

The differences in the impact of entrepreneurial abilities of various European SMEs on their financial risk perceptions

Mehmet Civelek, Lukáš Durda, Zuzana Vincúrová, Tomáš Dudáš, Ivan Brezina

ABSTRACT

Objective: The objective of the article is to investigate whether the impact of innovativeness and competitiveness of small and medium-sized enterprises (SMEs) on their financial risks differ depending on the countries where SMEs are located.

Research Design & Methods: The researchers created an online questionnaire and gained data from 1221 Czech, Slovak, and Hungarian SMEs. Moreover, the researchers applied ordinal logistic regression analyses to achieve the goal of this study.

Findings: According to the results, the impact of competitiveness on the bankruptcy risk perception of SMEs differ depending on the countries where they operate. Concerning the impact of innovativeness on financial performance and financial risk management, this article also proves that international differences between SMEs exist.

Implications & Recommendations: The developments in the financial literacy of company executives and their managerial experiences and the improvements in credit access conditions, intellectual property rights, and tax legislation can make SMEs reduce their concerns about their financial risks. Thus, policymakers' implementations are crucial to providing equal opportunities for SMEs even if they operate in various markets.

Contribution & Value Added: This current research does not only make international comparisons among the investigated variables but also analyses the impacts of entrepreneurial competencies on various indicators of financial risk. These facts not only make this research become a unique study in the literature but also the reason why it should garner the interest of prospective readers such as policymakers, academicians, and SME owners.

Article type: research article

Keywords: innovativeness; competitiveness; financial risk; financial performance, SMEs

JEL codes: G32, G33, L26

Received: 26 August 2022

Revised: 18 November 2022

Accepted: 18 November 2022

Suggested citation:

Civelek, M., Durda, L., Vincúrová, Z., Dudáš, T., & Brezina, I. (2022). The differences in the impact of entrepreneurial abilities of various European SMEs on their financial risk perceptions. *Entrepreneurial Business and Economics Review*, 10(4), 107-124. <https://doi.org/10.15678/EBER.2022.100407>

INTRODUCTION

Small and medium-sized enterprises (SMEs) have been called the main driver of labour creation (Ključnikov *et al.*, 2022) and export activities (Civelek & Krajčík, 2022; Pini & Tchorek, 2022) that cause economic development in countries (Abdulrab *et al.*, 2020; Zadeh, 2022). However, most SMEs are not successful as larger businesses when managing their financial risks, because they usually lack the financial resources, assets (Toulová *et al.*, 2016), access to finance, and knowledge regarding risk management (Dvorsky *et al.*, 2020; Kusa, 2020). Because they lack tangible financial resources to manage their financial risks, they have to be effective when using their intangible assets that increase their financial performance. This is because firms indicating higher financial performance are less likely to face financial risks. Financial risk is also related to how firms can manage their debt repayment to not face bankruptcy problems. Bankruptcy occurs when debtors are not able to pay back their liabilities and face insolvency issues (Bič, 2022). In this regard, it is a very costly process for SMEs and owners can be reluctant to establish a

new firm again (Dvorsky *et al.*, 2020). Thus, SMEs' effective financial management is also crucial for their survival. However, their capabilities to manage financial and bankruptcy risk and better financial performance also depend on their entrepreneurial characteristics which are intangible assets of those businesses. In this regard, firms' entrepreneurial capabilities that belong to the Resource-based view such as innovativeness and competitiveness might provide solutions for SMEs to overcome the major financial issues that they face (Abdimomynova *et al.*, 2021). These entrepreneurial characteristics that are based on the Resource-based View enable firms to develop different capabilities, receiving competitive advantages (Jalali *et al.*, 2013) and indicating better financial performance (Deku *et al.*, 2021). Innovativeness and competitiveness are also crucial factors that affect firms' entrepreneurial orientation and firms' revenues (Anwar & Shah, 2021; Jalali *et al.*, 2013).

The continuous development of new technologies creates new methods for businesses to use (Ključnikov *et al.*, 2020a; Teja Kusuma *et al.*, 2022), because firm executives have gained easier access to required information for their operations (Ključnikov *et al.*, 2020b), including financial risk management (Kotaskova *et al.*, 2020). Innovativeness also makes smaller enterprises compete with their larger rivals (Civelek *et al.*, 2021), because innovativeness positively affects the performance and income of those enterprises (Ključnikov *et al.*, 2021). Moreover, innovativeness increases the ability of companies to expand their operations in foreign markets (Martínez-Román *et al.*, 2019) and to fulfil the demand of their foreign customers (Kreiser *et al.*, 2013). In this regard, when companies determine effective factors that increase their customers' satisfaction, they can also gain a competitive advantage (Stefko *et al.*, 2020a). Moreover, firms having competitiveness not only indicate better performance (Stefko *et al.*, 2019) in sustainability practices (Pereira-Moliner *et al.*, 2021), but also decrease the costs of production, gain higher returns from their investments (Csapi & Balogh, 2020), and perceive the financial risks less intensively compared to their less competitive rivals (Dvorsky *et al.*, 2020).

However, these entrepreneurial capabilities might differ depending on the environment, in which SMEs are located, because different countries have various financial, economic, political, and legal conditions that affect entrepreneurial activities (Kocisova *et al.*, 2018). In this regard, this empirical research aims to investigate the differences between SMEs from different countries concerning the impacts of their innovative and competitive attitudes on their financial risk management, bankruptcy risk, and financial performance (Virglerova *et al.*, 2021). Hence, the research question was: "do the innovativeness and competitiveness of SMEs have an impact on their financial risk management, bankruptcy risk, and financial performance differ depending on the countries where they are located?" In line with this selected purpose, this research analysed SMEs from the Czech Republic, Slovakia, and Hungary. Even though those countries have similar cultural and socio-economic conditions, finding differences among SMEs of those Visegrad countries concerning the impacts of their entrepreneurial abilities on financial risk management, might make a valuable addition to academic literature.

Although many studies investigate the impacts of innovativeness or competitiveness on the financial risks of SMEs, they mostly focus on SMEs in a country-specific context (Aftab *et al.*, 2022; Li *et al.*, 2021; López Salazar *et al.*, 2012). Moreover, some studies compare innovative or competitive attitudes of SMEs and their impacts on financial risk management, financial performance, and bankruptcy (Civelek *et al.*, 2020a; de Araújo Lima *et al.*, 2021; Mason *et al.*, 2015). However, these articles analyse only the impact of innovativeness on risk management or competitiveness on financial performance and so on. For these reasons, this current research did not only include international comparisons between the investigated variables, but also analysed the impacts of entrepreneurial competencies on various indicators of financial risk. These facts not only make this research a unique study in the literature, but also the reason why it should garner the interest of prospective readers such as policymakers, academicians, and SME owners might be interested.

The remaining parts of the study are structured as follows: Literature review will give details regarding the theoretical background of the study with the development of the hypotheses. The research methodology will highlight the methodological approaches that the researchers have used to perform data collection and data analysis. The results of the study and hypotheses testing will be presented in the results section. The researchers will discuss the results of the study, recommend some policy im-

plications, and compare their findings with other studies in the discussion section. Finally, the researcher will summarize crucial facts, describe the limitations of this research, and make some recommendations for further studies in the conclusions section.

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Innovativeness is one of the crucial resources of SMEs that enables competitive advantage (Martínez-Román *et al.*, 2019). The innovative abilities of SMEs stimulate them to create new products and services or develop the existing goods (Kliuchnikava, 2022; Bartolacci *et al.*, 2022). Innovativeness also increases income (Ključnikov *et al.*, 2020c) and value-creating operations of SMEs that have a positive impact on their survival (Kreiser *et al.*, 2013). For instance, Civelek *et al.* (2020b) analysed the usage of innovative marketing tools by SMEs such as technology-enabled marketing tools and revealed that the usage of those tools increases SMEs' sales, revenue, and performance, thus, they might overcome the negative outcomes of bankruptcy issues. Thus, firms need to observe the developments in those new technologies to get more opportunities (Stefko *et al.*, 2022a). They became more available due to the steep development of IT products and innovative solutions in business process support (Roshchik *et al.*, 2022; Straková *et al.*, 2022). Although there are many factors including social, cultural, or economic ones that affect expenditures (Stefko *et al.*, 2022b), firms having more R&D productivity and high value become less likely to go bankrupt (Bai & Tian, 2020). Furthermore, firms lacking innovative abilities are more likely to go bankrupt than innovative firms (Donkor *et al.*, 2018). Some studies also find that innovation carries high importance for the long-term survival of SMEs (Bigliardi, 2013) and innovative activities such as creating new ideas enable firms' survival (Aftab *et al.*, 2022), especially if to consider certain types of innovations linked with technological and market behaviour issues (Lewandowska, 2021). Thanks to this empirical evidence, we can hypothesize that:

H1a: A negative relationship exists between innovativeness and bankruptcies of SMEs.

Moreover, bankruptcies might be explained by firms' competitive attitudes. This is because SMEs usually have less financial power which makes them less competitive and more likely to face failures (Kücher *et al.*, 2018; Abu Salma *et al.*, 2021; Karas & Režňáková, 2021). Some competitive strategies such as cost leadership, differentiation, and focus enable SMEs to overcome economic crises and the implementation of those competitive strategies by SMEs is positively related to their survival (Ulubeyli *et al.*, 2018). Moreover, competitive firms increase their profit and fulfil the demands of their customers, thus, they become more likely to survive (Csapi & Balogh, 2020). Similarly, when SMEs differentiate their goods and services from their rivals, they can increase their profits and become more likely to survive long-term (Sebestova *et al.*, 2020; Anwar & Shah, 2021). Firms' technological competitiveness also determines their bankruptcy risk. Firms that are less competitive in technological developments and have fewer patents are more likely to face bankruptcy problems (Eisdorfer & Hsu, 2011). Furthermore, firms focusing more on niche markets can also gain competitive advantages against their rivals and this increases their probability of survival. Although SMEs have more limited abilities and resources than their larger rivals, applying competitive strategies in their operations increases their competitive power and reduces their bankruptcy issues (Ulubeyli *et al.*, 2018). The results of the studies that are mentioned above lead to another hypothesis:

H1b: A negative relationship exists between competitiveness and bankruptcies of SMEs.

Innovativeness is a crucial capability of firms to continuously create new ideas, products, and services and to develop existential goods, organizational routines, technological procedures, and production processes (Kreiser *et al.*, 2013). Having such ability also increases firms' chances to penetrate markets, increase their market shares, and access new markets (Deku *et al.*, 2021), therefore, innovative firms achieve more improvement in growth (Li *et al.*, 2021), and increase profits (Stefko *et al.*, 2020b). Innovative firms also have high technological creativity (Deku *et al.*, 2021) to provide efficient and quick responses against changing market conditions and customers' demands (Kreiser *et al.*, 2013). In this regard, innovative firms can create business opportunities, differentiate their products, and apply more research and development activities that increase their competitive

power against their rivals (Anwar & Shah, 2021). Therefore, a positive relationship exists between innovativeness and the financial performance of firms (Anwar & Shah, 2021; Deku *et al.*, 2021). This positive relationship between innovativeness and the financial performance of SMEs has been also substantiated by some studies that investigate SMEs from Pakistan (Aftab *et al.*, 2022; Anwar & Shah, 2021), Ghana (Deku *et al.*, 2021; Li *et al.*, 2021), and Iran (Jalali *et al.*, 2013). Due to having those arguments, a research hypothesis might be presented as follows:

H2a: A positive relationship exists between innovativeness and the financial performance of SMEs.

On the other hand, firms become competitive when hitting their targets regarding market share such as reducing their prices and increasing their profits (Ulubeyli *et al.*, 2018). By doing so, firms draw out their rivals and give quick responses to their competitors' actions (Mason *et al.*, 2015). Moreover, firms implementing competitive strategies such as differentiation (Anwar & Shah, 2021) and cost leadership strategies (Ulubeyli *et al.*, 2018) can maintain their positions in the markets where they operate and get competitive advantages against their rivals. For these reasons, their competitive attitudes have positive impact on their financial performance (Anwar & Shah, 2021; Csapi & Balogh, 2020). The positive relationship between competitiveness and financial performance was also confirmed by some studies that investigate SMEs from Saudi Arabia (Abdulrab *et al.*, 2020), Pakistan (Anwar & Shah, 2021), and Ghana (Li *et al.*, 2021). Considering those arguments, we may hypothesize:

H2b: A positive relationship exists between competitiveness and the financial performance of SMEs.

Risk management consists of some activities such as reducing costs, financial shocks, and distress (Yang *et al.*, 2018), utilization of financial resources, and management of financial operations (Karadağ, 2018). Firms lacking financial risk management abilities face different financial problems (Karadağ, 2018). Since SMEs lack resources, they need effective financial management strategies. In this regard, innovation enables strategic flexibility and minimizes risk for SMEs (Martínez-Román *et al.*, 2019). Moreover, firms having more innovative initiatives get higher returns and face reduced financial risk compared to their less innovative counterparts (Zhang *et al.*, 2020). De Araújo Lima *et al.* (2021) analysed some SMEs in Italy and Spain and provided evidence that innovation leads firms to adopt more risk management strategies. Innovativeness also makes firms reduce and correctly evaluate their financial risks including credit, liquidity, operational, market risk, and solvency risks (Olalere *et al.*, 2021). For these reasons, innovativeness is an efficient tool for the financial risk management of SMEs. In this regard, we may hypothesize:

H3a: A positive relationship exists between innovativeness and financial risk management of SMEs.

Financial risk management is another vital issue for SMEs to increase their performance (Dvorsky *et al.*, 2020). This is because SMEs having issues with risk management can lose their competitive power and face more issues while trying to survive (Oláh *et al.*, 2019) such as encountering more costs in their operations (Yang *et al.*, 2018). In this regard, their competitive strategies such as aggressive management of their businesses might be an approach to managing this risk (Toulová *et al.*, 2016). For instance, Liu *et al.* (2021) analysed SMEs in China and found that competitive firms can reduce the risks that they face during their operations. Yang *et al.* (2018) also examined SMEs in Pakistan and stated that competitive firms can use enterprise risk management practices more effectively than their less competitive counterparts. Yang *et al.* (2018) also vindicated the positive relationship between risk management and the competitiveness of firms. Moreover, López Salazar *et al.* (2012) examined Mexican SMEs and substantiated that competitive firms are effective in financial management. The positive relationship between competitiveness and financial management of small enterprises has been also proved by the study by Karadağ (2018) that analysed Turkish firms. This empirical evidence allows us to hypothesize that:

H3b: A positive relationship exists between firm competitiveness and financial risk management of SMEs.

RESEARCH METHODOLOGY

The purpose of this empirical research was to discover the differences in the impact of innovativeness and competitiveness on the perception of financial issues by SMEs in various countries. In this regard, this study analysed SMEs from three countries, namely the Czech Republic, Slovakia, and Hungary. The research team applied the random sampling method to create research samples from the Cribis database. Moreover, the researchers generated an online survey and the links to the same questionnaire were directed to the randomly selected respondents by e-mail. Finally, 454 managers or owners of Czech SMEs, 368 managers or owners of Slovak SMEs, and 399 managers or owners of Hungarian SMEs filled out the online questionnaire.

To measure one of the independent variables of the research models, namely the innovativeness of SMEs, the following statements were directed to the survey participants: 'We place great emphasis on the innovation of our products and services, and it is positively reflected in the performance of the company.' Moreover, another independent variable of the research models, namely competitiveness was evaluated as follows: 'Business competition motivates us to perform better.' Corresponding to the measurement of the dependent variables, namely bankruptcy risk, financial performance, and financial risk management, the following statements were included in the online survey: 'There is no risk of bankruptcy for our (my) company within 5 years,' 'I evaluate the financial performance of our (my) company positively,' and 'I can adequately manage the financial risk in my (our) company.'

The researchers employed a five-point Likert scale as '1 – completely disagree', '2 – disagree', '3 – neither agree nor disagree', '4 – agree', and '5 – completely agree' to scale the responses of the survey participants for the statements that are explained in the previous paragraph. In this regard, lower ratings by survey respondents in innovative and competitive attitudes of SMEs were related to lower financial performance and financial risk management capabilities. On the other hand, lower values from the bankruptcy variable represented a higher probability of facing bankruptcy issues for SMEs.

To investigate the impact of independent variables on the dependent variables, the researchers ran Ordinal Logistic Regression Test. The reason is that all dependent and independent variables in this research were ranked and measured by a five-point Likert scale. Moreover, the researchers used the Logit function in the SPSS program to analyse this research. Some studies also applied this method when evaluating the innovativeness, competitiveness, and financial conditions of businesses (Campbell *et al.*, 2008; Civelek *et al.*, 2020a; Eisdorfer & Hsu, 2011).

The created research models that are based on Ordinal Logit Regression are as follows:

1st Research Model:

$$\text{Logit}(P(Y \leq j)) = \beta_j0 + \beta_j1 X_1 + \beta_j2 X_2 \quad (1)$$

Y₁= Dependent variable (bankruptcy risk)

2nd Research Model:

$$\text{Logit}(P(Y \leq j)) = \beta_j0 + \beta_j1 X_1 + \beta_j2 X_2 \quad (2)$$

Y₂= financial performance

3rd Research Model:

$$\text{Logit}(P(Y \leq j)) = \beta_j0 + \beta_j1 X_1 + \beta_j2 X_2 \quad (3)$$

Y₃: financial risk management;

J = categories;

X₁ – Independent variable (X₁: innovativeness in the 1st, 2nd and 3rd research models);

X₂ – Independent variable (X₂: competitiveness in the 1st, 2nd and 3rd research models);

B₁ – Regression coefficients;

β₀ – Constant or intercept term;

P- predictor.

This research also considered the volumes from the model fitting, goodness of fit, and test of parallel lines analyses to investigate whether the assumptions of ordinal logistic regression were fulfilled. The values from these analyses are illustrated below in Table 1. If the values that are presented under

'Sig.' column of model fitting are less than 5% significance level, it can be stated that the created models fit with the data. According to the table, p values were significant at the 5% significance level (Model 1 Czech sample= $\chi^2(8) = 32.866$, Sig, $p < 0.05$; Slovak sample= $\chi^2(8) = 29.549$, Sig, $p < 0.05$; Hungarian sample= $\chi^2(8) = 71.005$, Sig, $p < 0.05$; Model 2 Czech sample= $\chi^2(8) = 67.665$, Sig, $p < 0.05$; Slovak sample= $\chi^2(8) = 66.098$, Sig, $p < 0.05$; Hungarian sample= $\chi^2(8) = 95.832$, Sig, $p < 0.05$; Model 3 Czech sample= $\chi^2(8) = 61.918$, Sig, $p < 0.05$; Slovak sample= $\chi^2(8) = 79.612$, Sig, $p < 0.05$; Hungarian sample= $\chi^2(8) = 95.958$, Sig, $p < 0.05$). For this reason, the models fit with the data and the inclusion of independent variables, namely innovativeness and competitiveness into the research models increased the ability of these new models to make better predictions for the dependent variables. Moreover, the overall model fit was also developed by adding those independent variables.

On the other hand, the values from Cox and Snell and Nagelkerke indicators that are presented in Table 1, clarified the percentage of changes that independent variables (innovativeness and competitiveness) made on the outcome variables of the research models. The inclusion of innovativeness and competitiveness into the first research model for various research samples represents 7.4%, 8.2%, and 13% changes in bankruptcy risk, respectively. Furthermore, 14.9%, 17.7%, and 23.5% variations in financial performance (of Czech, Slovak, and Hungarian SMEs, respectively) might be explained by the inclusion of the innovativeness and competitiveness in the second research model.

Table 1. Test results for the assumptions of Ordinal Logistic Regression

Country	Assumptions	Model fitting				Goodness of fit Pseudo R-square		Test of parallel lines			
	Models	-2 Log likelihood	Chi-Square	df	Sig.	Cox & Snell	Nagelkerke	-2 Log likelihood	Chi-Square	df	Sig.
Czech	Model 1	263.355	32.866	8	0.000	0.070	0.074	236.162	27.193	24	0.296
Slovakia	Model 1	220.772	29.549	8	0.000	0.077	0.082	176.483	44.288	24	0.388
Hungary	Model 1	222.216	51.609	8	0.000	0.121	0.130	148.267	73.948	24	0.761
Czech	Model 2	260.858	67.665	8	0.000	0.138	0.149	315.421	26.594	24	0.283
Slovakia	Model 2	214.302	66.098	8	0.000	0.164	0.177	175.299	39.004	24	0.354
Hungary	Model 2	277.110	95.832	8	0.000	0.214	0.235	181.277	16.707	24	0.143
Czech	Model 3	298.205	61.918	8	0.000	0.127	0.139	146.213	90.075	24	0.852
Slovakia	Model 3	262.305	79.612	8	0.000	0.195	0.213	127.987	54.706	24	0.491
Hungary	Model 3	252.828	92.958	8	0.000	0.208	0.235	152.782	17.088	24	0.152

Note: Sig. – significance.

Source: own study.

To analyze the similarities between the slope coefficients of the cut-offs, the researchers considered the results from the test of parallel lines. Because the variables in the research models were measured on a five-point Likert scale, there were four levels (cut-offs) in those variables. Therefore, cut-off '1' indicated the cut-off value between the answers of 'completely disagree' to 'disagree', cut-off '2' showed the cut-off value between the replies of 'disagree' to 'neither agree nor disagree', cut-off '3' represented the cut-off value between the responses of 'neither agree nor disagree' to 'agree' and cut off '4' demonstrated the cut-off value between the responses of 'agree' to 'completely agree.' The P volumes that are greater than 5% enabled the fulfilment of this assumption of Ordinal Logistic Regression. Because all p values illustrated in Table 1 ('Sig.' column under Test of Parallel Lines) are higher than the 5% level of significance, this assumption is also fulfilled by the analyses. As already confirmed by the assumption testing, this study did not violate any assumptions of ordinal logistic regression. Hence, it was convenient to use the ordinal logistic regression test to achieve the goal of this research. Moreover, the details regarding the sample profile are also depicted in Table 2 which is presented below.

Corresponding to the hypotheses testing, this study used 5% significance. In this regard, p values smaller than 0.05 prove that this study supported the research hypotheses and vice versa. On the other hand, null hypotheses declared the nonexistence of positive and negative effects of innovativeness and competitiveness on bankruptcy risk, financial performance, and financial risk management.

Table 2. Sample profile

Criteria		Czech		Slovak		Hun	
		<i>n</i>	Share	<i>N</i>	Share	<i>N</i>	Share
Firm size	micro	290	63.88%	216	58.70%	268	67.17%
	small	107	23.57%	106	28.80%	73	18.29%
	medium	57	12.55%	46	12.50%	58	14.54%
	Total	454	100%	368	100%	399	100%
Firm age	up to 5 years	55	12.11%	53	14.40%	85	21.30%
	6 to 10 years	64	14.10%	52	14.13%	62	15.54%
	more than 10 years	335	73.79%	263	71.47%	252	63.16%
	Total	454	100%	368	100%	399	100%
Firm sector	manufacturing	135	29.74%	70	19.02%	109	27.32%
	retailing	266	58.59%	76	20.65%	240	60.15%
	service	34	7.49%	152	41.30%	18	4.51%
	others	19	4.18%	70	19.02%	32	8.02%
Total		454	100%	368	100%	399	100%
Age of firm executives	Young (max. 45)	175	38.55%	145	39.40%	193	48.37%
	Old (more than 45)	279	61.45%	223	60.60%	206	51.63%
	Total	454	100%	368	100%	399	100%
Educational Status of firm executives	Less than university	231	50.88%	76	20.65%	67	16.79%
	Minimum university	223	49.12%	292	79.35%	332	83.21%
	Total	454	100%	368	100%	399	100%

Source: own study.

RESULTS AND DISCUSSION

Results

As already mentioned in the Methodology section, this study employed a five-point Likert scale to measure the volumes of the dependent and independent variables. For this reason, there were four levels (cut-offs) in these ordinals and ranked independent and dependent variables of the research models. Those cut-offs were also depicted in the tables in the Results section.

Table 3 is presented below to illustrate the results of this study regarding the 1st research model. According to the table, p-values ('Sig.' in the Table) for innovativeness are not significant at the 5% significance level for all of the research samples. For this reason, innovativeness is not a significant predictor of bankruptcy and there is not any significant relationship between innovativeness and bankruptcy. Thus, this study failed to support the H1a hypothesis. Because this fact is valid for all the research samples, this study found no differences among SMEs of various countries regarding the investigated variables.

Concerning the impact of competitiveness on bankruptcy, while the cut-off values for competitiveness were not significant at the 5% level of significance in the Slovak sample, these values for Czech and Hungarian samples were significant at this significance level for the cut-offs of '3' and '4' (p values for 'competitiveness=3' and 'competitiveness=4' for Czech and Hungarian samples were 0.011, 0.008, 0.020, and 0.000, respectively). Therefore, competitiveness was a significant predictor of bankruptcy predictions of Czech and Hungarian SMEs.

As indicated in Table 3, the volumes of coefficients (the 'Estimate' column in Table 3) for the 3rd and 4th cut-offs of competitiveness in the Czech and Hungarian samples are negative (-1.480, -1.690, -1.584, -2.610, respectively). In this regard, a one-unit decrease in Czech and Hungarian SMEs' competitiveness enables them to perceive the bankruptcy risk less intensively compared to their more competitive counterparts. Thus, there is a positive relationship between the competitiveness of Czech and Hungarian SMEs and their more intensive perception of bankruptcy risk. Because this study does not find any significant relationship between the competitiveness of Slovak SMEs and their bankruptcies and finds a positive relationship between the competitiveness of Czech and Hungarian SMEs and their bankruptcies, this research does not support the H1b hypothesis.

Table 3. The results regarding the 1st research model

Country	Variable	Estimate	S.E.	Wald	df	Sig.	95% CI [Lower Upper]
MODEL-1							
Czech Republic	Bankruptcy = 1	-3.593	0.802	20.093	1	0.000	[-5.164 2.022]
	Bankruptcy = 2	-2.678	0.787	11.576	1	0.001	[-4.220 -1.135]
	Bankruptcy = 3	-1.187	0.779	2.320	1	0.128	[-2.715 0.340]
	Bankruptcy = 4	0.268	0.777	0.119	1	0.730	[-1.255 1.792]
	Innovativeness = 1	0.932	0.631	2.179	1	0.140	[-0.305 2.169]
	Innovativeness = 2	0.410	0.622	0.433	1	0.510	[-0.810 1.630]
	Innovativeness = 3	0.405	0.626	0.417	1	0.518	[-0.823 1.632]
	Innovativeness = 4	-0.252	0.674	0.140	1	0.708	[-1.572 1.068]
	Competitiveness = 1	-0.757	0.564	1.802	1	0.179	[-1.861 0.348]
	Competitiveness = 2	-1.192	0.560	4.532	1	0.033	[-2.289 -0.095]
Competitiveness = 3	-1.480	0.581	6.481	1	0.011	[-2.619 -0.341]	
Competitiveness = 4	-1.690	0.637	7.036	1	0.008	[-2.939 -0.441]	
Slovakia	Bankruptcy = 1	-3.842	1.510	6.472	1	0.011	[-6.803 -0.882]
	Bankruptcy = 2	-2.607	1.498	3.028	1	0.082	[-5.543 0.329]
	Bankruptcy = 3	-0.831	1.492	0.310	1	0.577	[-3.756 2.094]
	Bankruptcy = 4	0.635	1.492	0.181	1	0.671	[-2.290 3.559]
	Innovativeness = 1	-0.061	1.309	0.002	1	0.963	[-2.625 2.504]
	Innovativeness = 2	-0.828	1.299	0.406	1	0.524	[-3.374 1.718]
	Innovativeness = 3	-1.179	1.300	0.823	1	0.364	[-3.727 1.369]
	Innovativeness = 4	-1.658	1.358	1.492	1	0.222	[-4.319 1.003]
	Competitiveness = 1	0.216	0.768	0.079	1	0.779	[-1.289 1.721]
	Competitiveness = 2	-0.054	0.759	0.005	1	0.943	[-1.541 1.433]
Competitiveness = 3	-0.143	0.773	0.034	1	0.853	[-1.658 1.372]	
Competitiveness = 4	-0.291	0.813	0.128	1	0.720	[-1.885 1.302]	
Hungary	Bankruptcy = 1	-3.044	0.776	15.389	1	0.000	[-4.565 -1.523]
	Bankruptcy = 2	-1.980	0.757	6.847	1	0.009	[-3.463 -0.497]
	Bankruptcy = 3	-0.804	0.750	1.149	1	0.284	[-2.273 0.666]
	Bankruptcy = 4	1.215	0.750	2.622	1	0.105	[-0.256 2.685]
	Innovativeness = 1	1.836	0.694	6.994	1	0.008	[0.475 3.196]
	Innovativeness = 2	1.134	0.660	2.954	1	0.086	[-0.159 2.428]
	Innovativeness = 3	1.405	0.672	4.365	1	0.137	[0.087 2.723]
	Innovativeness = 4	0.409	0.740	0.305	1	0.581	[-1.042 1.860]
	Competitiveness = 1	-0.644	0.673	0.917	1	0.338	[-1.963 0.674]
	Competitiveness = 2	-0.913	0.651	1.968	1	0.161	[-2.189 0.363]
Competitiveness = 3	-1.584	0.678	5.454	1	0.020	[-2.914 -0.255]	
Competitiveness = 4	-2.610	0.716	13.305	1	0.000	[-4.013 -1.208]	

Note: Sig.: significance.

Source: own study.

The results of this study regarding the 2nd research model are provided below in Table 4. According to the table, the volumes of cut-offs were all significant at 5% significance level for innovativeness of Hungarian SMEs (Innovativeness: 1 $p=0.000$; Innovativeness:2 $p=0.000$; Innovativeness: 3 $p=0.000$; Innovativeness:4 $p=0.004$). Hence, innovativeness is a significant predictor of the financial performance of Hungarian SMEs. Concerning the values of the coefficients for each of the cut-offs, they were all negative (The values from the 'Estimate' column for Innovativeness 1: -4.259, Innovativeness 2: -3.531, Innovativeness 3: -2.681, Innovativeness 4: -2.229). Therefore, a one-unit decrease in Hungarian SMEs' innovativeness makes them have greater financial performance than more innovative Hungarian SMEs. However, since p values were not significant for the cut-offs of the innovativeness for Czech and Slovak SMEs, innovativeness (all p values were greater than the 5% significance level) is not a significant predictor of the financial performance of Czech and Slovak SMEs. Thus, the financial performance of

Czech and Slovak SMEs does not depend on their innovativeness. In this regard, Hungarian SMEs differ from their Czech and Slovak counterparts. Due to the existence of a negative association (in the Hungarian case) and the nonexistence of any associations between innovativeness and financial performance (in both Czech and Slovak cases) this study failed to support H2a hypothesis.

Corresponding to the impact of competitiveness on financial performance, there was no significant result in any of the research samples. This was because p values for competitiveness were greater than the 5% level of significance. Thus, competitiveness is not a significant variable to predict the financial performance of SMEs. In this regard, this study did not support the H2b hypothesis. Within this context, Czech, Slovak, and Hungarian SMEs did not differ.

Table 4. The results regarding the 2nd research model

Country	Variable	Estimate	S.E.	Wald	df	Sig.	95% CI [Lower Upper]
MODEL-2							
Czech Republic	Fin. perf. = 1	-1.578	0.777	4.123	1	0.042	[-3.101 -0.055]
	Fin. perf. = 2	0.568	0.774	0.540	1	0.462	[-0.948 2.084]
	Fin. perf. = 3	2.165	0.783	7.641	1	0.006	[0.630 3.700]
	Fin. perf. = 4	3.408	0.812	17.618	1	0.000	[1.817 5.000]
	Innovativeness = 1	-1.198	0.643	3.474	1	0.062	[-2.459 0.062]
	Innovativeness = 2	-.0562	0.634	0.787	1	0.375	[-1.804 0.680]
	Innovativeness = 3	-0.034	0.636	0.003	1	0.957	[-1.282 1.213]
	Innovativeness = 4	0.458	0.685	0.448	1	0.503	[-0.884 1.801]
	Competitiveness = 1	-0.210	0.544	0.149	1	0.699	[-1.275 0.855]
	Competitiveness = 2	0.279	0.539	0.267	1	0.605	[-0.778 1.335]
	Competitiveness = 3	0.852	0.562	2.294	1	0.130	[-0.250 1.954]
	Competitiveness = 4	1.384	0.622	4.950	1	0.026	[0.165 2.603]
Slovakia	Fin. perf. = 1	-4.945	1.575	9.862	1	0.002	[-8.031 -1.859]
	Fin. perf. = 2	-2.516	1.567	2.578	1	0.108	[-5.587 0.555]
	Fin. perf. = 3	-1.281	1.563	0.672	1	0.412	[-4.344 1.783]
	Fin. perf. = 4	1.092	1.557	0.492	1	0.483	[-1.960 4.144]
	Innovativeness = 1	-3.859	1.390	7.709	1	0.005	[-6.582 -1.135]
	Innovativeness = 2	-3.035	1.376	4.863	1	0.027	[-5.732 -0.337]
	Innovativeness = 3	-2.633	1.375	3.670	1	0.055	[-5.328 0.061]
	Innovativeness = 4	-1.745	1.423	1.503	1	0.220	[-4.534 1.045]
	Competitiveness = 1	-0.855	0.786	1.183	1	0.277	[-2.395 0.686]
	Competitiveness = 2	0.076	0.774	0.010	1	0.922	[-1.440 1.592]
	Competitiveness = 3	0.119	0.788	0.023	1	0.880	[-1.425 1.664]
	Competitiveness = 4	0.397	0.827	0.230	1	0.631	[-1.225 2.019]
Hungary	Fin. perf. = 1	-3.858	0.780	24.484	1	0.000	[-5.386 -2.330]
	Fin. perf. = 2	-1.081	0.767	1.987	1	0.159	[-2.585 0.422]
	Fin. perf. = 3	0.755	0.758	0.991	1	0.319	[-0.731 2.241]
	Fin. perf. = 4	2.819	0.863	10.661	1	0.001	[1.127 4.511]
	Innovativeness = 1	-4.259	0.735	33.570	1	0.000	[-5.699 -2.818]
	Innovativeness = 2	-3.531	0.698	25.600	1	0.000	[-4.899 -2.163]
	Innovativeness = 3	-2.681	0.700	14.675	1	0.000	[-4.053 -1.309]
	Innovativeness = 4	-2.229	0.770	8.386	1	0.004	[-3.738 -0.720]
	Competitiveness = 1	0.164	0.685	0.058	1	0.810	[-1.179 1.508]
	Competitiveness = 2	1.045	0.663	2.481	1	0.115	[-0.255 2.345]
	Competitiveness = 3	1.764	0.693	6.468	1	0.111	[-0.404 3.123]
	Competitiveness = 4	1.028	0.726	2.005	1	0.157	[-0.395 2.451]

Note: Sig.: significance.

Source: own study.

The findings of this study concerning the impacts of innovativeness and competitiveness on financial risk management are depicted in Table 5. As illustrated in Table 5, competitiveness is not

a significant independent variable to predict the financial risk management of SMEs. The reason is that all p values ('Sig.')

were higher than the 5% level of significance. Thus, the competitiveness of SMEs does not have any significant effect on their financial performance. Therefore, this study failed to support H3b hypothesis. Because Czech, Slovak, and Hungarian SMEs indicated similar patterns in this relationship, they did not differ.

Regarding the effect of innovativeness on financial risk management, the cut-off values in the Hungarian sample were significant at the 5% significance level (Innovativeness: 1 p=0.000; Innovativeness: 2 p=0.000; Innovativeness: 3 p=0.000; Innovativeness: 4 p=0.001). Moreover, the coefficients for the cut-offs were negative (The values from the 'Estimate' column for Innovativeness 1: -4.120, Innovativeness 2: -2.826, Innovativeness 3: -2.604, Innovativeness 4: -2.736). The volumes for the p-values and the coefficients confirmed that Hungarian SMEs with lower ratings in innovativeness were more likely to manage their financial risk compared to their more innovative counterparts.

Table 5. The results regarding the 3rd research model

Country	Variable	Estimate	S.E.	Wald	df	Sig.	95% CI [Lower Upper]
MODEL-3							
Czech Republic	Risk man. = 1	-1.793	0.784	5.225	1	0.022	[-3.330 -0.256]
	Risk man. = 2	0.371	0.780	0.226	1	0.634	[-1.158 1.900]
	Risk man. = 3	2.298	0.793	8.388	1	0.004	[0.743 3.853]
	Risk man. = 4	3.487	0.838	17.315	1	0.000	[1.845 5.130]
	Innovativeness = 1	-1.846	0.650	8.072	1	0.004	[-3.120 -0.573]
	Innovativeness = 2	-0.703	0.638	1.214	1	0.270	[-1.953 0.547]
	Innovativeness = 3	-0.681	0.642	1.128	1	0.288	[-1.939 0.576]
	Innovativeness = 4	-0.452	0.691	0.428	1	0.513	[-1.806 0.902]
	Competitiveness = 1	-0.095	0.551	0.030	1	0.864	[-1.174 0.985]
	Competitiveness = 2	0.351	0.546	0.413	1	0.521	[-0.720 1.422]
Slovakia	Risk man. = 1	-3.734	1.537	5.900	1	0.015	[-6.747 -0.721]
	Risk man. = 2	-1.086	1.527	0.506	1	0.477	[-4.080 1.908]
	Risk man. = 3	0.862	1.527	0.319	1	0.572	[-2.130 3.855]
	Risk man. = 4	3.479	1.664	4.369	1	0.037	[0.217 6.740]
	Innovativeness = 1	-2.568	1.339	3.677	1	0.055	[-5.193 0.057]
	Innovativeness = 2	-1.651	1.325	1.554	1	0.213	[-4.248 0.945]
	Innovativeness = 3	-0.932	1.323	0.496	1	0.481	[-3.524 1.661]
	Innovativeness = 4	-1.025	1.382	0.550	1	0.458	[-3.734 1.684]
	Competitiveness = 1	-1.325	.802	2.734	1	0.098	[-2.896 0.246]
	Competitiveness = 2	-0.187	.787	0.056	1	0.813	[-1.729 1.356]
Hungary	Risk man. = 1	-4.530	0.798	32.210	1	0.000	[-6.094 -2.965]
	Risk man. = 2	-1.095	0.777	1.986	1	0.159	[-2.617 0.428]
	Risk man. = 3	0.509	0.770	0.436	1	0.509	[-1.001 2.018]
	Risk man. = 4	2.723	0.911	8.936	1	0.003	[0.937 4.508]
	Innovativeness = 1	-4.120	0.738	31.196	1	0.000	[-5.566 -2.674]
	Innovativeness = 2	-2.826	0.695	16.549	1	0.000	[-4.187 -1.464]
	Innovativeness = 3	-2.604	0.705	13.639	1	0.000	[-3.985 -1.222]
	Innovativeness = 4	-2.736	0.794	11.870	1	0.001	[-4.292 -1.179]
	Competitiveness = 1	-0.684	0.722	0.897	1	0.343	[-2.099 0.731]
	Competitiveness = 2	0.197	0.698	0.080	1	0.778	[-1.170 1.564]
Competitiveness = 3	0.959	0.727	1.738	1	0.187	[-0.467 2.384]	
Competitiveness = 4	1.225	0.759	2.604	1	0.107	[-0.263 2.713]	

Note: Sig.: significance

Source: own study.

However, this result from the Hungarian sample was not compatible with the other research samples. This is because p values for the levels of innovativeness (especially for the 2nd, 3rd, and 4th cut-offs) in Czech and Slovak samples were higher than the selected significance level. Hence, innovativeness was not a significant predictor of financial risk management of Czech and Slovak SMEs. This result confirmed that a difference exists between Czech or Slovak SMEs and Hungarian SMEs concerning the relationship between innovativeness and financial risk management. Because this study confirmed the negative (in the Hungarian sample) or non-existent relationship between innovativeness and financial risk management of SMEs (in Czech and Slovak samples), this study failed to support H3a hypothesis.

Discussion

Concerning the impact of innovativeness on the bankruptcy perception of Czech, Slovak, and Hungarian SMEs, this study found no country-level differences. This result is compatible with the study of Civelek *et al.* (2020a) since those researchers did not confirm the differences between countries regarding the impact of innovative actions of SMEs on their bankruptcies. Regarding the relationship between the competitiveness of SMEs and their perceptions of bankruptcy risk, this study explored the differences between Czech and Slovak, and Slovak and Hungarian SMEs. On the other hand, Khan *et al.* (2020) confirmed the differences in the perception of bankruptcy risk by Czech and Slovak SMEs. Hence, the results of this study regarding the bankruptcy perception of Czech and Slovak SMEs are in line with the findings of Khan *et al.* (2020).

When it comes to the impact of innovativeness on financial performance, this study confirmed the differences between Czech and Hungarian, and Slovak and Hungarian SMEs. In this regard, this study found similar results to the studies of Lindman *et al.* (2008), Ključnikov *et al.* (2020c), because these researchers also declared the differences between the innovative performance of SMEs from various countries including Czech and Turkish (Ključnikov *et al.*, 2020c) and Spanish, Finnish, and Italian SMEs (Lindman *et al.*, 2008).

Corresponding to the effects of competitiveness on the financial performance of SMEs, this study revealed no differences between various countries' SMEs. However, Mason *et al.* (2015) compared competitive attitudes on the performance of Italian and Austrian SMEs and found differences among those SMEs. While competitiveness negatively influenced the performance of Italian SMEs, it positively affected the performance of Austrian SMEs. Thus, the result of this article regarding competitiveness and performance is not consistent with the study of Mason *et al.* (2015).

While innovation affects the financial management of Hungarian SMEs, it does not have any impact on the financial risk management of Slovak and Czech SMEs. Thus, Czech and Hungarian, and Slovak and Hungarian SMEs indicated various attitudes in this manner. Martínez-Román *et al.* (2019) also highlighted the differences between 13 different European countries regarding the effects of innovation in risk management. For this reason, the result of this research is compatible with the study of Martínez-Román *et al.* (2019).

This study also found some other similarities among Czech, Slovak, and Hungarian samples, because the competitiveness of Czech, Slovak, and Hungarian SMEs does not influence their financial risk management practices. Toulouva *et al.* (2016) also compared the risk management approaches of SMEs from various European countries including the Czech Republic, Slovakia, Germany, Austria, and Poland and substantiated the differences between them (Halaskova *et al.*, 2022). Thus, the result of this study regarding financial risk management differs from the study of Toulouva *et al.* (2016).

As already mentioned above, this research confirmed the nonexistence of the differences between Czech, Slovak, and Hungarian SMEs regarding the impact of their competitiveness on financial performance and financial risk management and innovativeness on bankruptcy. The reason for these results might stem from the common historical, social, and economic characteristics that these countries have (Oláh *et al.*, 2019). Therefore, these factors might have made SMEs from these countries show similarities concerning the effects of innovativeness and competitiveness on bankruptcy, financial performance, and financial risk management, respectively.

On the other hand, this study proved the differences between Czech, Slovak, and Hungarian SMEs concerning the effects of their innovativeness on financial performance and financial risk management and their competitiveness on bankruptcy. According to Statista (2021), the number of insolvencies in both the Czech Republic (11500) and Hungary (5200) is higher than the number of insolvencies in Slovakia (2186). Since SMEs in both the Czech Republic and Hungary might be aware of this situation, they might behave less competitively in performing their operations. By doing so, SMEs behaving less competitively might think that they are less likely to go bankrupt. This fact might be the reason, why less competitive Czech and Hungarian SMEs less intensively perceive bankruptcy risk.

Regarding the differences in innovativeness among those countries, financial performance and financial risk management, political risk, competition in a specific market (Dvorsky *et al.*, 2020; Toulouva *et al.*, 2016), and cultural differences (Ključnikov *et al.*, 2020c) might be strong arguments to explain why Hungarian SMEs differ from their Czech and Slovak counterparts. The Global Competitiveness Index might be a good indicator to highlight the differences in the market competitiveness in various countries. According to the Global Competitiveness Report, the score of Hungary on the competitiveness index is lower than the Czech Republic and Slovakia (Trading Economics, n.d.). Being located in a less competitive environment might make SMEs behave less innovatively and this fact might be a reason why less innovative Hungarian SMEs have higher financial performance and are good at managing financial risk in comparison with their more innovative counterparts. Corresponding to cultural differences, due to being formerly Czechoslovakia, the Czech Republic and Slovakia indicate more similarities in values and norms (Civelek *et al.*, 2020b) compared to Hungary. In this regard, Hofstede's Uncertainty Avoidance dimension can be considered to compare risk perception of individuals from various countries. This is because Hofstede created an uncertainty avoidance index (UAI) that enables us to evaluate risk perception (Stefko *et al.*, 2022c). Moreover, Hofstede *et al.* (2010) declared the fact that SMEs in countries with higher uncertainty avoidance have fewer propensities to take a risk and perform innovative operations. According to Hofstede Index (Hofstede Insights, n.d.), uncertainty avoidance is higher in Hungary than in Czechia and Slovakia, thus, Hungarian firms behave less innovatively and are risk-averse against risky circumstances. By doing so, less innovative Hungarian SMEs could get better financial performance and financial risk management. Regarding political risk, it is higher in Hungary than in Czechia and Slovakia (Regional Political Risk Index, PRS Group, 2020). This political risk in Hungary can make SMEs in Hungary risk less, therefore, they might not apply risky innovative actions. In this regard, they can have better financial performance and manage risks more effectively.

Financial literacy has crucial importance for the financial risk management, performance, and competitiveness of SMEs. Thus, educational courses that increase the awareness and knowledge of firm executives might provide solutions to reduce the financial concerns of SMEs. Even if they are newly established, firms having educated executives might become more capable of overcoming potential financial problems. By getting such information, executives can also know how to find suitable financing options for their companies. On the other hand, lacking managerial experience can cause SMEs to perceive financial issues more intensively and face difficulties to find effective solutions for them. Therefore, students in business, entrepreneurship, economy, international trade, and similar departments need to be supported by training that increases the responsibility of these students in a practical manner. Although governments stimulate collaboration between universities and businesses to provide training for students, the time that students spend in such organizations might be increased (Wach & Bilan, 2021).

On the other hand, the stability in the legal environment (Stefko *et al.*, 2021) and the quality of the institutional environment are very crucial for the development of some industries (Stefko *et al.*, 2022d). In this regard, the costs of borrowing for innovative initiatives and R&D activities can be reduced by the regulations of governments to increase the innovativeness of competitive industries or some sectors that have imperfect competition causing limited financing options (Stefko *et al.*, 2018). Governments can also provide some VAT exemptions or corporate tax exemptions for financial institutions that stimulate the innovative posture of SMEs. On the other hand, governments can impose sanctions to protect intellectual property that is guarantee of creative and innovative ideas of SMEs. Because patents, trademarks, and copyrights are costly for SMEs, policymakers can also give some subsidies or incentives to SMEs to protect their intellectual property at lower costs. These incentives also motivate both managers and

workers of SMEs (Stefko *et al.*, 2017). If these targets are achieved, SMEs might become more competitive and innovative to overcome bankruptcy risk, financial risk, and performance issues.

CONCLUSIONS

Since most SMEs have higher financial risks than their larger rivals, their main problem is access to bank funding. To overcome this issue, their perception of financial risk and their entrepreneurial capabilities might provide solutions. But depending on the countries where SMEs are located, these abilities and perceptions might differ. In this regard, this article aimed to find whether the effects of innovative and competitive attitudes of SMEs on their perceptions regarding financial risk differ depending on the countries where they operate or not. Thus, the research team created an online survey and 1221 SMEs from the Czech Republic, Slovakia, and Hungary took the survey. Moreover, this study investigated whether there was a positive or negative association between innovativeness, competitiveness, bankruptcy, financial performance, and financial risk management. To achieve the research aim, the researchers performed Ordinal Logistic Regression analyses in the SPSS statistical program.

According to the results, this research did not find negative associations between innovativeness, competitiveness and bankruptcy. Moreover, positive relationships between innovativeness, competitiveness, financial performance and financial risk management did not emerge. Thus, this research failed to support all research hypotheses. On the other hand, this study confirmed the similarities among Czech, Slovak, and Hungarian SMEs regarding the impact of innovativeness on their bankruptcy concerns and the impact of competitiveness on their financial performance and financial risk management. Having similar socio-economic conditions in those markets might be the reason for those similarities among SMEs. However, this research also proved the differences between SMEs from the Czech Republic, Slovakia, and Hungary corresponding to the influences of competitiveness on their bankruptcy concerns and innovativeness on their financial performance and financial risk management. The differences among those SMEs might stem from the number of insolvencies, political risk, competition, and cultural differences in those various markets. The developments in the financial literacy of company executives and their managerial experiences and the improvements in credit access conditions, intellectual property rights, and tax legislation can make SMEs reduce their concerns about their financial risks. Thus, policymakers' implementations are crucial to providing equal opportunities for SMEs even if they operate in various markets.

Although this study analysed SMEs from various countries and with various financial perspectives, it has some limitations. One of the limitations of this article is the lack of data that consists of financial statements. Moreover, this study analysed only the financial conditions of SMEs from their evaluation. This study also investigated SMEs from only some European countries and focuses on only some entrepreneurial characteristics. To overcome those limitations, new research should include some indicators from the financial statement of SMEs. By doing so, it would focus not only on the self-evaluation of the financial conditions of SMEs or their executives. The SMEs from other European countries can also be analysed to indicate more variations in this specific topic. Other components of entrepreneurial orientation such as proactiveness, risk-taking, and autonomy can also be examined by further studies to clarify the effects of more entrepreneurial abilities on the financial conditions of SMEs.

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Authors

The contribution share of authors is as follows 40% for Mehmet Civelek, 15% for Lukáš Durda, 15% for Zuzana Vincúrová, 15% for Tomáš Dudáš, 15% for Ivan Brezina. MC – conceptualisation, literature writing, methodology, calculations, discussion. LD – conceptualisation, methodology. ZV conceptualisation, data processing. TD – reviewing and conclusion. IB – reviewing, methodology.

Mehmet Civelek

Senior Researcher at European Centre for Business Research, Pan-European University (Czech Republic). PhD in Finance (2019, Tomas Bata University in Zlin, Czech Republic). His research interests include Credit Risk Management in SMEs, entrepreneurship, and marketing.


Correspondence to: Dr Mehmet Civelek, Spálená 76/14, 110 00 Prague, Czech Republic, e-mail: m_civelek@windowslive.com

ORCID  <http://orcid.org/0000-0002-1247-5308>

Lukáš Durda

Assistant professor at Pan-European University (Czech Republic). PhD in International Entrepreneurship (2019, Pan-European University, Slovakia). His research interests include tourism, business, and management.


Correspondence to: Dr Lukáš Durda, Spálená 76/14, 110 00 Prague, Czech Republic, e-mail: lukas.durda@vspp.cz

ORCID  <http://orcid.org/0000-0001-5979-9855>

Zuzana Vincúrová

Associate Professor at Pan-European University (Slovakia). Her research interests include Economics, Financial analysis, and Corporate finance.


Correspondence to: Doc. Dr. Zuzana Vincúrová, Tomášikova 20, 821 02 Bratislava, Slovakia, e-mail: zuzana.vincurova@paneurouni.com

ORCID  <http://orcid.org/0000-0002-6490-2367>

Tomáš Dudáš

Associate Professor at Pan-European University (Slovakia). His research interests include Foreign Direct Investments, International economics and finance.


Correspondence to: Doc. Dr. Tomáš Dudáš, Tomášikova 20, 821 02 Bratislava, Slovakia, e-mail: tomas.dudas@paneurouni.com

ORCID  <http://orcid.org/0000-0001-8931-8987>

Ivan Brezina

Assistant professor at Pan-European University (Slovakia). His research interests include Economic theory, Macroeconomics and Microeconomics.

Correspondence to: Mr. Ivan Brezina, Tomášikova 20, 821 02 Bratislava, Slovakia, e-mail: brezina.ivan@yahoo.com

ORCID  <http://orcid.org/0000-0002-8158-7805>

Conflict of Interest

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Published by Cracow University of Economics – Krakow, Poland



Ministry of Education and Science
Republic of Poland

The journal is co-financed in the years 2022-2024 by the Ministry of Education and Science of the Republic of Poland in the framework of the ministerial programme “Development of Scientific Journals” (RCN) on the basis of contract no. RCN/SP/0583/2021/1 concluded on 13 October 2022 and being in force until 13 October 2024.