The Role of SMEs' Innovativeness and Competitiveness in Their Financial Risk Management Concerns

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Abstract

The majority of small and medium-sized enterprises (SMEs) worldwide are fragile and endangered in facing financial problems due to a lack of financial resources. To overcome these issues, their capabilities based on a Resource-based View (RBV), such as innovativeness and competitiveness, might enable them to reduce their major financial issues related to their financial risk management. In this regard, this paper aims to examine the impacts of SMEs' innovative and competitive attitudes on their financial risk management. Moreover, this paper examines whether those impacts differ depending on firm size. In line with those purposes, this paper analyzes 1221 Czech, Slovak, and Hungarian SMEs randomly selected from various databases. The researchers employ an online survey to collect the research data from the survey respondents, who are the executives of the analyzed SMEs. Concerning the data analysis, the researchers run Ordinal Logistic Regression Test. According to the results, while innovativeness negatively affects the financial risk management of SMEs, competitiveness does not. On the other hand, the results regarding firm size indicate that more competitive and less innovative microenterprises perform better in financial risk management compared to their less competitive and more innovative counterparts. However, competitiveness and innovativeness do not play determining roles in the financial risk management of small and medium-sized firms. The costs of R&D activities that firms face, the sectors that firms operate, and the educational status of the executives of SMEs might be strong arguments to explain the result of this paper.

1. INTRODUCTION

While around 90% of all businesses in the world belong to the category of SMEs (World Bank, 2022), the European Union SME's share reaches 99% of all enterprises (European Commission, 2022). SMEs are categorized into three groups depending on their number of staff headcounts and annual turnover as follows: in the case of micro-enterprises, the staff headcount should not exceed 9, and the turnover should not exceed EUR 2 million; small enterprises should employ 10 to 49 workers and have a turnover of up to EUR 10 million; medium-sized enterprises should employ from 50 to 249 workers and have an annual turnover that is lower than EUR 50 million (European Commission, 2003).

SMEs play a crucial role, especially in job creation and innovative activities of nations (Dvorský et al., 2020a). However, financial risk management is one of their significant concerns since most of those businesses have limited budgets which causes many financial risk management problems, including bankruptcy, insolvency, and low financial performance (Rostami et al., 2015). In this regard, SMEs' innovativeness and competitiveness that are included in Resource Based Theory might enable the companies to solve these issues. This possibility arises because SMEs that are good at implementing innovative approaches (Kolková & Ključnikov, 2021; Ključnikov et al., 2021) and competitive reactions against their rivals can indicate better financial performance (Civelek et al., 2020). For these reasons, this paper aims to examine the impacts of SMEs' innovative and competitive attitudes on their financial risk management. In this context, the research question is formulated as follows: How might the competitiveness and innovativeness of SMEs affect their financial risk management problems? However, depending on their size, they can have various capital structures, different credit access conditions (Gupta et al., 2015), and financial obstacles that cause different financial risk management strategies (Dvorsky et al., 2021; Auken & Lema, 2003). Thus, another research question is, "How do SMEs' competitiveness and innovativeness affect their financial risk management depending on their size?"

These innovative and competitive abilities of SMEs are also categorized under the Entrepreneurial Orientation construct by many researchers (Covin & Slevin, 1989; Lumpkin & Dess, 1996). Entrepreneurial orientation is also included in the Resource-based view (Covin & Slevin, 1989) and consists of various dimensions, including innovativeness and competitive aggressiveness (Lumpkin & Dess, 1996), that reduce business failures (Khan et al., 2020). Although many studies investigate the relationship between innovativeness and competitiveness in financial risk management (Jin & Lee, 2020; Zhang, 2021), they only investigate a single relationship between innovativeness and competitiveness in financial risk management. Since this research analyzes the impacts of both innovativeness and competitiveness on the financial risk management of SMEs of various sizes, it differs from other studies, due to which it makes a valuable contribution to the academic literature. Moreover, this paper not only focuses on SMEs located in a specific market; by investigating SMEs from the Czech Republic, Slovakia, and Hungary, this paper also widens the scope that other studies lack. The examination of financial issues of SMEs from different countries and a broad perspective make this paper fill this research gap. For these reasons, financing institutions, policymakers, and SMEs might be interested in the results and suggestions of this paper declaring some solutions for one of the most significant troubles of these parties.

The remaining parts of the paper will be structured as follows: Section 2, Theoretical Background, investigates previous studies and provides arguments to set the research hypotheses. The methodological approaches that the authors apply and the details regarding the data collection process are clearly explained in Section 3. The results of this paper are indicated and clarified in Section 4. Moreover, the researchers discuss their results with other studies and present some arguments and suggestions regarding the reasons for their results in Section 4. Finally, the researchers summarize the paper in the Conclusions section, highlight the limitation of this research, and make recommendations for further studies.

2. THEORETICAL BACKGROUND

As already emphasized, one of the major problems that SMEs face in their operations is financial risk management. This problem arises because firms having trouble with financial risk management might face liquidity issues and fail (Khan et al., 2020). However, when firms increase their innovations in finance, their financial risk, including liquidity and operational risks, become reduced (Olalere et al., 2021). This is because financial innovations provide effective solutions for financial risk management activities, including savings and investing (Usman, 2016). Innovative firms are not only prone to creating new ideas regarding their products and services but also oppose to do existing and monotone business operations (Marom et al., 2019). Innovation also positively impacts firms' value-creating activities, profitability, return on assets and return on investments that signal firms' financial power (Usman, 2016). Moreover, firms with more innovative capabilities increase their market share and sales and receive more product success, financial returns, and higher financial performance than firms with lower innovative abilities (Donkor et al., 2018). On the other hand, firms' innovation capacities can positively affect their management performance. This is because innovation capacity enables businesses to make technological collaborations regarding R&D, ICT, and networking (Jin & Lee, 2020). Thus, firms might also use effective IT programs for better financial risk management solutions. Innovative firms also have abilities to create strong organizational structures, investment environments, and technological tools regarding financial risk management (Donkor et al., 2018). In this context, the first research hypothesis is created as follows:

H1a: There is a positive relationship between the innovativeness of SMEs and financial risk management.

Organizational structure, availability of resources, and risk management attitudes differ depending on the size of the firms (Marom et al., 2019). The differences exist because smaller firms lack economies of scale and lower financial credit access, capital, workforce, and bargaining power compared to larger firms. According to Gupta et al. (2015), micro, small and medium-sized SMEs also differ depending on their capital structure choices. While smaller firms focus on riskier options, larger SMEs prefer less risky financing opportunities (Beck et al., 2006). Since larger SMEs have more capabilities to diversify and stabilize their cash flows, they also perform better in financial risk management (Gill et al., 2009). Therefore, a negative relationship exists between firm size and facing financial issues such as bankruptcy and insolvency (Gupta et al., 2015). In this regard, smaller SMEs more intensively perceive financial risk than their

larger counterparts (Kljucnikov & Majkova, 2018). Moreover, smaller firms face some financial obstacles when accessing bank credit. Some of those obstacles are related to collateral that firms have to provide in loan applications, higher interest rates that banks ask of smaller firms, and negative values in financial indicators (Irwin & Scott, 2010). On the other hand, when implementing innovative strategies, executives of larger firms make less risky decisions. Marom et al. (2019) compare small and large businesses in the USA and support that larger businesses perform more innovative activities with reduced risk compared with their smaller counterparts. Furthermore, Kallmuenzer and Peters (2018) suggest that microenterprises have a lower potential to take innovative actions, and the impact of innovativeness on their financial performance is less optimistic. This is because smaller firms lack financial resources and make low-innovative investments (Cui et al., 2021). For these reasons, they are more likely to face issues regarding financial risk management (Kuo et al., 2021; Kim, 2021). Those empirical arguments enable this paper to set another hypothesis as follows:

H1b: The positive relationship between innovativeness and financial risk management differ depending on the size of SMEs.

Competitiveness is related to firms' responses to their rivals regarding market demand and trends (Lumpkin & Dess, 1996). Competitiveness also positively affects firm performance (Stefko et al., 2019). Although SMEs have to operate with a lack of financial assets, they need to take competitive actions for their survival. For instance, SMEs can make price reductions and counter-attacks against their competitors' strategies to increase their shares in a specific market. Moreover, other competitive actions of SMEs, such as being first movers in a market, make them have more sales and revenues, and the financial performance of companies increases (Karadağ, 2018). By having more financial power, they can pay their debt or credit repayments on time, which indicates effective financial risk management. The competitive environment has also impacted the perception of financial risk by SMEs. SMEs becoming competitive in such an environment reduce their financial risk to have better financial performance (Florio & Leoni, 2017). In a competitive environment, firms also decrease financial costs and increase productivity, stimulating their competitive power (Dvorsky et al., 2020b). In this regard, SMEs can effectively manage their financial risk and make effective financial decisions (Fraser & Simkins, 2016). For instance, Nohong et al. (2019) also analyze some SMEs in Indonesia and prove that the financial risk management of firms is also affected by the competitiveness of those businesses. The positive relationship between financial risk management and firm competitiveness has also been verified by the studies of Karadağ (2018), Yang et al. (2018), Gates et al. (2012), Fraser and Simkins (2016), and Hudakova et al. (2018) that analyze firms from Turkey, Pakistan, US, Canada, and Slovakia, respectively. For these reasons, this paper sets another hypothesis as follows:

H2a: There is a positive relationship between firm competitiveness and financial risk management.

According to Hudakova et al. (2018) and Virglerová et al. (2016), the financial risk perception of SMEs depends on competitiveness and firm size. Larger firms with more competitive attitudes are less likely to perceive financial risk. This tendency occurs because when competition is intense in a market, firms need to implement competitive strategies such as increasing the quality of their products and services and reducing their price to compete with their rivals (Dvorsky et al., 2020b). However, those competitive strategies are costly for businesses. Compared to

larger SMEs, smaller firms have lower amounts of available financial sources, face higher cost of capital and transaction costs, and limited access to capital (Auken & Lema, 2003). Moreover, when firm size decreases, knowledge and capabilities to support financial risk management activities become reduced (Yang et al., 2018). Since microenterprises also lack internal resources to finance these competitive activities, they become more obliged to get debt or credits from external sources. However, the credit risk of microenterprises is also higher than small and medium-sized enterprises (Gupta et al., 2015). These facts make microenterprises have a higher possibility of facing more issues regarding financial risk management, such as future bankruptcies and insolvencies (Auken & Lema, 2003). Since more competitive larger firms make more reserves against those issues than their less competitive and smaller counterparts, so they are more efficient in financial risk management (Virglerová et al., 2016). The firm size effect and differences between smaller and larger SMEs' competitiveness and financial risk management are also confirmed by studies that analyze SMEs from Pakistan (Yang et al., 2018), the Czech Republic (Virglerová et al., 2016), Spain (Auken & Lema, 2003) and Slovakia (Dvorsky et al., 2020b). Due to the findings of the studies mentioned above, another hypothesis might be generated, as provided below:

H2b: The positive association between competitiveness and financial risk management differs depending on the size of SMEs.

3. RESEARCH OBJECTIVE, METHODOLOGY, AND DATA

This paper aims to examine whether innovative and competitive attitudes of SMEs positively affect their financial risk management or not. Moreover, this research also aims to investigate whether such a relationship differs depending on the size of SMEs. Concerning sample selection, this paper chooses SMEs from the Cribis database (for the Czech and Slovak samples) and the Budapest Chamber of Commerce (for the Hungarian sample) by random sampling. In this regard, 8,750 SMEs from the Czech Republic, 10,100 SMEs from Slovakia, and 8,750 SMEs from Hungary were chosen. The following steps have been taken in sample selection: firstly, firms having less than 250 workers have been specified. Then, the research team created a serial number for each SME in alphabetical order. After that, the researchers performed the Randbetween Math function (the range of the function differs between one and the highest serial number), and prospective survey respondents received randomly created numbers. Finally, the researchers created an internet-mediated questionnaire which they electronically shared with the randomly selected respondents. The research team first created the English version of the survey. After that, the survey was translated into various languages, including Czech, Slovak, and Hungarian, to overcome language issues. Executives of SMEs, including managers or owners of 454 Czech, 368 Slovak, and 399 Hungarian SMEs (a total of 1221 SMEs), have completed the online questionnaire. The average response rate of the questionnaire survey is around 5%.

The questionnaire survey includes more than 60 survey questions and consists of various sections. The first section has ten questions related to firm-executive level characteristics, including gender, age, education of executives and age, size, sectors of SMEs, etc. Then, some statements are structured under different constructs of SMEs' risks, such as market risk, financial risk,

strategic risk, legal risk, etc. In another section, the survey has statements regarding the risk management perceptions of executives (including financial risk management, bankruptcy, etc.). Moreover, the survey includes statements that evaluate entrepreneurial characteristics such as the innovativeness and competitiveness of SMEs. In line with the research aim and analysis purposes, the researchers have used ten statements presented in Table 1.

Influenced by prior studies (Wu et al., 2008; Wang & Ahmed, 2004; Jansen et al., 2006), the researchers used three survey statements for both innovativeness and competitiveness to measure those characteristics of SMEs. Moreover, four survey statements were considered by the researchers when evaluating the financial risk management of SMEs. The validity and reliability of survey questions that measure each construct, namely, innovativeness, competitiveness, and financial risk management, have already been tested by some researchers (Dvorský et al., 2020c; Dvorsky et al., 2021; Jansen et al., 2006).

Tab. 1- Variables and measurements. Source: own research

Variables	Measurements
Innova-tiveness	"We place great emphasis on the innovation of our products and services," "Innovation of our company is positively reflected in the stability and performance of the company.","The number of new products/services has an upward trend in our company."
Competi-tiveness	"Business competition motivates us to perform better.", "Selling products and services on the market is challenging. However, our company has adequate sales volume.", "Our company uses competitive ways to win new markets and retain existing customers."
Financial risk management concerns	"I consider financial risk as part of everyday business.", "I evaluate the financial performance of our (my) company positively.", "I understand the most crucial aspect of financial risk.", "I can adequately manage the financial risk in my (our) company."

The researchers use a five points Likert Scale to scale the responses regarding the statements presented in Table 1. The answers of the survey participants are scaled as "1 – completely disagree", "2 – disagree", "3 – neutral", "4 – agree", and "5 – completely agree". Higher values that survey participants choose in this scale represent higher innovativeness and competitiveness of SMEs and reduced financial risk management concerns. Since all of the categories for the dependent and independent variables in this research are ranked and scaled by a five-point Likert scale, the researchers apply Ordinal Logistic Regression Analyses with the logit function.

The algorithm of ordinal regression measures continuous variables that are latent (Harrell, 2015), and this algorithm also represents the variations in the levels (cutoffs) of independent and dependent variables. Since the Five points Likert Scale evaluates the dependent and the independent variables in all research models, the variables have four cutoffs. For example, while Innovation=2 or financial management=2 indicates the cutoff value between the replies of "disagree" to "neutral," innovation=3 or financial management=3 represents the cutoff value between the replies of "neutral" to "agree." These identifications are valid for all dependent and

independent variables in the 1st, 2nd, 3rd, and 4th research models.

The researchers also used the SPSS statistical program to run all of the analyses in this research. Some researchers have also used this approach when evaluating firms' innovativeness, competitiveness, and financial management issues (Eisdorfer & Hsu, 2011). Four Ordinal Logit 1st and 3rd Regression Models are presented below:

Logit $(P(Y \leq j)) = \beta_{j0} + \beta_{j1} X1$ (1)

Y= Ordinal outcome, dependent variable (Y1: financial risk management for all of the research models)

J= Categories

X1 – Independent variable (X1: innovativeness in the 1st research model, X1: competitiveness in the 3rd research model)

B1 – Regression coefficients

β_0 – Constant or intercept term.

P – Predictor

2nd and 4th Regression Models are illustrated as follows:

Logit $(P(Y \leq j)) = \beta_{j0} + \beta_{j1} X1 + \beta_{j2} X2$ (2)

X1 – Independent variable ((X1: innovativeness in the 1st research model, X1: competitiveness in the 3rd research model)

X2 – Independent variable (X2: firm size in the 2nd and 4th research models)

The researchers consider 5% level of significance to make hypotheses testing. P values greater than this significance level make this paper fail to support the hypotheses. Concerning null hypotheses of H1a and H2a, they presume no positive or negative impact of an independent variable on a dependent variable. On the other hand, null hypotheses of H1b and H2b assume that the positive or negative association between investigated variables does not differ depending on firm size.

Concerning the sample profile, 37.18% of SMEs (454 firms) are located in the Czech Republic, 30.14% of SMEs (368 businesses) are in Slovakia, and 32.68% of SMEs (399 enterprises) do their business in Hungary. Moreover, 63.39% of those firms are microenterprises (774 firms), while the percentages of small and medium-sized enterprises are 23.42% (286 businesses) and 13.19% (161 companies), respectively. Regarding the length of doing business, 15.81% of SMEs have been operating for up to five years. Other 178 SMEs (14.58% of the research sample) have been doing business for six to ten years. The remaining 850 SMEs (69.61% of the sample) have operating experiences of more than ten years. SMEs in the research sample also operate in various industries, including manufacturing (215 firms, 17.61% of the sample), retailing (212 enterprises, 17.36% of the sample), service (473 businesses, 38.74% of the sample) and other industries such as construction and agriculture (321 SMEs, 26.29% of the sample).

4. RESULTS AND DISCUSSION

4.1. Results

This paper performs analyses for testing the assumptions of Ordinal Logistic Regression. Thus, Table 2 is provided below to illustrate the results from Model Fitting, Goodness of Fit, and Test of Parallel Lines. -2 Log-likelihood and Chi-square test represent the improvements in overall model fit. As indicated in this table, p values regarding Model Fitting (Sig. in the table) are lower than 5% level of significance. Since these volumes are significant, they are indicators of the developments in the overall model fit. They confirm the good model fit that the data and the research model have (Model 1= $\chi2(4) = 227.653$, Sig, $p < 0.05$; Model 2 for micro, small and medium-sized enterprises, respectively = $\chi2(4) = 150.610, 50.544, 33.013$, Sig, $p < 0.05$; Model 3= $\chi2(4) = 202.805$, Sig, $p < 0.05$; Model 4 for micro, small and medium-sized enterprises, respectively = $\chi2(4) = 147.736, 41.840, 18.038$, Sig, $p < 0.05$). Adding innovativeness, competitiveness, and firm size as predictor variables into the research models has enabled making better predictions for the dependent variable; thus, innovativeness, competitiveness, and firm size are good predictors.

The results from Pseudo R-square, namely, Cox & Snell and Nagelkerke statistics, are also shown in Table 2; these statistics also represent the overall model fit. The volumes from these statistics explain the percentage of independent variables variations of the research models (innovativeness, competitiveness, and firm size) caused by the dependent variable (financial risk management). For instance, adding innovativeness in the 1st research model and competitiveness in the 3rd model explains 17.2%, and 15.5% variabilities in financial risk management, respectively. This is because, as presented in Table 2, the volumes from Nagelkerke statistics for Model-1, and Model-3 are 0.172, and 0.155, respectively. Similarly, the addition of firm size and innovation into the 2nd research model explains 17.9%, 16.4%, and 18.8% of variabilities in the financial risk management of micro, small and medium-sized enterprises, respectively.

Tab. 2 - Test results for the assumptions of Ordinal Logistic Regression. Source: own research. Note: Sig.: Significance

Assumptions	Model fitting				Goodness of fit Pseudo R-square		Test of parallel lines			Multi-collinearity	
Models	-2 Log likelihood	Chi-Square	df	Sig.	Cox & Snell	Nagelkerke	-2 Log likelihood	Chi-Square	Sig.	Tolerance	VIF
Model 1	520.894	227.653	4	0.000	0.170	0.172	279.345	13.896	0.078		
Model 2										0.997	1.003
Micro	420.453	150.610	4	0.000	0.177	0.179	259.562	10.281	0.112		
Small	203.019	50.544	4	0.000	0.162	0.164	145.669	6.806	0.436		
Medium	138.915	33.013	4	0.000	0.185	0.188	90.544	15.358	0.071		
Model 3	508.280	202.805	4	0.000	0.153	0.155	301.158	4.317	0.628		
Model 4										0.995	1.005
Micro	420.730	147.736	4	0.000	0.174	0.176	265.545	7.448	0.323		
Small	213.462	41.840	4	0.000	0.136	0.138	160.847	10.775	0.098		
Medium	143.888	18.038	4	0.001	0.106	0.107	76.200	49.650	0.141		

Test of Parallel Lines is also included in the analyses to indicate whether the slope coefficients of the cutoffs are similar or not. There are four cutoffs in the variables of this paper analysis. That is because this paper employs a five-points Likert Scale, and while cutoff (1) represents the values between the replies of "completely disagree" to "disagree," cutoff (2) declares the volumes between "disagree" to "neutral," etc. P values that are lower than 5% level of significance invalidate the fulfillment of this assumption. As depicted under "Sig." column of the Test of Parallel Lines, all p values are greater than the selected significance level. This fact confirms that this research does not violate this assumption. Furthermore, since the 2nd and 4th research models include two independent variables, this research also analyzes the multicollinearity assumption of Ordinal Logistic Regression analysis. In order to not violate this assumption, tolerance volumes must be higher than 0.10, and VIF scores must be lower than 4 (Hair, 2010). According to Table 2, the tolerance values are greater than 0.10 (0.997 for Model-2 and 0.995 Model-4), and VIF scores are lower than 4 (1.003 for Model-2 and 1.005 for Model-4). Thus, this research also does fulfill the multicollinearity assumption. Since all the assumptions are fulfilled by the analyses, this research applies Ordinal Logistic Regression Test.

The results related to 1st research model are presented below in Table 3. As indicated in this table, the cutoff values of innovation are statistically significant at a 5% level of significance (Innovativeness=1: 0.000, Innovativeness=2: 0.000, Innovativeness=3: 0.000, Innovativeness=4: 0.001). Thus, firm innovativeness is a significant predictor of financial risk management. Since the coefficients (estimate) for the cutoffs of innovativeness are negative in Model-1 (-3.701, -2.388, -1.662, -1.457, respectively), a one-unit decrease in SMEs' innovativeness lowers the odds of the occurrence of efficient financial risk management by SMEs. More optimistic financial risk management perceptions are more likely for SMEs with lower innovativeness. In other words, SMEs with lower values in innovativeness are more likely to be effective in financial risk management than their more innovative counterparts. Thus, this paper fails to support the H1a hypothesis that suggests the positive relationship between firm innovativeness and financial risk management.

Tab. 3 - The results regarding 1st research model. Source: own research. Note: S.E.: Standard Error, df: Degree of freedom, CI: Confidence intervals

Variable	Estimate	S.E.	Wald	df	Sig.	95% CI [Lower Upper]	
MODEL-1							
Fin.Risk.Man.=1	-5.284	0.418	160.072	1	0.000	[-6.103	-4.466]
Fin.Risk.Man.=2	-2.069	0.400	26.702	1	0.000	[-2.853	-1.284]
Fin.Risk.Man.=3	0.895	0.399	5.030	1	0.025	[0.113	1.678]
Fin.Risk.Man.=4	3.223	0.547	34.787	1	0.000	[2.152	4.295]
Innovativeness=1	-3.701	0.417	78.823	1	0.000	[-4.519	-2.884]
Innovativeness=2	-2.388	0.406	34.572	1	0.000	[-3.183	-1.592]
Innovativeness=3	-1.662	0.408	16.612	1	0.000	[-2.462	-0.863]
Innovativeness=4	-1.457	0.443	10.811	1	0.001	[-2.325	-0.588]

Concerning the 2nd research model, the results are illustrated in Table 4. According to Table 4, the cutoff values for innovativeness are significant at 5% significance level only for microenterprises (Innovativeness=1: 0.000, Innovativeness=2: 0.000: Innovativeness=3: 0.000, Innovativeness=4: 0.000). However, the cutoff values for innovativeness=2,3 and 4 are not significant for small and medium-sized enterprises. Therefore, while innovativeness is not a significant predictor of financial risk management of small and medium-sized enterprises and does not determine it, the innovativeness of microenterprises negatively affects their financial risk management. The reason for that is the coefficients (estimate) of the cutoffs of innovativeness are negative for microenterprises (-4.140, -2.798, -2.100, and -2.176, respectively). A decrease in microenterprises' innovativeness by a unit from cutoff 3 to cutoff 2 makes the odds of occurrence for better financial risk management of microenterprises in their operations 2.798 times higher with 95% CI between -3.798 and -1.799. Thus, microenterprises can have more optimistic financial risk management perceptions in case of being less innovative. In other words, microenterprises with less innovative attitudes are more likely to have better financial risk management than those with more innovative microenterprises. Although this paper finds the differences between microenterprises and small and medium-sized enterprises, this difference occurs in the negative relationship between innovativeness and financial risk management. For this reason, the H1b hypothesis is not supported.

Tab. 4 - The results regarding 2nd research model. Source: own research. Note: S.E.: Standard Error, df: Degree of freedom, CI: Confidence intervals

Size	Variable	Esti-mate	S.E.	Wald	df	Sig.	95% CI [Lower Upper]
MODEL-2							
Micro	Fin.Risk Man=1	-5.520	0.521	112.328	1	0.000	[-6.541 -4.499]
	Fin.Risk Man=2	-2.603	0.503	26.826	1	0.000	[-3.588 -1.618]
	Fin.Risk Man=3	1.008	0.502	4.026	1	0.045	[0.023 1.993]
	Fin.Risk Man=4	2.774	0.660	17.655	1	0.000	[1.480 4.069]
	Innovative-ness=1	-4.140	0.522	62.838	1	0.000	[-5.163 -3.116]
	Innovative-ness=2	-2.798	0.510	30.133	1	0.000	[-3.798 -1.799]
Micro	Innovative-ness=3	-2.100	0.510	16.932	1	0.000	[-3.100 -1.100]
	Innovative-ness=4	-2.176	0.549	15.704	1	0.000	[-3.252 -1.100]

Small	Fin.Risk Man=1	-4.618	0.925	24.944	1	0.000	[-6.431 -2.806]
	Fin.Risk Man=2	-2.178	0.889	6.006	1	0.014	[-3.919 -0.436]
	Fin.Risk Man=3	2.016	0.911	4.891	1	0.027	[0.229 3.802]
	Fin.Risk Man=4	3.788	1.112	11.603	1	0.001	[1.608 5.967]
	Innovative-ness=1	-2.803	0.921	9.260	1	0.002	[-4.608 -0.998]
	Innovative-ness=2	-1.526	0.894	2.916	1	0.088	[-3.278 0.225]
	Innovative-ness=3	-0.785	0.902	0.759	1	0.384	[-2.552 0.982]
	Innovative-ness=4	0.090	0.974	0.009	1	0.926	[-1.819 2.000]
Medium	Fin.Risk Man=1	-5.284	1.124	22.093	1	0.000	[-7.488 -3.081]
	Fin.Risk Man=2	-2.258	1.032	4.788	1	0.029	[-4.281 -0.236]
	Fin.Risk Man=3	2.734	1.141	5.739	1	0.017	[0.497 4.970]
	Fin.Risk Man=4	3.853	1.400	7.577	1	0.006	[1.110 6.597]
	Innovative-ness=1	-2.785	1.068	6.796	1	0.009	[-4.878 -0.691]
	Innovative-ness=2	-1.436	1.038	1.914	1	0.166	[-3.470 0.598]
	Innovative-ness=3	-0.690	1.057	0.426	1	0.514	[-2.762 1.381]
	Innovative-ness=4	0.459	1.342	0.117	1	0.732	[-2.172 3.091]

The results of this paper regarding the 3rd research model are illustrated in Table 5. As shown under "Sig." column of the table, p values for the cutoffs of "Competitiveness=2", "Competitiveness=3" and "Competitiveness=4" are not significant (0.560, 0.145, 0.052, respectively). Thus, competitiveness is not a significant predictor of financial risk management and does not determine SMEs' financial risk management. An increase or decrease in SMEs' competitiveness does not increase or lower the odds of achieving effective financial risk management. For these reasons, this paper does not support the H2a hypothesis.

Tab. 5 - The results regarding 3rd research model. Source: own research. Note: S.E.: Standard Error, df: Degree of freedom, CI: Confidence intervals

Variable	Estimate	S.E.	Wald	df	Sig.	95% CI [Lower Upper]	
MODEL-3							
Fin.Risk.Man.=1	-3.214	0.345	86.613	1	0.000	[-3.891	-2.537]
Fin.Risk.Man.=2	-1.183	0.329	12.894	1	0.000	[-1.828	-0.537]
Fin.Risk.Man.=3	2.901	0.350	68.699	1	0.000	[2.215	3.587]
Fin.Risk.Man.=4	5.200	0.521	99.682	1	0.000	[4.179	6.220]
Competitiveness=1	-1.437	0.341	17.741	1	0.000	[-2.106	-0.768]
Competitiveness=2	-0.195	0.335	0.340	1	0.560	[-0.852	0.461]
Competitiveness=3	0.505	0.347	2.119	1	0.145	[-0.175	1.185]
Competitiveness=4	0.731	0.376	3.785	1	0.052	[-0.005	1.467]

Regarding the 4th research model, the findings from the Ordinal Logistic Test are depicted in Table 6. As illustrated in this table, there are significant results at 5% level of significance only in the cutoffs of competitiveness in the microenterprises segment (Competitiveness=1: 0.005, Competitiveness=2: 0.041, Competitiveness=3: 0.029, Competitiveness=4: 0.006). However, the cutoff values for competitiveness are not significant for small and medium-sized enterprises.

Tab. 6 - The results regarding 4rd research model. Source: own research. Note: S.E.: Standard Error, df: Degree of freedom, CI: Confidence intervals

Size	Variable	Estimate	S.E.	Wald	df	Sig.	95% CI [Lower Upper]
MODEL-4							
Micro	Fin.Risk Man.=1	-2.591	0.403	41.266	1	0.000	[-3.382 -1.801]
	Fin.Risk Man.=2	-0.800	0.387	4.275	1	0.039	[-1.558 -0.042]
	Fin.Risk Man.=3	3.209	0.414	60.211	1	0.000	[2.398 4.019]
	Fin.Risk Man.=4	5.635	0.630	79.890	1	0.000	[4.399 6.871]
	Competitiveness=1	0.131	0.404	7.843	1	0.005	[0.143 0.339]
	Competitiveness=2	0.333	0.396	2.707	1	0.041	[0.444 1.110]
	Competitiveness=3	0.895	0.410	4.764	1	0.029	[0.091 1.698]

Micro	Competitiveness=4	1.210	0.443	7.472	1	0.006	[0.342 2.078]
Small	Fin.Risk Man.=1	-4.576	0.836	29.980	1	0.000	[-6.214 -2.938]
	Fin.Risk Man.=2	-2.175	0.797	7.448	1	0.006	[-3.738 -0.613]
	Fin.Risk Man.=3	1.981	0.822	5.809	1	0.016	[0.370 3.592]
	Fin.Risk Man.=4	3.735	1.039	12.932	1	0.000	[1.699 5.771]
	Competitiveness=1	-2.333	0.813	8.239	1	0.004	[-3.926 -0.740]
	Competitiveness=2	-1.288	0.804	2.563	1	0.109	[-2.864 0.289]
	Competitiveness=3	-0.495	0.825	0.360	1	0.549	[-2.112 1.122]
	Competitiveness=4	-0.526	0.899	0.342	1	0.558	[-2.288 1.236]
Medium	Fin.Risk Man.=1	-4.827	1.115	18.729	1	0.000	[-7.013 -2.641]
	Fin.Risk Man.=2	-1.926	1.026	3.520	1	0.061	[-3.938 0.086]
	Fin.Risk Man.=3	2.945	1.145	6.621	1	0.010	[0.702 5.189]
	Fin.Risk Man.=4	4.065	1.404	8.379	1	0.004	[1.313 6.817]
	Competitiveness=1	-2.001	1.059	3.573	1	0.059	[-4.076 0.074]
	Competitiveness=2	-1.288	1.033	1.555	1	0.212	[-3.313 0.737]
	Competitiveness=3	-0.108	1.081	0.010	1	0.920	[-2.228 2.011]
	Competitiveness=4	-0.082	1.186	0.005	1	0.945	[-2.407 2.242]

For this reason, while the competitiveness of microenterprises positively affects their financial risk management, competitiveness does not play a determining role in the financial management of small and medium-sized enterprises. The positive association between the competitiveness of microenterprises and their financial risk management stems from positive coefficients (estimate) of the cutoffs of competitiveness for those firms (0.131, 0.333, 0.895, and 1.210, respectively). An increase in the competitiveness of microenterprises by one unit from cutoff 2 to cutoff 3 (neutral

to agree; in other words, competitiveness=2 to competitiveness=3), 0.895 times higher the odds of occurrence for better financial risk management perceptions of microenterprises with 95% CI between 0.091 and 1.698. Thus, microenterprises can have more positive financial risk management perceptions in case of being more competitive. In other words, microenterprises being more competitive are more likely to have better financial risk management perceptions than microenterprises having less competitive attitudes. Since this paper finds differences between microenterprises and small and medium-sized enterprises regarding the positive association between competitiveness and financial risk management, this paper does support the H2b hypothesis.

4.2. Discussion

As proved by the analyses, this paper confirms negative impacts of innovativeness on SMEs' financial risk management. Obtaining this result makes this paper object to the arguments of Olalere et al. (2021), Donkor et al. (2018), and Jin and Lee (2020) since these studies confirm the positive impact of firms' innovativeness on financial risk management of firms. Moreover, while the innovativeness of microenterprises negatively affects their financial risk management, it does not impact the financial risk management of small and medium-sized enterprises. Therefore, the impact of innovativeness on financial risk management differs depending on SMEs' size. In this regard, this paper opposes to findings of Kallmuenzer and Peters (2018). By analyzing Austrian firms, these researchers prove that firm size is not a significant factor in the association between innovativeness and financial performance.

The reason why innovativeness negatively affects the financial risk management of microenterprises might be related to the expenses that those businesses make for R&D activities. As already mentioned, most smaller firms lack the financial assets to invest in innovative actions. Therefore, by being less innovative, microenterprises in this research might have taken less costly actions that caused them to be more effective in their financial risk management compared to their more innovative counterparts. To overcome the costs of innovative strategies, smaller firms can set strategic alliances and close relationships with larger businesses to benefit from their partners' R&D and manufacturing assets. By doing so, they can afford the costs of innovations, which might give them better financial performance.

On the other hand, competitiveness does not positively impact the financial risk management of small and medium-sized firms. Thus, the result of this research is not consistent with the studies of Karadağ (2018), Yang et al. (2018), Gates et al. (2012), Fraser and Simkins (2016), Hudakova et al. (2018) that confirm the positive association between competitiveness and financial risk management of firms in various markets including Turkey, Pakistan, US, Canada, and Slovakia, respectively. The reason for this result might stem from the individual characteristics of firm executives. For instance, more educated executives might be more reluctant to take risks when making firm operations decisions (Zhang, 2021). That is because the knowledge of firm executives plays determining role when making financial decisions (Štefko et al., 2020). Since the majority of the survey respondents have at least university degrees (846 respondents, 69.29% of all survey participants), this fact might also make their firms to stay less competitive against their rivals, and this might be an argument to explain why the competitiveness of SMEs does not

positively affect their financial risk management.

Regarding firm size, competitiveness, and financial risk management relationship, this research only confirms the positive effect of competitiveness on the financial risk management of microenterprises. Therefore, the effect of competitiveness on the financial risk management of SMEs differs depending on firm size. In this context, this paper finds similar results to the studies of Yang et al. (2018), Virglerová et al. (2016), Auken and Lema (2003), and Dvorsky et al. (2020b) that verify the different impacts of firm size in the association between competitiveness on financial risk management by analyzing firm in Pakistan, Czech Republic, Spain, and Slovakia, respectively. The reason why microenterprises' competitiveness positively affects their financial risk management might be related to the sectors in which those businesses operate. The majority of microenterprises in the research data (around 59% of all microenterprises, 452 microenterprises) operate in industries where competition is high, such as manufacturing, financial services, and IT (Belas et al., 2020; Lejárraga & Oberhofer, 2015). For instance, firms in the manufacturing industry are interested in producing and creating new products, indicating technological improvements in production and focusing on R&D activities that signal their competitiveness (Lejárraga & Oberhofer, 2015). Operating in such competitive industries might have stimulated the competitiveness of microenterprises, and they might have received more revenues to fix their financial issues, which is an indicator of effective financial risk management.

Policymakers and financing institutions play crucial roles in firms' financial risk management issues. For instance, firms in countries where banking competition is fierce are more likely to be bankrupt since banks in these markets urge companies to pay back their credit installments. These efforts of banks can cause firms to be bankrupt. In this regard, policymakers should create efficient competition laws among banks as they regulate bankruptcy and collateral laws. Therefore, an effective legal system and institutional framework are prerequisites to reducing SMEs' financial concerns and motivating their innovative and competitive attitudes. By having such a legal system, banks and other financing institutions can also provide considerable credits for R&D and innovative activities of SMEs that increase their competitiveness. Governments can also guarantee these R&D and innovation credits to reduce banks' credit risks. SMEs' usage of these credits also enables them to have more investment returns and increase their financial risk management capabilities, reducing their financial concerns.

5. CONCLUSION

Although SMEs play influential roles in the creation of the labor force, international trade activities, and countries' economic developments, the issues they face regarding financial management create many troubles for their long-term survival. In this regard, their innovative and competitive postures might provide them with some solutions to overcome those impediments. This is because innovativeness and competitiveness are crucial for SMEs to differentiate their products and services from their rivals. Moreover, by having these attitudes, SMEs can also get ahead of the game, increasing their revenues which might minimize their financial concerns. Within this context, this paper analyzed whether the innovative and competitive abilities of SMEs minimize their financial risk management concerns or not. In addition, this paper also

investigated whether the effects of innovative and competitive attitudes on the financial risk management of SMEs differ depending on their size.

To hit the targets of this research, the researchers applied a random sampling method and chose 1221 SMEs from the Czech Republic, Slovakia, and Hungary. Then, the researchers directed the link of the internet-mediated questionnaire survey to the randomly selected respondents to collect the data. The researchers employed Ordinal Logistic Regression analyses for analysis purposes. The result of this paper regarding innovativeness and financial management concerns proves the negative impact of innovativeness on microenterprises' financial risk management. The costs of innovative activities might be the reason for this result. Microenterprises can initiate strategic alliances with larger companies with sufficient financial resources for innovative activities.

Concerning competitiveness, it does not have any significant impact on the financial management concerns of firms in small and medium-sized segments. The educational status of the executives of small and medium-sized firms might be an argument to support this result. However, competitiveness has positive impacts on the financial risk management of microenterprises. The sectors where micro firms perform their activities can be strong evidence to support this research finding. Except for collaborations of SMEs with larger enterprises, the collaborations of the governments with financing institutions are also important to minimize the financial problems of SMEs. Moreover, the government's initiatives to create an efficient financing environment for SMEs carry high importance. That is because by creating fair competition among financing institutions and by generating solid legal frameworks for easier credit access for SMEs, governments and other financing institutions can also reduce SMEs' financial issues.

As already mentioned, this paper focuses on different financial issues that SMEs face in various countries and highlights the crucial roles of SMEs' capabilities to overcome these financial obstacles. The broad scope of this paper makes it a comprehensive study of the academic literature. However, this research has some limitations. The first limitation of this paper might be related to a lack of complex data to analyze the financial conditions of SMEs. For instance, this paper does not consider any financial statements to evaluate the financial performance of SMEs. The analyses are based on SME executives' perceptions regarding their firms' financial conditions. On the other hand, firm capabilities, including innovativeness and competitiveness, are also measured depending on the executives' perceptions. Moreover, this paper is also limited to the firms categorized under the segment of SMEs, which operate in some of Visegrad countries. For these reasons, further studies can analyze companies' financial conditions by focusing on their financial statements. Researchers can also analyze the financial conditions of both SMEs and larger companies from different countries and continents.

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