

## Fostering Entrepreneurship through the Assessment of Business Risks for SMEs in V4 Countries

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*SME owners and managers are intuitively aware of risks but do not make sufficient efforts to assess them realistically and implement strategies to reduce them. The relationship between SME risk perception and the consistency of this perception during the length of their business has not been investigated yet. The main aim of this article is to identify the most significant risks in the SMEs, to analyze the dependence among the degree of intensity of the observed financial, market and economic risks and the SME timeframe by selected statistical methods and tools. Building upon the empirical research implemented in 2017–2018 and 2019–2020, it is possible to consider the market, financial and economic risks as the crucial risks negatively affecting the current business environment of the SMEs. The secondary aim of the article is to evaluate and compare the results of our research with the results of identical investigations in the Czech Republic, Hungary, and Poland. Drawing from these findings, market risks affect the SME business environment highly negatively and are considered the most significant risks in all the examined countries. SME entrepreneurs in the V4 countries should thus increasingly support the process of applying risk management, to ensure higher stability, performance and resilience of their businesses. The results are valuable for SMEs and institutions providing business support to strengthen the competitiveness of entrepreneurs in the V4 countries. Concerning their impact, they are significant at the national and international level of the V4 countries and can assist SMEs in gradually moving towards the global trends in this field.*

Keywords: Risk; Risk Source; Risk Assessment; Small and Medium Enterprises (SMEs); Enterprise Risk Management.

### Introduction

New, hard-to-predict sources of risk are currently related to global measures responding to the development of the COVID-19 pandemic. There are noticeable significant changes in the perception of growing risk levels and their actual impact not only on the business stability but on their very existence. In addition to the influence of the changes on the growing number of sources of threats, uncertain predictions and unexpected events, there is also increasing managerial awareness of the danger of underestimating the risks. These facts significantly determine the behavior of managers who must address risk management issues frequently. The requirements for their readiness to identify and analyze risks and the ability to increase business resilience during unexpected changes are increasing.

Various global surveys and studies (Laitinen, 2021; Harith & Samujh, 2020; Yan & Yan, 2016; Virglerova, 2020; Benzing *et al.*, 2009) define-risk management as a significant contribution to increasing the performance, value, and competitiveness of enterprises in dynamic changes of the external and the internal environment.

SMEs are a crucial part of the economy, with a decisive share of gross domestic product in all V4 countries (Gavurova *et al.*, 2020, Mikusova; 2017, Haviernikova & Kordos, 2019). They are more sensitive to changes in the business environment, but due to their specifics, they can respond to

them more flexibly. Several authors emphasize (Ribau *et al.*, 2017, Wegner *et al.*, 2017) that it is important for SMEs to be aware of the development of the market environment, in particular their actual strengths and areas of vulnerability.

Although SME entrepreneurs are intuitively aware of the common risks, it is highly improbable they will identify them without any direct previous experience (Sevincer *et al.*, 2021). Therefore, it is vital to increase risk awareness and inform entrepreneurs about them, especially in the V4 countries. The comparison between the implementation of risk management in numerous enterprises in the Slovak Republic and that of more advanced countries reveals notable deficiencies (Sira *et al.*, 2016, Holla & Moricova, 2019). The situation in the other V4 countries is identical. Entrepreneurs should possess the ability to recognize key business risks, establish a platform for open discussions surrounding them, and develop preventive measures that prioritize averting enterprise crises. In conclusion, SME entrepreneurs must address risk effectively and systematically.

**The main aim** of the article is to identify the key business risks and their sources in the SMEs, to analyze the dependence between the intensity of the perceived market, financial and economic risks, and the SME duration by utilizing selected statistical methods and tools. The authors assess the dependence between market, financial and

economic risks, and the duration of business operation of selected small and medium-sized enterprises. The secondary aim is to conduct a comparative evaluation of our research findings with those of similar studies conducted in the Czech Republic, Poland, and Hungary.

**The originality of this article** lies in the assessment of key business risks of SMEs in Slovakia, the Czech Republic, Poland, and Hungary in using selected statistical methods to accept or reject the hypothesis in the empirical research. It is the first unified research in the field focusing on V4 countries in 2017–2018. The follow-up research was conducted in 2019–2020 in Slovakia, providing stimulating conclusions also for other V4 countries. The authors are experts who have been involved in long-term (2001–2022) research into risk management issues in Slovakia. The processed results form a valuable basis for SME managers. The examined problem is highly topical and relevant.

The research results confirm the need and importance of addressing risk management in SMEs, increasing awareness of the risk importance, modifying the approach of owners and responsible managers to risks in V4 countries and gradually approaching global trends in this area.

The first part of the article after the Introduction is the theoretical part (Background) which includes the initial analysis of the nature and importance of business risk assessment for SMEs. It is followed by Methods and Data. In this chapter, the authors define the main aims of the article and describe the applied methods. The Results summarize the main outputs applicable to managers and SME owners in Slovakia, the Czech Republic, Poland, and Hungary.

## Background

The SME sector has become an essential tool used by economies of developed, developing and underdeveloped countries to address socioeconomic policies and industrial activities (Pandya, 2012).

Due to their size, SMEs have specific limitations, such as a lack of resources, financial constraints, and absent formal planning (Del Brio & Junquera, 2003; Klewitz & Hansen, 2014). Therefore, in relation to the SME specifics and the current COVID-19 pandemic, not only in developing and seizing opportunities but especially in keeping the market position and building competitiveness, one of the primary activities should be enterprise risk management.

Due to the pandemic, in the current government restrictions, the SME sector is particularly vulnerable to an increase in business risk. At the same time, a highly variable economic environment increases the uncertainty and unpredictability of economic phenomena, raising the risk associated with operating an enterprise (Haviernikova *et al.*, 2016). In addition, the size of the company affects the level of risk taken, which is lower in larger enterprises. Small enterprises are exposed to risks three times higher than large enterprises. The risk for medium-sized enterprises is again lower than for small but higher than for large enterprises (Gengatharan *et al.*, 2020). On the other hand, P. Kokot-Stepiens research (Kokot-Stepien, 2015) confirms that the greatest threat to business activities in the SME sector is external factors that the examined entities cannot influence.

The present growing SME issues caused by the aftermath of the COVID-19 pandemic have significantly

increased the need to recognize enterprise vulnerabilities. Based on the studies carried out so far (Wang *et al.*, 2020), SMEs in the V4 countries are aware of the need for greater emphasis on risk awareness. However, there is a considerable delay in applying risk management processes compared to developed countries. Some authors (Cera *et al.*, 2019; Khan *et al.*, 2019) search for the causes of the insufficient risk management application in these enterprises. The most significant obstacles included (Dvorsky *et al.*, 2020a): managers' approach to risks, risk underestimation in the enterprise, lack of strategic intentions in accepting possible risks, and in some cases lacking knowledge and practical experience in applying risk management methods and tools. On the other hand, according to the authors (Belas *et al.*, 2018), the greatest benefits of risk management are increased enterprise resilience and competitiveness, improved stability and performance, overall improvement of the probability of achieving set goals in the enterprises (Gavurova *et al.*, 2020).

Other risk management authors (Hassel & Cedergren, 2021) highlight the significant trend of a comprehensive approach to risk management present in all key processes. Accepting this trend can be observed in a more systematic analysis of changes in the environment and in more efficient decision-making. High-quality decisions contribute to risk reduction, the company's readiness for the consequences of possible changes and the fulfilment of the company's goals. From several perspectives (Dvorsky *et al.*, 2020b), SMEs should focus on key business risks, i.e. market, financial, economic, personnel, operational, and legislative risks.

Market risk arises from the nature of the company's external environment and is most frequently associated with the success of products and services in the markets (Popp *et al.*, 2018). Such a view of risks particularly assesses the effects on competitiveness, customer behavior, demand, and market saturation, etc. The authors (Mikusova, 2017) characterize market risks in terms of value creation as risks of new market opportunities (new technologies, changing customer requirements, etc.). Other authors define market risks as marketing risks (Belas *et al.*, 2018) influenced mainly by marketing factors (e.g. market research, advertising), price (e.g. sales price strategy, global prices of products, materials and raw materials), supporting activities (e.g. technological product support, promotion). According to several authors (Garcia *et al.*, 2018), market risks significantly affect SME business, and the most significant risk sources here are increased competition, limited market size, low demand, changes in customer requirements, inefficient marketing, low competitiveness, inability to identify the target market, etc. It is assumed that entrepreneurs who have been in the market longer have more experience and can manage risks better. Based on the above, Hypothesis 1 claims: There exists a correlation between the perceived market risks and the longevity of small and medium enterprises.

Financial risk is one of the most severe risks in any small or medium-sized enterprise. It arises from movements in the financial market and changes in the attitude of entities to individual financial instruments and to transactions (Agarwal & Ansell, 2016). The authors (Ismanto *et al.*, 2020) understand financial risk as a possible loss caused in the financial market, a loss caused by interest rate movements or failure to settle financial liabilities. Business financing

issues and lack of funding are the most common signs of financial risk in SMEs (Ismanto *et al.*, 2020), as most enterprises are financed from the entrepreneurs' equity. According to the authors (Olah *et al.*, 2019), in V4 countries (Slusarczyk & Grondys, 2019), financial risks represent the main problems of SME termination, manifested by payment discipline and profitability. Due to low revenues, companies are not able to generate profit and thus pay their liabilities. As a result, their indebtedness increases, and they must close their enterprise. Dvorsky *et al.* (2020) add that assessing liquidity is considered one of the most significant SME risks.

Concerning the length of business operation, SMEs with the long-term market operation have a more secure financial background and are more resistant to financial risks. We used these facts to construct Hypothesis 2: There is a dependence between perceived financial risks and enterprise duration in SMEs.

Economic risks are also one of the primary business risks for SMEs. This form of risk is linked to engaging in business activities within a specific country. A significant part of it is tax risk, which includes risks related to the variability of tax law, variability of interpretation of applicable legislation and methods of tax construction. It is also important to mention the level of interest rates or changes in labor regulations that significantly affect the entity's profitability (Biernacki, 2018). According to Belas *et al.* (2020), economic risks pose a threat to the enterprise mainly due to changes in cost items (increase in the purchase price of energy and raw materials). Lyukevich *et al.* (2020) define economic risks as adverse macroeconomic effects on business, e.g. inflation, exchange rate changes, the introduction of economic sanctions and other decisions that may adversely affect profits. Other authors (Al-Nimer *et al.*, 2021) associate economic risks with foreign activities and influences that may affect the company's investment in the domestic or foreign market (Patel & Tsionas, 2021).

Hypothesis 3: There is a dependence between perceived economic risks and enterprise duration in SMEs. It is related to the impact of economic risks on the enterprise duration. In this area, we currently perceive the greatest differences in their impact before and after the outbreak of the COVID-19 pandemic. At the same time, there is potential for further research to reflect the changes.

SMEs are key economic drivers in the V4 countries (Kotaskova *et al.*, 2020). However, Gorzen-Mitka (2016) points out that knowledge about risk management, regardless of the size of the enterprise or financial situation, is low among SMEs in the V4 countries.

The research also analysed personnel risks. Nowadays, the human factor is the focus of every business, so it is also significant to monitor personnel risks in SMEs (Fraser &

Simkins 2016). Within this research, personnel risks are seen as risks associated with the human factor. According to Gede Rian *et al.* (2020) and Grabara *et al.* (2019), the most significant sources of personnel risks can be considered human errors of employees and managers, insufficient employee qualifications, non-compliance with OSH rules and conditions, fraud, loss of key employees, high turnover rate, a decline of work morale and discipline, the risks from managers' wrong decisions that affect the success of the enterprise.

Therefore, Hypothesis 4 is: The rank of importance of market, financial and economic risks perceived by managers and owners in V4 countries was developed to investigate the development of the market, financial and economic risks in Slovakia, the Czech Republic, Poland, and Hungary as V4 countries that have similar business environments.

### Data and Methods

The aim of this article is to identify the primary risks and their origins in the SMEs and to examine the relationship between the intensity of the perceived financial, market, and economic risks, and the SME duration by using specific statistical methods and tools. Additionally, it assesses and contrasts the outcomes of our research with those conducted in the Czech Republic, Poland, and Hungary.

The results highlight the importance and the necessity for managers to identify the most significant risks and apply the risk management process in SMEs with an emphasis on preventing enterprise crises in the V4 countries.

In 2017–2018 we conducted research focused on identifying entrepreneurial risks in Slovakia and analyzing the current state of enterprise risk management. A total of 487 managers and owners of enterprises in Slovakia participated in the survey. Similar research was implemented in mentioned V4 countries – the Czech Republic (408 respondents), Poland (498 respondents) and Hungary (388 respondents). Surveys were conducted by online questionnaires distributed by our partners in V4 countries.

Questionnaires included 28 questions in many variants of selections, e.g.

1. Choose the size of your business (trichotomies question – 1 option).
2. Select the three most perceived risks (8 options and 1 written number (0–100 %): 1–3 options; 1–3 numbers).
3. Choose your enterprise duration (4 options – 1 selection).

In 2019–2020 we implemented identical research. A total of 422 Slovak enterprise managers and owners participated in the survey. Table 1 describes the respondent sample.

Table 1

**Structure of Respondents in Relative Numbers in V4 Countries**

Size of business	Research #1 (2017–2018)				Research #2 (2019–2020)
	SVK	CZE	PL	HU	SVK
Micro	0.6448	0.2353	0.6004	0.6211	0.5545
Small	0.2361	0.6397	0.2851	0.1856	
Medium	0.1191	0.1250	0.1145	0.1933	0.2654
Big	-	-	-	-	0.1801

Industry	Research #1 (2017–2018)				Research #2 (2019–2020)
	SVK	CZE	PL	HU	SVK
Manufacturing	0.1622	0.2230	0.3098	0.1057	0.1777
Trade	0.2443	0.2279	0.1451	0.2242	0.2085
Agriculture	0.0103	0.0368	0.0569	0.0464	0.0640
Constructing	0.1211	0.1544	0.1667	0.0515	0.1564
Transport	0.0636	0.0490	0.0588	0.1443	0.0995
Accommodation	0.0883	0.0637	0.0667	0.1598	0.0569
Trade services	0.065708419	0.0515	0.0235	0.1057	0.0355
Other services	0.215605749	0.1544	0.1118	0.1108	0.1019
Others	0.028747433	0.0392	0.0608	0.0515	0.0995

Business Operation (Year)	Research #1 (2017–2018)				Research #2 (2019–2020)
	SVK	CZE	PL	HU	SVK
(0;1>	0.0370	0.0441	0.0444	0.1237	0.1422
(1;5>	0.1910	0.1618	0.2263	0.2216	
(5;10>	0.2587	0.1961	0.2970	0.1263	0.2607
(10; more)	0.5133	0.5980	0.4323	0.5284	0.5972

Respondent age (Year)	Research #1 (2017–2018)				Research #2 (2019–2020)
	SVK	CZE	PL	HU	SVK
(18;30>	0.2033	0.1667	0.2233	0.4072	0.1209
(30;50>	0.2444	0.2623	0.5734	0.4381	0.6564
More than 50	0.5524	0.5711	0.2032	0.1546	0.2227

The aforementioned objectives necessitated the utilization of empirical research methods such as questionnaires and interviews with SME representatives as well as statistical techniques. The statistical methods employed include variance analysis tools such as percentages, averages, homoscedasticity, Bartlett's Test, Kolmogorov-Smirnov Test, F-test, Kruskal-Wallis Test and Box-and-Whisker Plot. MS Excel software was utilized for data analysis. These applied statistical methods and tools serve to ascertain whether the average values of the principal risks are influenced by the duration of enterprises in Slovakia.

The analysis of variance - ANOVA, determined by the parametric or non-parametric tests, was also applied (Ojiako *et al.*, 2012). The calculation of the parametric tests required two primary conditions: the resulting p-value of the key risk intensity by the homoscedasticity test (identity of variances) and the normality test; they verified the risk intensities.

**The methodology of processing results:**

1. Identification of the key business risks perceived by owners and managers who operated an enterprise in Slovakia, based on 2017–2018 survey results.
2. Analysis of Intensity Dispersion of the Perceived Market Risks in Dependence on the SME Duration.
3. Analysis of Intensity Dispersion of Perceived Financial Risks in Dependence on the SME Duration.
4. Analysis of Intensity Dispersion of the Perceived Economic Risks in Dependence on the SME Duration.
5. Assessment and comparison of the Most Significant Entrepreneurial Risks and their impact on small and medium enterprises in Poland, Hungary and the Czech Republic.

After conducting an in-depth analysis of the relevant domestic and foreign literature, examining the current global state of enterprise risk management and thoroughly analyzing the outcomes of our surveys, the main aim of the article was defined. It is reflected in the research questions, which served as the foundation for the hypotheses.

Based on the processed baseline analysis, i. e. the analysis of the knowledge from professional domestic and foreign literature, analysis of the current global state of enterprise risk management, and the analysis of the results of our surveys, the primary article aim was specified. It reflects in research questions, which were the basis for the hypotheses.

**The research questions were determined:**

1. Do SMEs perceive market risks identically during the length of their business?
2. Do SMEs perceive financial risks identically during the length of their business?
3. Do SMEs perceive economic risks identically during the length of their business?
4. Do SMEs in Slovakia, Poland, Hungary and the Czech Republic consider the market, financial, and economic risks the most significant risks?

**Based on research questions, the following hypotheses were established:**

- H1: There exists a correlation between the perceived **market** risks and the longevity of small and medium enterprises.
- H2: There is a dependence between perceived **financial risks** and enterprise duration in SMEs.
- H3: There is a dependence between perceived **economic risks** and enterprise duration in SMEs.
- H4: The rank of importance of market, financial and economic risks perceived by enterprise managers and owners in V4 countries is identical in the Czech Republic, Poland, and Hungary.

Data collection for each survey was implemented using an online questionnaire. The questionnaire could only have been completed by the SME owner or the top manager. To increase its reliability, purposive sampling of respondents was conducted based on emails collected by the authors. A total of 1910 respondents were asked to complete the questionnaire in 2017–2018 and 2250 respondents in 2019–2020. (The number of respondents was determined by applying

sample size analysis.) The questionnaire was divided into the following sections: basic demographic data about the respondents, questions directed to the identification of SME risks and their sources, questions on the application of individual steps of the risk management process, the use of risk management methods and tools, and risk management education.

Based on the data comparison, the resulting validity was determined acceptable. The internal consistency of the statistical set was calculated based on Cronbach alpha. The result was subsequently compared with the statistical tables of values for the respective range of the population. The statistical interval of the set was calculated based on ITEM-total correlation. The result was compared with the statistical table value and found within the acceptable interval.

The data are statistically significant, considering a 5 % margin of error in the 0.95 confidence level. Based on the formula, 487 and 422 respondents were needed for representative surveys, and the condition was fulfilled.

**Results**

The empirical research identified the key entrepreneurial risks of the Slovak SMEs and the state of implementing the risk management processes there. It was conducted in 2017–2018 and involved 487 SMEs. Out of 487 participants, there were 64 % micro-companies, 24 % small-sized companies and 12 % medium-sized companies. Concerning the line of business, the structure was as follows: 16% industry; 24 % trade; 1 % agriculture; 12 % building industry; 6 % transport, information; 9 % accommodation, catering; 7 % business services; 22 % other types of services; 3% other services.

The addressed Slovak SME owners and managers were requested to determine a maximum of three out of seven options for key risks in their enterprise.

Out of the total number of 487 SMEs, we determined the percentage distribution of the identified key risks of the Slovak SMEs as follows: the most severe risks were the market risks – 26 %; financial risks – 21 %; economic risks – 19 %; personnel risks – 11 %; operational risks – 9 %; legal risks – 7 %; safety risks – 6 % and other risks – 1 %, Tab. 2.

Table 2

**Share of Identified key Business Risks of SMEs in Slovakia in 2017–2018**

Risks	Multiplicity	Relative cumulative count
Market	340	0.25
Economic	258	0.19
Financial	283	0.21
Operational	122	0.09
Personnel	149	0.11
Safety	78	0.06
Legal	97	0.07
Other	12	0.01
Summary	1339	1.00

Similar research aimed at detecting the key entrepreneurial risks of the Slovak enterprises and the state of implementing the risk management process was conducted in 2019–2020 with 422 SME participants.

The risk perception distribution in the examined enterprises was as follows: market risks - 24.31 %, economics risks - 17.48 %, financial risks - 16.93 %, personnel risks - 15.10 %, operational risks - 9.43 %, safety risks - 6.92 %, legal risks - 4.21 % and other risks - 6.00 %, Table 3.

Table 3

**Share of Identified key Business Risks of SMEs in Slovakia in 2019–2020**

Risks	Multiplicity	Relative cumulative count
Market	278	0.2601
Economic	187	0.1754
Financial	179	0.1682
Operational	68	0.0636
Personnel	45	0.0426
Safety	156	0.1461
Legal	99	0.0929
Other	54	0.0502
Summary	1066	1.00

The next step for fulfilling the stated goal was assessing the dependence between the identified key risks and the enterprise duration, i.e. whether the type of the perceived key risk depends on the Slovak SME (the micro-company, small-sized and medium-sized company) duration. The first most significant risks – the market, financial and economic and risks were selected for the assessment; then the quantitative analysis of variance was performed.

The necessary information for the variance analysis is specified in Table 4 (all SMEs N=487; micro-sized enterprises N= 314; small-sized enterprises N= 115; medium-sized enterprises N=58).

Table 4 outlines the distinctive features of the statistical set of risks within the three specified SME groups based on the duration of the enterprises. The basic statistical characteristics (BSCs) are presented as follows:  $\mu$  – the average intensity of

the risk to the enterprise,  $\sigma$  – standard deviation intensity of the risk to the enterprise,  $\sigma_x$  – variance intensity,  $\kappa$  – kurtosis of the risk to the enterprise. Table 5 demonstrates the dependence between selected categories of risks.

Table 4

**The Basic Statistical Characteristics (BSCs) of Specific Risks within the three Mentioned SME Groups, Categorized by the Duration of the Enterprises**

Main risk	BSCs	Less than 1 year	From 1 to 5 years	From 5 to 10 years	More than 10 years
Market risks	$\mu$	48.5710	46.7164	40.0000	45.1149
	$\sigma$	0.1995	0.1972	0.1817	0.0160
	$\kappa$	2.4744	1.4617	1.9230	0.7599
	$\sigma_{\bar{x}}$	0.0399	0.0389	0.0330	0.0440
Financial risks	$\mu$	33.6360	36.7308	37.5676	37.2917
	$\sigma$	0.0924	0.0210	0.1849	0.01316
	$\kappa$	-0.4482	-0.2761	2.4539	3.1547
	$\sigma_{\bar{x}}$	0.0085	0.0230	0.0342	0.0249
Economic risks	$\mu$	41.0000	31.5686	33.3784	33.9695
	$\sigma$	0.2558	0.1419	0.0193	0.0135
	$\kappa$	2.4348	4.2411	1.9258	1.4605
	$\sigma_{\bar{x}}$	0.0654	0.2014	0.0275	0.0240

Table 5

**Correlation between Selected Categories of Risks**

Risks	Market	Financial	Economic
Market	X	0.67	0.76
Financial	0.45	X	0.82
Economic	0.69	0.83	X

It is possible to assume a strong correlation between economics and financial risks. This dependence can also be observed between financial and economic risks. Medium dependence is between market and financial risks and between the market and economic risks category. As economic risks are more frequently perceived as macroeconomic influences on the business, they directly affect its financial flows (e.g. an increase in the price of energy and raw materials, inflation affecting the profit). On the other hand, financial risks are more often perceived as possible losses caused in the financial market but also as impacts on the business caused by wrong decisions and approaches of managers to manage financial flows effectively, i.e. financial risks affecting payment discipline and profitability in connection with the economic environment of the business (e.g. the profit of the business is affected by the increase in the price of energy and raw materials, inflation in the country). Based on the results, we can assume that financial risks may affect economic risks, and economic risks may affect financial risks.

**Analysis of Intensity Dispersion of the Perceived SME Market Risks in Dependence on the Enterprise Duration**

Based on the investigated set, market risk was identified as the key type of risk. Bartlett's test (p-value = 0.151) fulfilled the assumption of sphericity. The Kolmogorov-Smirnov test fulfilled the assumption of normality. The test p-values were 0.09 for the enterprises operated for less than one year, 0.158 for the enterprise duration of 1–5 years, 0.119 for 5 to 10 years, and 0.125 for more than ten years.

Following the examination of the dispersion of the market risks among SMEs in Slovakia through the application of the parametric F-test (with a p-value of 0.0325 – Table 6), the data can be deemed statistically significant since the value is below the chosen level of significance (0.0500). Consequently, there exists a certain correlation between the intensity of perceived market risks among SMEs and the duration of the examined set of enterprises at the reliability boundary of 95 %.

It is also evidenced by other processed results that point to the highest intensity of SME market risk sources, i.e., loss of customers, high competition in the sector, market stagnation, and unreliability of suppliers.

Table 6

**Analysis of Intensity Dispersion of the Perceived SME Market Risks by the F-test**

Variance of SME according to the length of the business	Sum of squares	Df	Average of squares	F-ratio	p-value
Between Groups	0.0912	3	0.0304	1.1621	0.0325
In Groups	7.2453	277	0.0262		
Total	7.3365	280			



**Analysis of Intensity Dispersion of the Perceived SME Financial Risks in Dependence on the Enterprise Duration**

The financial risk was identified as the second most significant key risk of SMEs. Based on Bartlett's Test (p-value = 0.138), the assumption of the sphericity was fulfilled. The normality of the investigated set was also fulfilled. The test p-value was 0.078 for enterprises less than one year in operation, 0.109 for the enterprise duration of 1 – 5 years, 0.115 for 5 to 10 years, and 0.116 for enterprises operating more than ten years.

After analyzing the intensity dispersion of financial risks in Slovak SMEs using the parametric F-test (p-value is 0.0480 – Table 7), we can consider the data statistically significant because the value is lower than the selected level of significance (0.05).

Based on this, we can conclude that there is a dependence between the intensity of the perceived SME financial risks on the enterprise duration of the investigated set of companies at the reliability boundary of 95 %. The most severe sources of financial risks for SMEs were identified as insufficient profit of the enterprise, unpaid receivables, inability to pay liabilities (insolvency), and indebtedness of the enterprise.

Table 7

**Analysis of Intensity Dispersion of the Perceived SME Financial Risks by the F-test**

Variance of SME according to the length of the business	Sum of squares	Df	Average of squares	F-ratio	P-value
Between Groups	7.9721	3	0.0266	0.6558	0.0480
Within Groups	169.7004	338	0.0405		
Total	177.6725	341			

**Analysis of Intensity Dispersion of the Perceived SME Economic Risks in Dependence on the Enterprise**

The importance of the economic risks in the entrepreneurial environment cannot be challenged. The research identified them as the third most significant risk for SMEs. Bartlett's Test, with a p-value of 0.209, indicating that the data exhibited spherical distribution. Furthermore, the investigated set also met the criteria for normality. The p-value for the normality test was 0.083 for enterprises less than one year in operation, 0.139 for the enterprise duration of 1 – 5 years, 0.117 for 5 to 10 years and 0.123 for the enterprise duration of more than ten years.

0.9377 – Table 8), we can consider the data statistically insignificant because the value is higher than the selected level of significance (0.0500). According to these findings, there is no statistically significant relationship between the intensity of perceived economic risks among SMEs and the duration of the analyzed set of companies at the reliability boundary of 95.

The main sources of economic risks were identified as the development of the tax burden, the rise in prices of all types of energy, the weak availability of financial resources, and the development of interest rates.

Concerning the dependence hypothesis, we consider this result correct because the economic risks in the Slovak conditions are highly specific. As demonstrated by the high p-value, the enterprise duration affects it only to a minor extent.

Table 8

**Analysis of Intensity Dispersion of the Perceived SME Economic Risks by the F-test**

Variance of SMEs according to the length of the business	Sum of squares	Df	Average of squares	F-ratio	P-value
Between Groups	0.0107	3	0.0035	0.1371	0.9377
In Groups	6.7828	262	0.0258		
Total	6.7935	265			

**Assessment and comparison of the Most Significant Entrepreneurial Risks and their impact on SMEs in Poland, Hungary and the Czech Republic**

During 2017–2018, a parallel empirical research initiative took place in in the Czech Republic, Poland, and Hungary, with the aim of identifying the key entrepreneurial risks and assessing the state of the risk management implementation in SMEs.

**In the Czech Republic**, a total of 408 SMEs participated in the study. The owners and managers of these enterprises highlighted market risks (24 %), financial risks (19 %), personnel risks (19 %), economic risks (16 %), operational risks (10 %), legal risks (6%) and security risks

(5 %) as the most significant risks faced by their companies. Notably, both Slovakia and the Czech Republic identified market risks as the primary risks for SMEs. The analysis further examined the sources of market risks, revealing that the loss of customers emerged as the most significant risk factor. The impact of globalization played a notable role in this context, with markets becoming more open to foreign investments, increased importation of goods from Asian markets and evolving customer preferences (Dvorsky *et al.*, 2020b, Mikusova, 2017). In the Czech Republic, financial risks ranked as the second most substantial risks, with insufficient company profit identified as a primary source. as the largest source of financial risks. Personnel risks, also at the same percentage as financial risks, were recognized

as another critical risk category for SMEs. Insufficient worker qualifications were identified as the most significant risk source of personnel risks, as companies consistently struggle with a shortage of skilled workforce, particularly in specific and irreplaceable positions (Belas *et al.*, 2020).

The research involved the participation of 498 SMEs in **Poland**. The owners and managers of these enterprises considered especially market risks (20 %), financial risks (16 %), personnel risks (15 %), economic risks (14 %), operational risks (12 %), security risks (12 %) and legal risks (11 %) the most significant risk types.

Similar to Slovakia and the Czech Republic, market risks were also identified as the most critical entrepreneurial risks for SMEs in Poland. The research findings indicate that the loss of customers and intense competition are perceived as the primary source of market risks. The Polish market, characterized by its specificity and dynamism, consists of numerous domestic and foreign providers of goods and services. Despite the previous mention, the Polish market is predominantly oriented towards importing goods (Pietrasieński & Ślusarczyk, 2015). In Poland, financial risks were recognized as the second most significant risk category. Insufficient company profits were identified as one of the primary sources of financial risks. Similarly to the Czech Republic, personnel risks ranked as the third most substantial risks. The sources of personnel risks included inadequate worker qualifications, a high employee turnover rate and an increased potential for workplace injuries.

**In Hungary**, a total of 388 SMEs participated in the research. The owners and managers of these enterprises identified market risks (19 %), personnel risks (18 %), financial risks (16 %), economic risks (13 %), operational risks (14 %), security risks (11 %) and legal risks (9 %) as the most significant risks faced by their companies.

Similarly to the other countries examined, market risks were identified as the most severe entrepreneurial risks for SMEs in Hungary. The analysis of specific market risk sources revealed that intense market competition was determined as the most significant factor. The Hungarian market faces limitations primarily due to current regulations on exporting and importing goods and services, which are partially influenced by the government under Viktor Orban's leadership (Kot, 2018, Popp *et al.*, 2018, Olah *et al.*, 2019).

In contrast to the other participating countries, the research identified personnel risk as the second most significant risk in Hungary. Personnel risks encompassed inadequate worker qualifications and a heightened likelihood of injuries. The findings highlight a growing awareness among SME owners and managers regarding the ramifications of having inadequately skilled employees, which can have a substantial impact on their economic growth. Financial risks were identified as the third most significant risk category. Its highest source is insufficient company profit, similar to the Czech Republic and Poland.

Based on the results from Slovakia, the Czech Republic, and Poland, it is possible to conclude that the identified SME risks have developed similarly. The primary market risks in these countries stem from the challenges of positioning goods and services in both domestic and international markets, presenting the most substantial threat. related to placing goods and services in the domestic and foreign markets as the greatest threat. Financial, personnel

and economic risks were identified as the second, third and fourth most significant risks, respectively. The ranking only displayed minor variations among the examined countries.

According to the results of Bartlett's Test (p-value = 0.1982), the assumption of sphericity was met, indicating that the data exhibited spherical distribution as well as the normality of the investigated set. The test yielded a p-value was 0.1673 for the selected data sample. Based on the presented statistical research, it is not possible to statistically confirm the hypothesis. The results in Table 9 compare the selected sample sizes. The hypothesis was rejected; and we can observe that rank of selected risks is not identical in selected countries.

## Discussion

Based on the research results, Hypothesis 1 was confirmed. Drawing from the research findings, **market risks** were considered the most significant type in the SME framework. Calculations of the dispersion analyses of the SME market risks confirmed hypotheses that the perceived market risks in Slovakia depend on the enterprise duration. SMEs have become more vulnerable in terms of the market environment. Additional research findings highlight that the most significant sources of market risks for SMEs are attributed to the loss of customers, fierce competition within the industry, market stagnation and unreliable suppliers. These observations align with the hypotheses supported by numerous other authors who have conducted similar studies (Belas *et al.*, 2020; Kot, 2018; Popp *et al.*, 2018; Olah *et al.*, 2019; Pietrasieński & Ślusarczyk, 2015).

Compared to the results of the statistical research from 2017–2018, we can state that the key SME risks still include market risks. During the period of 2017–2018, these risks were identified as the most substantial, accounting for 30 % of the total risks assessed.

However, in 2020 no dependence between the perceived risks and the SME enterprise duration was established. Based on the findings, it is very important to focus on this area in risk assessment and management. From a sustainability point of view, there is a need to consider their innovation potential while their size provides them certain advantages and opportunities to exploit market gaps in a flexible way.

**Financial risks** represent significant risks in every company. Analyzing the dispersion of the SME financial risks, we can state that the perceived financial risks are dependent on the Slovak enterprise duration, so Hypothesis H2 was also accepted. Financial risks are at the same level in small-sized and medium-sized enterprises. Other research results indicate the highest intensity of the following SME sources of financial risks: insufficient profit of the company, outstanding debts, insolvency, and indebtedness of the enterprise. This statement is confirmed by other authors (Belas *et al.*, 2020; Dvorsky *et al.*, 2020b; Ahmad *et al.*, 2018). In comparison with the results of the statistical research from 2017–2018, we can state that the financial risks can still be considered key SME risks. In 2017–2018, they were identified as the second most significant type with a 22 % share of the overall risks. However, in 2020 no dependence between the perceived risks and the SME enterprise duration was established. Financial risks and lack



of access to finance have long been among the primary barriers to SME development. The recent events highlighted the need to develop support measures for maintaining the operation and self-sustainability of SMEs that plunged into the financial crisis of the COVID-19 pandemic.

Concerning the SME **economic risks**, it is possible to conclude that the perceived economic risks are not dependent on the Slovak enterprise duration. The assessment of the economic risks does not affect the enterprise duration, so hypothesis H3 was rejected. Other results indicate the highest intensity of the following sources of SME economic risks: the development of the tax and insurance burden and the development of the interest rates.

The sources of the economic risks can be considered the most significant ones, based on the perception of the entrepreneurial subjects in this questionnaire. The results cannot be compared with the 2017–2018 results because the 2017 research assessed the economic risks in the framework of the market ones. Compared to the results of the statistical research from 2017–2018, the key SME risks still include economic risks. However, in 2020 no dependence between the economic risks and the SME enterprise duration was established. Economic risks as high tax burdens and the

complexity of paying taxes, the fragmented framework of support for SMEs and others are identical for small and medium-sized enterprises regardless of their duration. It is, therefore, necessary for the state to create conditions aimed at supporting SME entrepreneurship and at the same time at maintaining and increasing employment, where SMEs have a significant role to play.

The research findings from Slovakia provide a basis for comparing and evaluating the results of the investigated issue in Poland, Hungary and the Czech Republic. Table 9 demonstrates similar development of significant SME risks in these countries. The greatest threat to SMEs in this region seems to be the market risks, mainly related to the placement of products and services in domestic and foreign markets. Financial, personnel or economic risks were identified as the second, third or fourth most significant risks, respectively. Only minor variations occurred between the countries considered. The obtained results allow for the rejection of H4. It was not confirmed due to the occurrence of personnel risks among the top three in the Czech Republic, Hungary, and Poland. It may be caused by the different sectoral structures of the SMEs considered and, also, by the different quality of the business environment.

Table 9

**The Proportion of Identified Entrepreneurial Risks for SMEs in Slovakia, the Czech Republic, Poland, and Hungary**

	Risks		
	Personnel	Financial	Market
Slovakia	11 %	21 %	26 %
Poland	15 %	16 %	20 %
Czech	19 %	19 %	24 %
Hungary	18 %	16 %	19 %

The outbreak of the 2020 pandemic affected the change in perceptions of business risk and its management and encouraged efforts in most countries to use diverse types of financial instruments to keep businesses afloat, to finance the costs of suspending, closing, or slowing down businesses (Gavurova *et al.*, 2020, Borocki *et al.*, 2019, COVID-19, 2020). Appropriate risk management reduces costs related to operations, materials, and supplies, resulting in a competitive advantage regardless of the company size and ability to survive a difficult period of stagnation (Stanczak, 2014). However, companies lack experience and practical guidance on using the risk management system in the current situation. Risk management knowledge and experience increase the company's resilience to risks that cannot be accurately predicted (Grondys *et al.*, 2021).

Despite measures adopted by governments worldwide to promote entrepreneurship and protect employment, numerous small enterprises have not survived due to long-term restrictions on their activities (OECD, 2020). For many companies, survival in the economic and public conditions of this pandemic has been a demanding task, with knowledge-based management skills and rapid adaptation becoming decisive factors in crisis resilience (Habiyaemye, 2021). The quality of an organization's response to a crisis is a function of its ability to use emerging knowledge that increases improvisation capacity, coordination, flexibility, and perseverance (Williams *et al.*, 2017).

**Conclusion**

As mentioned above, in 2017–2018, we conducted a survey identifying key business risks in 487 Slovak SMEs. Similar surveys were implemented in the Czech Republic with 408 SMEs, Poland with 498 SMEs and Hungary with 388 participants. Market risks were identified as the most substantial risks for SMEs in Slovakia, the Czech Republic, Poland and Hungary. The research findings indicate that the loss of customers constitutes a significant source of market risks. Financial, personnel and economic risks were identified as the second, third and fourth most significant risks, respectively. The ranking of these risks exhibited minor variations across the studied countries.

A similar research endeavour aiming to identify key business risks was carried out in Slovakia in 2019–2020, involving 346 SME participants. It also confirmed the fact that market risks represent the most significant sources of threat for SMEs in Slovakia (24.31 %), followed by economic and financial risks.

The obtained results were utilized to evaluate the correlation between the identified key risks and the duration of business operations. The findings revealed a significant association between the perceived intensity of market risks in SMEs and the length of time the studied enterprises had been in operation, at the 95 % confidence level. Furthermore, the results suggest that financial risks can impact the overall economy, and economic risks can influence financial risks. Consequently, it can also be

inferred that there is also a correlation between the perceived intensity of financial risks of SMEs and the duration of the business operations within the studied company set, with the 95 % confidence level. However, there is no evidence of the relationship between the perceived intensity of economic risks in SMEs and the duration of business operations within the company set a confidence level of 95 %.

These research findings, obtained before the COVID-19 pandemic, were confirmed by the current results of the development of the SME business environment where economic risks (i.e., also the consequences of the pandemic) affected all SMEs, regardless of the duration of their business activity. Therefore, business support is highly significant, including a crucial factor - systematic monitoring of the business environment to identify market failures and assess the effectiveness of the support measures implemented to promote SME sustainability. Support for SMEs is one of the European Union's most important current topics, given their key position in the economy. It can be implemented in the form of loans, guarantees, programmes at the national and international levels, grants, etc.

Every enterprise in the current dynamic environment should concentrate on increasing the security of its activities and processes. The reasons do not only include an elementary effort to achieve positive economic results but, in particular, the responsibility the management bears in connection with all interested parties. The employees, customers, regional institutions, the State, and many other subjects profit from the results of entrepreneurial activity of small-sized, medium-

sized or large companies. The risks are based on the SME's existence in particular conditions. The risk sources here are the external negative influences and, also, the insufficient preparedness of entrepreneurial entities.

The improvement of awareness of the possibilities and approaches to risk management in the entrepreneurial activity supports successful business performance and regional and country development. Risk management is a prerequisite for the successful accomplishment of business activities of the organization in terms of security and sustainable development.

The limitations of the research are related to the different sectoral structures of the SMEs surveyed. The research limitation was the method of engaging the participating SME owners and in Slovakia, Poland, Hungary, and the Czech Republic. Moreover, a research limitation is the measurement of the size of the enterprise by the number of employees without considering its financial performance. At the same time, we can also include the respondents' inconsistent perception of economic risks, as it follows from the theoretical definition. A suggestion for future research entails a comprehensive representative statistical survey to provide an overview of the state of enterprise risk management, encompassing both SMEs and large enterprises. Such an initiative would enable a thorough mapping of risk management practices across the V4 countries. Future research can also study the difference in the management of the analyzed risks in companies with different duration in Slovakia and the V4 countries.

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