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# The Assessment of Key Business Risks for SMEs in Slovakia and Their Comparison with other EU Countries

# Mária Hudáková, Matej Masár

## ABSTRACT

**Objective:** The essence of this article is to identify statistically the most serious entrepreneurial risks defined by SME owners and managers in Slovakia based on the empirical research conducted in 2017 and to identify the most serious market risks and their sources (causes) depending on the company size and the duration of doing business.

**Research Design & Methods:** Using empirical research methods and statistical methods, the authors investigate the dependence between the risks perceived by managers and owners of SMEs and the duration of business activity and the size of an enterprise.

**Findings:** Based on the results, we can say that market risks that negatively affect the SME entrepreneurial environment are considered to be the most serious risks in all countries. The overall research results in individual countries underline the importance of dealing with the assessment of entrepreneurial risks and their sources in SMEs.

**Implications & Recommendations:** The owners or managers of SMEs should be able to apply the risk management process in enterprises using appropriate methods and tools to identify changes timely in case of adverse development of business environment. The application of enterprise risk management leads to an improvement in business performance and also cost saving.

**Contribution & Value Added:** The task of this article is to make the need of implementing the risk management in SMEs through a relevant study more transparent, to compare and evaluate the results of the area being solved in individual countries.

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#### INTRODUCTION

The area of the risk management in SMEs has been analysed and discussed not only in Slovakia but also in other EU countries for a long time. New trends in risk management bring idea that it is necessary to pay permanent attention to assess key business risks in business external environment. SMEs are very sensitive to changes in the entrepreneurial environment, which after some time are always reflected in the quantitative characteristics of this sector.

The essence of this article is to identify statistically the most serious entrepreneurial risks defined by the SME owners and managers in Slovakia based on the empirical research conducted in 2017 and to identify the most serious market risks and their sources (causes) depending on the company size and the duration of doing business. The aim is also to compare and evaluate the results of our research with the results of the same investigations in the Czech Republic, Poland, and Hungary.

Based on the results we can say that market risks that negatively affect the SME entrepreneurial environment are considered to be the most serious risks in all the countries. The overall research results in individual countries underline the importance of dealing with the assessment of entrepreneurial risks and their sources in SMEs. The task of this article is to make the need of implementing the risk management in SMEs through a relevant study more transparent, to compare and evaluate the results of the area being solved in individual countries – in Slovakia, the Czech Republic, Poland, and Hungary.

#### LITERATURE REVIEW

Today, managers are increasingly faced with the responsibility to take important decisions to ensure prosperity and financial stability under the conditions of uncertainty and risk (Agarwal & Ansell 2016; Klučka & Grünbichler, 2016). More and more businesses, not just large but also small ones, are beginning to realize the need and importance of risk management (Jankelová, Jankurová, Beňová, & Skorková, 2018).

Concerning the global trends and survey results, the current state of application risk management in companies is a very valid and highly needed topic. According to various global surveys and studies (The American Institute of CPAs, 2017; Global risk, 2018; CGMA, 2017), it can be said that risk management means a significant contribution to increasing the performance and value of enterprises in dynamic changes of the environment (Ribau, Moreira, & Raposo, 2017; Streimikiene, 2016).

Small and medium-sized enterprises represent an important part of the economies in developed countries and the same situation is in Slovakia, in the Czech Republic, in Poland, and Hungary. Small and medium-sized entrepreneurs have particularly good conditions for risk management as they are in close proximity to all aspects of individual operations, and they recognize many strengths and vulnerabilities in their businesses (Urbancová, 2015; Kormancová, 2014; Hrehová, 2011).

The owners of small and medium-sized businesses are intuitively aware of the current sources of risks that affect their everyday lives, they are unlikely to be aware of such sources of risk they do not have direct experience with (Bogodistov & Wohlgemuth, 2017; Abbas, 2018; Fudaliński, 2015).

The improvement of the awareness and level of risk management requires not only theoretical knowledge but also practical skills with regard to specific process activities, structure, risk management principles, methods and tools that can be used for risk management. The solution to this issue represents a significant contribution to increasing the performance, value, competitiveness of companies in Slovakia. The risk management system in enterprises is not only an up-to-date global trend in enterprise management but also an opportunity to increase performance or save costs (Gates, Nicolas, & Walker, 2012). Investing in prevention will greatly save financial costs compared to the cost of dealing with the consequences of negative events.

Therefore, it is necessary to raise awareness and foreknowledge among SME managers about risk management in enterprises around the world, but especially in businesses in Eastern Europe and the Slovak Republic, the Czech Republic, Poland, and Hungary. The application of risk management in many companies in Slovakia compared to advanced countries has considerable deficiencies (Sira, Vozarova, Kravcakova, & Radvanska, 2016; Ključnikov & Popesko, 2017). It is important for business managers to be able to identify the most serious risks, create a scope for discussion, and propose preventive measures with a focus on preventing business crises. This fact implies the need for active and systematic risk management also from SME managers. It is necessary to prepare for the threats of the current environment to prevent a crisis in current dynamic business environment.

#### MATERIAL AND METHODS

The objective of the article is, based on the empirical research carried out in 2017, to identify the most serious entrepreneurial risks perceived by the owners and managers of Slovak SMEs. The utilisation of the selected statistical methods and tools will help us analyse the dependence between the intensity of the market risks for SMEs and the size of the enterprise and the duration of doing business activity in Slovakia. We will also assess the sources of market risks (causes) and compare the results of market risks for SMEs with the results of the research in previous years. We will compare the most serious risks that negatively affect the SME entrepreneurial environment in all aforementioned countries. Based on the processed results we will show the importance and need for managers to implement risk management in SMEs with an emphasis on preventing the company crises.

In order to meet the objective stated, empirical research methods (questionnaire, interviews with competent persons in SMEs), statistical methods, i.e. analysis of variance using quantitative tools of statistics (percentages, averages, homoscedasticity, Bartlett's Test, Kolmogorov-Smirnov Test, F-test, Kruskal-Wallis Test, Box-and-Whisker Plot) and MS Excel software were used. Using statistical methods and tools was to examine whether the average (mean) values of the key risks are dependent on the number of the years of enterprise activities in Slovakia or not.

To achieve the objective of the quantitative method the 'analysis of variance' was used. The analysis of variance was implemented either by parametric or non-parametric tests. Using the calculation of parametric tests two basic conditions had to be met: the resulting p-value of the intensity of the key risks of the homoscedasticity test (identity of variances) and normality test to verify intensities of risks must be higher than the level of significance 0.05 that was chosen.

The comparison is interpreted by the researcher in the way that reflects the interviewer's worldview, which affects how the data are compared with others and thus the representation cannot be considered the absolute truth (Klučka, 2016; Masár & Hudáková, 2017).

#### **RESULTS AND DISCUSSION**

In 2017 within the project VEGA No. 1/0560/16 Risk Management of Small and Medium-Sized Enterprises in Slovakia and Prevention of Company Crises, supported by the Scientific Grant Agency, empirical research, aimed at identifying the key business risks for SMEs in Slovakia and the state of the application of the risk management process in enterprises, was implemented (Hudáková, Dvorský, Lusková, & Schönfeld, 2017). A total of 487 SMEs took part in the survey. From this number 64% were micro-enterprises, 24% small enterprises and 12% medium-sized enterprises. The number of enterprises representing industry was 16%, trade 24%, agriculture 1%, construction 12%, transport, information 6%, accommodation, catering 9%, business services 7%, other services 22%, and additional services 3%.

The addressed owners and managers of SMEs in Slovakia should identify a maximum of three risks from the selection of seven business risks, which they consider to be key ones in their business. Of the total number of 487 of the addressed SMEs, the share of identified key risks for SMEs in Slovakia was identified: market risks 26%, financial risks 21%, economic risks 19%, personnel risks 11%, operational risks 9%, legal risks 7% security risks 6% and other risks 1%. Fig.1 presents the share of identified key risks for SMEs in Slovakia in 2017.



Figure 1. Share of identified key risks for SMEs in Slovakia in 2017 Source: own study based on the research results (n=487).

The next step in fulfilling the objective was to assess the dependence between the identified key risks and the size of the enterprise, i.e., to what extent the type of perceived

key risk depends in Slovakia on the size of the enterprise (micro-enterprise, small and medium-sized enterprise). The most important market risks were selected for assessment by using the quantitative method 'analysis of variance'.

Table 1. Basic statistical characteristics (BSCs) of individual risks in three groups of SMEs accord-
ing to enterprise size

Main risk	BSCs	Micro sized enterprise	Small sized enterprises	Medium sized enterprises
Market risks	μ	45.020	41.930	45.000
	σ	0.215	0.177	0.163
	К	0.919	1.163	-0.026
	$\sigma_{\overline{x}}$	0.015	0.019	0.026

Source: own study based on the research results (n=487).

The necessary information for the analysis of variance is given in Table 1. The table of the characteristics of the level and variability details the individual characteristics of the statistical set of individual risks in three groups of SMEs according to the size of enterprise. The basic statistical characteristics (BSCs) are as follows:  $\mu$  – the average intensity of risk to the enterprise,  $\sigma$  – standard deviation intensity of risk to the enterprise,  $\sigma$ 2 – variance intensity of risk to the enterprise (Ojiako, Papadopoulos, Thumborisuthi, & Yang, 2012).

# Analysis of the Intensity Variance Of Perceived Market Risks for Smes in Relation to the Enterprise Size

Based on the SMEs survey results market risks were identified as the key and the most important risks. Using Bartlett's test (p-value = 0.284), the main assumption of homoscedasticity can be considered as fulfilled. Also, based on the Kolmogor-Smirnov Test, the normality of the examined file was met. The values (p-value) of the test were: 0.090 for micro-enterprises (total number of employees up to 10), 0.135 for small enterprises (10-50 employees) and 0.189 for medium-sized enterprises (20-250 employees).

The variance of SMEs according to the size of the enterprise	Sum of Squares	df	MS	F	P-value
Between Groups	0.6007	2	0.0325		
Within Groups	1371.6645	339	0.0403	18.3681	0.0081
Total	1377.6725	341			

Table 2. Analysis of the intensity variance of market risks for SMEs using the F-test

Source: own study based on the research results (n=487).

After analysing the variance of market risks intensity in the conditions of the Slovak Republic, using a parametric F-test, the value of which is 0.0081 (Table 2), the data can be considered statistically significant since the value is lower than the chosen significance level (0.05). On the basis of the above, it can be concluded that there is a dependence between the intensity of the market risks that SMEs are experiencing and the size of the enterprise at the confidence level of 95% (Figure 2).



Figure 2. Results of the graphical representation of perceived market risks in relation to enterprise size using Box and Whisker plot Source: own study based on the research results (n=487).

# Analysis of Intensity Dispersion of the SMEs' Perceived Market Risks in relation to the Duration of Business Activity

Based on the investigated set, the market risk was identified as the key one (according to the SMEs). Based on Bartlett's Test (p-value = 0.151) – the assumption of homosce-dasticity was fulfilled.

The normality of the investigated set based on the Kolmogorov-Smirnov Test was also fulfilled. The p-value of the test for the companies doing business for shorter than one year – 0.09; the duration of business activity 1-5 years – 0.158; 5 to 10 years – 0.119 and the companies with the duration of activity of more than 10 years – 0.125.

The variance of SMEs 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		
Within Groups	7.2453	277	0.0262	1.1621	0.0325
Total	7.3365	280			

Table 3. Analysis of intensity dispersion of perceived market risks in SMEs by the F-test

Source: own study based on the research results (n=487).

After carrying out the analysis of intensity dispersion of market risks for SMEs in Slovakia by using the parametric F-test (its value is 0.0325 – Table 3) we can consider the data as statistically significant because the value is lower than the selected level of significance (0.0500).

Based on this we can say that **there is a certain level of dependence** between the intensity of the perceived market risks in SMEs in relation to the duration of the business activity of the investigated set of companies at the reliability boundary of 95% (Figure 3).

The results of our own empirical research show that market, financial, economic and personnel risks are among the four most important risks that negatively affect the current business environment of SMEs in Slovakia.

The most important risks for SMEs are **market risks**. Using the statistical methods we analysed the dependence between the intensity of the perceived market risks for SMEs, the duration of doing business and the size of the enterprise.



Figure 3. Results of the graphical depiction of the perceived market risks in relation to the duration of business activity by using Box and Whisker Source: own study based on the research results (n=487).

Based on the calculations of the market risk variance analysis, it can be concluded that perceived market risks depend the size of the enterprise in the conditions and on the duration of doing business in Slovakia. Small and medium-sized enterprise are more vulnerable from the perspective of the market environment in comparison with large enterprises.

This is evidenced by further processed survey results that point to the greatest SMEs market risk sources intensity for SMEs:

- loss of customers,
- strong competition in the line of business,
- stagnation of the market,
- unreliability of suppliers.

This hypothesis is confirmed by many other authors who have done similar research (Belás, Dvorský, Kubálek, & Smrčka, 2018; Hudáková *et al.*, 2016). Compared to the results of the 2013 statistical survey, it can be concluded that financial risks are still among the key risks for SMEs. Even in 2013, they were identified as the most important with the 30% share on overall risks, and the dependence between perceived risks, the size of the enterprise and on the duration of doing business in Slovakia was also identified (Hudáková *et al.*, 2017; Kelišek *et al.*, 2017).

# Assessing the Most Serious Entrepreneurial Risks for SMEs in the Czech Republic, Poland, and Hungary

In 2017 the same empirical research aimed at identifying the key entrepreneurial risks as well as at the state of the risk management implementation process was carried out in SMEs in the Czech Republic, Poland, and Hungary.

In the Czech Republic, 408 SMEs participated in the research. The owners of the enterprises and the company managers consider the most serious risks the companies face to be especially market risks (24%), financial risks (19%), personnel risks (19%), economic risks (16%), operational risks (10%), legal risks (6%) and security risks (5%).



Figure 4. The share of the identified entrepreneurial risks for SMEs in the Czech Republic in 2017 Source: own study based on the research results (n=408).

Both in Slovakia and in the Czech Republic **market risks** were identified as the most serious entrepreneurial risks for SMEs. Subsequently, also the sources of market risks, i.e. those that cause given risks, were analysed. The results show that the loss of customers is the biggest source of market risks. Globalisation plays an important role in the framework of this risk. The loss of customers is relatively common for the current state of individual economies also in other countries being assessed. It is caused especially by markets that are being opened for foreign investments to an extent larger than ever before and the increased import of goods from Asian markets to the Czech market, as well as by changing requirements of customers as for a product or service (Kozubíková, Dvorský, Cepel, & Balcerzak, 2017; Kormancová, 2014; Mikušová, 2016).

Analysis of Intensity Dispersion of the Perceived Market Risks in SMEs in relation to the Duration of Business and Enterprise size in the Czech Republic:

- Based on the Bartlett's Test (p-value = 0.113) the assumption of homoscedasticity was fulfilled.
- The normality of the investigated set based on the Kolmogorov-Smirnov Test was also fulfilled. The p-value of the test for the companies doing business for shorter than one year 0.295; the duration of business 1-5 years 0.121; 5 to 10 years 0.145 and the companies with duration of more than 10 years 0.083.
- The normality of the investigated set based on the Kolmogorov-Smirnov Test was also fulfilled. The p-value of the test for microenterprises – 0.083; small sized enterprises – 0.123; and medium sized enterprises – 0.158.

Based on this we can say that there is a dependence between the intensity of perceived market risks in SMEs in relation to the duration of the business of the investigated set of companies at the reliability boundary of 95% (by results of F-test – p-value is 0.0122). There is a dependence between the intensity of the SMEs-perceived market risks and enterprise size of the investigated set of companies at the reliability boundary of 95% (by results of F-test – p-value is 0.0313), too.

**Financial risks** were identified as the second most serious risks in the Czech Republic. Insufficient company profit was detected as the biggest source of financial risks. **Personnel risks** (the same percentage as financial risks) were identified as another group of the most serious risks for SMEs. From the point of view of individual personal risk sources, insufficient workers' qualifications were considered to be the most serious one. The companies permanently feel shortage of qualified workforce, especially in the area of specific positions which are irreplaceable in companies (Belás *et al.*, 2018).

**In Poland** 498 SMEs participated in the research. The owners of the enterprises and the company managers consider the most serious risks the companies face to be especially market risks (20%), financial risks (16%), personnel risks (15%), economic risks (14%), operational risks (12%), security risks (12%) and legal risks (11%).

Similarly as in Slovakia and in the Czech Republic also in Poland, **market risks** were identified as the most serious entrepreneurial risks for SMEs. Subsequently, also the sources of market risks, i.e. those that cause given risks, were analysed. The results show that the loss of customers and strong competition are perceived as the biggest source of market risks. The Polish market is very specific, dynamic and unique. The market comprises several Polish and foreign providers of services and goods. According to the sources acquired, the Polish market is, in spite of the fact we mentioned before, more oriented on importing goods (Pietrasieński & Ślusarczyk, 2015).



Figure 5. The share of the identified entrepreneurial risks for SMEs in Poland in 2017 Source: own study based on the research results (n=498).

Analysis of Intensity Dispersion of the SMEs-Perceived Market Risks in relation to the Duration of Business and Enterprise size in Poland:

- Based on Bartlett's Test (p-value = 0.168) the assumption of homoscedasticity was fulfilled.
- The normality of the investigated set based on the Kolmogorov-Smirnov Test was also fulfilled. The p-value of the test for the companies doing business for shorter than one year 0.273; the duration of business activity 1-5 years 0.126; 5 to 10 years 0.111 and the companies with the duration of more than 10 years 0.090.
- The normality of the investigated set based on the Kolmogorov-Smirnov Test was also fulfilled. The p-value of the test for microenterprises – 0.074; small sized enterprises – 0.113; and medium sized enterprises – 0.1101.
- Based on this we can say that there is a dependence between the intensity of the perceived market risks in SMEs in relation to the duration of the business activity of the investigated set of companies at the reliability boundary of 95% (by results of F-test p-value is 0.0387). There is a dependence between the intensity of the SMEs-perceived market risks and enterprise size of the investigated set of companies at the reliability boundary of 95% (by results of F-test p-value is 0.0296), too.

**Financial risks** were identified as the second most serious ones in Poland. Insufficient company profit was detected as one of the sources of financial risks. The same as in the Czech Republic, the third most serious risk – **personnel risk** – was detected. From the point of view of individual sources of personal risks, insufficient qualifications of workers, high fluctuation rate of employees and an increased rate of possible injuries were identified.

In Hungary 388 SMEs participated in the research. The owners of the enterprises and the company managers consider the most serious risks the companies face to be especially market risks (19%), personnel risks (18%), financial risks (16%), economic risks (13%), operational risks (14%), security risks (11%) and legal risks (9%).



Figure 6. The share of the identified entrepreneurial risks for SMEs in Hungary in 2017 Source: own study based on the research results (n=388).

Similarly, as in other evaluated countries, also in Hungary **market risks** were identified as the most serious entrepreneurial risks for SMEs. From the point of view of individual market risk sources, **strong market economic competition** was stated as the most important one. The Hungarian market is considerably limited, especially due to the current rules in terms of exporting goods and services and their import to the country. The market is partially regulated by the current government of Viktor Orbán (Kot, 2018; Popp, 2018; Oláh, 2018).

Analysis of Intensity Dispersion of the SMEs-Perceived Market Risks in relation to the Duration of Business Activity and Enterprise Size in the Czech Republic:

- Based on Bartlett's Test (p-value = 0.147) the assumption of homoscedasticity was fulfilled.
- The normality of the investigated set based on the Kolmogorov-Smirnov Test was also fulfilled. The p-value of the test for the companies doing business for shorter than one year 0.193; the duration of business activity 1-5 years 0.146; 5 to 10 years 0.198 and the companies with the duration of more than 10 years 0.093.
- The normality of the investigated set based on the Kolmogorov-Smirnov Test was also fulfilled. The p-value of the test for microenterprises – 0.086; small sized enterprises – 0.148; and medium sized enterprises – 0.156.
- Based on this we can say that there is a dependence between the intensity of perceived market risks in SMEs in relation to the duration of the business of the investigated set of companies at the reliability boundary of 95% (by results of F-test p-value is 0.0408). There is a dependence between the intensity of the SMEs-perceived market risks and enterprise size of the investigated set of companies at the reliability boundary of 95% (by results of F-test p-value is 0.0408).

The second most serious risk in Hungary the research identified are personal risks in comparison with other assessed countries. Insufficient qualifications of workers and an increased rate of possible injuries were identified as the sources of **personnel risks**. The **result shows** that the owners and company managers of SMEs begin to feel much more the consequences of insufficiently qualified employees and this fact can significantly affect their economic growth. Financial risks were identified as the third most serious ones. Their biggest source is considered to be insufficient company profit, similarly as in the Czech Republic and Poland.

Based on the processed research results in the Slovak Republic, the Czech Republic, Poland and Hungary we can say that the identified most serious entrepreneurial risks for SMEs were developing in a similar way.

The SMEs in these countries assessed **market risks** that are connected especially with placing goods and services in the domestic and foreign markets as the biggest threat. Financial, personnel and economic risks were identified as the second, third and fourth most serious risks. The sequence of these risks was only slightly different in individual countries.

The overall results of empirical research point to the significance and importance of addressing the assessment of key risks and their resources in SMEs in the Slovak Republic, the Czech Republic, Poland, and Hungary. They emphasize the need for active and systematic work with risk and preparation for the traps of the current business environment (Brachert, Hyll, & Titze, 2017).

SMEs overcome the consequences of the crises more flexibly and faster and are more able to implement inevitable structural changes. In spite of this, they should know the risks for their businesses and should be prepared for their reduction. Especially due to their importance in the economic system of individual countries, which consists especially in their large share in forming the working positions, as well as from the point of view of their participation in creating GDP.



Figure 7. The share of the identified entrepreneurial risks for SMEs in Slovakia, the Czech Republic, Poland and Hungary Source: own study based on the research results.

Therefore, it is necessary to increase the level of knowledge about possible causes and consequences of the risks, as well as the application of measures for their reduction (Fraser & Simkins, 2016). Improving the level of risk management, therefore, requires enterprises in the Slovak Republic, the Czech Republic, Poland, and Hungary to acquire theoretical knowledge about the risk management process, methods, and tools that can be used in risk management.

## CONCLUSIONS

Enterprise risk management can help SMEs not only to avoid business mistakes but to ensure proper management that is closely linked to the level of risk acceptability. The owners or managers of SMEs should be able to apply the risk management process in enterprises using appropriate methods and tools to identify changes timely in case of the development of adverse business environment. The application of enterprise risk management leads to an improvement in business performance and also brings cost savings. Managers are convinced that successful risk management provides fewer negative surprises, greater financial stability and enterprise performance according to this research. It also provides opportunities to earn profits and maintain a good company. The authors' efforts are to create progress actions to promote the application of the risk management process in enterprises in Slovakia so that managers can manage risks and progressively move towards global trends.

Based on the results it is possible to establish the following recommendations for Slovak enterprises:

**Establishing strong and successful strategy, policies and responsibility for risk management in the company.** It is necessary to support risk management principles by top management. It is important to deal with risk in the company environment, especially with market risks, which may influence strategy plans. Companies should develop and improve their strategies, policies, principles and establish responsibility for risk management in their company.

Establishing risk criteria, identifying external and internal risks and analysing the external and internal environment. Establishing key risk criteria and continuous evaluating and improving them. Managers should ensure regular and continuous monitoring of all ongoing external and internal events affecting the achievement of their objectives. It is necessary to elaborate the analysis of internal and external business environment, define strategic and organisational connections with risk management and distinguish the positive impact (opportunities) or negative effects (threats).

Development and implementation of a plan for preventive measures, evaluating the effectiveness of preventive measures and risk management. Managers should create and establish measures to reduce risks. It is necessary to make a review of the risk management process in the company. Managers should provide advice, reporting and effective communication. Managers should ensure the control of identified risks, the proposed measures and review their effectiveness.

**Ensuring monitoring and early warning systems by controlling.** An early warning system is necessary for the continuous monitoring of processes in the company. Managers should define the early warning system, key indicators, and conditions for their implementation.

The achieved results are the basis for the professional public as well as for other organisations that are trying to help companies with effective application of the risk management process in enterprises in the Slovak Republic, the Czech Republic, Poland and Hungary.

Research limitation in this article was to obtain managers and owners of SMEs, who took part in the survey in Czech Republic, the Slovak Republic, Poland and Hungary. The data are statistically significant (We calculated with 5% mistake. Based on the formula, to establish a representative survey 384 respondents are needed, this condition was fulfilled).

A suggestion for future research is to establish a representative statistic survey which will describe the state of enterprise risk management, not only in SMEs but also for large enterprises, which will map risk management across the V4 countries.

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#### Authors

The contribution share of authors is equal and amounted to 50% each of them.

## Mária Hudáková

Mária Hudáková has been focused on the issue of risk management in the company at the Department of Crisis Management at the Faculty of Security Engineering of the University of Zilina in her research activity for 17 years. She received the scientific and pedagogical title of Associate Professor in 2017 in the field of management at the Faculty of Management and Informatics at the University of Zilina in Žilina. Her scientific-research activities are oriented at risk management in enterprise and risks in quality management. She teaches lessons in management, quality management, and management methods and techniques, in which she tries to link risk management.

Correspondence to: doc. Ing. Mária Hudáková, PhD, University of Žilina, Faculty of Security Engineering, Department of Crisis Management, Univerzitná 8215, 01026 Žilina. e-mail: maria.hudakova@fbi.uniza.sk

#### Matej Masár

Bachelor of Crisis Management (University of Žilina, Slovakia); Master in Crisis Management (University of Žilina, Slovakia). His research interest include Enterprise Risk Management, Project Risk Management and Hospitality Management.

Correspondence to: Ing. Matej Masár, University of Žilina, Faculty of Security Engineering, Department of Crisis Management, Univerzitná 8215, 01026 Žilina. e-mail: matej.masar@fbi.uniza.sk

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