Assessing the Importance of Market Risk and its Sources in SMEs of the Visegrad Group and Serbia*

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Abstract

The main goal of the paper is to assess the market risk sources of small and medium-sized enterprises in the V4 and Serbia according to the business environment of the countries analyzed. To achieve this goal, a questionnaire-based survey was carried out involving 1,905 small and medium-sized enterprises in these countries. Market risk sources include: losing customers, strong competition in the area of business, stagnation of the market, and unreliability of suppliers. Mathematical statistics tools (PivotTables, Relative Frequency, goodness of fit and Z-Score) were used to compare the evaluation of selected market risk sources. According to the entrepreneurs' evaluation, the partial results of this research show that the most serious source of market risk is losing customers (22%). The country of operation of the entrepreneurs is a statistically significant factor when evaluating all sources of risk. There are statistically significant differences between entrepreneurs in the countries analyzed when evaluating - the high and very high intensity of - the following market risk sources: "losing customers", "stagnation of the market" and "unreliability of suppliers".

1. Introduction

All but 0.2 % of enterprises which operated in the EU-28 non-financial business sector in 2016 were SMEs. These SMEs employed 93 million people, accounting for 67 % of total employment in the EU-28 non-financial business sector, and generating 57 % of value added in the EU-28 non-financial business sector [1].

Small and medium-sized enterprises (SMEs) play an important role in most economies worldwide [2, 3]. SMEs are the predominant type of business units in all OECD economies and account for about two-thirds of total employment. For instance, in the European Union, around 99% of economic activity can be traced back to SMEs, which account for two thirds of all jobs in the private sector [4, 5]. Compared to larger firms, SMEs are usually seen as having a simpler internal organization and thus as being more flexible and faster at responding and adapting to change [6].

Risk management is a major issue for companies. But risk and risk management, although sensitive and topical issues, are rather ill-defined, which cause difficulties for companies, and specifically for SMEs [7-9]. Implied in SME, risk management is the core principle that entrepreneurial or management should be focused on recognizing future uncertainty, deliberating risks, their possible manifestations and effects, and formulating plans to address these risks and reduce or eliminate their impact on the enterprise [10].

It can be assumed that business risks have increased due to turbulence in the economic system. SMEs are currently operating in a more demanding economic environment, and many of them are struggling to survive [11].

SME owner-managers need to emphasize the importance of identifying risk and minimizing its consequences if they are ill prepared for the outcome of a possible risk [12]. This entails that entrepreneurs in SMEs need to be conversant with risk identification and analysis in order to be able to manage risks from a diverse range of sources [13]. By incorporating risk management into SME operations, SMEs are better equipped to exploit their resources, thereby enabling organizations to transform an expenditure activity into an activity that can yield a positive return [14, 15]. The list of risks that SMEs face is endless because this is a sector where entry and exit is uncontrollable [16].

The main objective of the article is to identify the most serious sources of market risk in the V4 countries (Slovakia – SR, Poland – PL, the Czech Republic – CR, Hungary – HU) and

Serbia (SRB)). The partial objective is to find whether there are statistically significant differences in the evaluation of sources of market risk (losing customers, strong competition in the area of business, stagnation of the market, unreliability of suppliers) among entrepreneurs in the countries examined by using selected mathematical statistics. The study focusses on the evaluation of market risk involving 1,905 small and medium-sized enterprises.

2. Literature Review

To an economist, risk is defined as the existence of uncertainty about future outcomes. Risk is a key factor in economic life because people and firms make irrevocable investments in research and product development, plant and equipment, inventory, and human capital, without knowing whether the future cash flows from these investments will be sufficient to compensate both debt and equity holders [17].

Risk management risk is a global process, and a driver for business process innovation. Its deployment needs to be supported by a knowledge base coupled to a decision support system [18]. In both developed and emerging economies, capital markets have become more important as a means of allocating resources. As a result, both banks and nonfinancial firms find that the number, type, and extent of their exposures have increased significantly. Finally, a spate of volatile financial innovations are simultaneously a source of risk and a means to mitigate it [17].

Studies have identified a number of factors that influence enterprise expansion and success. A fundamental element [19, 20] that has a positive impact on an organization's growth is the depth of "human capital" or "brain power. It can be said that risk management means a significant contribution to increasing the performance, value, and competitiveness of enterprises in dynamic changes of both the external and the internal environment.

Investing in prevention will greatly save the financial costs compared to the cost of dealing with the consequences of negative events" [21]. Published foreign studies [22-24] present positive impacts of risk management on the quality of information, decision making influenced by risk, increasing the company value, ensuring its competitiveness, achieving continuous improvement and prevention in order to ensure the smooth running of the enterprise. It is

concluded that introduction of wider usage of risk management at SMEs will dicrease business failure and support better management practices [25].

Some company boards of directors and management teams are still reluctant to embrace enterprise risk management (ERM) because of the uncertainty regarding its value to the bottom line. A survey of audit and risk management executives suggests that the use of ERM leads to increased management consensus, better-informed decisions, enhanced communication of risk taking, and greater management accountability [23]. It leads to greater management consensus, better-informed decision making, and increased accountability.

When designing interventions to develop markets for SME services, it is important to bear in mind a basic principle: all things being equal, subsidies distort markets [26]. SMEs success is tied in with local economic conditions as the SME sector's market growth usually occurs at the same rate as the macro economy as a whole; therefore, if there is an economic downturn, SMEs will usually also experience difficulty [27]. The importance of risk management is very topical issue for SMEs, as many authors have proved in their research [28-30].

According to [31, 32], the market related factors that exert the most negative influence on enterprise success are increased competition, limited market size, low demand, inefficient marketing, poor understanding of competitors, poor understanding of location and markets, and the inability to identify the target market [32, 33]. SMEs in many developing countries get around market failures and the lack of formal institutions by creating private governance systems in the form of long-term business relationships and tight, ethnically-based, business networks [34-37]. Firms of all sizes are increasingly being confronted by demands from multiple external stakeholders to demonstrate a commitment to corporate social and environmental responsibility [38]. Strategy development in small and medium sized enterprises emphasizes the sustainability and the value creation.

One response is 'supplier management for risks and performance' which takes a minimalist approach to incorporating environmental and social criteria to complement what are essentially economic-based supplier evaluations [39]. A number of drivers underscore the emerging opportunities for SMEs to become proactively involved in sustainable practices: accelerating cycles of technological innovation, the rapid globalization of networked communications, extended and interconnected supply chains, and rapidly changing markets [40].

Despite the positive outlook and growth trends for the sector, SMEs in the European Union - as in most developing economies - are faced with a number of challenges, such as insufficient

managerial skills, a lack of trained personnel, poor access to financial resources and low utilization of new technologies [4]. In the context of the difficult market situation it is more and more difficult for management to forecast, quantitatively measure, manage and foresee risk compensation when performing a firm's production activity [41].

3. Methodology and Methods

Sampling

The data collection was carried out in 2017 and 2018. The sample consisted of of 1,905 enterprises in the V4 and Serbia. The composition of the sample represents the small and medium-sized enterprises in the five countries analysed. The data was collected through a standard questionnaire, in the context of an online survey. The answers given by the respondents were recorded online in the five countries included in the questionnaire. With the content and form of the questionnaire used during the survey great attempts were made to ensure the questions were comprehensible, and to completely filter out any ambiguity, even in terms of the order of the questions.

The statistical unit of research was a single enterprise. The entrepreneurs were selected using 'the random selection method' (using the 'Randbetween' function) from specialized databases of entrepreneurs for each country (Slovakia – Cribis database, Czech Republic – Albertina database, Poland – Central Registration and Information on Business (CEIDG), Hungary – Hungarian Chamber of Commerce and Industry, Serbia – Statistical Office of the Republic of Serbia (OP3C)). With this method, randomness was ensured. Of the 1,905 small and medium-sized enterprises analyzed, Slovakia provided 487 respondents (25.6%), Poland 474 (24.9%), the Czech Republic 408 (21.4%), Hungary 216 (11.3%) and Serbia 320 (16.8%). The refusal rate was 30%; the questions were answered in 70% of all enterprises surveyed.

The questionnaire consisted of two parts. The first part involved 8 questions: social and demographic factors (gender and age of the entrepreneur, entrepreneurship education, size of business, length and region of business and sector of business). The second part included 22 questions designed to identify and evaluate key risks and their sources (market, economic, financial and credit risks, operational, personnel, security and legal risks). The questionnaire

was translated into the entrepreneurs' native languages (i.e. Slovak, Polish, Czech, Hungarian and Serbian).

The partial results of the risk evaluation by entrepreneurs (V4 + Serbia) demonstrated that the most serious risk for the SME segment is market risk. The authors consider it necessary to analyze sources of market risk and compare the perception of these sources among entrepreneurs in the various countries. The sources of market risk include losing customers (R11), strong competition in the area of business (R12), stagnation of the market (R13), and unreliability of suppliers (R14).

The respondents were asked to evaluate sources of risk on a Likert type scale as follows: a very low intensity of the source of risk (V1); a low intensity (V2); a medium intensity (V3); a high intensity (V4) and a very high intensity (V5).

In order to fulfil the main task of the paper the authors formulated the following statistical hypotheses:

H1: The country of entrepreneur is a factor when evaluating the sources of market risk.

H2: There are differences in evaluating (V4 + V5), the sources of market risk between entrepreneurs in the Visegrad group and Serbia.

In order to evaluate the given hypotheses which were essential to achieve the main objective of the article, we used tools from descriptive statistics (pivot table, relative and absolute frequency) in the first stage. In order to determine the frequency of entrepreneurs' answers, we used a simple sorting of the statistical sign (R11, R12, R13, R14) and a sorting according to two statistical signs (countries – V4 (SR, PL, CR, HU) + SRB, and type of answer (V1, V2, …, V5)). The Chi-Square calculator for a 5 x 5 Contingency Table was applied to accept or reject the statistical hypothesis H1. Descriptive characteristics are needed to calculate the Z-score. The Z-score method was applied to accept or reject the statistical hypothesis H2.

The level of significance of the testing was determined with a p-value of 0.05 and of 0.01. The conditions for carrying out the Z-test (normal distribution of samples according to statistical

features and the representativeness of the sample – number of respondents) were fulfilled. All these results were performed using the SPSS Statistics analytical software for data evaluation.

The entrepreneurs (All entrepreneurs / Those entrepreneurs who evaluated all of their resources) in Slovakia (487/487), Poland (498/474), Czech Republic (408/408), Hungary (388/216) and Serbia (329/320) were chosen on the basis of demographic characteristics (gender, age, education). The structure of the characteristics of the entrepreneurs who filled in the questionnaire was as follows:

- Slovakia (SR): male entrepreneurs – 325 (66.8%); female entrepreneurs – 162 (33.2%); age - up to 30 years – 99 (20.3%); from 31 to 50 years – 269 (55.2%); over 50 years – 119 (24.5%); level of education – secondary school without the school-leaving exam – 58 (11.9%); secondary school with the school-leaving exam – 257 (52.8%); university graduates – 172 (35.3%);
- Poland (PL): male entrepreneurs – 295 (62.2%); female entrepreneurs – 179 (37.8%); age - up to 30 years – 106 (22.3%); from 31 to 50 years – 271 (57.2%); over 50 years – 97 (20.5%); level of education – secondary school without the school-leaving exam – 100 (21.1%); secondary school with the school-leaving exam – 252 (53.2%); university graduates – 122 (25.7%);
- Czech Republic (CR): male entrepreneurs – 290 (71.1%); female entrepreneurs – 118 (28.9%); age - up to 30 years – 68 (16.7%); from 31 to 50 years – 107 (26.2%); over 50 years – 233 (57.1%); level of education – secondary school without the school-leaving exam – 77 (18.9%); secondary school with the school-leaving exam – 195 (47.8%); university graduates – 136 (33.3%).
- Hungary (HU): male entrepreneurs – 121 (56%); female entrepreneurs – 95 (44%); age - up to 30 years – 103 (47.7%); from 31 to 50 years – 91 (42.1%); over 50 years – 22 (10.2%); level of education – secondary school with the school-leaving exam – 146 (67.4%); university graduates – 70 (32.4%).
- Serbia (SRB): male entrepreneurs – 176 (55%); female entrepreneurs – 144 (44%); age - up to 30 years – 61 (19.1%); from 31 to 50 years – 194 (60.6%); over 50 years – 65 (20.3%); level of education – the achieved education – secondary school without the school-leaving exam – 6 (1.9%); secondary school with the school-leaving exam – 145 (45.3%); university graduates – 169 (52.8%).

Our third goal was to study the interrelationships of the group of countries and risk sources and risk perception level and determine differences between the V4 countries and Serbia. The use of loglinear analysis gives us a more detailed insight into the relathionship between the studied cathegorical variables.

Loglinear Analysis requires fewer distributional assumptions and limitations and can be applied in any circumstance in analyses of the reationships between cathegorical variables. In loglinear models, the cell probabilities for the cross-classified I x J x K contingency table are decomposed into multiplicative effects for each variable and for the associations among them [42] and subsequently the logarithms of the cell frequencies are formulated as a linear function of the estimated parameters. In this context, Loglinear Analysis is an equivalent to Analysis of Variance (ANOVA) with categorical independent variables and the dependent variable is of the logarithm of the cell probabilities.

As the algorithm takes the natural logarithm of these cell probabilities, large number of observation is required so as to avoid zero frequencies and observations should be obtained in same circumstances independently from each other. In our study, a general nonhierarchic log-linear model with three cathegorical variable was fitted.

The data were analysed by SPSS 23 software using LOGLINEAR package and are given in Table 1.

Table 1

Observed cell probabilities in the studied cross-classified 4 by 2 by 2 contingency table

			Country			
			V4		Serbia	
			Lower (V1-V3)	Higher (V4-V5)	Lower (V1-V3)	Higher (V4-V5)
Risk source	loosing consumers	Row N %	54,3% (m_{111})	45,7% (m_{112})	48,1% (m_{121})	51,9% (m_{122})
	strong competition	Row N %	56,6% (m_{211})	43,4% (m_{212})	53,1% (m_{221})	46,9% (m_{222})
	stagnation of market	Row N %	76,2% (m_{311})	23,8% (m_{312})	66,6% (m_{321})	33,4% (m_{322})
	unreliable suppliers	Row N %	78,0% (m_{411})	22,0% (m_{412})	71,1% (m_{421})	28,9% (m_{422})

In this 4 by 2 by 2 contingency table 7620 valid observations are cross-classified on three variables: Risk source (A) with levels i (i = 1 for loosing consumers; 2 for strong competition; 3 for stagnation of market; 4 for unreliable suppliers). Country (B) with levels j (j = 1 for V4 countries; 2 for Serbia) and Risk perception level (C) with levels k (k = 1 for lower values; 2 = higher values). The estimated nonhierarchical model can be denoted as follows:

$$\ln(m_{ijk}) = \lambda + \lambda_k^C + \lambda_{ik}^{AC} + \lambda_{ik}^{BC} + \lambda_{ijk}^{ABC}, \tag{1}$$

where m_{ijk} is the expected frequency for cell (i,j,k), λ is a constant and the other subscripted λ-terms sums to zero over each lettered subscript. For instance the set of terms λ_{jk}^{BC} describes the relationship between B and C (Country and risk perception level) and the following constraints should be satistfied:

$$\lambda_{11}^{BC} = -\lambda_{12}^{BC} = -\lambda_{21}^{BC} = \lambda_{22}^{BC} \tag{2}$$

The λ-terms can easiy be converted to odds ratios for example as follows [43]:

$$\lambda_{11}^{AC} = \frac{1}{4}\ln\left(\frac{\sum_j m_{1j1} \cdot \sum_{i=2,j} m_{ij2}}{\sum_j m_{1j2} \cdot \sum_{i=2,j} m_{ij1}}\right) \quad \text{and} \quad \lambda_{11}^{BC} = \frac{1}{4}\ln\left(\frac{\sum_i m_{i11} \cdot \sum_i m_{i22}}{\sum_i m_{i12} \cdot \sum_i m_{i21}}\right) \tag{3}$$

Model fitting can be performed by the so called IPF (Iterative Proportional Fitting). The algorithm first starts with arbitary values of the cell frequencies (equal frequencies) that satisfy the loglinear constraints. Then proportionally adjust the frequencies for a given cinfiguration (that is a cross-classified table for A and B, or B and C, or A and C). The process is repeated for each configuration until the estimated cell frequencies stabilize.

To generalize the results, we denote the complete set subscripts by Θ. Let m_θ and $\hat{m}_\theta$ the observed and estimated cell frequencies, then the pearson chi-square statistic for estimating the goodness of the model fit can be calculated as follows:

$$\chi^2 = \sum_\theta \frac{(m_\theta - \hat{m}_\theta)^2}{\hat{m}_\theta}$$

This summation is calculated only for the cells with nonzero estimated cell frequencies and the deegre of freedom for this statistic is T – P – C, where T denotes the total number of cells, P is the number of parameters and C indicates the number of cells with nonzero frequencies.

4. Empirical Results

The following Tables (2, 3, 4 and 5) summarize the results of the assessment of the sources of market risk (R11, R12, R13, R14) for entrepreneurs in the selected countries. The authors consider it important to investigate the differences in the values of the sources of market risk – the answers reflect a high intensity of the source of risk (V4) and a very high intensity of the source of risk (V5).

We accept (or do not reject) the hypothesis H1 because the p–values of the chi-square tests (see Tables 2, 3, 4 and 5) are less than the level of significance. We reject the hypothesis H2 because the p–value of the Z-score is not less than 0.05 (see Table 3).

In the loglinear analysis, we performed a hierarchical backwards elimination analysis by the Hiloglinear procedure of SPSS in order to test the partial associations between the effects. The test indicated significant effects of both country by risk source by risk perception level /Chi^2(3)= 9.9;p=0.020/ and the second order effects /Chi^2(7)= 495.2; p<0.001/. However, country by risk source effect was not significant / Chi^2(3)= 3.5; p=0.327/ and was not included in the final nonhierarchical model. The ninhierarchical model fitted the data well, as indicated by the high p-values for the goodness-of-fit statistics of the second- and third-order effects.

Table 2

The evaluation of "losing customers"

R11	Selected countries					Z- score (P- value[*])
	SR	PL	CR	HU	SRB	V4/SRB
V1	53	22	26	23	34	-1.658
	10.9%	4.6%	6.4%	10.6%	10.6%	0.096
V2	89	69	86	32	49	0.911
	18.3%	14.6%	21.1%	14.8%	15.3%	0.363
V3	127	163	110	61	71	2.509
	2.1%	34.4%	27%	28.2%	22.2%	0.012
V4	120	128	102	56	65	2.006
	24.6%	27%	25%	25.9%	20.3%	0.044
V5	98	92	84	44	101	-4.530
	20.1%	19.4%	20.6%	20.4%	31.6%	0.000
V4+V5	218	220	186	100	166	*-2.027*
[%]	44.8%	46.4%	45.6%	46.3%	51.9%	*0.042*
Sum	487	474	408	216	320	
	100%	100%	100%	100%	100%	
Chi-square	α = 0.05	55.568		α = 0.01	55.568	
P- value		<0.0001			<0.0001	

Notes: V1, V2, V3, V4, V5 – the evaluation of source of market risk; * level of significance is 0.05. Source: authors' own data collection.

R11: The structure of the entrepreneurs' answers (1905 entrepreneurs equals 100%): V1 – 158 (8.3% of entrepreneurs); V2 – 325 (17.1%); V3 – 532 (27.9%); V4 – 471 (24.7%); V5 – 419 (22%). The country of operation of the entrepreneur is the statistical significant factor when evaluating the source R11: "losing customers" (see Table 2; the P-value is less than 0.001). There are statistically significant differences between entrepreneurs in the V4 group and those in Serbia (V4+V5) when evaluating the market risk source R11 (see Table 2; the P-value of the Z-score is 0.042).

Table 3

Evaluation of "strong competition in the area of business"

R12	Selected countries					Z- score (P- value[*])
	SR	PL	CR	HU	SRB	V4/SRB
V1	24	20	28	12	26	-1.976
	4.9%	4.2%	6.9%	5.6%	8.1%	0.048
V2	67	60	64	24	59	-2.266
	13.8%	12.7%	15.7%	11%	18.4%	0.023
V3	163	147	168	60	86	2.457
	33.5%	31%	41.2%	27.8%	26.9%	0.014
V4	163	176	102	82	91	1.592
	33.5%	37.1%	25%	38%	28.4%	0.112
V5	70	71	46	38	58	-1.803
	14.4%	15%	11.3%	17.6%	18.2%	0.072
V4+V5	233	247	148	120	149	*0.206*
[%]	47.8%	52.1%	36.3%	55.6%	46.6%	*0.834*
Sum	487	474	408	216	320	
	100%	100%	100%	100%	100%	
Chi-square	$\alpha = 0.05$	48.732		$\alpha = 0.01$	48.732	
P- value		<0.0001			<0.0001	

Notes: V1, V2, V3, V4, V5 – evaluation of the source of market risk; * level of significance is 0.05. Source: authors' own data collection

R12: The structure of entrepreneurs' answers (1905 entrepreneurs equals 100%): V1 – 110 (5.8% of entrepreneurs); V2 – 274 (14.4%); V3 – 624 (32.8%); V4 – 614 (32.2%); V5 – 283 (14.8%). The country of entrepreneur is the statistically significant factor when evaluating the source of risk R12: "strong competition in the area of business" (see Table 3; the P-value is less than 0.001). There are no statistically significant differences between entrepreneurs of the V4 group and Serbia (V4+V5) when evaluating the market risk source R12 (see Table 3; the P-value of the Z-score is 0.834).

Table 4

Evaluation of "stagnation of the market"

R13	Selected countries					Z- score (P- value[*])
	SR	PL	CR	HU	SRB	V4/SRB
V1	68	60	66	21	33	1.577
	14%	12.7%	16.2%	9.7%	10.3%	0.114
V2	110	107	106	47	63	1.423
	22.6%	22.6%	26%	21.8%	19.7%	0.156
V3	218	166	165	90	117	1.251
	44.8%	35%	40.4%	41.7%	36.6%	0.211
V4	61	99	61	45	71	-2.311
	12.5%	20.9%	15%	20.8%	22.2%	0.020
V5	30	42	10	13	36	-3.389
	6.2%	8.8%	2.4%	6%	11.3%	0.007
V4+V5	91	141	71	58	107	*-4.041*
[%]	18.7%	29.7%	17.4%	26.8%	33.4%	*<0.001*
Sum	487	474	408	216	320	
	100%	100%	100%	100%	100%	
Chi-square	$\alpha = 0.05$	57.734		$\alpha = 0.01$	57.734	
P- value		<0.0001			<0.0001	

Notes: V1, V2, V3, V4, V5 – the evaluation of the source of market risk; * level of significance is 0.05. Source: authors' own data collection.

R13: The structure of the entrepreneurs' answers (1905 entrepreneurs equals 100%): V1 – 248 (13% of entrepreneurs); V2 – 433 (22.7%); V3 – 756 (39.7%); V4 – 337 (17.7%); V5 – 131 (6.9%). The country of operation of the entrepreneur is the statistically significant factor when evaluating the source of risk R13: "stagnation of the market" (see Table 4; the P-value is less than 0.001). There are statistically significant differences between entrepreneurs of the V4 group and Serbia (V4+V5) when evaluating the market risk source R13 (see Table 4; P- value of Z-score is less than 0.001).

Table 5

Evaluation of "unreliability of suppliers"

R13	Selected countries					Z- score (P- value[*])
	SR	PL	CR	HU	SRB	V4/SRB
V1	127	100	115	51	74	0.633
	26.1%	21.1%	28.2%	23.6%	23.1%	0.529
V2	159	125	122	51	67	2.885
	32.6%	26.4%	29.9%	23.6%	20.9%	0.004
V3	107	127	102	50	86	-0.953
	22%	26.8%	25%	23.1%	26.9%	0.342
V4	70	95	54	47	55	-0.176
	14.4%	26.8%	13.2%	21.8%	17.2%	0.857
V5	24	27	15	17	38	-4.441
	4.9%	20%	3.7%	7.8%	11.9%	0.000
V4+V5	94	122	69	64	93	*-2.722*
[%]	19.3%	5.7%	16.9%	29.6%	29.1%	*0.006*
Sum	487	474	408	216	320	
	100%	100%	100%	100%	100%	
Chi-square	α = 0.05	57.734	α = 0.01		57.734	
P- value		<0.0001			<0.0001	

Notes: V1, V2, V3, V4, V5 – the evaluation of source of market risk; * level of significance is 0.05. Source: authors' own data collection.

R14: The structure of the entrepreneurs' answers (1905 entrepreneurs equals 100%): V1 – 467 (24.5% of entrepreneurs); V2 – 524 (27.5%); V3 – 472 (24.8%); V4 – 266 (16.9%); V5 – 83 (6.3%). The country of operation of the entrepreneur is the statistically significant factor when evaluating the source R14: "unreliability of suppliers" (see Table 5; the P-value is less than 0.001). There are statistically significant differences between entrepreneurs in the V4 group and those in Serbia (V4+V5) when evaluating the market risk source R14 (see Table 5; the P-value of the Z-score is 0.006).

Table 6

Parameter estimates of the loglinear model I (country effect)

Effect		Esti-mate	Std. Error	Z-value	Signi-ficance	Odds ratio for V4 against Serbia	
						lower (V1+V2+V3) vs higher level (V4+V5)	higher (V4+V5) vs lower level (V1+V2+V3)
Country by risk source by risk perception level	loosing consumers	0.002	0.03	0.08	0.933	1.01	0.99
	market competition	-0.080	*0.03*	*-3.00*	*0.003*	*0.73*	*1.38*
	market stagnation	0.051	*0.03*	*1.81*	*0.070*	*1.23*	*0.82*
	unreliable suppliers	0.027	0.03	0.96	0.336	1.11	0.90
Country by risk source	loosing consumers	-0.035	0.03	-1.30	0.193	0.87	1.15
	market competition	0.044	0.03	1.65	0.098	1.19	0.84
	market stagnation	-0.004	0.03	-0.15	0.882	0.98	1.02
	unreliable suppliers	-0.005	0.03	-0.18	0.861	0.98	1.02

Table 7

Parameter estimates of the loglinear model II. (Risk perception level effect)

Effect		Estimate	Std. Error	Z	Sig.	odds ratio of lower level against the higher level	odds ratio of higher level against the lower level
Risk perception level by risk sources	loosing consumers	-0.239	0.03	-8.88	<0.001	0.38	*2.60*
	market competition	-0.222	0.03	-8.32	<0.001	0.41	*2.43*
	market stagnation	0.190	0.03	6.76	<0.001	*2.14*	0.47
	unreliable suppliers	0.271	0.03	9.65	<0.001	*2.96*	0.34
Risk perception level by country	V4	0.061	0.02	3.83	<0.001	*1.28*	0.78
	Serbia	-0.061	0.02	-3.83	<0.001	0.78	*1.28*

Table 6 presents the observed odds ratios for V4 against Serbia with respect to risk source and risk perception level. The observed odds ratio for the effect of country (V4 against Serbia) and risk sources (market competition vs other risk sources) on risk perception level (higher vs lower) is 1.38. That is the odds of a higher risk perception level (V4+V5) against the lower level (V1+V2+V3) in case of the V4 countries were 1.38 times the odds of Serbia for market competiton compared to other risk sources.

Hence, the V4 countries are more exposed to this type of risk but regarding the market stagnation and unreliable suppliers their odds is much lower. However, significant difference at 5% level can only be determined in case of market competition. The country and risk source effect was not significant at all indicating that each of these risk sources could occour in the same way in Serbia as well as in the V4 countries.

Studying the effect of the risk perception level on country and risk sources we could find more stornger and significant differences (Table 7). Lower risk perception levels are 2.136 and 2.956 times higher for market stagnation and unreliable suppliers than higher level compared to the other risk sources, the opposite is true for loosing consumers and market competition. Therefore market competition and loosing comsumers are more riskier than the other two risk sources and all countries are more exposed to them.

The observed odds ratio for the effect of country (V4 against Serbia) on risk perception level (higher vs lower) is 1.28. This implies that the odds of a higher risk perception level (V4+V5) against the lower level (V1+V2+V3) in case of Serbia were 1.28 times the odds of the V4 countries regarding all the risk sources. Hence, the Serbia is generally more exposed to the studied risk sources.

5. Discussion and Conclusion

According to the entrepreneurs' evaluations, the most serious source of market risk is losing customers. 22% of entrepreneurs (i.e. 419 individuals) reported that losing costumers is a very high intensity market risk. Only 6.3% (83) of entrepreneurs considered the unreliability of suppliers as a very high intensity source of market risk.

There are significant differences between entrepreneurs in the selected countries in evaluating sources of market risk (losing customers; strong competition in the area of business; stagnation

of the market; unreliability of suppliers). The country of operation of the entrepreneurs is the statistically significant factor when evaluating all sources of market risk. It is not surprising that management weaknesses are widely considered to be the most important internal growth constraint facing SMEs [44, 45]. An important success factor is whether the management of SMEs have the skills to be able to spot and to take opportunities in situations where resources are scarce and information is expensive [46].

There are statistically significant differences between entrepreneurs in the Visegrad group and those in Serbia when evaluating (as of high and very high intensity) the following sources of market risk: "losing customers", "stagnation of the market" and "unreliability of suppliers".

There are no statistically significant differences between entrepreneurs in the Visegrad group and those in Serbia when evaluating (as of high and very high intensity) "strong competition in the area of business" as a source of market risk.

Lower risk perception levels are 2.136 and 2.956 times higher for market stagnation and unreliable suppliers than higher level compared to the other risk sources, the opposite is true for loosing consumers and market competition. Therefore market competition and loosing comsumers are more riskier than the other two risk sources and all countries are more exposed to them.

The observed odds ratio for the effect of country (V4 against Serbia) on risk perception level (higher vs lower) is 1.28. This implies that the odds of a higher risk perception level (V4+V5) against the lower level (V1+V2+V3) in case of Serbia were 1.28 times the odds of the V4 countries regarding all the risk sources. Hence, the Serbia is generally more exposed to the studied risk sources.

Our findings have potentially important implications for managers and for the literature on risk management. Understanding the factors that affect small business performance "would enable public policymakers and small business advisors to better serve the small business sector" [47]. 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

Additional empirical research on risk identification, risk analysis, strategy implementation and control in the SME risk management process is needed. All risks must be taken into account during situational planning and forecasting, and economic and financial calculations, as well

as when planning and taking measures regarding production policy and the financial management of the enterprise.

This research provides valuable results regarding the business environment and risk management in small and medium-sized enterprises in the V4 countries and Serbia. However, the limitations of this study cannot be overlooked. These include the possibility that the entrepreneurs did not adequately understand the issues involved or that some statements in the questionnaire was expressed wrongly.

It is not possible to verify whether the questionnaire was really completed by the person responsible for risk management. Neither could it be verified whether the information provided reflected the real situation in the company. Finally, the survey was conducted in 5 countries, and therefore the results are geographically limited.

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