

SHOWING THE IMPACT OF THE OPERATIONAL RISKS POSED ON THE TOURSIM & TRAVEL SMES SUSTAINABILITY

Pregledni naučni rad
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Literature on risk and crisis management, sustainability, and multi-criteria decision making (MCDM) in sustainable engineering represent the theoretical framework of the research. The focus of the paper is the tourism and travel industry sector of with its supply chains: food and accommodation, travel and logistics, trade, and supply chains. The authors of the paper explored three internal risks, operational risk of unpredictable events and specific COVID-19 risk, the significance of their influence on the enterprises sustainability risk as a dependent variable. Also is explored the possible decision making impact on the strategy issues brought by these influences. To that purpose of the three internal risks assessment, a survey of 124 SMEs from Serbia was conducted in the first quarter of 2020. The hypothesis of the research, that the sustainability risk of SMEs from the T&T sector in Serbia would be significantly influenced by other two risks in 2020-is confirmed. Descriptive statistical analysis, Pearson's correlation coefficients, multiple regression linear equations, and f-DEMATEL method are used in the research. By exploring the correlation among more internal risks in SMEs from T&T industry and supporting them in making further decisions to simultaneously manage the exposure to these risks are main contributions of the findings. That also covers the literature gap between tourism risk management and crisis and adoption of sophisticated models of sustainability.

Key words: tourism and travel, SMEs, sustainability, risk management, sustainable supply chains, operational risks.

1. INTRODUCTION

The corona virus pandemic continues to develop, and the current economic outlook is highly uncertain. Therefore, there is a higher degree of uncertainty related to the forecasts than under normal circumstances. However, for the tourism and travel (abbr. T&T) industry sector and its supply chains, series of major international events and the magnitude of disaster risks which make tourism and travel industry sectors suffer some severe losses, the discussion about sustainable tourism became an important topic.

Nowadays, in tourism, the risk management more refers to planning and managing activities and processes the adverse effects of crisis and catastrophes on the sector. A tourist destination with all its businesses and supply chains significantly affects its own sustainability by being able to predict and adapt to market conditions changes. The sustainability is then based on using resources efficiently as well as delivering innovative planning and development strategies about risk management. Literature review as used in this article considers the key elements of crises and disasters and their effects on tourist destinations and puts an emphasis on the risk management processes for sustainable tourism (Ghanem et al. 2020; Grozdanic 2006).

With currently widespread travel bans and restrictions, as the global fight against the corona virus pandemic intensifies, global international passenger air traffic plummeted in March and is forecasted to remain extremely weak. Tourism contributes to the global Gross Domestic Product with 10.4 per cent and creates up to 10 jobs in the global employment growth, in the period of 2015-2019 (Turner 2020). The potential initial impact of partial shutdowns on activities in the G7 economies shows, looking ahead over the coming months, that sharp declines could be expected across all regions as the spread of coronavirus and widespread travel bans greatly restrict international travel. The pattern on outbound travel bookings largely mirrors the trends observed on inbound bookings in the early part of 2020, as more resilient than international air travel bookings.

At the local level, Serbian tourism, as a prospective industry sector, which is explored in the paper has very high T&T contribution to the economy, to employment creation, visitor impact, in total exports and sector characteristic spending, with an impressive impact of international visitors (Table 1).

Table 1. Indicators.

Indicators	2019
GDP Contribution of Total Economy	5.9% (total T&T GDP =USD 2,994.9 MN)
Travel & Tourism GDP Growth vs Real Economy GDP Growth	+5%: +3.1%
T&T Contribution to Employment (Over the last 5 years)	6.2% of total employment134.8 jobs (000's)
International Visitor Impact, % of Total Exports	USD1,975 MN in visitor spending (7.0% of total exports)
Sector Characteristics Spending (Leisure/ Business)	86% / 14%
Sector Characteristics Spending (Domestic/ International)	31% / 69%

Source: Authors, based on Oxford Economics & WT&TC 2020 data; Dimitrijevic et al. 2017.

Restricting activity in tourism, travel, and supply chains can be expected in Serbia too, as the production and service networks have already been impacted. The 2020 plan of the sector predicts about four million guests, more than half of which are foreign tourists, 10,600,000 overnight stays, with a high foreign exchange inflow. In 2019, T&T growth was about eight percent. Tourism losses regarding foreign exchange inflows are estimated to be around EUR 300 million in five months, given the very high growth in tourism traffic in January, and February, which initially indicated one of the best years in tourism. Travel agencies are expecting losses from 5 -50 million Euros in 2020. Numerous group arrangements crucial for Serbian tourism in pre-season have been cancelled, and hotels have been closed. Serbian tourist, and travel organizations will need to put a lot of efforts into promotional activities targeting both foreign and regional markets as well as domestic tourists to travel more around the country.

The country in all scenarios could be the illest affected through tourism as a key area of vulnerability, as some institutions assume that the impact of the pandemic can be contained by the end of the 2020. Because of that, the motivation for the research of the risk losses dimensions caused by two operational risks to the sustainability in the T&T supply chains, directly through the assessment of the SMEs businesses in the tourism sector.

The organization of the paper is as follows: after abstract and introduction, the review of the literature is given. The results of the empirical research of

the attitudes of SMEs from T&T sector in Serbia are presented in the third part, through the sample definition, methodology and key results elaboration of the operational risk of unexpected events impact and specific operational COVID-19 risk which affect the SMEs in the tourism industry, their sustainability strategy and the ex-ante distribution of its operational losses: lost market, jobs, revenues, bankruptcy situation. Discussion and conclusions, with references are presented in the last section of the paper.

2. LITERATURE REVIEW

Uncertainty, and Risk Management help business practices of SMEs to be dialed into this uncertain and sustainable strategy. Many SME companies have risk management programs which might sound similar, but really address just part of the challenge, as any loss caused by internal processes, people, systems, or by external events such as a global pandemic, such as Covid-19 pandemic, can be classified under operational risks. The most often analyzed operational risks are: fraud issues, practices of hiring and safety of the working place, laws and regulations, clients, products and business practices, damage to physical assets, business disruption and systems failures, supply-chain disruptions and business continuity, delivery, and process management, hazards, and diseases. Very often, risks of uncertainty, operational risk, and risk of hazards are also defined as event risks. COVID-19 can be categorized as an operational risk as well. Failed policies of procedures or systems may cause an increase of such operational risks which limits the SMEs broader risk controls and post-impact action.

Despite operational and market shocks being independent, operational risk in the tourism industry may affect an SME's exposure to market risk, both directly and indirectly.

In notable risk management and supply chain collaboration textbooks (Grozdanic et al. 2012; Crouhy et al. 2014) main characteristics of the operational risk for SMEs are discussed, and the operational risk losses (Hull 2015; Ebnother et al. 2001; Moscadelli 2004). Findings are evident that the number of resources necessary for operational risk may be more than what is needed for a market studies risk. The parameters of the operational loss processes (Chavez-Demoulin et al. 2006) need internal firm and market data for the estimation. These findings use a

Some studies connect communication constraints within an organization with the aggregation of risky positions (Amin 2016; Biais 2014; Chernobai 2016).

In bridging theories approach, consistent with financial theory, SMEs in vulnerable pandemic risks would have to satisfy multiple stakeholders, the need of closer collaboration among the partners within the supply chain and closer define sustainability, and risk management issues of tourism and travel sector.

The basic phenomena of the risk management literature are events that create a shock to the industry with the potential to affect long-term confidence in a product or organization in tourism and travel sector. The market potential is damaged with pandemic risk in the entire region of Western Balkans along with infrastructure, installations, and the reputation of the tourism business, which confirms the crisis, and in Serbia as a part of the region. The framework of the T&T crisis management would have to pass phases from the pre event, prodromal, emergency, and intermediate, to recovery (Amit & Wernerfelt 1990; Freeman 1994). When the sensitivity of tourist is negatively affected, crisis are not limited to a geographic area, or duration, but varies across markets and segments. Pandemics such as the corona virus, and sudden global economic events are most likely to lead to travel cancellations (Figure 1).

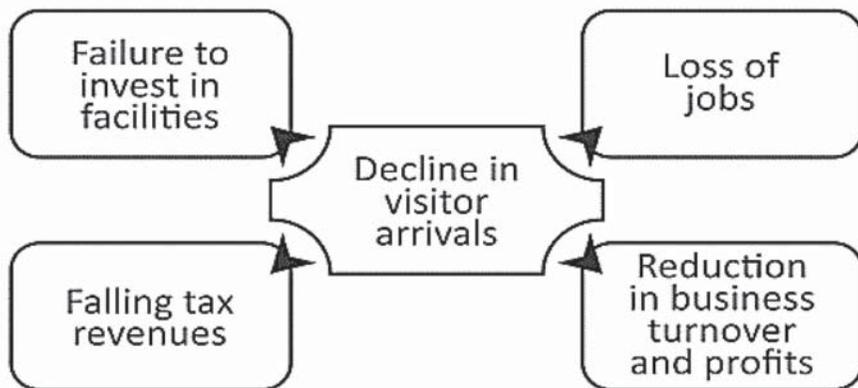


Figure 1. Impacts of Tourism Crises

Source: Nulty 2011.

Elements which could be affected by a crisis, (Song 2011) if there was an epidemic impact upon a country, tourist destination or business/organization are employees, economic viability, visitors, services, facilities, and reputation. The crisis

affected SMEs as organizations and as business, too. However, when a disaster affects a community, industry sector, as T&T is also affected. Operators are a part of the community disaster management too.

The studies on the supply chains management and modeling in tourism concern the problems of the strategic interactions inter-firms, issues of coordination and coherence. Many components such as accommodation, hotels, hostels, pubs, restaurants, transport, and excursions, food production, handicrafts making are involved in the supply chains of T&T. Also, there is waste disposal and other infrastructure) that supports T&T in various destinations. As the touristic product has high service component, the supply chain in tourism differ from chains in general. Because of that the SMEs in supply chains of tourism most often focus on the emerging from internal actions and operations within companies and on involving in inter-organizational actions and collaboration with external supply chain partners, as fundamental approaches of the risk management principles. The frequency of supply chain disruption can be predicted by firms' performance regarding these principles and strategies.

Managing risks in T&T supply chain in passive, internal, collaborative, and integral patterns, risk management styles, the standardized management systems, and the supply chain have to be discussed in SMEs strategic approach to the successful functioning on the market.

All suppliers of services and goods make the supply chain in tourism. That include their delivery of the product to consumers, managing them is regarded as crucial. To maximize the profit from T&T sector, it is needed to permanently improve the satisfaction of the consumers, and visitors from targeted source markets while efficiently managing the operations within the supply chain (Figure 2).

For SMEs in supply chains are crucial to increase and sustain demand in tourism managing supply through offering tourism products that are representing demand. Small and medium companies from T&T sector can successfully ensure customers satisfaction (Intojunyomg 2016).

In defining the main components of three internal risks of SMEs, the aspects from Table 1 are considered: contribution of the T&T sector to Serbian economy and to GDP growth, creation of new jobs, exports, and spending. Also, the decline in visitor arrivals, from Figure 1. on the crisis in T&T is taken into the

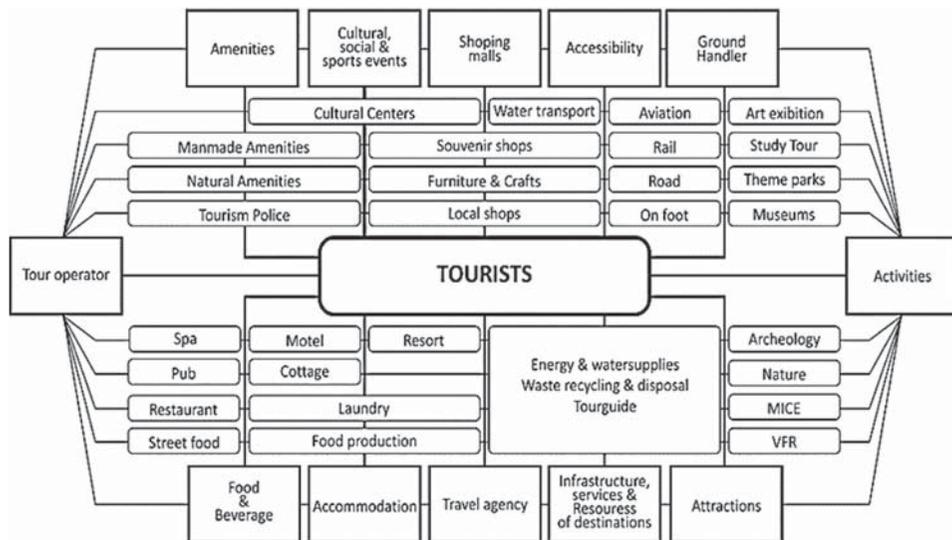


Figure 2. T&T components of supply chain management.

Source: Zhang 2009.

Figure 2. has been consulted in defining the main sectors of T&T industry for this research and assessment of the potential effects of these risks which might make long-lasting problems in their business sustainability. They are defined as:

- Food & Accommodation (including hospitality industry, pubs, restaurants, hotels, motels, private apartments, resorts, spas, cottages, laundry, food production, street food),
- Travel & Logistic (including air traffic, railway, water transport, travel agencies, tour operators, infrastructure services & resources of destinations, energy & water supplies, waste recycling & disposal, tour guides), and
- Trade & Supply chains (including attractions, archeological sites, nature, MICE, activities, cultural, social & sports events, shopping malls, shops, cultural centers).

The assessment of the SMEs from T&T industry in Serbia, focuses on perceptions regarding the influence of operational risk of unpredictable events (ORUE) factors, which do not include all, but most of the events such as external theft, natural disasters, new laws impact on business, suppliers problems caused by various events which affect T&T SME's business sustainability in 2020.

The sustainability risk of SMEs in T&T industry and its supply chains in Serbia is dependent variable in these research. This risk is seen through potential employees' number reduction in the SMEs, the loss of the tourism market, liquidity reduction, revenue decrease, bankruptcy, and termination of the enterprise, and would depend on the impact of mentioned operational two risks.

3. MATERIALS AND METHODS

3.1. Methodology

The objective of the research is to investigate the assessment of the SMEs from tourism and travel industry in Serbia, and the corona virus risk impact on their sustainability in 2020 as well as to demonstrate the approaches of 10 experts from the T&T industry.

The research hypothesis is that operational risks, the risks of unpredictable events and specific C-19 risk that SMEs from tourism sector from Serbia are exposed to, significantly affect their sustainability in 2020.

There are two independent variables: the operational risk of unpredictable events (abbr. ORUE) and the operational COVID-19 risk (abbr. C-19). There is also one independent variable: sustainability risk (abbr. SR).

Means, standard deviation, and Pearson's product-moment correlation coefficients (r) were used to observe data in the distribution, and cross-correlation structure between various kinds of uncertainty and COVID-19 risks. It takes the value from 0 to 1 (positive correlation). To qualitatively determine the correlation strength between variables, the following interpretation of its absolute value $|r|$ is used commonly: $|r|=0$: Complete absence of correlation; $0 \leq |r| < 0.25$: Weak correlation; $0.26 \leq |r| < 0.50$: Relatively weak correlation; $0.51 \leq |r| < 0.75$: Emphasized correlation; $0.76 \leq |r| < 1$: High correlation; $|r|=1$: Very high correlation. The indicator of multiple linear correlations is used for the quantification of the relationship of observed phenomena, i.e. variables. Regression analysis determined the analytical relationship between the phenomena and variables.

The Fuzzy-DEMATEL method (abbr. f-DEMATEL) (Huai-Wei 2019) is used as very useful functional techniques for finding a cause-and-effect relationship between estimated criteria in the decision-making process in any system, concerning suitable to analyze and develop various structural parts SMEs companies in

To apply this method gives the authors the opportunity to analyze the fuzzy variables causal relationships of and define the level of interactive impact.

Since the decision-making process requires considering and defining certain factors, especially when it comes to complex areas such as risk management in travel and tourism companies, previous theoretical papers were consulted on multi-criteria decision making approach using hybridized IT2FS-DEMATEL-AHP-TOPSIS and the IT2FS-TOPSIS method. A model for evaluating risks is used, based on a concept of classical sets, fuzzy sets, and institutional fuzzy sets to prioritize criteria in a typical multi-step decision problem (Zadeh1965) and to analyze a possible crisis management strategy for SMEs in tourism in Serbia.

Except from respondent in the regular sample of the research, it was necessary to have the opinion of the team of experienced tourism experts. Thus, a team of 10 experts (representatives of professional associations from hotel accommodation, hospitality industry, transportation, travel agencies, food, and supply chains) is selected, comparing criteria for operational risk of unexpected events (ORUE), COVID-19 risks (C-19) and sustainability risk (SR) to determine the crisis management strategy in tourism.

To evaluate the options, it is important to consider an effective set of criteria. They were identified (ORUE, C-19, SR) to evaluate the problem, using a fuzzy matrix of direct estimates. Respondents identified the relationships between the criteria (ORUE, C-19, SR) for the crisis management strategy in tourism by giving their views on a scale of comparison from zero to four.

In f-DEMATEL is used the approach of trapezoidal membership functions. The advantage of these functions is in easing the acquiring the necessary parameters characterizing the membership function which are all related to real features of the weights for the influence modeled. Since trapezoidal fuzzy numbers are not suitable for matrix operations, it was necessary to convert or desensitize intuitively trapezoidal fuzzy numbers into crisp numbers. A causality and effect diagram consisting of (D + R) and (D-R) criteria values is formed too.

3.2. Research population

The population for this research includes the touristic SMEs from Serbia from the following categories: accommodation, adventure sports and team building, art galleries, conference events, services and functions venues, health and beauty, tourist attractions, tours, travel and transport services, restaurants, souvenir shops

and spas. Therefore, the population included 124 touristic, travel and supply chain related registered businesses. The selected participants voluntarily accepted to fill in the questionnaire for the research.

3.3. Data collection

Secondary data consists of an in-depth review of literature on tourism, travel, and supply chain in Serbia, strategy implementation and analysis of the tourism business environment. Journal articles, books, tourism website and the government documents are used for collecting secondary data. Primary data has been collected from the tourism and travel operations in Serbia. The research instruments are designed using the literature constructed to meet the objectives of the research.

3.4. Measuring instrument

The research was conducted online, in partnership with the national tourist organizations and Departments of Tourism, Trade and Culture in the Chamber of Commerce. It lasted from March 2 to 30 of April 2020. The questionnaire was constructed using a five-point Likert-type scale with 18 questions in four parts. The following are the sections of the measuring instrument:

Section I with 6 questions, concerns the demographics issues at the industry operations, the legal form of organization, number of employees, the position of the respondents (manager, owner, director of SME) the SME's revenue in 2019, and the origin of revenues,

Further three sections present responses based on a Likert's scale (1 = Disagree strongly, 2 = Disagree, 3 = Not sure, 4 = Agree and 5 = Agree strongly), regarding the perceptions of the influence of 3 risks, so:

Section II with 4 questions focuses on perceptions regarding the influence of operational risk of unpredictable events (ORUE) factors, such as external theft, natural disasters, and new laws impact on business, suppliers, which affect T&T SME's business sustainability in 2020.

Section III with 3 questions concerns perceptions of SMEs regarding factors of the C-19 risk such as unprecedented health, social and economic challenges, the immediate pressure experienced by the SMEs self-employed workers in the tourism industry, the need for the direct legislative and financial power over COVID-19 matters, and the sustainability performance extent or level of the tourism

Section IV with 5 questions addresses perceptions of SMEs from the T&T sector regarding factors of SMEs sustainability risk demonstrated through: the employees' number reduction, the loss of the tourism market, liquidity reduction, revenue decrease, bankruptcy, and termination.

3.5. Key results

This section presents the key findings according to the data interpretation. The first section includes the demographics followed by the results emanated from the factor analysis. Its scope is the tourism sector: food & accommodation, travel & logistics and trade & supply chains in tourism. SME representatives answered questions and gave their estimates the impact of two operational contingency risks, general and special Covid-19 their firms are exposed to and on the viability of their businesses in 2020. The correlations between the impacts of these risks are calculated. Beside that the crisis management strategy views of 10 experts has been explored by the f- DEMATEL method and shown in a separate diagram. It could be useful to companies from the sector in planning their future steps in decision-making processes.

The frequencies and percentage representation in a research sample is presented in (Table 2) according to the main touristic activity of the company, the position of the respondents, the company's revenue in 2019, and the origin of revenues.

Table 2. Demographics.

Descriptive statistics	Element	Count	Prob	Total	Total Prob
The main touristic activity of the SME	Food & accommodation	64	0.51613	124	1.0000
	Travel & logistics in tourism	38	0.30645		
	Trade & supply chains in tourism	22	0.17742		
The position of the respondents	the business owner	70	0.56452	124	1.0000
	manager / director of the company	54	0.43548		
The SME's revenue in 2019	less than 10.000 €	34	0.27419	124	1.0000
	from 10.001 to 50.000 €	38	0.30645		
	from 50.001 to 500.000 €	24	0.19355		
	over 500.001 €	28	0.22581		
The origin of revenues	foreign tourists and travel	101	0.81452	124	1.0000
	domestic market	23	0.18548		

Most of sample make Serbian SMEs from food & accommodation, 51.61%, the business owners as respondents, 56.45%, and firms with revenue from 10.001 to €50.000, 30.64%, and with foreign market (foreign tourists and travel), 81.45%, as origin of their revenues. According to the legal form, all 124 companies or 100% belong to independent private companies, from 10 to 250 employees.

The values of statistics are given in Table 3. The questions in the survey are set according to the rule of the above mentioned five-point Likert's scale.

Table 3. Respondents' opinion on risk factors.

Variable	Questions	Mean	Std Dev	Std Err Mean
Operational risk of unpredictable events	External theft	3.7741935	1.3545390	0.1216412
	Laws	3.8387097	1.2256546	0.1100670
	Natural disasters	3.9919355	0.8600999	0.0772393
	Suppliers	3.9838710	1.0279340	0.0923112
All variables - operational risk of unpredictable events (ORUE)		3.8971774	0.7795742	0.0700078
COVID-19 risk	Unprecedented health, social and economic challenges	3.7903226	1.0062746	0.0903661
	The immediate pressure experienced by SMEs, self-employed people in the tourism industry	3.5483871	1.2710334	0.1141422
	The need for the direct legislative and financial power over COVID-19 matters	3.6209677	1.1518295	0.1034373
All variables- COVID-19 risk (C-19)		3.6532258	0.7772734	0.0698012
Sustainability risk	The number of employee's reduction	3.6935484	1.3803347	0.1239577
	The loss of the touristic market	3.6129032	1.3172383	0.1182915
	Liquidity reduction	4.0080645	0.8505949	0.0763857
	Revenue decrease	3.6774194	0.9673397	0.0868697
	Bankruptcy & termination	3.7177419	1.3468451	0.1209503
All variables - Sustainability risk (SR)		3.7387097	3.7271510	1.1066040

Of all threes researched risks, the highest average score of 3.89 is achieved for all variables of the operational risk of unpredictable events (ORUE) group of factors. Within this risk the highest impact of 3.99 have the natural disasters. The

on SMEs, self-employed people in the tourism industry, unprecedented health, social and economic challenges, with the need for the direct legislative and financial power over COVID-19 matters. For this group of factors the average score is 3.65, where with the question of unprecedented health, social and economic challenges has the highest score of 3.79. All the variables for Sustainability risk (SR) group reached the average score of 3.73, where the liquidity reduction has got the highest impact of 4.00.

The cross-tabulated values for the main touristic activity of the company, and the company's revenue in 2019 are given in (Table 4):

The highest number of companies were (26) operating in the food and accommodation (hospitality industry, restaurants hotels, motels) are those with the revenue from € 10 thousand to € 50 thousand, and just one company in tourism with the revenue over € 500,001 in 2019. Cross-tabulated values for the main tourist activity of an SME and the market, domestic or foreign where the company's revenue in 2019 comes from are presented in Table 5:

The food and accommodation (hotels, motels, hospitality industry, and restaurants) is the main touristic activity of the company in most of the samples (51), with the foreign market as one the revenues come from the Pearson correlation value.

Strong correlation is founded between the independent variable, Unpredictable events operational risk, and Sustainability risk as the dependent one with the coefficient, 0.9164. The determination coefficient is 0.9164, which shows how accurately the Sustainability risk as a dependent variable correlative to the independent variable Unpredictable events operational risk can be predicted, that is with 83.97%. The total determination coefficient is 0.859204 (with 85.92% can be explained the variability of the Sustainability risk, dependent variable, by the two independent variables). The correlation between the variables is strong.

The statistical significance score sums it up [F (2; 121) =369.2008, $p < 0.0001$].

The independent variable operational risk of unpredictable events affects the sustainability risk, a dependent variable with 65.54%, while the independent variable COVID-19 risk affects the sustainability risks- dependent variable with 29.58%. This confirms the research hypothesis that the unpredictable operational events risk level and the COVID-19 risk level significantly influence the SMEs from T&T sector in Serbia sustainability risk level. A multiple regression linear equations were formed, which read:

Table 4. Cross-tabulated values for the main touristic activity, and the company's revenue in 2019.

The main SME's activity / revenue in 2019	Food & Accommodation				Travel & Logistics in Tourism				Trade & Supply Chains in Tourism				All	
	N	Column %	Row %	% of Total	N	Column %	Row %	% of Total	N	Column %	Row %	% of Total	N	% of Total
less than 10,000 €	7	10.94	20.59	5.65	15	39.47	44.12	12.10	12	54.55	35.29	9.68	34	27.42
from 10,001 to 50,000 €	26	40.63	68.42	20.97	8	21.05	21.05	6.45	4	18.18	10.53	3.23	38	30.65
from 50,001 to 500,000 €	11	17.19	45.83	8.87	8	21.05	33.33	6.45	5	22.73	20.83	4.03	24	19.35
over 500,001 €	20	31.25	71.43	16.13	7	18.42	25.00	5.65	1	4.55	3.57	0.81	28	22.58
All	64	100.00	51.61	51.61	38	100.00	30.65	30.65	22	100.00	17.74	17.74	124	100.00

Table 5. Cross-tabulated values for the main SME's activity and the market of the company's revenue in 2019.

The main SME's activity / Origin of the revenue	Food & accommodation				Travel & logistics in tourism				Trade & supply chains in tourism				All	
	N	Column %	Row %	% of Total	N	Column %	Row %	% of Total	N	Column %	Row %	% of Total	N	% of Total
Foreign tourists and travel	51	79.69	50.50	41.13	30	78.95	29.70	24.19	20	90.91	19.80	16.13	101	81.45
Domestic market	13	20.31	56.52	10.48	8	21.05	34.78	6.45	2	9.09	8.70	1.61	23	18.55
All	64	100.00	51.61	51.61	38	100.00	30.65	30.65	22	100.00	17.74	17.74	124	100.00

$$\begin{aligned}
 \text{Sustainability risk} &= -0.14374 + \\
 &+ 0.6999864 \cdot \text{The operational risk of unpredictable events} + \\
 &+ 0.3168993 \cdot \text{COVID - 19 risk}
 \end{aligned}
 \tag{1}$$

To further assess the impact of operational risks on the sustainability of SMEs, an f-DEMATEL method was calculated. Table 6, gives the linguistic values of the impact of 10 experts' views (ORUE, C-19 and SR) on the Sustainable strategy in tourism.

10 experts' average opinions for the criteria (ORUE, C-19, SR) for the strategy Sustainability in tourism are presented in Appendix C Table 2. These values are returned as the answer values for the criteria expressed with crisp numbers.

The total relation matrix for ORUE, C-19, SR is presented in Table 7.

In Figure 3, a Causal Diagram is given on the performance and significance of the criteria set for (ORUE, C-19 & SR) strategies. Based on the obtained importance and standardized values of its ranks it can be seen that the most significant criterion for a defined number of experts was the criterion, SR 31.09 or 33.76%, (1), then the criterion, ORUE, 30.77 or 33.41%, (2) and lastly criterion C-19, 30.24 or 32.83%, (3). The criterion ORUE is of great importance and a great degree of satisfaction falls into the quadrant Keep up the Good Work category. The C-19 criterion is of great importance, but a small degree of satisfaction belongs to the Concentrate Here category. The SR criterion is of little importance, but it gives great satisfaction, it belongs to the quadrant Possible Overkill category.

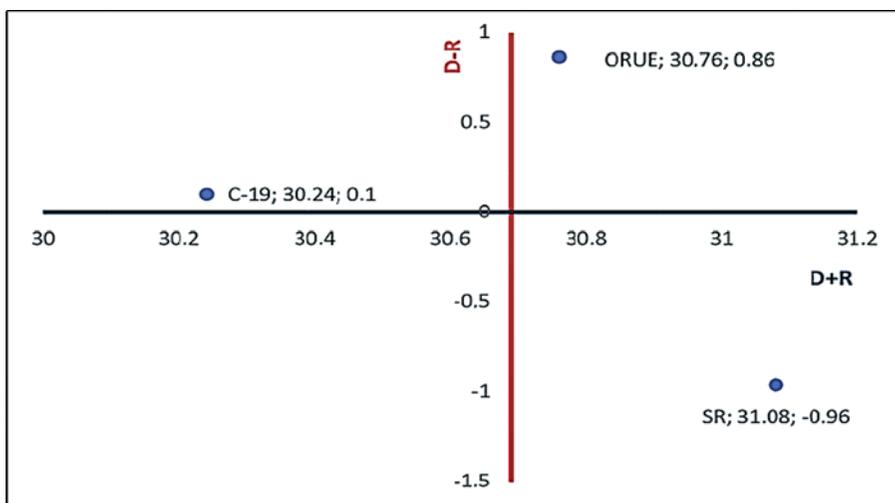


Figure 3. A causal diagram of the criteria set (ORUE, C-19 & SR).

Table 6. Experts' views on the criteria set (ORUE, C-19 & SR).

	ORUE	C-19	SR
ORUE	N	VH, M, H, VH, M, H, HL, VH, VH, M	VH, H, VH, H, H, M, VH, M, VH, H
C-19	H, M, H, VH, M, H, M, M, H, H	N	VH, VH, M, M, VH, H, VH, VH, M, VH, M
SR	M, H, H, VH, H, H, M, H, H, H	M, M, VH, H, M, H, VH, M, H, H	N

Table 7. The total relation matrix for the criteria (ORUE, C-19 & SR).

	ORUE	C-19	SR	D	R	D+R	(D+R) rank	D-R	(D-R) rank	ω_i	W_i (%)	W_i rank
ORUE	4.92	5.28	5.61	15.81	14.95	30.76	2	0.86	1	30.77	33.41	2
C-19	5.02	4.76	5.39	15.17	15.07	30.24	3	0.10	2	30.24	32.83	3
SR	5.01	5.03	5.02	15.06	16.02	31.08	1	-0.96	3	31.09	33.76	1
	/	/	/	/	Mean	30.69	Mean	0.00	Total	92.11	100.00	/

4. DISCUSSION

The authors' analysis demonstrates a clear structure of different patterns of how SMEs proactively assess operational risks, internal, and integral with other risks of the company, as sustainability risk is. The authors found that firms pursuing an inter-functional orientation (collaborative and integral) face the lowest levels of operational risk supply chain disruption, which is very important for the supply chain in the sector. The operational risk of unpredictable events make up two third of the impact on sustainability risk, while COVID-19 risk makes up 1/3 of the total impact. Strategically speaking, there are various examples of combining different approaches that treat uncertainty (fuzzy access) with traditional multi-criteria techniques, such as TOPSIS, VIKOR, AHP ANP which are consulted for the purpose of the paper and encouraged the use of f-DEMATEL method. It can be confirmed that strategy which simply concentrate on having greater control of internal operations of risk management of SME are not vigorous enough to stop at the supply chain level the negative impact of a disruption.

Furthermore, the excellent performance of integral risk management strategies also suggests that collaboration between buyers and suppliers in the industry of T&T can ensure the efficacy of internal business continuity plans and security procedures (Alexander 2003; Jobst 2007; Larsen 2015).

The analysis of risk management in tourism in previous studies concerned its reactive internal initiatives within a firm concerning one kind of a risk. The internal sustainability risk of SMEs in correlation with the impact of the other risks exploring has motivated the authors to use the literature, literature on the sustainability, and risk management as a broader framework to emphasis the interconnection and correlations of internal risks of the firm. It also shows the importance of a multi-risk management approach.

When an exogenous event results in a tourism supply chain in disruption, an SME will try to put its operations under control through internal capabilities. It implies that risk management strategies in the tourism sector and its supply chain designed proactively in advance with relevant partners could be even more beneficial. Also, there is little empirical evidence showing the current situation of risk management in tourism and trade as well as in their supply chains.

5. CONCLUSIONS

The subject of this research is the assessment of ongoing COVID-19 operational risk in the most active industry sectors in Serbia, tourism, travel, and their businesses. The findings show valuable results and contribute to the literature on risk management and sustainability in tourism. Predictions about a tourist season is very pessimistic and the pandemic has paralyzed Serbia and the surrounding countries of Western Balkans too, where tourism is a strategic industry of importance, along with logistics, transportation, and trade in tourism supply chains.

Problems make the standstill in tourist reservations. It is very hard to keep the employees reducing the cost of the business at the same time.

Serbia has taken a measure of repayment of minimum wages to all employees. The Serbian Government would distribute additional 60,000 vouchers to domestic tourists (a total of 160,000) to compensate for the 2020 year's decline of foreign guests visitors.

Analyzing the literature concerning these categories reveals that little attention is given to the categories of risk and especially to treatment of multiple company risks and their interaction (Peters & Sisson 2006; Tversky, & Kahneman 1975). The research provides understanding of risk management, tourism principles, implementation practices enabling SMEs as decision-makers and their supply chains partners to choose an optimal risk strategy. For researchers, insights from this article provide a foundation for further development and improvement of the models, hypothesis development, and empirical testing of various risks internal relationships.

Limitations of the research are following: the sample could be bigger if it were not conducted at the time of growing problems in tourism sector, the support measures by the funds and governments could not be included because they were in the initial discussion phase and the comparison of situations in the countries mentioned in this paper would be possible at least half a year after the beginning of the pandemic.

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Prikaz Uticaja operativnih rizika na održivost MSP iz oblasti turizma i prometa

Teorijski okvir istraživanja predstavlja literatura o kriznom menadžmentu i upravljanju rizicima, održivosti i višekriterijumskom sistemu odlučivanju (MCDM) u održivom inženjerstvu. Oblast istraživanja u radu je industrija turizma i prometa sa svojim lancima snabdevanja: ugostiteljstvom i hoteljerstvom, putovanjima i logistikom, trgovinom i lancima snabdevanja. Autori rada istraživali su tri unutrašnja rizika, operativni rizik od nepredvidivih događaja i specifični COVID-19 rizik i značaj njihovog uticaja na rizik održivosti preduzeća kao zavisne varijable. Takođe je istražen i mogući uticaj ovih rizika na donošenje odluka o strateškim pitanjima preduzeća. U svrhu procene uticaja ovih uticaja sprovedeno je empirijsko istraživanje stavova predstavnika 124 MSP iz ove industrije Srbije u prvom tromesečju 2020. godine. Rezultati su potvrdili valjanost hipoteze istraživanja, da na rizik održivosti MSP iz sektora turizma i prometa u Srbiji značajno utiču druga dva operativna rizika. U istraživanju su korišćene: deskriptivna statistička analiza, Pearsonov koeficijent korelacije, linearne jednačine višestruke regresije i f-DEMATEL metoda. Glavni doprinosi rada su u samom istraživanju povezanosti više internih rizika u malim i srednjim preduzećima iz industrije turizma i prometa i njihovom uticaju

na održivost i donošenje daljih odluka za istovremeno upravljanje izloženošću tim rizicima. Rad takođe doprinosi pokrivanju nedovoljno istraženog jaza u literaturi između upravljanja rizikom i kriznim menadžmentom u turizmu i primene sofisticiranih modela održivosti.

Ključne reči: turizam i promet, MSP, održivost, upravljanje rizikom, održivi lanci snabdevanja, operativni rizici.

Rad prijavljen: .

Rad recenziran: .

Rad odobren: .