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Risky Travel? Subjective vs. Objective Perceived Risks in Travel Behaviour—Influence of Hydro-Meteorological Hazards in South-Eastern Europe on Serbian Tourists

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Abstract: In terms of climate related security risks, the region of South-Eastern Europe (SEE) can be identified as one of the world's hot spots. As weather-related hazards continue to increase in numbers and spatial distribution, risk perception in the tourism industry becomes even more important. Additionally, people's perception of natural hazards is one of the key elements in their decision-making process when choosing a travel destination. Although a vast number of studies have examined aspects of risk perception, an integrated approach which considers both objective and subjective factors related to the tourism industry and hydro-meteorological hazards remains relatively scarce. This pioneering study inspects the causality between objective perceived risks, as well as subjective risk factors. A methodological approach and the obtained results present a certain novelty since the previous conceptualized Psychological Preparedness for Disaster Threat Scale (PPDTS) was applied for the first time in the tourism industry. The obtained results reveal the presence of a statistically significant relationship between objective risks and certain subjective risk factors (gender, age, education, prior experience, anticipation, and awareness). Therefore, this study may offer a conceptual platform for both theoretical and practical implications for enhanced approaches oriented toward more qualitative risk management at a given travel destination, in regions prone to hydro-meteorological hazards.

Keywords: objective risk factors; subjective risk factors; psychological preparedness; natural hazards; hydro-meteorological hazards; travel destination; Serbian tourists; risk management; South-Eastern Europe

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1. Introduction

Natural hazards present threat to humans and the natural environment, and they result from a rather complex processes of interaction between natural and anthropogenic systems. An improved understanding of these interactions elevates these processes from an area of pure natural phenomena to the domain of social and psychological occurrence [1]. A number of recorded natural disasters in the world has a positive tendency from the

beginning of systematic observations (dating from 1975 onwards), which is reflected in their variability, generic type and frequency, as well as geospatial distribution. As pointed out by Lukić et al. [2], Europe was mostly affected by hydro-meteorological hazards. Those events can often lead to the occurrence of various risk elements that encompass: environmental changes, the population, infrastructure, and socio-economic aspects e.g., [3–5].

In terms of climate related security risks, South-Eastern Europe (SEE) could be identified as one of the world's critical areas [6]. This geographical area has been known for its numerous hydro-meteorological hazards through modern history [7]. These undesirable natural events often cause environmental, social, and therefore economic damages, with long-term consequences, and can easily turn into disasters with catastrophically large effects. The severity of economic damages can be illustrated by the reported loss of over 433 billion EUR for the period 1980–2015 in the European Economic Area (EEA) [8]. With an evident increasing number of extreme weather events induced by climate change, hydro-meteorological hazards have emerged as a high-impact risk, especially in Europe [9–11]. Contemporary research in the field [8] presented unfortunate facts related to hydro-meteorological hazards in Europe. Basically, all major hazardous events (heavy precipitation episodes/floods, storms, landslides/rock falls, wildfires, droughts, extreme temperatures) have increased in frequency and/or intensity. Projected scenarios for the future are not optimistic since even more natural-hazard related damages are expected for various sectors [9]. During these hazardous events, humans and anthropogenic systems in general are highly exposed and vulnerable. Climate and weather conditions are not the only reason for this. As the global population continues to experience a rising trend (estimated to 11 billion by the end of this century [12]), accompanied by the urbanization of natural disaster-prone zones [13], society development and economic growth [14], the amplification of natural hazards impact is imminent. This socio-economic development has also led to tourism expansion, thus increasing its sensitivity to weather-related hazards [2]. Travel and leisure related risks were identified and highlighted as a major concern for tourists several decades ago [15,16]. Such risks could be described as: (a) a tourist's perception of negative travel results that may occur [17]; (b) the possibility of experiencing danger while travelling [18]; or (c) the likelihood of the hazard and its negative effects.

Perceived risks can often lead to a decline in tourist arrivals [19,20], which further negatively affects the tourist destination [21]. This is not surprising since people prefer a safe destination while travelling [22], and hazardous events can be responsible for deaths or the displacement of thousands of tourists [23,24]. These travel related safety concerns justifiably occupy a central point of the decision-making process [25] since tourists' perceived risk affects their intention to visit certain destination [26]. Whereas it is impossible to exclude all potential risks and have a hazard-free destination, it is essential to recognize and understand them in order to sustainably mitigate their negative effects. According to the Center for Research on the Epidemiology of Disasters (CRED) data base EM-DAT [27], 99 hydro-meteorological hazards were recorded in four SEE countries (Turkey, Greece, Croatia, and Montenegro), covered by this study, for the period 2003–2021. The most numerous among them were floods (more than 50% of all registered events), followed by wildfires, storms, extreme temperatures, and landslides/rock falls (mass movements). Study covered countries (based on performed survey in this research) are presented in Figure 1. Turkey is one of the largest European countries. It comprises mountain ranges, a high central plateau, and long and narrow coastal plain. Its climate properties vary significantly; high precipitation amounts are occurring over the Black Sea area, high air temperatures, dry summers, and cold and windy winters occur in the plateau region, while the coastline is characterized by hot and humid periods during the summer season. Greece is a mostly mountainous peninsular country with widespread archipelago. The country has generally hot and dry summers, and mild and wet winter periods. However, the northern part of the country has considerable rainfall amounts, cold periods and occasional blizzard episodes. Croatia is quite diverse in geographical context (i.e., physical properties). Its terrain includes plains, highlands, low mountains, and numerous islands along the Adriatic Sea coast. The

predominately continental climate in Croatia is known for hot and dry summers and cold winters, occasionally followed by heavy snowfall. During the spring, and especially in the autumn season, weather conditions are rainy. On the other hand, the coastal zone in Croatia has a Mediterranean climate with hot and dry summers and moderate and windy winters. Montenegro is a small European country, mainly mountainous, with high plateaus and a pronounced coastline. Similar, to Croatia, its coastline has a pleasant Mediterranean climate, while the mountainous inland regions have cold winters with heavy snowfalls [28].

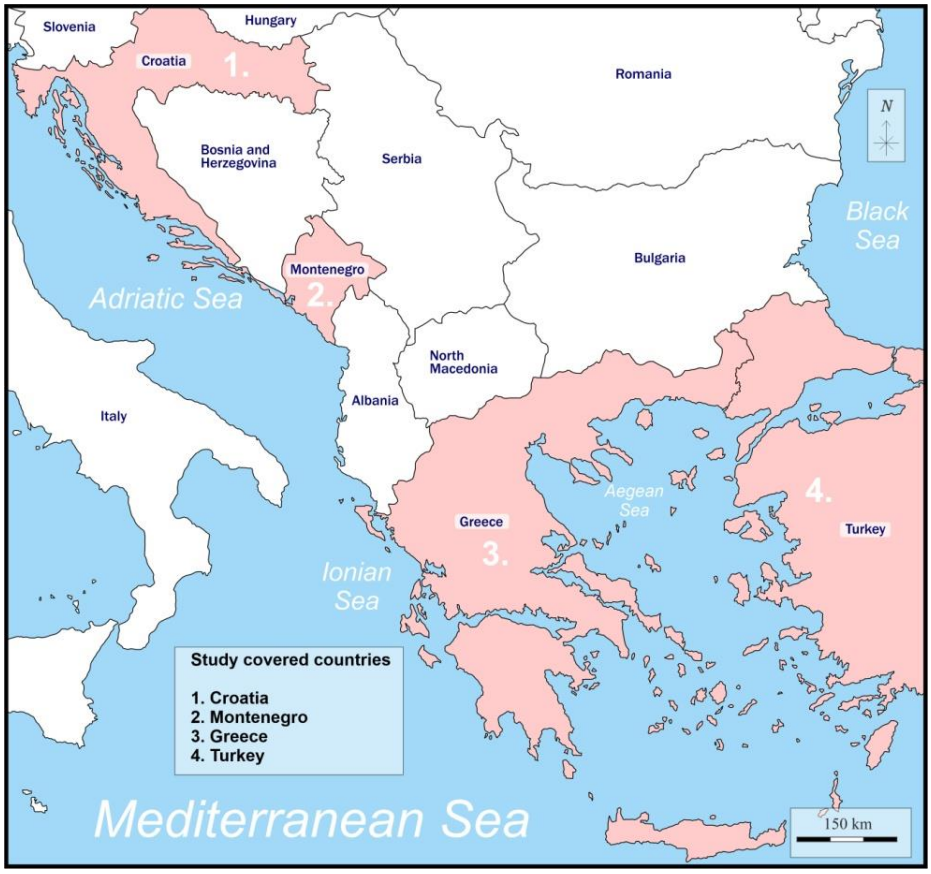

Figure 1. Study covered countries.

In response to the existing literature and the raised awareness of travel risks, this study aims to expand the research area by evaluation of hydro-meteorological travel risk perception among Serbian tourists who travelled to destinations in SEE. The primary objective of the study was to explore the influence of subjective risks (gender, age, income, respondents' level of education, information trust, experience, and psychological readiness) on the objective risks (physical, financial, and service quality risks) in order to examine their influence on travel behaviour and travel decision-making.

2. Literature Review

The risk and safety perceptions of tourists play a significant role in their decision-making process to travel to a certain location [29]. Risk can refer to danger, probability, consequence, or a potential adverse event or threat [30]. The work of Bauer [31] originally brought the concept of risk to consumer perception and behavioral studies. Since then, the concept of risk has been gaining consistent interest in consumer behavior research. Experts have tended to characterize risk perception as consumers' judgments about the uncertainty and severity of potential adverse outcomes [32]. It has been determined that one of the primary worries of people who travel internationally is risk [16]. Hence, tourist risk perception is determined by objective and subjective factors [25,33].

2.1. Objective Risks

The objective elements influencing travel risk perception primarily refer to unfavorable outcomes or impacts that may occur during vacation [34]. Previous research on this topic indicates that tourist risk perceptions tend to be multidimensional. Therefore, scholars have devoted a great effort to discovering and evaluating the risk associated with tourist activities [16,35–39]. The authors presented the objective travel risk through different factors, ranging from two (physical risk and equipment risk [39]) to 10 (equipment risk, financial risk, health risk, physical risk, political risk, social risk, satisfaction risk, time risk, terrorism risk, and psychological risk [16]). Fuchs and Reichel [36] presented destination risk perception through: human induced risk, financial risk, service quality risk, natural disaster and car accident risk, socio-psychological risk, food safety, and weather problem risk. On the other hand, Li [38] presented the eighth-dimension scale for the risk of disasters: personal risk, health risk, value risk, moral hazard, social risk, time risk, crime risk, and convenient risk. Moutinho [40] categorized the perceived risks of tourists into five categories: functional, physical, financial, social, and psychological risk. Roehl and Fesenmaier [41] characterize tourist risk as follows: equipment, financial, physical, psychological, satisfaction, social, and time risk, in an attempt to determine the relationship between the risk perceptions of tourists and leisure travel. Cui et al. [34] proposed the main risk factors that affect tourism for different tourist groups and tourist resources. Physical risk is particularly essential for natural tourism resources or scenic sites (such as land scenery, water scenery, biological landscape, and climatic scenery), followed by equipment risk and performance or service quality risks. Physical risk refers to the possibility of an accident, insecurity, changing environment and weather, natural disasters, life-threatening diseases, illness, and other factors damaging human body health. Equipment risk covers any dangers created by malfunctioning equipment during a vacation, such as stoppage of operation, lodging, and traffic accidents [29]. Service quality risks are caused by the poor quality of tourism products and services or by the quality of tourism products and services not meeting consumer expectations. The equipment risk was the most significant for cultural artifacts such as sites, structures, etc. Travelers may be particularly concerned about financial risk when participating in cultural tourism activities [34]. Financial risk includes the personal economic effects of unanticipated consumption and travel [37].

2.2. Subjective Risks

The subjective elements that affect people's perceptions of the risks that are associated with tourism can be separated into two categories: demographic variables (age, gender, education, a place of residence, income etc.) and individual cognitive capacities (personality, information trust, values, psychological preparedness and similar) [34,42]. Previous research has discovered a link between perceived travel risk and a variety of demographic factors. Some studies have demonstrated that older travelers perceive less travel risk than younger ones [43–46]. Sönmez and Graefe [16], on the other hand, discovered no link between age and risk perception. Moreover, several studies have demonstrated that gender affects risk perception. Women perceive greater travel and natural disaster risk than men [25,47,48]. In a study conducted in South Florida (USA), it was revealed that female visitors feel more uneasy about natural disasters. The same study found that low-income tourists perceive a higher impact of almost all natural disasters than high-income tourists [24]. In addition, tourists' views of natural hazards and travel risks vary based on their level of education. Studies show that more educated tourists perceive lower travel risk than those less educated [16]. People with more education may be better aware of the hazards and opportunities of those risks occurring than less educated individuals as a result of a wider range of encounters and present information awareness [46]. According to Sellick [49], income and education are crucial for the perception of travel risks, while gender and employment status are not. Trust in information is also vital in terms of natural hazard risk perception [50]. When an individual's knowledge of the hazard is limited, trust is a crucial aspect of their risk perception [51]. Consequently, according to Cui et al. [34], when

individuals have greater trust in information sources, their risk perception is heightened. On the other hand, Siegrist and Gutscher [52] contend that media-provided information influences risk perception, but only if respondents lack first-hand experience. In most instances, exposure to a natural danger increases a person's perception of risk. For example, Ruin et al. [53] claim that people who have never been in a flood tend to underestimate the danger, while people who have been in a flood tend to overestimate it.

Psychological disaster preparedness is crucial in the face of persistent environmental risks, natural hazard risks, or developing pandemic threats [54]. Most authors define psychological preparedness as the ability of people to deal with the mental and physical effects of disaster warnings and the effects of the disaster itself [55]. It is frequently assumed that providing the public with information on hazards and how to mitigate their consequences will encourage preparation [56]. The study conducted in Cairns (Northern Queensland, Australia) examined participants' knowledge of cyclones, preparatory measures, and emotional reactions to the upcoming cyclone season. Participants who received a cyclone information guide were better able to predict, identify, and regulate, their emotions during this cyclone season, according to the findings [57]. Roudini et al. [58] came to the conclusion that people who are more mentally prepared for a disaster are more capable of dealing with the stress that comes with it, feel more in control after the warning, and during the effects of a disaster. According to scholars, psychological preparedness has two main mental domains: a mostly cognitive aspect that is focused on the threat and includes knowledge of the threat environment and adaptive responses; and a mostly affective aspect that includes self-awareness and emotional self-control [59] The Psychological Preparedness for Disaster Threat Scale (PPDTS [60]) evaluates awareness of the dangerous environment, adaptive reactions, self-awareness, and emotional self-control. The scale was established in the Australian state of Queensland, where the most commonly experienced hazards are violent storms and cyclones, which are hydro-meteorological hazards. The PPDTS appears to have acceptable psychometric qualities and may be appropriate for assessing a person's psychological preparedness for a variety of dangers.

Due to the necessity to define type of travelers based on subjective factors, this study continues the trend of analyzing travel risk perception by important socio-demographic and economic parameters (gender, age, income, and education), information trust, past experience, and psychological preparedness. As a response to the aforementioned publications, the following hypotheses are proposed (presented in Figure 2):

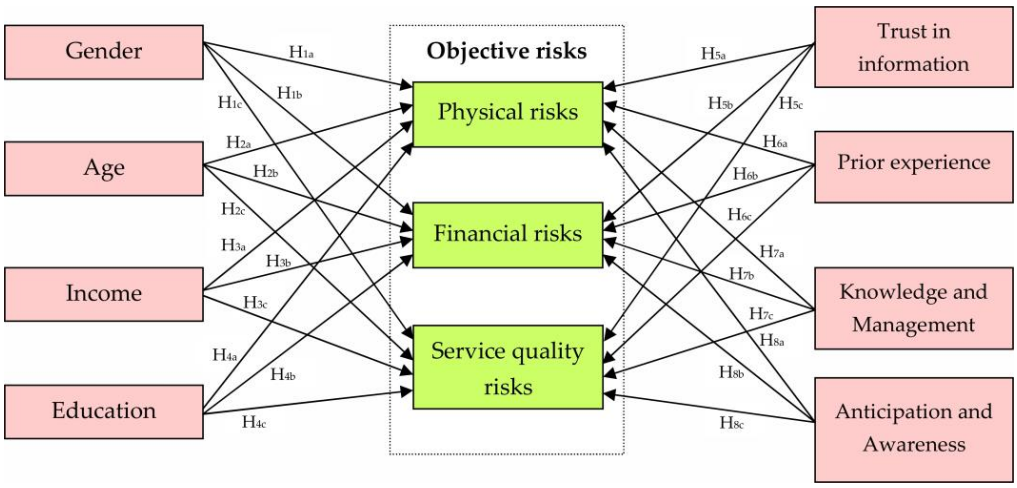

Figure 2. Proposed model of research with defined hypotheses.

$H_{1a,b,c}$: Women are more sensitive to travel risks than men.
$H_{2a,b,c}$: Older travelers perceive less travel risk than younger travelers.
$H_{3a,b,c}$: Natural disasters have a greater impact on low-income tourists than on high-income tourists.

$H_{4a,b,c}$: More educated tourists have a lower perception of travel risks than those less educated.
$H_{5a,b,c}$: Individuals' risk perception increases as their trust in information sources grows.
$H_{6a,b,c}$: Prior experience with natural hazards increases a person's perception of risk.
$H_{7a,b,c}$: Individuals' risk perception decreases as their knowledge and management of the situational environment grow.
$H_{8a,b,c}$: Individuals' risk perception decreases as their anticipation and awareness, and management of their psychological response grow.

3. Materials and Methods

3.1. Questionnaire Development

This study's questionnaire consisted of four sections. The first section measured the participants' age, gender, education, and monthly income. The second section of the questionnaire consists of three questions regarding the respondents' hydro-meteorological experience and perspectives. Two questions pertain to hydro meteorological dangers encountered at the destination (yes/no question) and destinations where hazards were encountered (open-ended question). Third question pertain to respondents' trust in information sources about hydro-meteorological dangers (yes/no question).

The third section consisted of a questionnaire regarding the various facets of dread produced by hydro-meteorological hazards. Several studies were considered in order to adjust or support the questionnaire design for the Serbian adult hydro-meteorological risk perception research [35–37,40,41,61]. The questionnaire was modified to assess the concern of hydro-meteorological hazards at a destination visited during the past 10 years by respondents. After the initial item pool was compiled, 10 expert judges in the fields of tourism and natural hazards from the participating research consortium were invited to conduct an initial screening and evaluation of the items in this study in order to improve the content validity of the scale, due to a large number of statements and the variety of scales initially compiled. In light of the expert evaluation, the scale was amended and 11 items and three scales were kept (physical risks, financial risks, and service quality risks). In the questionnaire, a five-point Likert scale was employed, ranging from 1 (strongly disagree) to 5 (strongly agree).

The fourth section of the questionnaire examined travelers' preparedness for hydro-meteorological disasters. The majority of disaster-preparedness related studies focuses on households, and the Psychological Preparedness for Disaster Threat Scale (PPDTS) developed by Zulch et al. [62] has not yet been applied to the tourism industry. Therefore, the PPDTS was adopted and modified according to the main research objective of the study-tourism industry. The PPDTS comprised of 18 questions and two factors, first factor (10 items) was interpreted as Knowledge and Management of the situational environment subscale, and factor 2 (8 items) was interpreted as Anticipation and Awareness. The PPDTS was utilized in this study to assess travelers' preparedness for hydro-meteorological hazards in tourist areas. These statements were also measured using a 5-point Likert scale.

3.2. Data Collection

The original questionnaire was adopted and translated into Serbian, and several items were reworded and modified in order to investigate the respondents' perceptions of natural hazard risks in tourist areas. Prior to the main study, a pilot study was undertaken in December 2021 to assess the reliability of the measurement instruments and the clarity of the research questions. The pilot study, which used the standard paper and pen survey, included 117 students from Faculty of Sciences, Department of Geography, Tourism, and Hotel Management, Novi Sad. The obtained data were factor analyzed using the principal component method and varimax rotation procedure in the Statistical Package for Social Sciences version 23 (IBM, SPSS.23). All factors with eigenvalue >1 and with factor loadings >0.3 were retained. The Kaiser–Meyer–Olkin (KMO) overall measure of sampling adequacy was 0.89 [63] indicating that the data were appropriate for the principal component model. The Bartlett's test [64] of sphericity was significant (p = 0.000). The

results of the exploratory factor analysis (EFA), which suggested a five-factor solution, included 29 items, and explained 69.23% of the variance. Cronbach's α values for each factor were >0.7 which demonstrates that the scales of the obtained questionnaire have considerable reliability [65] (see Table A1).

For the purpose of the main study, a technique of convenience sampling was deployed. Data were collected between January and August of 2022. Residents of Serbia older than 18 years were the subjects of interest. The respondents' responses were collected online by using Google Forms. Individual emails, mailing lists, and social media channels, were used to distribute the online questionnaire. A total of 729 respondents accepted the invitation to answer the questionnaire. A total of 56 questionnaires were discarded from the analysis due to incompletion. Finally, 673 valid questionnaires were processed by the R-lavaan and semPlot packages (RStudio), which was used for the CFA and Path analyses. Additional analyses included regression analysis, *t*-tests, and ANOVA, which were processed by the Statistical Package for Social Sciences version 23 (IBM, SPSS.23). Respondents were notified that the questionnaire was anonymous and participation was voluntary. The given approach secured representativeness of sample.

4. Results

4.1. Study Sample

The sample consists of 673 respondents from Republic of Serbia. The predominant age group was 31–40, and 55.3% of the sample was comprised of males (age range 18–77). There is the highest percentage of individuals with a college or university degree (53.3%). The majority of respondents have monthly incomes of between 45,001 and 70,000 RSD (384–597 EUR) (41.9%). About half (45.8%) of respondents had personal experience with natural hazards, while 56.8% believed the information sources about them (Table 1).

Table 1. The sample characteristics (N = 673).

Gender (%)		**Education (%)**	
Male	55.3	Secondary school	31.9
Female	44.7	Faculty/College	53.3
		MSc/PhD degree	14.7
Age (%)		**Monthly income**	
18–30	18.7	**(in Serbian dinars RSD) (%)**	
31–40	32.7	Below 45,000	23.5
41–50	16.9	45,001–70,000	41.9
51–60	11.4	70,001–100,000	18.9
61–70	11.1	100,001–150,000	10.5
71+	9.1	Above 150,000	5.2
Prior experience		**Trust in information sources**	
Yes	45.8	Yes	56.8
No	54.2	No	43.2

Figure 3 presents the frequency of occurrence of particular natural hazards experienced by respondents during travel in the past 10 years. A higher number of green thick marks presents higher percentage of experienced particular natural hazard across study covered countries. The red X mark indicates that travelers did not experience particular hazards during the travel. The distribution of respondents (in numbers) who experienced some of the mentioned hazards across the countries is as follows: Greece (98), Croatia (82), Montenegro (68), Turkey (57). Other countries include Bulgaria (1), North Macedonia (1), and Albania (1).

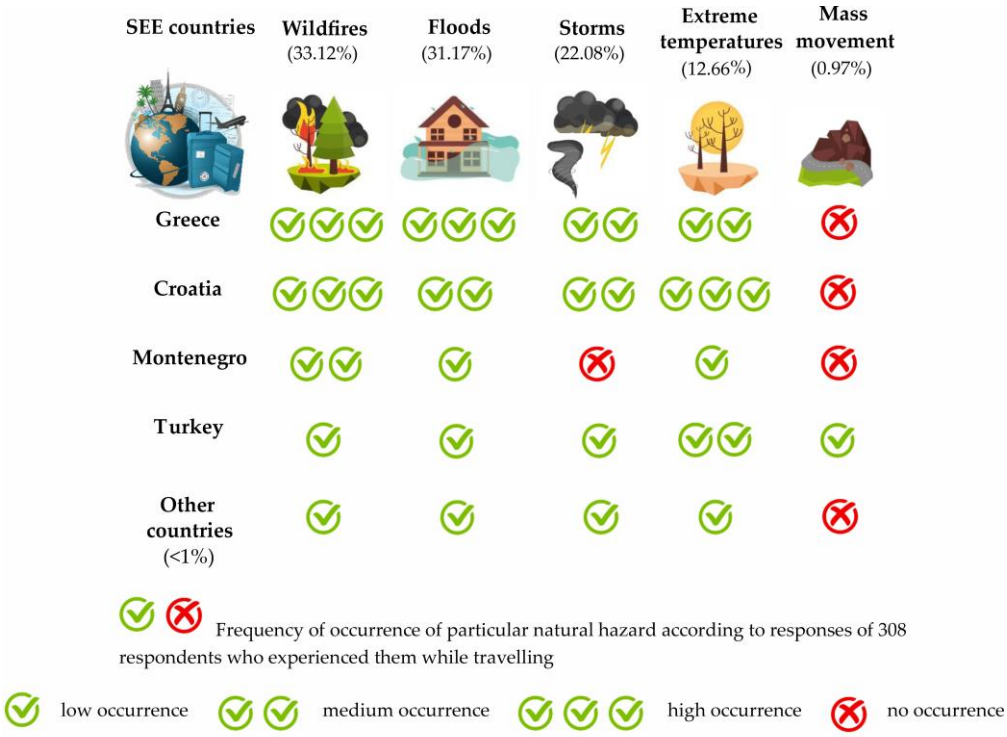

Figure 3. The most frequent natural hazards in study covered countries.

4.2. Confirmatory Factorial Analysis

By using Confirmatory Factorial Analysis (CFA), the latent component measurement model's inherent construct validity and reliability were evaluated to determine its estimation. The following fit indices were employed: comparative fit index (CFI; criteria ≥ 0.900), Tucker–Lewis index (TLI; criteria ≥ 0.900), root mean square error of approximation (RMSEA; criteria ≤ 0.080), and standard root mean square residual (SRMR; criteria ≤ 0.080) [62]. Initial model fit indices indicated good results, with the exception of RMSEA and SRMR, which were above the limit value of 0.08 (CFI = 0.959, TLI = 0.957, RMSEA = 0.109, SRMR = 0.101). As a result, potential model defects are revealed. Consequently, modification indices were required. According to Beaujean [66], a "troublingly large" residual is ">0.1," therefore the item with high residual was excluded (Table 2), resulting in a model with a reasonable fit (CFI = 0.991, TLI = 0.962, RMSEA = 0.078, SRMR = 0.061).

Table 2. CFA results for Objective factors scale.

Factors	Items	β	*t* Value	α	AVE	CR
Physical risks	I am concerned about the safety and health of my parents, children, spouse, and friends.	0.832	*	0.901	0.615	0.782
	I am concerned about my life and health.	0.872	28.541			
	I am concerned about my pets' lives and wellbeing. **	0.891	30.128			
	Due to the occurrence of hydro-meteorological hazards, I am worried about a lack of potable and technically accurate water.	0.725	29.171			
	I am concerned about a lack of food as a result of the occurrence of hydro-meteorological hazards.	0.765	30.115			

Table 2. *Cont.*

Factors	Items	β	*t* Value	α	AVE	CR
Financial risks	I am concerned that I won't have enough money to recoup material losses resulting from a hydro-meteorological hazard.	0.743	*	0.813	0.714	0.904
	I am concerned that the occurrence of hydro-meteorological hazards would result in the destruction and damage of my property (car, personal belongings, etc.).	0.865	25.687			
	I am worried that a hydro-meteorological hazard at a certain tourist site will cause extra costs that weren't planned for.	0.891	20.223			
Service quality risks	Employees in the tourism sector will be terrified and unable to provide quality service.	0.874	*	0.842	0.621	0.716
	There will be no sports, entertainment, or recreational facilities available.	0.821	20.174			
	The visitation of museums, galleries, and other cultural institutions will not be permitted.	0.723	27.444			
Knowledge and Management	I am familiar with the relevant natural hazard preparedness materials for the tourist destination I will be visiting.	0.827	*	0.710	0.588	0.802
	I know which preparedness measures are needed to stay safe during a natural hazard in a tourist destination.	0.800	30.907			
	I know how to adequately prepare for the forthcoming fire/flood/cyclone season.	0.788	29.001			
	I know what to look out for if an emergency weather situation should develop.	0.796	30.445			
	I am familiar with the disaster warning system messages used for extreme weather events.	0.899	29.902			
	I am familiar with the weather signs of an approaching fire/flood/cyclone.	0.842	30.101			
	I am confident that I know what to do and what actions to take in a severe weather situation.	0.802	24.324			
	I would be able to locate the natural hazard preparedness materials in a warning situation easily.	0.837	28.312			
	I am knowledgeable about the impact that a natural hazard can have on buildings (hotels, restaurants, apartments, etc.).	0.856	30.112			
	I know what the difference is between a disaster warning and a disaster watch situation.	0.702	22.212			
Anticipation and Awareness	I think I am able to manage my feelings pretty well in difficult and challenging situations.	0.744	*	0.723	0.603	0.720
	In a natural hazard situation, I would be able to cope with my anxiety and fear.	0.821	18.267			
	I seem to be able to stay cool and calm in most difficult situations.	0.842	17.871			
	I feel reasonably confident in my own ability to deal with stressful situations that I might find myself in.	0.837	12.905			
	When necessary, I can talk myself through challenging situations.	0.833	16.456			
	If I found myself in a natural hazard situation, I would know how to manage my own response to the situation.	0.810	19.128			
	I know which strategies I could use to calm myself in a natural hazard situation.	0.798	20.501			
	I have a good idea of how I would likely respond in an emergency situation.	0.821	19.322			

Notes: * Items fixed to 1 in CFA; ** item removed from CFA; β-Std. regression weights; α—Cronbach's alpha; CR—composite reliability; AVE = average variance expected.

Using average variance extracted (AVE) indices, composite reliability (CR), and Cronbach's alpha coefficients, the reliability of the scale was determined. The convergent validity of every dimension was evaluated by calculating the mean variance extracted score (AVE). When all item-to-factor loadings are significant and the AVE score for each dimension is greater than 0.50, convergent validity is established [67]. The results in Table 2 show that all dimensions had AVE greater than 0.50 and CR greater than 0.70, indicating good convergent validity. The Cronbach's values for each factor were greater than 0.70, with a radius ranging from 0.710 to 0.901, showing that the questionnaire scales were considerably reliable [65].

4.3. Results of the Path Model

The R and RStudio software were used to conduct a path model analysis in order to test the hypotheses. The subsequent fit indices were utilized: Sattora–Bentler χ^2 (S-Bχ^2), which should not be statistically significant and ratio χ^2/df, which should be less than 3 [68]; RMSEA, SRMR, CFI, and TLI. The independent variables included in the first model were the sociodemographic characteristics of the respondents, trust in information, prior experience with hydro-meteorological hazards, knowledge and management, and anticipation and awareness, while the dependent variables were objective factors. The first model showed unsatisfactory fit indices (CFI = 0.896, TLI = 0.885, RMSEA = 0.099, SRMR = 0.116). Wald test recommended excluding income, trust in information and knowledge and management. This produced a significantly better fit (Model 2, Table 3), and rejects Hypotheses $H_{3a,b,c}$, $H_{5a,b,c}$, and $H_{7a,b,c}$.

Table 3. Model fit indices of the proposed model.

Model	*S–B*χ^2	*df*	χ^2/*df*	RMSEA	SRMR	CFI	TLI
1	1.057.21	245	4.31	0.099	0.116	0.896	0.885
2	295.90	102	2.90	0.078	0.072	0.972	0.965

Note: Values of S-Bχ^2 in the Model 2 are not significant at $p > 0.01$.

Additional analyses were conducted to examine the associations between categorical independent variables and dependent variables. The model indicated that gender positively affects all three objective factors. Additionally, a *t*-test was conducted in order to explain this finding in more detail. The results of the *t*-test indicate that women perceive physical ($t = -2.782$; $p < 0.01$), financial ($t = -4.906$; $p < 0.01$), and service quality risks ($t = -3.906$; $p < 0.01$) more strongly, thus supporting H_{1a}, $H_{1b,}$ and H_{1c}. The ANOVA test confirmed that there is a statistically significant difference ($F = 5.162$; $p < 0.01$) between respondents based on age. The LSD post hoc test shows that respondents over 60 perceive less physical risk than age group 31–40 (MD = −0.778; $p < 0.01$) and less financial risk compared to respondents 41–50 years old (MD = −0.761; $p < 0.01$). The model did not show a significant influence of the respondents' age on service quality risks. The results confirmed hypotheses H_{2a} and H_{2b} and rejected hypothesis H_{2c}. The ANOVA analysis also determined the existence of a difference ($F = 8.101$; $p < 0.01$) in the respondents' perception of travel risk in relation to their level of education. The LSD post hoc test showed that lower educated respondents (secondary school) have a higher perception of physical (MD = 0.802; $p < 0.01$), financial (MD = 0.809; $p < 0.01$) and service quality (MD = 0.950; $p < 0.01$) risks compared to respondents with a higher degree of education, so H_{4a}, H_{4b} and H_{4c} can be confirmed. A *t*-test was used to examine the respondents' previous experience with hazards. The results showed that previous experience positively affects objective risks. Those who have encountered natural disasters have a heightened perception of physical ($t = -3.782$; $p < 0.01$), financial ($t = -4.782$; $p < 0.01$), and service quality risks ($t = -2.782$; $p < 0.01$), which confirmed H_{6a}, $H_{6b,}$ and H_{6c}. Standard linear regression analysis was conducted in order to analyze the influence of respondents' anticipation and awareness on objective risks. The results show that anticipation and awareness have a significant negative influence on

physical (β = −0.364, $p < 0.000$), financial (β = −0.224, $p < 0.000$), and service quality risks (β = −0.192, $p < 0.000$), that confirmed hypotheses H_{8a}, H_{8b}, and H_{8c}. The obtained results are illustrated on Figure 4 As individuals become better at preparing for and responding to potential risks, they become less afraid of such risks overall.

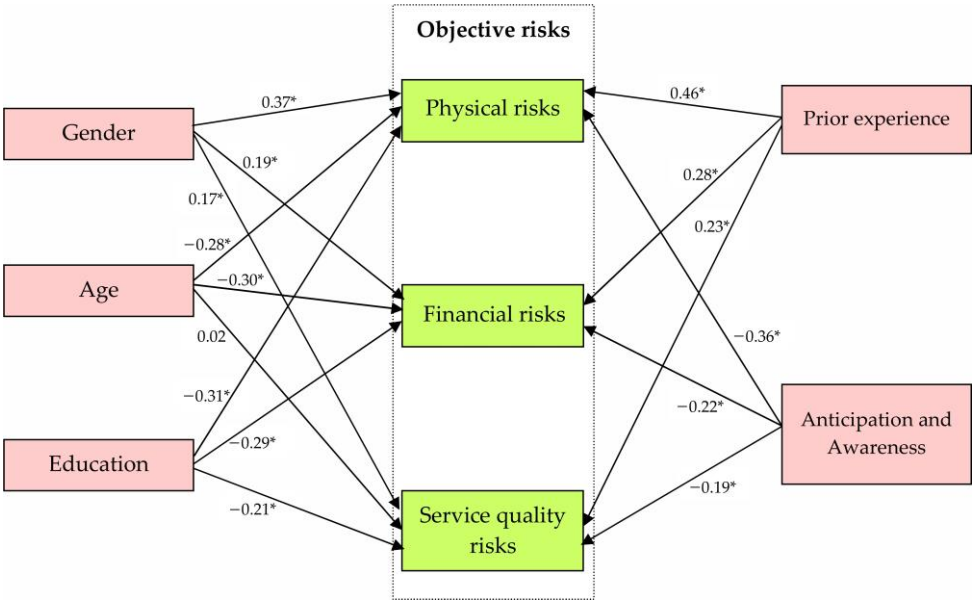

Figure 4. The results of the Path Model (* presents statistical significance where $p < 0.01$).

5. Discussion and Concluding Remarks

Perceived natural hazard risks at a tourist destination are acknowledged as an important factor in a traveler's decision-making process [34,69]. The purpose of this study was to ascertain the attitudes of Serbian respondents concerning hydro-meteorological hazards at tourism destinations. Hence, the study analyzes the differences in tourists' responses in relation to their socio-demographic and economic profiles, as well as the relationship between information trust, past experience, and psychological preparedness on travel risk perception. Physical, financial, and service quality hazards are the travel-specific forms of perceived hydro-meteorological risks. This typology is essential for a better understanding and more appropriate response to perceived travel risk, as observed by Fuchs and Reichel [16,35–39].

As hypothesized, the findings indicate a positive relationship between respondents' gender and objective factors. Women are more vulnerable to travel hazards than men. Similar results have been found for natural disasters such as avalanches, landslides, tornadoes, and tsunamis, showing that female tourists are more worried about these risks than their male counterparts [24]. Moreover, physical risk is seen as more significant by female tourists, perhaps due to their worry that they will be unable to flee the disaster area unharmed [70,71]. It contradicts the findings of Sönmez and Graefe [16], who discovered no gender differences in a trip risk perception.

In accordance with previous research, [43–46], the respondents' age had a considerable influence on the objective risk. Older visitors are more comfortable exploring new places than younger travelers. Similar results were obtained by Simpson and Siguaw [46], who concluded in their study that the youngest age group was most concerned about financial risks, transit performance, travel service provider performance, and care for others. For example, depending on their more extensive personal and observable learning experiences, abstractions, and experiments, older people may be more risk averse than younger people. This model did not confirm the influence of the respondent's age on service quality risks. Similarly, some scholars discovered that tourists' opinions of service quality do not alter with age [72,73].

Several studies e.g., [24,49] have established that practically all natural disasters have a bigger impact on tourists with lower income than on tourists with higher income. It appears that low-income tourists, who have substantially less money for travel, are more hesitant to travel when the natural catastrophe risk is high. Nevertheless, the results of this research did not confirm the impact of income on the perception of travel risk.

This research indicates that better-educated visitors view travel dangers as lower than less educated tourists. The premise that more educated people are more familiar with natural hazards, their frequency, regional distribution, and repercussions, can explain such findings. Some authors even argued that greater knowledge leads to a better comprehension of the minor dangers, resulting in greater support for risky events [73,74]. On the other hand, when people are uncertain about a threat, they are more likely to depend on the opinions of those they trust [75]. The risk of the hazard is then assessed using trust in multiple sources of information. However, this study did not confirm the influence of trust on objective factors. Subjective knowledge, which was examined in the study through the factor knowledge and management, has been demonstrated to be significantly associated with positive attitudes and acceptance of a hazard [76]. Still, the results did not confirm the existence of the influence of this factor on objective risks. A person's perception of risk and their level of tolerance towards that risk are largely influenced by their awareness but also by their affective and emotional responses to that risk. It was discovered that people relied on particular emotions while estimating the hazard, even though they might utilize their knowledge to evaluate the hazard [76]. The results revealed that people's sense of risk diminishes as their ability to foresee and understand potential dangers and control their emotional reactions to those dangers increases. Direct experience with a natural disaster might serve as an example of the danger and a demonstration of the possibility of future risk. In most situations, one's perception of risk increases after experiencing a natural disaster [51], which was also demonstrated by this study.

The implications of risk perception are of great importance for quality risk governance and communication through various participative activities (effective risk communication, stakeholder and local community involvement, emergency preparedness etc.) in tourism destinations. Major challenges lie in the utilization of enhanced approaches oriented toward more qualitative risk management at a given travel destination, which affects the traveler's decision-making [51]. Therefore, in terms of theoretical contributions, the given paper outlines the importance of analyzing relationships between risk dimensions and tourist behavior, and thus their impact on objective risks. Methodological approach and obtained results present a certain novelty since the Psychological Preparedness for Disaster Threat Scale (PPDTS) was applied for the first time in the tourism industry. The results of this study may have practical implications for management of tourism destinations in regions prone to hydro-meteorological hazards, as the proposed model is applicable globally.

Limitations and Suggestions for Future Research

Several limitations of this study should be outlined. To begin with, the provided results cannot be considered generic because the data were obtained through a convenient method. Future research should be based on a stratified sample, which is made up of the strata that make up the final sample in an even way. Secondly, we only consider the effect of socio-demographic parameters (gender, age, income, and education), information trust, past experience, and psychological preparedness, on objective risks. Some variables such as marital status, employment status, family size, place of residence (rural/urban), and different cultural backgrounds, can be considered as potential predictors. Additionally, it is thought that adding categorical variables like the respondents' psychological processes (attention, perception, memory, thinking, and language skills) [34], or their individual cognitive capacities (personality traits, emotions), will lead to important results. Furthermore, this study considers three dimensions of objective risks-physical, financial, and service quality risks. Although this dimensionality is commonly recognized in prior research [16,35–39,61], the integration of other objective risks in the model, such as time

or social risk [77], might enable a better understanding of visitors' perceptions of risk and safety as one of the most influential variables in their choice of a travel destination.

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Appendix A

Table A1. Results of Exploratory Factor Analysis (N = 117).

Factors	Items	Factor Loading	Eigenvalue	Variance Explained	α
Physical risks	I am concerned about the safety and health of my parents, children, spouse, and friends.	0.601	9.712	36.123	0.705
	I am concerned about my life and health.	0.657			
	I am concerned about my pets' lives and wellbeing.	0.402			
	Due to the occurrence of hydro-meteorological hazards, I am worried about a lack of potable and technically accurate water.	0.601			
	I am concerned about a lack of food as a result of the occurrence of hydro-meteorological hazards.	0.633			
Financial risks	I am concerned that I will not have enough money to recoup material losses resulting from a hydro-meteorological hazard.	0.536	3.032	11.119	0.896
	I am concerned that the occurrence of hydro-meteorological hazards would result in the destruction and damage of my property (car, personal belongings, etc.).	0.699			
	I am worried that a hydro-meteorological hazard at a certain tourist site will cause extra costs that weren't planned for.	0.772			

Table A1. *Cont.*

Factors	Items	Factor Loading	Eigenvalue	Variance Explained	α
Service quality risks	Employees in the tourism sector will be terrified and unable to provide quality service.	0.766	2.101	7.652	0.801
	There will be no sports, entertainment, or recreational facilities available.	0.781			
	The visitation of museums, galleries, and other cultural institutions will not be permitted.	0.762			
Knowledge and Management	I am familiar with the relevant natural hazard preparedness materials for the tourist destination I will be visiting.	0.646	2.067	7.322	0.798
	I know which preparedness measures are needed to stay safe during a natural hazard in a tourist destination.	0.671			
	I know how to adequately prepare for the forthcoming fire/flood/cyclone season.	0.701			
	I know what to look out for in an emergency weather situation should it develop.	0.823			
	I am familiar with the disaster warning system messages used for extreme weather events.	0.814			
	I am familiar with the weather signs of an approaching fire/flood/cyclone.	0.560			
	I am confident that I know what to do and what actions to take in a severe weather situation.	0.587			
	I would be able to locate the natural hazard preparedness materials in a warning situation easily.	0.636			
	I am knowledgeable about the impact that a natural hazard can have on buildings (hotels, restaurants, apartments, etc.).	0.612			
	I know what the difference is between a disaster warning and a disaster watch situation.	0.537			
Anticipation and Awareness	I think I am able to manage my feelings pretty well in difficult and challenging situations.	0.781	1.998	7.001	0.812
	In a natural hazard situation, I would be able to cope with my anxiety and fear.	0.802			
	I seem to be able to stay cool and calm in most difficult situations.	0.853			
	I feel reasonably confident in my own ability to deal with stressful situations that I might find myself in.	0.816			
	When necessary, I can talk myself through challenging situations.	0.615			
	If I found myself in a natural hazard situation, I would know how to manage my own response to the situation.	0.755			
	I know which strategies I could use to calm myself in a natural hazard situation.	0.708			
	I have a good idea of how I would likely respond in an emergency situation.	0.717			

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