



How do Tourists Perceive Risk and Develop Travel Preparedness? Influence of Destination Attributes and Knowledge

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Abstract

This study explores how destination attributes, such as accessibility, natural attractions, facilities, and disaster knowledge, influence tourists' risk perceptions, ultimately shaping their travel preparedness. Data were collected through questionnaires distributed to 806 tourists visiting a tsunami-prone beach destination in Indonesia. Partial Least Squares Structural Equation Modeling (PLS-SEM) was implemented in the analysis. The findings indicate that accessibility and well-developed tourist facilities tend to lower tourists' perceived risk, while disaster knowledge heightens it, leading to improved preparedness. Tourists generally feel safer when destinations offer accessible amenities and infrastructure, yet this sense of security may inadvertently decrease their readiness for disasters. This situation creates a paradox: While enhanced accessibility and high-quality amenities contribute to visitor satisfaction, they can unintentionally lower risk perception and preparedness levels. The study challenges the conventional view that accessibility and amenities are inherently beneficial, highlighting the importance of balancing these attributes with proactive risk management strategies. Destination providers, destination management organizations (DMOs), and governments should enhance tourists' disaster awareness through well-crafted guidelines, educational campaigns, and community engagement programs; these efforts help equip tourists with the necessary knowledge to respond effectively in emergency situations. At the same time, they contribute to the development of safer and more enjoyable tourist destinations.

Keywords: travel preparedness, perceived risk, disaster knowledge, destination attributes, tourist resilience

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Introduction

Risk is a crucial factor in the management of outdoor spaces, especially in forested regions (Putra et al., 2024). Extreme climatic conditions, wildlife disturbances, and even natural disasters pose potential hazards that may endanger human safety. Risk is inherently intertwined with human presence and activities in the context of forest management for tourism and is an important factor in determining travel demand and tourist behavior. These risks can be categorized across several domains, such as terrorism, health crisis/pandemic (Floyd et al., 2004; Rittichainuwat & Chakraborty, 2009; Sharifpour et al., 2014), criminal activity, economic instability, political unrest, war, adverse weather, natural disaster, physical harm, equipment failure, and cultural differences (Floyd et al., 2004; Jonas et al., 2011;

Sharifpour et al., 2014; Utkarsh & Sigala, 2021). These risks influence how people view and interact with tourism, as they continuously weigh potential threats when making travel decisions (Maksim Godovykh & Bahja, 2021; Dağıstan et al., 2023; Wattanacharoensil et al., 2023). Given the increasing uncertainties within the global tourism landscape, the dichotomy between perceived risks and actual travel behavior presents an avenue for further research.

The need to enhance tourist readiness for potential hazards has been highlighted recently. Governments, industry stakeholders, and academic researchers have emphasized the need for safety measures to ensure the competitiveness and long-term viability of global tourism (Domingues et al., 2017). This focus has been further heightened in the post-pandemic period, where travelers seek

natural and remote destinations (many of which are susceptible to environmental and man-made disasters) more than ever (Sharifpour et al., 2014). Such locations are increasing in popularity, which creates even more strain on destination managers to combine risk mitigation measures with their attractiveness to tourists. A well-informed tourist body can help mitigate destination vulnerability, favoring sustainable tourism outcomes (Ng, 2022).

Multiple influences play into both how risk is perceived and how society responds. Previous studies have found that perceived risks are positively associated with victims' vigilance and precautionary behaviors in disasters, which can help mitigate damage (Park & Tussyadiah, 2017). However, the interplay between risk and perception is complex, influenced by psychological, social, and contextual factors determining how individuals interpret and respond to risks (Yovi et al., 2023). Despite much research on risk perception in tourism, there is a gap in the literature regarding the positive repercussions of such perceptions in the form of preparedness behaviors, particularly for disaster-prone destinations. Risk perception has been a salient consideration within this research stream; however, it has received significantly less attention than the mechanisms by which tourists can be motivated to engage in concrete safety behaviors, including emergency preparedness, situational awareness, and adaptive behaviors.

Such thought on tourist risk perception has primarily treated the phenomenon from the inside, with an emphasis on psychological and cognitive components, including knowledge, socio-demographic traits, and social norms (Boguszewicz-Kreft et al., 2022; Karl et al., 2020; Park & Reisinger, 2010). While these studies have been insightful in understanding risk judgments, they do not consider how external situational influences can shape risk-based behavioral choices. One of these factors is the destination's attractiveness, which is critical to the travel decision but has seldom been studied as an element of disaster preparedness. Some studies find that prestige motivation, where tourists emphasize unusual or prestigious destinations, helps reduce perceived risk and encourages travelers to overlook safety considerations (Rahmawati et al., 2023). This phenomenon is especially troubling in high-risk locales, where the potential allure may lead to a mistaken belief that deters appropriate precautionary action.

Due to the absence of an integrated framework that incorporates both internal psychological factors and external situational influences, the concept of tourist preparedness remains poorly understood (Xu et al., 2018). Asymmetrically, most research has looked at risk perception in isolation or described the destination image without exploring the interplay between these elements and preparedness behaviors. A more comprehensive analysis should incorporate a broader examination of destination characteristics, crisis communication, and cognitive effects to better understand the state of mind that potentially shapes tourists' readiness for hazardous events.

In light of this gap, this research presents an integrated theoretical model that combines psychological (risk perception), situational (destination characteristics), and cognitive (knowledge) factors into a comprehensive model of tourist preparedness analysis. Although earlier research

has addressed different elements of destination image, as well as the relationship between risk perception and readiness (Jamin et al., 2020; Ng, 2022; Najar & Rather, 2023), little is known about how destination-specific factors and hazard knowledge combine to influence proactive safety measures. Therefore, the present study employs the Situational Crisis Communication Theory (SCCT) (Coombs, 2007) to investigate how crisis-related information affects tourists' perceptions and behaviors. Reflecting on disaster management frameworks, SCCT describes the effects of destination reputation and crisis communication behaviors on risk perception. Consequently, the study's primary hypotheses examine "how destination characteristics, accessibility, facilities, and natural attractions may shape tourists' risk perceptions?"

Nevertheless, SCCT alone can not describe individual cognitive processes and must be integrated with Protection Motivation Theory (PMT). Such a focus complements the specifics of tourist preparedness, as PMT explains how humans evaluate threats and the decisions made regarding the need to take protective behaviors. In this case, risk perception is formed by internal cognitive assessments alongside external elements, such as a destination's history of disasters, safety infrastructure, and the success of its crisis communication strategies (e.g., early warnings and emergency instructions). This is achieved by integrating Schumacker and Lomax's (2004) and Bakeman and Gottman's (1997) perspectives to generate greater insight into the psychological and situational drivers of preparedness behaviors in tourism destinations prone to disasters. The integration of PMT forms the theoretical foundation for addressing the central research question: "How does risk perception influence tourist preparedness?"

This study examines how tourists' risk perception, destination attributes, and hazard knowledge influence their preparedness behaviors in disaster-prone tourism destinations. It fills a critical gap in understanding the psychological and situational factors that shape proactive safety measures in travel. This study also makes significant contributions to the literature in several important ways. Specifically, it contributes to theoretical integration by integrating organizational communication perspectives (SCCT) with individual cognitive appraisal models (PMT), resulting in a more holistic framework for explaining tourist preparedness. Second, it fills an important gap in the disaster tourism literature by considering the interaction between formal crisis communication systems and tourists' subjective risk assessments. Third, the results have managerial implications for destination managers, informing them how their risk communication strategies can be optimized to consider both the informational and psychological components affecting travelers' behavior.

Finally, the presented study extends the tourism literature by enhancing the perspective on destination attributes and evaluating tourists' preparedness for potential hazards. By exposing the paradox wherein the destination's attractiveness may reduce perceived risk and thus decrease preparedness, the research aims to provide insights for destination managers, destination management organizations (DMOs), and policymakers. These aim to encourage balanced tourism development, improving both the attractiveness of a

destination and visitor safety, while pursuing long-term sustainability in an increasingly uncertain global tourism environment.

Methods

Location of the study The research was conducted at Pangandaran Beach in West Java, a famous marine tourism destination vulnerable to tsunami disasters. In 2006, Pangandaran Beach was severely hit by a tsunami, which claimed the lives of 668 people and caused significant material damage to the tourism industry (Nijman, 2021). Nevertheless, the development of tourism infrastructure has continued, with the number of hotels increasing to 444 in 2022, marking a 6% rise from 2019. Intensive infrastructure and access development have strengthened its tourist appeal following the tsunami.

This situation suggests a potential bias in the perception of actual tsunami risks. Generally, the northern coastal areas of Pangandaran are situated close to the sea, and their low elevation heightens vulnerability to tsunamis compared to other areas further from the shoreline (Figure 1). Lower land elevation correlates with increased susceptibility to tsunami hazards, as it affects the magnitude of tsunami runoff impacting the mainland (Oktariadi, 2009). On the other hand, accidents due to negligent tourists and a lack of disaster preparedness still occur (Dikara et al., 2022).

Research hypothesis This study examines how SCCT elucidates the influence of key destination attributes (accessibility, attractions, and amenities) on tourists' risk perceptions. SCCT establishes a crucial connection between destination attributes, functioning as the "organizational" entity managing crises and tourist behavior (Su et al., 2023). Furthermore, SCCT enriches the analysis of hazard knowledge by incorporating crisis communication dimensions (Hinsberg & Lamanna, 2024).

Prior research provides substantive support for these relationships. Tverijonaite et al. (2017) demonstrate that enhanced accessibility and improved facilities in natural areas positively affect environmental quality while influencing individual risk perceptions by fostering a sense of ease and freedom intrinsic travel motivation (Marwa & Rahmafitria, 2018; Bulut et al., 2020). Paradoxically, the aesthetic appeal of natural attractions often obscures potential environmental hazards, thereby reducing tourists' risk perceptions (Marincioni et al., 2019). This breathtaking allure can engender a false sense of security, attenuating the perceived probability of encountering disasters (Heimisdóttir et al., 2019).

Tourists' disaster knowledge, awareness, and understanding of natural hazards play a pivotal role in shaping risk perceptions. As Hao et al. (2022) suggest, tourists acquiring knowledge from diverse sources (e.g., pre-

Tsunami Vulnerability Index of Pangandaran Beach

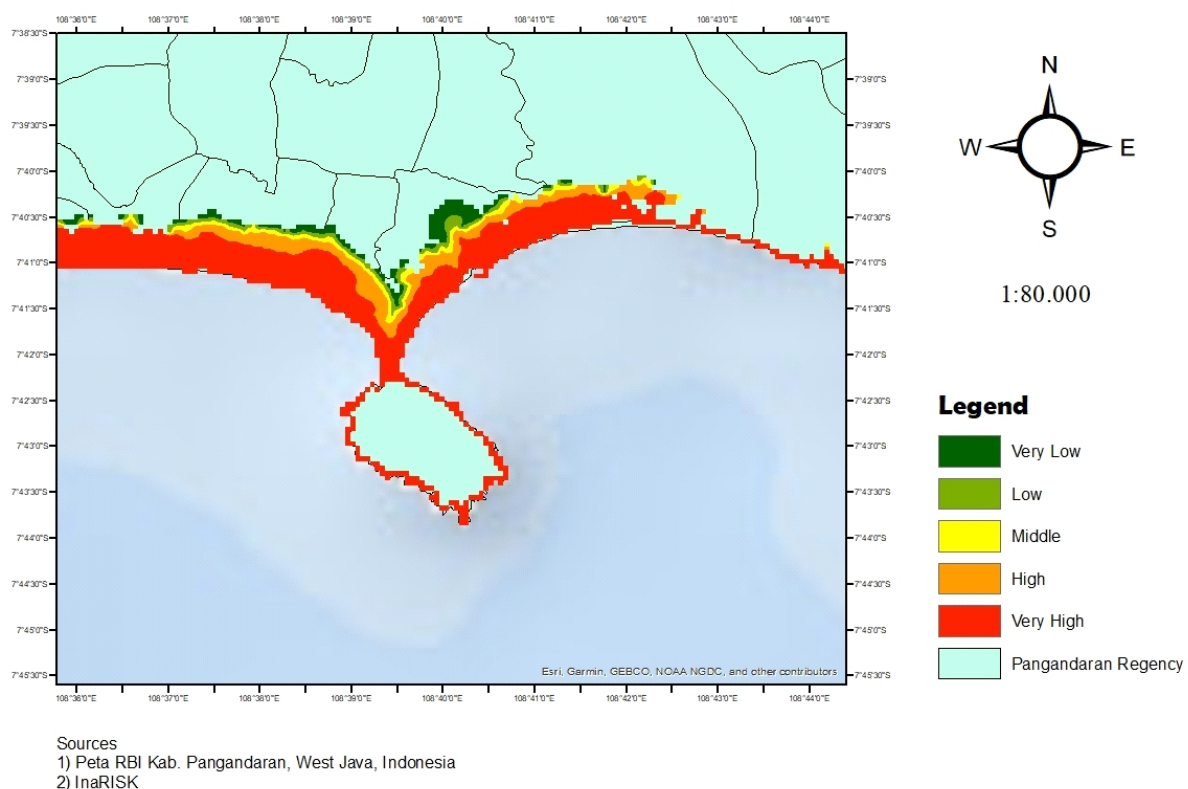


Figure 1 Map of tsunami vulnerability in the Pangandaran beach region (Sources: Peta RBI Kab. Pangandaran and InaRISK).

travel information, local guidelines, and educational programs) demonstrate reduced risk perceptions and more prudent emergency behaviors.

This theoretical synthesis yields four key hypotheses:

H1: Improved accessibility to disaster-prone tourist destinations negatively correlates with tourists' perceived risk.

H2: Natural attractions are inversely related to tourists' risk perception in hazardous areas, as their scenic beauty overshadows potential dangers.

H3: Developing high-end tourist facilities and infrastructure in disaster-prone areas reduces perceived risk by promoting a tourist-oriented image that minimizes environmental threats.

H4: Disaster knowledge, acquired through personal experience or media exposure, positively influences risk perceptions and affects visitation intentions to hazardous areas.

The study incorporates PMT to examine the psychological mechanisms linking individual factors with preparedness. Lazo et al. (2015) substantiate this approach, demonstrating that individuals exhibit greater preparedness when perceiving imminent disaster threats. Their findings highlight how perceived urgency, shaped by media coverage, local advisories, or prior experiences, motivates protective action among tourists in hazardous destinations. This leads to our final hypothesis:

H5: Risk perception positively predicts tourist preparedness in disaster-prone destinations.

The conceptual framework for the study is illustrated in Figure 2.

Instrument development The indicators used in this study were derived from various sources in the literature, as shown in Table 1. Respondents' perceptions were measured using a Likert scale ranging from 1 to 5, with 1 indicating strong disagreement and 5 indicating strong agreement. The questionnaire with a 5-point Likert scale was used in this

research because it was more straightforward and more accessible for respondents to understand, aligning with the original format proposed by Likert (1932). This scale is also suitable for large samples with complex constructs, ensuring more accurate responses. Scales with more than 5 points can make it more difficult for respondents to identify their positions, potentially leading to frustration, lower response rates, and unreliable results (Joshi et al., 2015). This study employs a questionnaire as the primary data collection tool, organized into three sections. The first section addresses demographic information. The second part deals with perceptions of the destination, and the last part focuses on travel experiences.

Sampling and data collection According to the ten-time rule approach for PLS-SEM (Hair et al., 2016), the sample size should exceed ten times the number of indicators. With 19 indicators, this study's minimum required sample size would be 190. However, to enhance the validity and reliability of the data, a sample size of 806 was utilized. Hair et al. (2016) describe that PLS-SEM is suitable for analyzing complex models with numerous constructs and indicators and new structural models without imposing distribution assumptions on the data.

The survey was administered to participants using a convenience sampling method. It targeted visitors to Pangandaran Beach, a popular tourist destination in West Java, during the two-week school holiday in July 2023. Bujang et al. (2012) mention that convenience sampling is adequate for obtaining a more extensive sample within a short timeframe. Each day, four surveyors handed out the questionnaire to visitors. They were asked for their consent to fill out the questionnaire. If they agreed, they filled it out directly on the questionnaire sheet. A screening question restricted respondents to a minimum age of 18 years. A total of 804 domestic tourists contributed to this research.

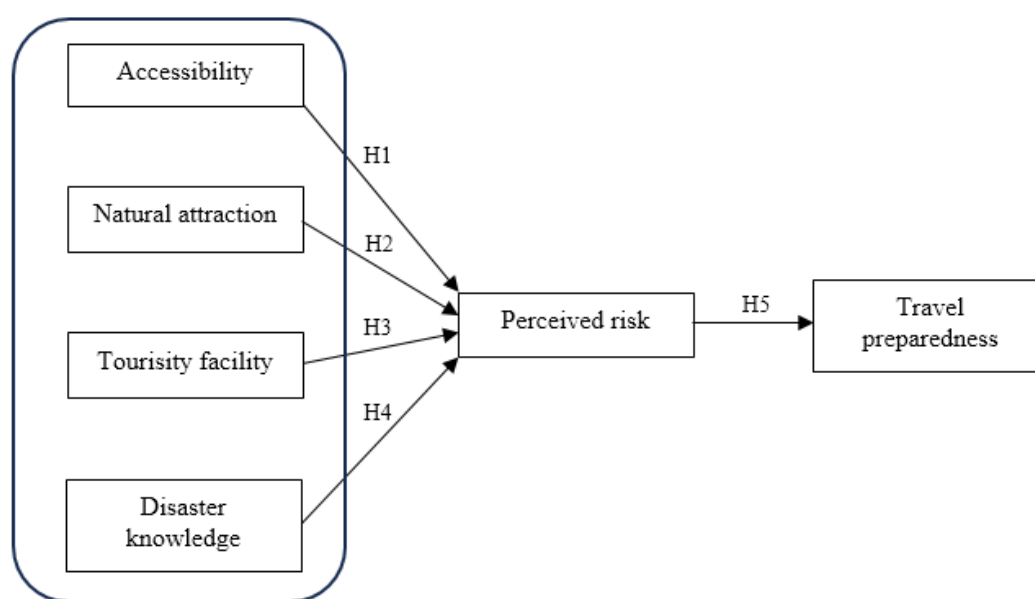


Figure 2 Conceptual framework of the research.

Table 1 Variables and indicators

Variables	References	Indicators
Accessibility	Rahmafitria et al. (2020; 2023)	Ease of travel Travel cost
Attractions	Hughes and Morrison-Saunders (2003)	Nature attractiveness Nature uniqueness Management of nature attraction
Touristy facility	Kozak and Rimmington (1998)	Number of touristy facilities Provided touristy facilities
Knowledge	Sharifpour et al. (2014)	Disaster knowledge Knowledge of the previous disaster
Perceived risk	Cui et al. (2016)	Physical risk Psychological risk Financial risk Performance risk Social risk
Disaster preparedness	Domingues et al. (2017)	Anticipating disaster occurrence Attitude toward disaster Disaster awareness Self-efficacy

Data analysis Smart PLS 3.0, was employed to analyze the latent constructs, test the hypotheses, and analyze complex models with numerous constructs. PLS-SEM was selected due to the uncertainty surrounding the population of tourists in the tourism context, which raises questions about the normal distribution of the data. While one of the benefits of PLS-SEM is its capacity to work with a small sample size, this research aimed to gather as many samples as possible within six weeks to enhance the model's significance, especially if the coefficients were small. According to Kock (2018), a larger sample size in PLS-SEM analysis allows models with small path coefficients to achieve greater significance. This recommendation is rooted in the need for a high power value to mitigate bias from potential capitalization on errors.

The analysis using PLS-SEM commences with convergent validity testing to assess construct validity. Latent variables with loading factors more significant than 0.70 indicate high validity towards their indicators. However, a new model structure can still accommodate loading factors ranging from 0.50 to 0.60. In the analysis, one indicator related to disaster knowledge showed a loading factor of 0.5, while all other indicators demonstrated loading factors above 0.7, indicating robust validity (Figure 3). Given the novelty of this model structure, all indicators were retained.

Results

Profile of respondents As preliminary findings, the researchers present the demographic profile of the 804 respondents who served as data sources for this study. This profile is crucial in assisting researchers in interpreting the analysis results. Table 2 indicates that most respondents are between 18 and 28 years old, have tertiary education, and are

employed. About 70% of the respondents reported spending between USD50 and USD200. Approximately 38% of the respondents earn less than USD3,000, followed by 33.6% earning between USD3,000 and USD5,000. The number of female and male respondents is roughly equal.

Constructal model The first stage of result interpretation involved testing indicator validity through outer model analysis. The study includes six latent variables and 15 manifest variables. The reliability and validity of these 15 constructs were assessed using the PLS procedures outlined by Hair et al. (2014). All indicators demonstrated outer loadings exceeding the threshold value of 0.50, allowing their inclusion in the model (Figure 3). Furthermore, all variables were valid, with composite reliability values ranging from 0.753 to 0.875 and AVE values between 0.638 and 0.702. Subsequently, discriminant validity was evaluated by comparing the square root of the AVE values with the correlations among the latent variables. Discriminant validity is deemed acceptable when the square root of the AVE is greater than the highest correlation with any other construct. In this study, all constructs met the necessary criteria (Table 3).

Structural model The subsequent stage proceeded with hypothesis testing. Two core metrics were used to evaluate the structural model: the path coefficient and the *t*-statistic. As demonstrated in the SEM model, a *t*-statistic more significant than the critical threshold of 1.96 (from the *t*-table) indicates a statistically significant relationship between the variables. The results from hypothesis testing are illustrated in Figure 4 and summarized in Table 4.

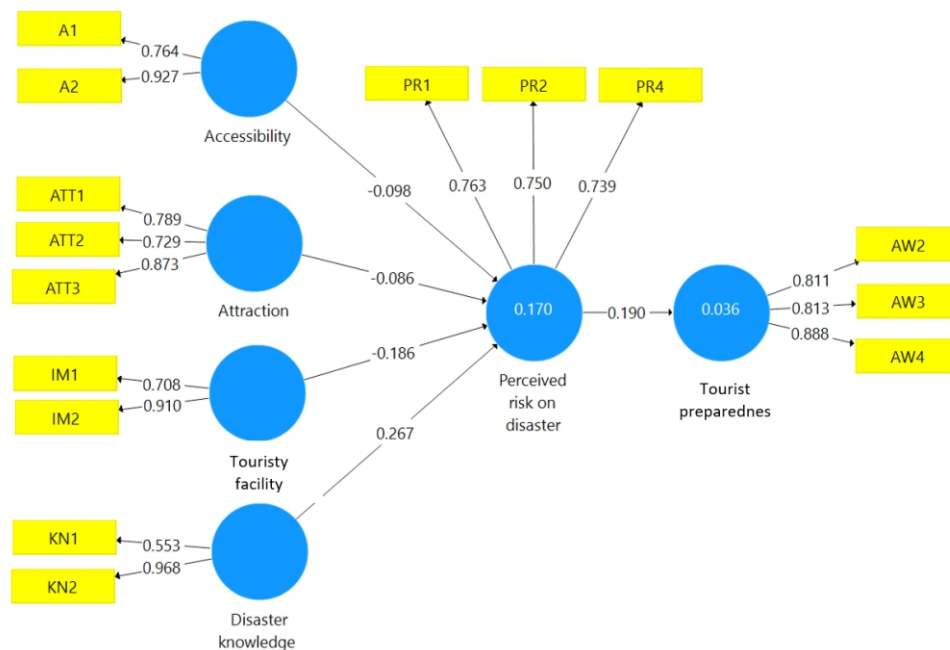


Figure 3 Outer model of the evaluation loading factor value.

Table 2 Profile of respondents

Demographic profile	n	Proportion (%)
Gender		
Male	419	52.1
Female	385	47.9
Age (year old)		
18–28	316	39.3
29–39	190	23.6
40–50	208	25.9
51–61	86	10.7
> 61	4	0.5
Educational background		
Elementary	9	1.1
Secondary	269	33.5
Tertiary	526	65.4
Occupation		
Employee	242	30.1
Professional	14	1.7
Self-employed	5	0.6
Entrepreneur	197	24.5
Students	198	24.6
Housewife	138	17.2
Retired	7	0.9
Unemployed	3	0.4
Expenditure (in USD)		
< 50	107	13.3
51–100	312	38.8
101–200	246	30.6
> 200	139	17.3
Income (in USD)		
< 3,000	306	38.1
3,000–5,000	270	33.6
5,000–8,000	169	21.0
8,000–11,000	28	3.5
> 11,000	15	1.9
I prefer not to say	16	2.0

Table 3 Construct validity and reliability values

Items	Mean	Skewness	Kurtosis	Loading	CR	AVE
Accessibility					0.837	0.722
- I had a comfortable journey to Pangandaran	4.063	2.428	0.447	0.764		
- Travel cost to Pangandaran is affordable	4.279	2.428	0.356	0.927		
Natural attraction					0.840	0.638
- Natural attractions in Pangandaran are unique	3.813	0.863	0.321	0.789		
- Pangandaran beach is attractive for recreational activities	4.175	0.179	0.342	0.729		
- The natural landscape in Pangandaran is magnificent	3.626	0.692	-0.220	0.873		
Disaster knowledge					0.753	0.621
- Pangandaran beach is prone to natural disaster	2.888	-0.223	-0.585	0.553		
- A tsunami has hit Pangandaran beach	3.508	0.223	-0.556	0.968		
Risk perception					0.795	0.664
- I am concerned about the possibility of a tsunami occurring while visiting Pangandaran	2.533	0.033	-0.169	0.763		
- I am worried about becoming a tsunami victim while visiting Pangandaran beach	2.416	0.371	-0.795	0.750		
- I am concerned about feeling disappointed due to poor safety at Pangandaran beach	2.511	0.202	-0.076	0.739		
Touristy facility					0.796	0.665
- The tourism infrastructure in Pangandaran is comprehensive	4.441	0.257	0.844	0.707		
- The tourist facilities in Pangandaran are very appealing	3.824	-0.257	0.434	0.910		
Travel preparedness					0.875	0.702
- I am trying to gather information about safety before visiting Pangandaran	2.430	-0.172	-0.492	0.811		
- I am trying to learn about the signs of a tsunami before visiting Pangandaran	2.283	-0.296	-0.448	0.813		
- I am learning how to perform rescue operations in the event of an accident caused by a disaster before visiting Pangandaran	2.946	0.306	-0.933	0.887		

Table 4 Result of hypothesis testing

Construct	Original sample (O)	Sample mean (M)	Standard deviation (Stdev)	<i>t</i> -statistics (O/Stdev)	<i>p</i> - values	Category
Accessibility → Perceived risk of disaster	-0.098	-0.103	0.038	2.566	0.011	Weaken
Natural attraction → Perceived risk of disaster	-0.086	-0.087	0.046	1.859	0.064	Not significant
Touristy facilities → Perceived risk of disaster	-0.186	-0.185	0.048	3.869	0.000	Weaken
Disaster knowledge → Perceived risk of disaster	0.267	0.270	0.036	7.467	0.000	Strengthen
Perceived risk of disaster → Travel preparedness	0.190	0.196	0.038	5.036	0.000	Strengthen

The hypothesis testing results revealed that Hypotheses 1, 3, 4, and 5 were supported, while Hypothesis 2 was not statistically significant. Hypothesis 1 demonstrates that accessibility significantly influences tourists' risk perception. Destination development illustrates how management communicates risk factors and cultivates tourist awareness. With a *t*-statistic value of 2.566 and a *p*-value of 0.011, the relationship between accessibility and risk perception is both harmful and significant.

The PLS-SEM analysis further indicates that hazard knowledge significantly affects risk perception ($t = 3.869$, p -value < 0.001). Similarly, the effect of risk perception on tourist preparedness is statistically significant ($t = 5.036$, p -value < 0.001). However, Hypothesis 2 regarding the influence of natural attraction appeal on risk perception was non-significant. While the *t*-statistic (1.859) met the threshold, the *p*-value (0.064) exceeded the 0.05 significance level.

To understand the significance of risk perception as a mediating variable, an analysis of the direct and indirect effects of attractions and facilities, and knowledge of risk perception and travel awareness was conducted. The results are in Table 5.

In evaluating the structural model, the coefficient of determination (R^2) and the path coefficient (*t*-value) were utilized to measure the relationship between the variables. R^2 quantifies the proportion of variance in the dependent variables that is explained by changes in the independent variables (Zhang et al., 2018). This metric helps gauge the overall explanatory power of the model, providing insight into how much influence the independent variables exert on the dependent variables. Additionally, the goodness of fit was assessed using the Q^2 score, as shown in Equation [1].

$$Q^2 = 1 - \{(1 - R_1)(1 - R_2)(1 - R_3)(1 - R_4)\} \quad [1]$$

In this study, the Q^2 score of 0.475 indicates that the model successfully explains 47.5% of the variation in travel preparedness. This suggests that the variables under investigation contribute significantly to understanding and predicting tourists' preparedness behaviors.

Discussion

This study yields significant findings for enhancing tourist preparedness in disaster-prone destinations. The results substantiate and extend SCCT by demonstrating how destination attributes reflecting management decisions communicate institutional safety concerns, reducing tourists' risk perceptions. Conversely, destination development that prioritizes tourist-centric aesthetics while neglecting safety messaging may inappropriately diminish visitors' risk awareness.

The research reveals that enhanced accessibility significantly correlates with lower tourist risk perceptions. Defined as the ease of reaching a destination, accessibility has emerged as a critical factor in contemporary tourism studies, frequently associated with increased visitor satisfaction and destination popularity (Jamin et al., 2020). While natural attractions naturally attract visitors through their scenic appeal, many destination managers and

policymakers emphasize accessibility improvements to boost tourism growth, often without considering visitor safety implications (Zhang et al., 2018).

The focus on accessibility presents a critical paradox: improved access may inadvertently reduce visitor vigilance toward potential hazards. As Apollo (2017) observes, accidents frequently occur when tourists perceive natural or conservation areas as easily accessible yet lack the necessary skills or awareness to navigate these environments safely. This phenomenon, where enhanced accessibility potentially suppresses risk perception in high-risk destinations, remains understudied in tourism literature, highlighting an essential gap in current understanding.

Tourists tend to feel safer when destinations are easily accessible and affordable. Tverijonaite et al. (2017) argue that easy access to natural areas fosters an anthropocentric mindset, which encourages the development of more extensive and comfortable facilities. Additionally, Bulut et al. (2020) suggest that ease of access enhances the intrinsic desire for freedom, which may reduce tourists' caution and contribute to riskier behaviors.

These findings significantly contribute to SCCT by demonstrating that crisis communication extends beyond verbal messages, including physical infrastructure and facility development. Within the SCCT framework, management policies implicitly communicate the degree to which authorities prioritize hazard awareness and risk mitigation (Bulut et al., 2020). The presence of warning signs, information boards, and safety infrastructure is tangible evidence of managerial recognition of potential threats and their commitment to visitor safety.

Exploration of the influence of touristy facilities on risk perception also proved a significant relationship and strengthened the SCCT. The presence of comfortable facilities negatively affects tourists' risk perception. The availability of comprehensive and comfortable facilities indirectly conveys information about the ease and acceptability of tourists enjoying themselves according to their travel motivations (Wattanacharensil et al., 2023). Tourists focusing on hedonic pleasures can lead to egocentrism or overconfidence (Pratt & Tolkach, 2022). This imbalance in roles makes individuals less cautious about their safety and that of others, resulting in lower risk perception. Therefore, this information must be balanced with safety signs and hazard warnings in disaster-prone destinations to enhance tourists' awareness.

This research highlights a critical issue in tourism: Despite the growing availability of modern amenities, tourists often display low levels of disaster preparedness. This phenomenon is exacerbated by the very facilities designed to enhance their experience. The development of contemporary amenities in tourist destinations, especially within conservation areas, has shifted tourist priorities, often leading to a focus on hedonistic motivations over safety (Najar & Rather, 2023). While enhancing the travel experience, these modern amenities may unintentionally encourage visitors to become more deeply immersed in the allure of their surroundings, inadvertently diminishing their awareness of potential risks. Recent studies by Tverijonaite

et al. (2017) and Sæþórsdóttir et al. (2022) suggest that infrastructure development in natural areas significantly influences tourist behavior, contributing to an anthropocentric mindset where environmental hazards are overlooked in favor of comfort and enjoyment.

Cheung and Yiu (2022) further explain how, when coupled with hedonistic perceptions, coastal amenities can reduce the salience of risks such as flooding by dulling tourists' risk heuristics. The "touristy" image promoted by modern facilities can create a false sense of safety, causing tourists to neglect the inherent dangers associated with disaster-prone areas (Lepp & Gibson, 2003; Hajibaba et al., 2015). This dynamic is crucial, leading to insufficient preparedness for potential disasters despite these destinations' apparent vulnerability. While research has explored the impact of amenities on tourists' experiences and behavior, the connection between infrastructure development and disaster preparedness remains underexplored.

The role of disaster knowledge is also explored in this study as a part of SCCT. Knowledge of disaster is increasingly recognized as a crucial aspect of tourism management, particularly in disaster-prone areas. Despite its growing importance, there remains a gap in understanding how different types of disaster knowledge influence tourists' risk perceptions and decision-making processes. Recent studies by Rahmafitria and Kaswanto (2024) and Ng (2022) underscore the necessity of educating tourists about the risks and vulnerabilities associated with natural disasters at their destinations. Given that many tourists enter high-risk areas with limited awareness of potential hazards, this lack of knowledge can severely impact their safety and behavior (Barber et al., 2009).

This finding aligns with broader tourism literature, showing informed tourists are more likely to act cautiously in disaster situations (Huan et al., 2004). However, a paradox exists in disaster knowledge: tourists with prior negative experiences of natural disasters often report heightened risk perceptions due to their lived experiences. At the same time, those with limited exposure may develop a false sense of security (Hao et al., 2022). This dichotomy illustrates how disaster education can have complex, sometimes contradictory effects on tourists' risk assessments.

While high-risk perceptions can discourage travel (Thapa et al., 2013), disaster education's role in amplifying or mitigating these perceptions remains underexplored. The social amplification of risk theory (Zhang et al., 2024) suggests that how risks are perceived and communicated significantly influences public behavior and decision-making. In tourism, portraying natural disasters in the media can amplify perceptions of risk, potentially deterring visitors even when the threat is low. As a result, effective communication strategies and educational initiatives are vital for promoting informed decision-making and reducing unnecessary fear among tourists.

However, the effect of natural attractions on risk perception yields different results. The magnificence of natural attractions often evokes a sense of awe and wonder in visitors (Marincioni et al., 2019). Furthermore, nature's allure is a powerful motivator for tourists (Lee & King, 2019). This

evidence indicates that while nature's grandeur is captivating, it does not inherently influence how tourists assess the potential risks of visiting these sites. Instead, risk perception appears more closely linked to cognitive factors, such as knowledge of natural hazards, than emotional responses to the scenery.

Wachinger et al. (2013) highlight the growing complexity in distinguishing between natural disasters and those induced by human activities. Climate change and human interference with natural environments have blurred the lines, suggesting that anthropogenic factors increasingly influence many "natural" hazards. This interconnectedness of natural and human-induced hazards challenges traditional perceptions, as natural landscapes, often celebrated for their beauty, are rarely associated with potential risks unless explicitly linked to disaster awareness. Ma et al. (2020) support this view, asserting that stunning landscapes are typically regarded as attractions rather than sources of danger, even though they may conceal vulnerabilities to disasters. Therefore, natural attractions without disaster awareness do not appear to affect tourists' risk perception directly.

The study further advances PMT by demonstrating the role of risk perception in fostering disaster awareness. PMT explains how individuals respond to perceived threats by evaluating both the severity of the risk and their ability to cope with it. In tourism, this theory helps understand how tourists assess risks and decide whether to take protective actions. Tourists who perceive potential physical, financial, psychological, and social risks during their travels tend to adopt a more proactive approach, equipping themselves with essential disaster-coping skills. This finding corroborates previous studies by Perpiña et al. (2019) and Park and Reisinger (2010), underscoring the critical role that risk perception plays in shaping disaster preparedness. It highlights the necessity of presenting accurate risk information when promoting and marketing destinations vulnerable to disasters. Neglecting to include disaster preparedness information in promotional materials could inadvertently encourage tourists to overlook vital safety measures, thereby increasing their susceptibility to unforeseen hazards.

Understanding risk perception is critical in disaster management, as it significantly influences stakeholders' effectiveness at all stages of disaster response, from preparedness and response to recovery (Appleby-Arnold et al., 2021). A well-established body of literature indicates that how individuals perceive risk can shape their behaviors regarding disaster preparedness.

Ng's (2022) research discusses the relationship between risk awareness and disaster preparedness behavior. Their findings suggest that individuals more aware of potential risks are more likely to take proactive measures to prepare for disasters. This connection highlights the importance of enhancing risk awareness among communities and tourists, as increased awareness can lead to heightened preparedness. Yin et al. (2022) further strengthen this perspective; their research demonstrates that disaster risk perception can substantially influence preparedness actions. Their research highlights the necessity of considering individual and

Table 5 The direct, indirect, and total effects of the travel preparedness model

Effect	Direct effect	Indirect effect	Total
Accessibility → Risk perception	- 0.098		
Attraction → Risk perception	- 0.085		
Disaster knowledge → Risk perception	0.267		
Touristy facility → Risk perception	- 0.185		
Risk perception → Travel preparedness	0.190		
Accessibility → Risk perception → Travel preparedness		- 0.018	- 0.018
Attraction → Risk perception → Travel preparedness		- 0.016	- 0.016
Disaster knowledge → Risk perception → Travel preparedness		0.051	0.051
Touristy facility → Risk perception → Travel preparedness		- 0.185	- 0.035

contextual factors that affect how risk perception translates into preparedness behaviors, particularly among tourists who may not be as familiar with local risks.

To explore the mediating role of risk perception, the study calculated the direct, indirect, and total effects of destination attributes on travel preparedness (Table 5). The results indicate that disaster knowledge is the sole factor significantly enhancing tourists' preparedness. While factors such as ease of access and tourist-friendly facilities can sometimes obscure the real risks associated with a destination, a solid knowledge of past disasters leads to more accurate risk perception and greater preparedness. This finding is consistent with Sahadev et al. (2024), who suggest that an individual's perception of risk is shaped by their social environment, personal control over behaviors, and attitudes toward disasters. Yovi et al. (2023) further note that the depth of knowledge heavily influences these factors. Tourists with solid environmental awareness are more likely to adopt proactive attitudes and protective behaviors, as Barber et al. (2009) highlighted. This reinforces the importance of developing robust educational tourism programs for visitors to disaster-prone destinations, ensuring they are informed and actively engaged in safeguarding their well-being.

The findings of this research emphasize the pivotal role of risk perception in shaping tourists' preparedness. While ensuring that tourism infrastructure is safe and comfortable is vital, it must be complemented by an informed understanding of disaster risks. Without this balance, tourists may develop a false sense of security, potentially leading to complacency in their risk assessments and preparedness levels (Wahyuningtyas et al., 2020). This oversight could result in a higher incidence of tourist accidents and an increased likelihood of environmental degradation as tourists neglect to take appropriate precautions (Rahmafitria et al., 2024).

Conclusion

The present research aims to enhance our understanding of how destination attributes, risk perception, and tourist readiness interact in disaster-prone areas. This investigation utilizes a robust research model tested through Structural Equation Modeling (SEM). The results underscore the significant role of disaster knowledge in fostering preparedness, as informed tourists are more inclined to adopt safety measures and take proactive actions, which is in line with the SCTT. Interestingly, while scenic attractions draw

visitors, the aesthetic appeal of these destinations does not appear to increase perceived risk. This creates a paradox between enjoying a beautiful natural setting and being aware of potential hazards. Additionally, access to creature comforts may enhance overall satisfaction, reducing perceived risk (risk compensation), potentially leading to complacency. These findings highlight the necessity of risk-informed communication alongside infrastructure development to address safety misconceptions. The study also identifies tourist infrastructure as a factor that may diminish perceptions of risk, linking it to concerns about harm and damage while promoting sustainable tourism development. Furthermore, the mediating effect of risk perception underscores the importance of disaster education in encouraging proactive behaviors among tourists. Theoretical contributions of this research enrich the tourism literature by connecting destination features with disaster awareness and readiness. Practically, it urges destination managers and policymakers to adopt a dual approach: enhancing destination attractiveness while integrating disaster education into marketing and management strategies to ensure the safety and resilience of tourists. These insights are vital for planning resilient and disaster-conscious tourism in vulnerable destinations.

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