

# A systematic review of safety issues in tourism: Identifying emerging threats and proactive responses

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**Abstract:** The study conducted a systematic review of seven scientific articles published between 2014 and 2024 to uncover emerging safety concerns in the tourism industry and suggest preventive measures. The identified safety threats in the sector include environmental risks, health issues, crime, terrorism, and digital dangers. Solutions like mobile safety apps and smart devices are being utilized to address these risks. The research aligns tourism safety strategies with Protection Motivation Theory (PMT) and proposes a multi-level intervention framework encompassing individual, organizational, and government actions. The study aims to contribute both theoretically by linking safety strategies with PMT and practically through the development of a comprehensive safety planning approach for sustainable tourism.

**Keywords:** Prevention, Protection Motivation Theory, Safety threats, Systematic review, Tourism destinations, Tourism safety

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## Introduction

Tourism represents one of the most rapidly expanding sectors of the global economy, playing a pivotal role in contributing to the gross domestic product (GDP) of numerous nations (Pedak & Mellander, 2018). As reported by the World Travel & Tourism Council (WTTC), in 2019, the tourism industry contributed approximately 10.4% to the global GDP and supported the creation of more than 300 million jobs worldwide (WTTC, 2023). However, despite this vast economic potential, the growth of tourism is also accompanied by increased risks and threats to tourist safety (Khan et al., 2021). These threats can stem from various factors, including natural disasters such as earthquakes and floods, crimes such as theft and fraud, health issues such as the spread of infectious diseases, and transportation risks that can negatively impact the travel experience (Jiang & Ritchie, 2017).

Although many studies have highlighted the importance of safety in tourism, there remains a gap in the literature that comprehensively explores how various types of threats affect tourists (Pickering et al., 2018). Many existing theories and approaches have yet to provide a holistic solution to this issue. For instance, previous studies have primarily focused on specific aspects of tourism safety, such as transportation crises or natural disasters, without considering a broader approach to identifying various types of threats and the preventive measures that can be effectively implemented (Rosselló et al., 2020).

This study aims to address this gap by adopting Protection Motivation Theory (PMT) as a theoretical foundation in analyzing how tourists and stakeholders assess and respond to threats to safety. PMT highlights protective behavior through four main components, namely perceived severity, vulnerability, action effectiveness, and self-efficacy, which together can serve as a basis for developing safety intervention strategies (Wang et al., 2019).

The significance of this research is based on the fact that tourist safety threats not only impact individuals but can also damage the image of tourism destinations and hinder the economic growth of the country. Many global tourist destinations still face serious challenges in

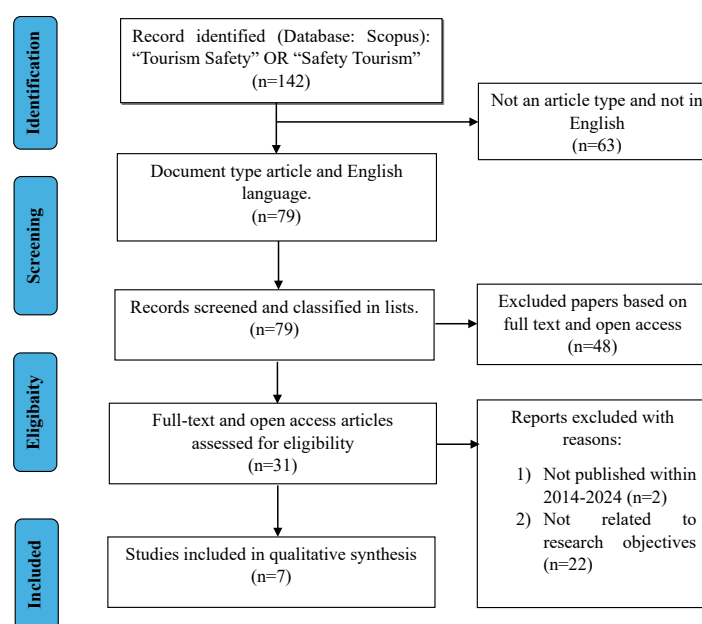
ensuring the safety of tourists (Yin et al., 2024). Furthermore, the anticipated growth of international tourist arrivals reaching 1.8 billion by 2030, as projected by the World Tourism Organization (UNWTO), underscores the increasing importance of addressing safety-related concerns. (UNWTO, 2019). This study is expected to make a significant contribution to policymakers, tour operators, and tourists in understanding the existing risks and how to address them. Therefore, the results of this research can serve as a foundation for the development of better-integrated tourism safety policies and raise awareness of the importance of safety in the rapidly growing tourism sector.

This research seeks to answer two main questions. First, what types of safety threats are identified in the recent tourism literature? Second, what forms of preventive measures have been proposed, and how do they relate to intervention strategies implemented at various levels, whether individual, organizational or governmental? Understanding these two aspects is important for building a comprehensive approach to improving traveler safety.

## Methodology

This research utilizes a systematic review method to identify and analyze safety issues faced by tourists in various tourism destinations. The systematic review method was chosen because it allows researchers to collect, evaluate, and synthesize related studies in a structured and transparent manner, providing a comprehensive overview of safety threats and preventive measures that can be applied (Khizar et al., 2023). This systematic review adhered to the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines to maintain methodological rigor and ensure the reliability of the research findings (Page et al., 2021).

The entire review process, including article identification, screening, eligibility checks, and synthesis, was conducted over a period of three months, from September to November 2024. This duration ensures sufficient time for comprehensive evaluation and selection of relevant studies according to pre-established inclusion and exclusion criteria.



**Figure 1.** PRISMA flow chart process of article selection (adapted from (Page et al., 2021))

The study screening process was conducted systematically, following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) flow. In the initial stage, identification was carried out, resulting in 142 articles from the Scopus database using the keywords "Tourism Safety" OR "Safety Tourism." After further screening, only 79 articles met the criteria of being scientific articles in English. In the next filtering stage, 63 articles were eliminated due to not meeting the specified type or language criteria. During the eligibility phase, 31 open-access

articles were reviewed in depth. Of these, 22 articles were excluded for being irrelevant to the research objectives, and 2 others were excluded because they were not published within the period 2014-2024. As a result, 7 articles met the requirements to be included in the qualitative synthesis, as illustrated in

## Results and Discussions

The systematic review of the literature identified key findings on traveler safety across different contexts and destinations. Based on PRISMA's thematic analysis of the selected studies, four main categories of safety threats and relevant prevention strategies were identified, as shown in **Table 1**.

**Table 1.** Intervention Levels for Various Safety Threats in the Tourism Sector

Threat Category	Individual Interventions	Organizational Interventions	Governmental Interventions
Environmental Risks	Use of mobile weather alerts	Climate-adapted infrastructure	Early warning systems, zoning laws
Health Hazards	Wearables for health monitoring	Sanitization protocols, first aid points	Disease surveillance, public health systems
Crime & Terrorism	Personal safety apps	Security staff, CCTV	National security strategies, crisis plans
Digital/Cyber Threats	Data privacy awareness	Encrypted booking platforms	Cyber law enforcement, digital literacy campaigns

An analysis of the seven studies reviewed reveals the frequency of occurrence of each safety threat category:

1. Environmental Risks: appeared in 6 out of 7 studies, reflecting a strong focus on natural hazards such as extreme weather events, floods or earthquakes.
2. Health Risks: addressed in 5 out of 7 studies, mainly related to infectious diseases and health challenges in tropical destinations.
3. Crime & Terrorism: also found in 5 out of 7 studies, indicating concerns over physical and social security in tourist destinations.
4. Digital Threats: mentioned in 4 out of 7 studies, reflecting the increasing attention to personal data security issues and cyber risks in modern tourism.

The tourism industry faces various safety challenges, and recent research highlights the importance of comprehensive strategies to address these issues. From the literature review, three main emerging safety threats in tourism have been identified: environmental risks, health issues, and human-caused incidents such as crime and terrorism. Additionally, the emergence of new threats, such as cybersecurity, underscores the continuously evolving risk landscape in tourism.

### Environmental Risks

The threats posed by natural disasters are substantial, particularly in popular tourist destinations that are vulnerable to extreme weather conditions such as storms, floods, and earthquakes. Research, such as the study by Zhong et al (2023) on tourism safety early warning systems, emphasizes the importance of systematic environmental monitoring to predict natural disasters and their impact on tourists. Furthermore, studies indicate that destinations with high environmental risks should develop strategies focused on the real-time collection and dissemination of data, providing accurate and timely information to tourists. In destinations prone to heat-related illnesses, mobile solutions with integrated safety systems are becoming increasingly essential (Dinkoksung et al., 2023).

### Health-Related Risks

Health and safety have now become top priorities, especially after the COVID-19 pandemic, with increasing concerns among tourists about the risk of disease transmission (WHO, 2020). Destinations in hot and humid climates face risks from diseases such as malaria and dengue fever. The surge in zoonotic diseases, as recorded in studies from China, has drawn attention to health

risks in tourism, with some experts proposing frameworks to monitor and control the spread of diseases among tourists (Rizzolo et al., 2023).

Research on health indicates that technologies such as smartwatches and mobile health-monitoring applications play a significant role in maintaining tourists' health (King & Sarrafzadeh, 2018). These applications provide real-time health data and can connect tourists with nearby medical services during emergencies (El-Sherif & Abouzid, 2022).

### **Crime and Terrorism**

Tourism safety is also threatened by crime and terrorism, particularly in high-profile destinations or major events such as the Summer Olympics. Research Szabolcs et al, (2022) indicates that risks are higher in such settings due to large crowds. The relationship between tourism safety and crime rates has been extensively studied, especially concerning the increased perception of risk and its impact on tourism demand. Countries hosting major international sporting events are highly vulnerable to terrorism threats, necessitating significant investments in both physical and cybersecurity (Mataković & Cunjak Mataković, 2019).

Despite substantial investments in policing and security for these events, research questions whether such expenditures directly correlate with a reduction in crime during the events. Instead, the overall security environment in a country appears to play a more significant role. Studies on sports policing and safety during the Summer Olympics highlight the importance of preparedness and collaboration between local law enforcement and international security agencies.

### **Cybersecurity and Digital Threats**

As more aspects of tourism move online, the risk of cyberattacks has increased significantly (Briguest, 2024). Research highlights the importance of protecting tourists' personal data, as platforms for booking accommodations, flights, and other services have become prime targets for hackers (Florida-Benítez, 2024). The increasing digitalization of the industry, along with the use of mobile applications, makes tourists vulnerable to identity theft and financial fraud (Zeng et al., 2023). Strong cybersecurity measures and public education campaigns on related risks are crucial in creating a safer digital environment.

### **Theoretical Implication**

This research extends the application of Protection Motivation Theory in the context of tourism safety. Travelers assess risk and take protective actions based on perceptions of threats and the effectiveness of available responses. The synthesis shows that interventions at multiple levels are needed to influence tourists' protective motivation and behavior. Perceptions of safety are not only determined by actual risk, but also by the existence of real and trustworthy safety mechanisms.

The implementation of technology, including mobile applications and smart devices capable of providing real-time weather alerts and emergency assistance, has proven effective in reducing risks in high-risk tourist destinations. The importance of secure infrastructure, such as adequate transportation and quick access to emergency healthcare services, is also a key factor in ensuring tourists' safety. Tourists' perceptions of safety greatly influence their decisions to visit or return to a destination, making it essential for tourism destinations to continually enhance their safety image.

Success in ensuring tourist safety relies on technology, infrastructure, and strong collaboration between governments, tourism service providers, and technology developers. Comprehensive and integrated safety policies are crucial to supporting tourism sustainability and maintaining the reputation of tourist destinations as safe places to visit.

### **Conclusions**

This study conducts a systematic review of various safety threats faced by tourists, as well as preventive efforts that can be undertaken to minimize risks. The review found that tourist safety is influenced by several key factors, including environmental risks, health threats, and

human-made threats such as crime and terrorism. Additionally, emerging threats like cyberattacks have become increasingly relevant with the growing digitalization in tourism.

The limitations of this study are limited to the small number of articles ( $n=7$ ), language limitations (only English articles), and not including primary data. Future research directions should empirically test the proposed framework with a mixed-methods approach, extend the coverage to non-English literature, and conduct primary data collection across different geographical contexts as shown in Figure 1.

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