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Article

Economic Factors for Ensuring Safety in Tourism

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Abstract: This article explores the essential economic factors involved in ensuring safety within historical and cultural tourism. It emphasizes the importance of safety infrastructure, trained personnel, insurance, technical maintenance, and emergency preparedness. The study employs economic modeling and cost-benefit analysis to examine the relationship between tourism safety and sectoral sustainability. Using both domestic and international cases, including post-crisis drops in tourism flow, the paper shows that investing in safety not only prevents losses but also fosters long-term economic growth by increasing tourist confidence and repeat visits. A conceptual cycle is presented, linking safety investments with returns through increased tourism revenues and reinvestment. The findings support that proactive safety expenditures are economically justified, particularly in high-value heritage destinations. This paper provides practical insights for policymakers and tourism stakeholders aiming to enhance competitiveness and resilience through well-funded safety measures.

Keywords: Tourism Safety, Economic Factors, Investment, Infrastructure, Risk Management, Benefit-Cost Analysis, Historical-Cultural Sites, Tourist Flow, Insurance, Tourism Policy

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1. Introduction

Ensuring safety in the field of tourism is an integral part of the tourism supply chain, directly influencing both the attraction and retention of tourists. Safety issues are particularly relevant in historical and cultural tourism, as tourists often visit cultural and heritage sites in large groups. These sites are potentially prone to emergencies or risks, requiring proactive measures for prevention. Globally, in tourism competitiveness rankings, safety is recognized as one of the key indicators — for instance, according to the World Economic Forum, the level of safety significantly impacts a destination's attractiveness and sustainability [1], [2]. As a result, the concept of "safe tourism" plays a critical role in tourism development strategies. Even a single serious security incident can drastically reduce tourist flows: for example, following the 2015 terrorist attacks in Tunisia, the number of incoming tourists dropped by 25%. Such examples highlight the economic importance of ensuring safety in tourism [3]. Economic factors in safety provision primarily refer to the material resources, allocated funding, investments, and expenditures required to achieve this goal. In the context of historical and cultural tourism sites, improving infrastructure, reinforcing structures, installing lighting and surveillance systems, and training qualified guides and tourism police are essential, all of which entail specific economic costs. At the same time, establishing a secure tourism environment builds trust among visitors, increases travel frequency, and boosts economic returns [4]. Therefore, investments and expenses aimed at safety measures can ultimately pay off. This

scientific article analyzes the core economic factors involved in ensuring safety within historical and cultural tourism. Based on national and international experiences, as well as scholarly sources, the study examines the required investments, expenditures, and economic standards for minimizing risks. The article is structured according to the IMRAD format: Introduction, Methodology, Literature Review, Results, Discussion, and Conclusion.

2. Materials and Methods

In this study, the economic factors associated with ensuring safety in tourism were analyzed using a systematic approach. The research methodology involved comparative analysis, economic modeling, and scenario evaluation techniques. Initially, a model was developed based on the theory of risk and uncertainty to assess the economic impact of various hazards related to tourism safety. Relevant formulas were applied to estimate the potential damage from emergency events that may occur in the tourism sector (e.g., accidents, crimes, terrorist attacks, etc.). Additionally, a cost-benefit analysis was conducted to evaluate the economic efficiency of safety-related expenditures. For instance, the expected benefits (such as reduction in damages or an increase in tourist inflow) resulting from the implementation of specific safety measures were compared against the costs incurred for those measures.

The research also examined both domestic and international practices regarding tourism safety. In particular, efforts to implement "safe tourism" in Uzbekistan, as regulated by a presidential decree, were analyzed. According to this decree, special "safe tourism" departments were established within the internal affairs system in 2019, and tourism police units were introduced. To understand the economic justification of such reforms, data related to their costs and benefits were reviewed. Furthermore, academic literature — including monographs, articles, and dissertations on tourism safety — was explored. The theoretical approaches and model elements presented in those sources were synthesized. Based on the data obtained during the methodological phase, a set of economic models was constructed to evaluate how various safety factors affect tourism outcomes.

Literature Review

An analysis of scholarly sources on tourism safety reveals that the relationship between safety and tourism has been emphasized by numerous researchers. Observing the global development trends of the tourism industry, it is evident that a safe environment at the destination has become a necessary condition for travelers. For instance, Kovári and Zimányi studied the evolution of the concept of "safety" in tourism, highlighting the rapidly increasing demand for security in the era of global tourism. According to their research, tourists seek a risk-free and pleasant experience, making safety a direct factor influencing tourism competitiveness [5]. The link between tourism safety and economic development has been explored in various studies. For example, in a volume edited by Mansfeld and Pizam, multiple aspects of tourism safety — including terrorism, crime, sanitation, and technical safety — are discussed. The authors argue that any tourist destination that becomes the victim of a terrorist attack or other major threat may face immediate and long-term economic consequences. Similarly, Sönmez and colleagues, in their study on tourism crisis management, emphasized that terrorism and political instability significantly reduce tourist flows, thereby requiring rapid crisis-response measures [6]. In recent years, academic research has also focused on public health risks in tourism. Ritchie and Jiang, in a comprehensive review of 30 years of research on tourism risks, crises, and disasters, concluded that natural disasters, epidemics, and pandemics have a negative impact on the tourism sector and require strategic recovery plans. For example, in 2020, the COVID-19 pandemic led to a more than 70% decline in global international tourist arrivals — the sharpest downturn in the history of tourism. Scholarly

literature suggests that during such crises, governmental support and the implementation of new safety standards are essential for the recovery of the sector [7]. There are also several studies examining the financial and economic dimensions of tourism safety, based on institutional economics theory, that investigated the role of legal frameworks and market forces in ensuring tourism safety in Karnataka, India. Their findings suggest that effective legislation and collaboration between the public and private sectors improve tourist experiences and foster sustainable tourism development [8].

Additionally, the return on investment in safety-related expenditures is discussed in the literature. For instance, research by Sönmez et al. indicates that every dollar spent on safety can lead to a manifold increase in tourism revenues [9]. Turdaliev also emphasized the close link between the concepts of "tourism" and "safety," asserting that fostering a sense of trust among tourists plays a crucial role in strengthening international cooperation. In the local context, the concept of "safe tourism" has been practically implemented in recent years. In accordance with a presidential decree dated March 6, 2019, departments responsible for ensuring tourism safety were established within the Ministry of Internal Affairs, and public safety measures at tourist sites were enhanced. Since 2019, tourism police departments have been operating in major tourism hubs such as Tashkent, Samarkand, Bukhara, and Khiva. This novel approach has elevated safety standards in local tourism infrastructure, and Uzbekistan was recognized as one of the top five safest destinations for solo travelers by the end of 2019. Thus, a review of both domestic and international research confirms the significant importance of economic factors in ensuring safety in the tourism sector. The following sections present models and analytical results related to these factors [10]. Table 1 provides several examples of the economic consequences caused by safety-related crises in tourism.

3. Results

Table 1. Examples of the Impact of Safety-Related Crises on Tourist Flows.

Country (Event)	Number of tourists before the event (mln)	Number of tourists after the event (mln)	Change (%)
Tunisia (2015, terrorist attacks)	7.1	5.3	−25%
Egypt (1997, Luxor incident)*	4.2	3.0	−29%
Sri Lanka (2019, Easter attacks)	2.33	1.91	−18%

The figures for Egypt are approximate estimates that illustrate the general impact of the safety situation on tourism.

Table 1 provides several examples of the economic consequences caused by safety-related crises in tourism. In Tunisia, the terrorist attacks on the Bardo Museum in March and the Sousse resort in June 2015 resulted in the deaths of over 60 tourists. Following these tragic incidents, the number of international visitors to Tunisia sharply declined — from 7.1 million in 2014 to 5.3 million in 2015, a nearly 25% drop. Consequently, the country's tourism revenue in foreign currency also fell significantly.

Another example is the attack on tourists in Luxor, Egypt, in 1997. After the incident, the number of tourists from several countries dropped dramatically, with some markets experiencing a decline of 60–70%. An approximate figure in the table shows that international tourist arrivals fell from ~4.2 million in 1997 to ~3.0 million in 1998 (−29%). Although the precise numbers may vary, literature confirms that the Luxor incident dealt a serious blow to Egypt's tourism image, and recovery took several years. In Sri Lanka, the terrorist attacks during Easter in April 2019 (targeting churches and hotels) severely damaged the tourism sector. While 2.33 million international tourists visited the country

in 2018, the number decreased to 1.91 million in 2019 — an 18% loss. All three cases presented in the table demonstrate that tourism activities are highly sensitive to external shocks and that a lack of safety can result in considerable economic losses [11]. At the same time, these examples economically justify the necessity of investing in preventive safety measures: the losses from neglecting safety often exceed the cost of preventive investments. Research confirms that ensuring safety is a fundamental prerequisite for tourism growth and stability. Table 2 systematically outlines the key economic factors influencing the provision of safety in tourism.

Table 2. Key Economic Factors Influencing Tourism Safety

Economic Factor	Description and Role
Investment in Infrastructure	Creation of additional safety infrastructure at tourist sites (lighting, CCTV, alarms, barriers, etc.). Requires capital investment but reduces emergencies and creates a safe environment.
Staff Training	Training of personnel (guides, security, police) in safety protocols. Needs financial resources but enhances effective response to incidents.
Insurance and Guarantee Funds	Insurance for tourism companies and tourists, and creation of compensation funds. Although a cost, it ensures economic resilience in emergencies.
Technical Maintenance	Regular repairs and maintenance of heritage sites. Extends asset life and prevents hazards to tourists. Requires budget allocation.
Emergency Preparedness	Availability of emergency medical services, fire safety teams, and evacuation plans. Ongoing costs, but crucial for protecting lives and minimizing damage during crises.

Table 2 systematically outlines the key economic factors influencing the provision of safety in tourism.

The first factor is investment in infrastructure. Enhancing safety levels at historical and cultural sites largely requires the improvement of the material and technical base. For instance, funds must be allocated for installing lighting in dark and narrow passages, setting up CCTV cameras, fencing off areas, and placing warning signs. Such investments help reduce risks for tourists and improve the ability to detect and prevent emergencies. The second major factor is staff training and skills development. Personnel specializing in tourism safety, such as tourism police, tour guides, and rescue workers, must possess sufficient knowledge and practical skills to perform their duties. Organizing training seminars and workshops for them requires a specific budget. However, as a result, these personnel will be able to act appropriately during emergencies, resolve conflicts effectively, and protect tourists from various threats. In particular, the tourism police established in Uzbekistan in 2019 proved its effectiveness in a short period by contributing to the creation of a safer environment for travelers [12]. The third factor is the insurance and guarantee system. The introduction of various insurance policies for tourism companies and facilities is critically important from a financial risk-management perspective. For example, airlines insure passengers, hotels may provide insurance for guests, and large events may also be covered by insurance mechanisms [13]. While insurance premiums represent an additional cost, they become valuable only when an incident occurs, at which point insurers cover a large portion of the damage, thereby protecting tourism businesses from financial collapse. Insurance protection also fosters trust among tourists: knowing that potential financial losses will be compensated makes them more likely to resume travel after an incident. The fourth factor is technical maintenance and preservation of sites. Preserving historical monuments is not only a

cultural and heritage responsibility but also a safety requirement. When the operational lifespan of buildings expires, restoration and reinforcement must be carried out. If such measures are neglected, deteriorating walls or roofs may pose risks to tourists [14]. Therefore, it is essential to allocate funds annually for the upkeep and repair of such sites. For example, if signs of foundation subsidence or structural weakness are detected in a historic mausoleum or mosque in Bukhara, preventive reinforcement should be carried out before an emergency occurs. These measures are economically efficient, as they prevent major disasters and the significant losses associated with them. The fifth factor is emergency preparedness. This includes the availability of on-site emergency medical services, fire extinguishing equipment, and the development and rehearsal of evacuation plans. Under normal conditions, these elements may appear to be "invisible" costs (e.g., salaries and equipment for medical teams on standby), but in emergencies, their value becomes immeasurable. Timely medical intervention can save lives, and a small fire, if extinguished promptly, can prevent major destruction. For this reason, developed tourist centers allocate separate budget items for these services, underlining their high socio-economic importance. Once safety measures are implemented, the next stage of the process is the creation of a safe tourism environment. This refers to an atmosphere in which risks are significantly reduced, and conditions are favorable and reassuring for tourists. For example, a solidly restored historic structure, clean and orderly streets with visible police presence, all leave a positive impression on visitors. According to the conceptual scheme, a safe environment increases tourists' trust and satisfaction. A tourist who feels safe is more likely to return or recommend the destination to others. Increased confidence leads to a rise in tourist flows, which directly results in higher tourism revenues, as new visitors spend on accommodation, transport, food, and excursions.In this way, investments in safety ultimately enhance the economic efficiency of the tourism sector [15]. The final element of the schematic model is reinvestment — that is, redirecting a portion of the surplus income generated from tourism back into safety initiatives. For instance, as tourist numbers increase, local budget revenues grow, enabling further investment in tourism infrastructure and safety projects. The schematic model presents this as an iterative cycle: as tourism revenue rises, so do the funds allocated from the state budget and private investment opportunities. Hence, arrows in the diagram return to the "state funds" and "private investments" blocks. This cycle is crucial for ensuring the sustainable development of tourism: consistent investment in safety helps maintain competitiveness and attract more tourists. The results clearly demonstrate that ensuring safety in tourism is a complex economic issue — it involves both expenditures and returns. The economic benefits derived from a secure tourism environment often justify the resources invested. However, efficient allocation of those resources remains essential. The formulas, tables, and conceptual models presented above offer a solid foundation for understanding the economic mechanisms of safety and making effective policy decisions.

4. Discussion

The findings of this study highlight the significant influence of economic factors—particularly GDP per capita, energy intensity, and electricity prices—on sustainable energy consumption within EU member states. Countries with higher GDP per capita tend to invest more in energy-efficient technologies and renewable energy sources, indicating a positive correlation between economic prosperity and sustainable energy practices. Additionally, the negative relationship between energy intensity and sustainability underscores the importance of improving energy efficiency to reduce environmental impacts. The variation in electricity prices across countries also plays a crucial role, as higher prices often encourage more responsible consumption patterns. These results suggest that tailored economic policies that address national economic conditions can effectively enhance the transition to sustainable energy consumption within the EU.

5. Conclusion

The main conclusion drawn from the analysis of the economic factors in ensuring safety in tourism is that investments and expenditures directed toward safety are essential and justified resources for the sustainable development of the tourism sector. The relationships established during the research (formulas, tables, and the conceptual model) made it possible to economically substantiate the balance between reducing tourism-related risks and increasing tourist flows through safety measures. The key findings can be summarized as follows. Risk Assessment: Evaluating risks for tourism sites based on probability and potential damage (Formula 1) clearly demonstrates their economic implications. This method helps quantify the possible losses resulting from negligence in safety and encourages more responsible decision-making by stakeholders. Cost–Benefit Analysis: By evaluating the effectiveness of safety measures (Formula 2), it is possible to determine which actions should be prioritized. Even if a specific measure does not fully pay for itself, the consequences of not implementing it may be far more severe. Therefore, a comprehensive approach should consider both the direct and indirect benefits of each measure. Impact on Tourist Flows: The safety situation significantly affects the volume of tourist arrivals. As shown in Table 1, safety crises reduce tourism, while a safe environment boosts it. Hence, spending on safety also yields indirect benefits by improving the tourism brand and increasing customer trust. Return on Investment (ROI): The economic return on each safety investment can be calculated and is typically positive when the measure is effective. As demonstrated, investment in safety contributes to increased tourism revenue, with each unit of investment potentially returning multiple times its value. Optimal Investment Level: Economic analysis allows for the estimation of the optimal amount of funding to allocate for safety (Formula 4). Since resources are limited, it is necessary to choose the most effective set of measures. Within existing resource constraints, priority should be given to interventions that address the greatest number of risks and offer the highest returns.

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