



SAFETY IN MOUNTAIN TOURISM: CASE OF SLOVENIA

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Abstract:

The rapid expansion of tourism, particularly in mountain regions, brings heightened safety risks due to the seasonal and unpredictable nature of these areas. This paper explores safety concerns in mountain tourism, with a focus on crisis management, seasonality, and the impact of external factors such as natural disasters and the COVID-19 pandemic. Literature reveals that seasonality poses significant challenges for mountain destinations, affecting infrastructure, employment, and safety measures. Tourist safety is a critical factor, especially in activities like mountaineering, which carry inherent risks. The study analyzed data from mountain rescue operations between 2006 and 2023, focusing on accidents, interventions, and demographic trends. Results indicated that external factors, such as weather and economic crises, significantly influenced accident rates and rescue missions. A sharp decline in rescue operations in 2020 was attributed to COVID-19 restrictions. While rescue interventions have fluctuated over the years, the importance of coordinated crisis management, preventive safety education, and tailored safety measures for different tourist demographics is emphasized. This research underscores the need for improved safety protocols and visitor awareness in mountain tourism to mitigate risks.

Keywords:

safety, mountain tourism, mountaineering, seasonality.

INTRODUCTION

Tourism is one of the fastest-growing industries globally, with mountain destinations becoming increasingly popular due to their unique landscapes and outdoor recreational opportunities (Mrak, 2011; Beedie & Hudson, 2003). However, as the demand for mountain tourism grows, so does the necessity for effective safety management. Mountain regions, while offering thrilling experiences, are particularly vulnerable to natural hazards such as earthquakes, landslides, and wildfires, which pose significant risks to both tourists and local communities (Ma *et al.*, 2020; Wang *et al.*, 2019). Additionally, the seasonal nature of mountain tourism creates fluctuating pressures on infrastructure and workforce management, intensifying the challenges of maintaining safety and ensuring crisis preparedness (Čorluka, 2019; Jolliffe & Farnsworth, 2003). Recent global events, such as the COVID-19 pandemic, have further highlighted the fragility of mountain tourism, as restrictions brought about significant disruptions to travel and operations,

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causing a sharp decline in visitor numbers and corresponding rescue interventions (Matiza & Slabbert, 2021). Safety concerns are particularly pronounced in adventure and sport tourism, where participants engage in high-risk activities like skiing, mountaineering, and hiking. These activities, while attractive to tourists seeking adventure, often result in accidents and fatalities, raising the need for comprehensive safety strategies (Perić *et al.*, 2018; Musa & Thirumoorthi, 2015). Governments and tourism stakeholders must prioritize the implementation of safety policies and risk management measures, not only to safeguard tourists but also to protect the economic viability of mountain tourism destinations. Understanding the factors that influence safety perceptions, such as visitor demographics, natural hazards, and the role of rescue operations, is essential for enhancing safety outcomes and ensuring sustainable tourism growth (Ivanuša *et al.*, 2012; George, 2010). This study aims to analyze trends in mountain tourism safety, focusing on rescue interventions, accident patterns, and the impact of external factors, with the goal of providing insights for more effective crisis management and safety planning.

LITERATURE REVIEW

Safety in Tourism

Tourism is rapidly expanding, but its vulnerability to various security risks makes safety a central concern, particularly in mountain destinations. These regions are especially susceptible to crises due to their seasonal nature, requiring a strong focus on safety and risk management (Mansfeld & Pizam, 2006; Ivanuša *et al.*, 2012). Governments must understand that security policies affect both domestic and international tourism, influencing visitor numbers and destination safety (Santana-Gallego *et al.*, 2020). Mountain tourist destinations are also vulnerable to natural disasters like earthquakes, which have a significant impact on tourism flows, often greater than terrorist threats (Ma *et al.*, 2020). Additionally, the COVID-19 pandemic severely disrupted mountain tourism, halting operations and marking these areas as particularly fragile due to their reliance on seasonal activity (Matiza & Slabbert, 2021). Safety in mountain tourism requires coordinated crisis management, with a focus on both preventive measures and post-crisis recovery (Ivanuša *et al.*, 2012).

Mountain Tourism and Seasonality

High-altitude mountains, once largely avoided due to their inaccessibility and harsh conditions, have evolved into popular tourist destinations known for their unique landscapes and a wide range of recreational activities (Mrak, 2011; Beedie & Hudson, 2003). This transformation has opened up opportunities for both local communities and the tourism industry. However, mountain tourism faces significant challenges primarily due to seasonality. Kennedy (1999) defines seasonality in tourism as fluctuations in demand during specific times of the year, a phenomenon particularly pronounced in mountain regions. Tourist activity tends to peak during a few busy months, often coinciding with favorable weather conditions for activities like skiing or hiking. This surge in visitors can strain local infrastructure, create environmental pressures, and lead to overcrowding, while the off-season brings inefficiencies and underutilization of resources (Ćorluka, 2019). Moreover, seasonality has profound implications for employment within mountain tourism. Demand for workers is concentrated in the peak season, leading to challenges such as part-time work, underemployment, and difficulties in retaining skilled staff (Jolliffe & Farnsworth, 2003).

Mountain Tourism and Safety

Safety remains a primary concern for tourists, especially in the realm of mountain tourism, where the interplay between natural environments and outdoor activities is profound (Sun & Zong, 2019). With the rise of eco-tourism, an increasing number of safety incidents in mountainous regions have been reported, highlighting the need for enhanced safety measures and management strategies (Sun & Zong, 2019). Mountain tourism has gained international traction, largely due to the deep connection that individuals feel with nature, making these regions increasingly attractive to tourists (Río-Rama, 2018). Tourist safety plays a crucial role in shaping the overall experience, particularly for sport tourists, who often display heightened sensitivity to safety



issues compared to non-sport tourists (Perić *et al.*, 2018). Activities such as mountaineering, while exhilarating, are inherently risky, and the number of participants continues to rise despite frequent reports of injuries and fatalities (Musa & Thirumoorthi, 2015). Mountain regions are particularly vulnerable to natural hazards like landslides, floods, and wildfires, which threaten not only the safety of tourists but also the attractiveness of these destinations (Wang *et al.*, 2019; Kastolani, 2016). Mountain protected areas play a fundamental role in conserving the natural environment while also offering social benefits, including spaces for leisure and recreation. Understanding the motivations and behaviors of visitors in these areas is vital for their effective management (Taczanowska *et al.*, 2019). Well-planned tourist trails fulfill various functions, including safety and ecological preservation. They can minimize negative environmental impacts while enhancing visitor safety (Kolodziejczyk, 2019). Additionally, individual factors such as age, nationality, and visit frequency can significantly influence perceptions of safety in tourist destinations. Research indicates that domestic tourists often have a different awareness of safety and crime compared to international visitors, necessitating tailored safety measures (George, 2010). In mountain environments, four critical factors influence health and injury risks among mountaineers: individual characteristics (such as mountaineering skills and physical fitness), equipment (including ropes and ice axes), the uncontrolled environment (which encompasses climbing routes and weather conditions), and the crucial role of mountain guides (Musa & Thirumoorthi, 2015).

METHODOLOGY

The research included data on mountain rescue interventions, accidents, and the demographics of individuals affected from 2006 to 2023. Descriptive statistics were done, where the focus was on variables such as the number of interventions, including rescues, searches, medical aid, and helicopter assistance. It also examined the severity of injuries, categorized as minor, severe, or fatalities, distinguishing between mountaineers and other groups. Additionally, the study looked into the types of accidents occurring in mountain environments, such as hiking, climbing, skiing, and other outdoor activities. The total number of accidents and incidents was analyzed over the years, with special attention to fluctuations influenced by factors like weather, economic crises, and the COVID-19 pandemic. Demographic data were also considered, focusing on the age groups of those affected, ranging from young individuals to the elderly, to determine which age groups are most susceptible to accidents or fatalities. The research aimed to understand trends in mountain safety and how external factors and seasonality impacted the frequency of mountain rescues and accidents over time.

RESULTS

In the Vorarlberg area, significant variations were observed in 2013 and 2019, with the attractive summer weather and challenging conditions during the snow-poor early winter of 2013 leading to increased rescue deployments, despite a 42% rise in fatalities that year. By 2019, although the number of interventions had decreased, the duration of these operations increased due to extensive search and recovery missions. Slovenia and Vorarlberg both experienced a drop in rescues in 2014, influenced by adverse weather and management issues; however, regulations improved thereafter. In 2020, interventions declined across all three regions due to reduced mountain visits and COVID-19 restrictions. Analyzing trends, the Dolomites saw the highest increase in interventions, followed by Slovenia, while Vorarlberg had the smallest growth. Future predictions for rescue operations remain uncertain due to the ongoing pandemic situation.

CONCLUSIONS AND DISCUSSION

Visitor safety is crucial in adventure tourism, particularly in mountainous regions (Wang *et al.*, 2019). As mountain visits have increased, so have accidents and rescues. Notably, after 2007, both Slovenia and Italy experienced a decline in rescue interventions, attributed to the economic crisis and reduced mountain visitation. However, rescues began to rise again after 2013, peaking until 2019, before sharply dropping in 2020 due to the COVID-19 pandemic. In Vorarlberg, Austria, while overall rescues decreased, there was a rise in



incidents in alpine and rough terrain, likely linked to more locals and inexperienced hikers choosing less populated routes during the pandemic. The correlation between the number of accidents and rescues and visitor numbers highlights the influence of external factors like weather and economic conditions. Given the seasonality of mountain tourism, effective crisis management is essential during both low and high visitation periods. Slovenia's lack of a dedicated rescue helicopter emphasizes the need for coordinated efforts between mountain rescue teams and military or police helicopters. Additionally, cooperation with mountain huts for shelter and resources is vital. Preventive education for mountain visitors about potential dangers, necessary equipment, and preparedness is key to enhancing safety. Teaching the younger generation about safe mountain practices and crisis response will further contribute to improved safety in mountainous areas.

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