



Risk Management in Adventurous Sports Tourism. A case study of Trekking in Nepal

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Abstract

The study was conducted to explore Risk management practices in Adventure Sports tourism, with specific focus on trekking activities in Nepal. Adventure tourism has inherent risk, including environmental, health, operational challenges. Ensuring safety and mitigate this risk are critical for maintaining customers trust and sustaining business operations. The objective was to identify key risks, evaluate risk management practice adopted by adventures sports organization and outline challenges faced by the operators.

A qualitative research method was applied including semi structured interviews with tour operators, guides and other participant involved in trekking. The analysis involved thematic analysis to categorize insights into risk identification, mitigation strategies and the perceived effectiveness of current protocols.

The finding highlighted several prevalent risks including unpredictable weather, natural disasters, high altitude sickness. Moreover, the importance of regular safety briefing and updated training for the guides contributes to risk awareness and rapid response capabilities. However, challenges are mentioned such as geographical location, narrow and unsafe trail, and limitation on resources.

In conclusion the current risk management practices contribute significantly to the safety of the participants, but there is need of continuous improvement. Better resource allocation, regular and updated training to the guides and adaptive strategies tailored to environmental unpredictability were recommended to strengthen overall risk management in adventure tourism.

Keywords/tags (subjects)

Risk, Risk Management, Adventure, Adventure Sport Tourism, Trekking, Nepalese Trekking, Tour operator, Guides

Miscellaneous (Confidential information)

For example, the confidentiality marking of the thesis appendix. See Project Reporting Instructions, Section 4.1.2.

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1 Introduction

Adventures sports tourism is rapidly growing tourism industry in the world (Buckley, 2007). Tourism, in its simple form, is travel and stay by persons in places other than the familiar environment for reasons like business, leisure and recreation or attending business and other functions or events for more than one day but not less than a year. It is a form of tourism that is related to both sports' tourism and adventure tourism. Adventure tourism can be described as a subset of tourism whereby tourists take part in sporting activities that are physically demanding, or those that induce thrills, which often occur in the natural roller-coaster or in remote terrains that call for specific skills, apparatus and possibly daft as well. The major incentive for this type of tourism is the fun, adventure and fortunes entail in these activities. Buckley, (2007) describes tourism product are those which involves the combination of the price, place, size, duration, skill level and remoteness which enhance the overall thrill and the excitement level of the clients. It is a guided commercial tour package which major attraction it the outdoor activities.

Adventures tourism means the outdoor activities with full of excitement. It has a unique feature which makes many people attract on these types of activities. Adventure sports tourism is the outcome of unique experience in tourism. There are some examples of adventurous sports including Trekking and mountaineering, White-water rafting, Bungee Jumping, Rock climbing, Skating, Mountain Cycling, Underwater diving, Wave surfing. On these adventures activities it meets the unique experience which combined with the excitement of physical challenges with appeal of discovering unknown places (Explore Tourist Places, 2023).

Adventure tourism is the major force to drive sustainable tourism, promoting conservation, engagement of people to protect the surrounding, according to the United Nation Tourism Organization (UNWTO, 2022). Adventure tourism attracts youths who value adventure and meaningful experiences. Studies have shown that adventure tourist are mainly focused on personal growth, winning their fear, cultural exchange and environmental awareness (Adventure Travel Trade Association, AATA, 2021). Additionally, adventure tourism provides an opportunity for employment in the rural areas in the sector of hotel, guides, transportation, equipment rental shops. It also enhances environmental conservation by encouraging in protecting natural resources along with an adventurous experience (UNEP and UNWTO, 2019).

2 Literature Review

2.1 Adventures Sports Tourism

Tourism is the growing business around the world and adventure sports tourism is one of the interesting types of tourism. World Tourism Organization (2014) defines adventure tourism as risk taking. Many adventures tourist put their life in risk to get the pleasure and to overcome with the fear. Dickson (2012) criticised risk by saying risk is not all about losing but it is also about gaining something. According to Hanna et al (2019), Adventures tourism are categories as high-risk adventure tourism and minimal risk adventures tourism. In high-risk adventures sky diving, white water rafting, rock climbing etc are included whereas in low-risk adventure hiking, trekking, and camping are included. Many people like to experience diverse types of risk-taking activities in their life. Giddy and Webb, (2018) talks about the motivation factor on adventures tourism. It includes risk and physical danger; however, thrill or rush remain as key motivation for the adventure tourism where people were likely to participate in high dangerous adventures activities. Also, they talk about the push and pull approach for the motivation of the adventure's tourism. On this approach push factor is related to the love for nature where pull factor is about environment. There are some distinct factors which make the adventure sports tourism different from the other. The main feature of adventure sports tourism are as follows.

Physical Challenges

Adventures sports tourism involves physical activities which are often challengeable to the participants endurance, strength, and skills. Adventurous activities like mountain bike, trekking, bungee jumping, white water rafting, mountain climbing, rock climbing is some of the examples which needs physical fitness to participate. Participants often face challenging terrains, unpredictable weather conditions, and physical strain, which is beyond the limitation. For the participant who like to take part in the adventurous activities physical challenges add an element of excitement and accomplishment to the experience. Adventure tourism often define as part of tourism industry which involves travelling in remote locations with physically demanding activities. (Explores Tourist Place, June 23, 2023)

Natural and Remote Location

Adventure sports are predominantly carried out in natural and often remote environments. It includes high mountain climbing, rafting in rivers, forest walks, high cliff bungee etc. These adventures activities offer a sense of escape from urban life to rural areas which allows participants to reconnect with the nature. However, the remoteness of the location often needs thorough preparation and planning as access to resources, medical emergencies, and limitation in communication. These things make the adventure activities more authentic with the raw experience of the environment to the participants.

Skills and Expertise Required

It is never easy to be the part of the adventures activities because it always needs more skills, expertise, knowledge, and training related to the activities. Activities like rock-climbing, high-altitude trekking, sky diving etc need special skills, knowledge and information about the activities before take part. It also needs training and certificate in such activities to minimize the risk and ensure safety and have full fun. The uniqueness of adventure tourism is the need of expertise as it combines recreational enjoyment with personal development through the acquisition of new skills.

Exploration and Discovery

One of the most thrilling aspects of the adventure tourism is the opportunity for exploration and discovery. Participants visit new and unfamiliar places, encounter new culture, natural environment (flora and fauna), along their way. This element of discovery adds an educational and enriching layer to the experience, as participants gain deeper understanding of the world around them. Exploration might involve navigating new trails, finding hidden nature, or engage with the remote communities making each adventure a unique and memorable journey.

Seasonal

Adventure activities are mostly seasonal, with their availability depend on weather and environmental conditions. For example, ice skating, skiing, snowboarding these activities need

snow; in rafting it need more flowing water so it suitable for monsoon or spring seasons. This seasonal based activity adds excitement and uniqueness as participants must plan their trips during specific time.

Personal Growth and Achievement

Participant often leads to the personal growth and a sense of achievement. Participants challenge themselves to get out of the fear and push them to participate on those activities to get satisfaction and build confident. Successfully navigating a difficult climb, surviving a breath-taking trek, developing new skills boost confidence and provide a deep sense of satisfaction. The personal transformation is a key motivator for many of the individual to take part on those activities which helps to grow mentally and emotionally and contribute to the self believe.

2.2 Adventure Sports Tourism in Nepal

Nepal is small country sharing border with to big countries India and China in Asia. Nepal is blessed with nature with its beautiful mountains, fast flowing rivers, lakes on the top of the mountain, culture, festival, heritage and unparallel geography. Nepal occupied only 0.1% of the world land area (Bhatta, 2021). Nepal is divided into three parts Himalayan Region, Mountain Region, and Terai Region. In these three regions all the places are equally important for the tourism purpose. Some of them covered the pilgrimage tourism, some of them are historically importance places, some of them are naturally important places. All these places attract the tourist.

Geographically Nepal elevations start from 60m above the sea level to the world's highest peak mount Everest at 8848m by contributing to the biodiversity. On this varied terrain of Nepal, it includes rugged mountains, valleys, and forest provides perfect place for natural based adventures sports. Nepal is home for eight highest mountain peak including Mt Everest out of fourteen above 8000m. In 2021, approximately 10.3% of tourist visit Nepal for trekking, expedition, and rafting (Nepal Tourism Statistics, 2021).

Table no 1. Matrix of Adventure Tourism Activities in Nepal

	Land Based	Water Based	Air Based
Established	<div style="text-align: center;"> Mountaineering <pre> graph TD A[Mountaineering] --> B[Trekking] A --> C[Mountain Climbing] C --> D[Peak Climbing] C --> E[Rock Climbing] </pre> </div>	White Water Rafting	Paragliding
	Jungle Safari	Kayaking	Sky Diving
Emerging	Skiing	Canyoning	Zip-flying
	Mountain Biking	Stand-Up-Paddle Boarding	Bungee Jumping

Source: Adapted from Wengel (2020)

Nepal government acknowledge the critical role of adventure tourism in driving the country's economy as a main source for the foreign exchange and revenue generation. According to a 2022 report by the World Bank, the tourism industry contributed about 6.7 percent to Nepal's GDP, while its total impact was US\$2.2 billion" (Shrestha, 2023). Nepal become the most popular adventure tourism destination in different catagories to the whole Asia pacific region (Nepal, 2016).

Overall Nepal has a balanced combination in natural landscapes, cultural heritage, and varieties of adventure activities. However, for the sustainable growth it needs continued efforts in conservation and ensure to develop infrastructure which beings' tourism remains viable and sustainable contributor to the economy of Nepal.

2.2.1 Historical Perspectives

The history begins from the early age of the human exploration and trade in Adventures sports tourism. At that time travelling is for the necessity survival, trade, or discovery but later travelling is because of the motivated by curiosity and the pursuit of adventure. Late 19th and 20th centuries marked as the actual beginning of adventure travelling where people desire for thrill and exploration with the mountaineering in the Alps and expedition to remote regions like Himalayas gaining popularity. These early adventures took on tough challenges in harsh environment which could be more than just relaxing, it may also be pushing human limits (Beedie and Hudson, 2003).

After the post war two it brought the meaningful change to the travel industry with the increase in disposable income, improved transportation, and the technological advancement and the emerging adventures tourism in recognition. The 1960s and 1970s were the pivotal decades, for the trekking and mountaineering in organized manner with the guide and the trekking routes. Most popular trekking trail like Annapurna circuit of Nepal and the Inca Trails in Peru become the icons of adventures travel, able to attract the international traveller to experience their physical challenges and cultural immersion (Swar Brooke et al., 2003).

On late 20th century, adventure sports tourism diversified with the introduction of extreme sports and new outdoor activities such as bungee jumping, skydiving, and white-water rafting. These extreme activities help in increase in the safety equipment's and the professionalization of guiding services helped make these activities safer for the adventure's lovers. Moreover, increasing in awareness of environmental conservation helps in increasing in the eco adventure, blending adrenaline with responsible travel practices (Buckley, 2007).

The digital age, social media play crucial role for the growth of adventures sports. The social media platform like YouTube, Instagram, Facebook played incredibly significant role to influence traveller to challenge themselves and participate at those activities. Influencer culture and Travel vlogs help a lot to fulfil demand for off-the-beaten-path destinations, and once remote location became increasingly popular. Modern adventure tourism now includes a wide range of activities, ranging from wildlife safaris to deep sea diving, catering to all levels of skill and interest (Carter, 2017).

Nowadays adventures tourism is well settled global industry, which can adapt new trend while maintaining its core value, which is the combination of thrill, personal challenge, and the connection to the natural world. This industry developed from the early age to the present to a dynamic and multi-faceted industry reflect broader societal shift in the way people engage with travel highlighting the enduring human desire for adventure and discovery (Fletcher, 2010).

2.2.2 Current Trend

New trend in adventure tourism market reflects shifts driven by consumer behaviour, use of advanced technologies and global conditions. The rapid growth of adventure sport tourism is aligned with the demand for novelty, the emphasis on sustainability, the incorporation of advanced technology and the interest in cultural tourism (UnivDatos, 2024). There are a lot of new extreme sports introduced in this phase. This industry is constantly growing with a lot of changes according to the choices of the tourist. This is influenced by the preference of the participant, technological advancement, weather changes and other major and minor global events. This several key trends have emerged shaping the way adventures tourism is experienced and able to cover the market in the world.

Sustainable and Responsible Travel

Sustainability is one of the current trending important adventure tourisms. In modern adventure traveller they focus not only on their pleasure but also the impact made by them while doing adventures activities in the nature. It helps to increase the concern about the environmental impact by the traveller, leading the rise in eco-friendly and community-based tourism. Now a days Tour operator is focusing on minimizing carbon footprints, supporting local communities, and promoting conservation efforts. Adventure experiences that priorities with environmental and social responsibility are gaining popularity, reflecting a growing trend towards more ethical travel (UNWTO, 2020)

Personalized and Customized Experiences

Now a days customized travel package become more popular to the traveller rather than traditional packages. Traditional packages are more likely to offer a one size fit all approach, which bring the

changes on the preferences of the traveller on their itineraries which align with their specific interest, skill levels, and preferences. It includes solo expedition travellers, family or friend adventure tours, customized offering allows travellers to craft experiences that are meaningful and align with their goals (Briedenhann and Wickens, 2004)

Digital Integration and Technology

Technology become the crucial to every sector in today's world including the adventure tourism sector. Extreme expedition needs the information about weather, location real time of the current location, and related apps which are helpful in adventures activities. In addition, virtual reality (VR) and augmented reality (AR) are being used to offer impressive preview of adventure experiences. Likewise, social media like Facebook, Instagram, TikTok, YouTube etc remains powerful tool for marketing adventures tourism to increase attraction to the traveller to make their choice of their preferences (UNWTO, 2019)

Safety and Risk Management

The ongoing emphasis on safety and risk management has intensified in response to global events like COVID- 19 pandemic. This is the very worst time in the world which teach to prioritise the health and safety protocols to the traveller. After COVID-19 tour operator must prioritize the strict hygiene standard, offering flexible booking option, and ensuring comprehensive risk assessment. This trend points the importance of balancing adventure with security, making it a key factor in decision making process for moder adventure tourist. The integration of sustainability, personalization, technology, wellness, and safety is shaping the future of adventure tourism, making it more accessible, ethical, and aligned with changing dynamics of global travel (World Travel and Tourism Council, 2021).

2.3 Risk in Adventures Sports Tourism

Risk is the crucial consideration in adventures tourism because of its link to the uncertainty, challenge, novelty, exploratory, discovery and how it conflicts with emotion. (Swarbrooke, Beard, Leckie, & Promfret, 2003, as cited in Wang et al., 2019). Piramanayagam and Pratim (2017) describes

risk as tragedy in adventures tourism. Here in terms of adventure risk mean potential of losing of life or hurting the body by doing the dangerous activities. Adventure is all about the outdoor activities which is different than the regular activities. Risk is a challenge which stimulates both fear and pleasure at the same time, caused by the combination of sports adventure, intensity and natural environment (Mata, Pereira, and Carvalhinho, 2022). Many people take risk to get some new experience and to build confidence in their life. There are some examples of extreme adventures activities which as more risk such as climbing the high-altitude mountain, jumping from the plane with parachute, bungee jump, white water rafting, surfing etc. People put their life in danger to experience these activities. Risk is important consideration in adventures sports tourism which is linked to uncertainty (Wang, Liu-Lastres, & Pan, 2019). Implementing effective risk management strategies is crucial for making adventure tourism more accessible and safer. Aven, T. (2016). talks about the three major strategies for management risk informed strategy, cautionary/ Precautionary strategy and discursive strategy. Where informed strategy refers to treatment of risk, cautionary/ precautionary refers to the safety factors and discursive refers to building confidence, trustworthiness.

Mata, Pereira, and Carvalhinho (2022) defines risk as a challenge which brings both fear and excitement at the same time with distinct pleasure by the fusion of sports, adventure, radicalness, and nature. So, the adventures activities are the mixture of fun and fear. When there is elevated level of risk, there may be the tragic incident of losing life while participating on those activities. Therefore, it is concern with the safety measures and risk management. Risk management in adventurous sports tourism is the process to evaluating risk exposure and measures to ensure the safety of the individuals who take part in the sports. It is important to know the risk arises in those kinds of activities and manage them effectively. Ensuring safety measure and risk management protocol is especially important which helps to feel secure to the adventure's traveller. According to Alwi (2022), risk management in adventure tourism can be described as a systematic process which identify and analyse risk exposure, and then followed by the implementation of the appropriate measures such as control, mitigate, or remove such risk.

2.4 Risk Management in Adventurous Sports Tourism

Quality assurance is one of the major focuses in adventures activities. Taylor, Varley, and Johnston, (2013) point out the importance of quality assurance in adventures tourism by emphasizing aspects like service quality, standardization, and business efficiency from business perspectives. They also elaborate quality assurance through educational perspective which emphasize quality of experience and the unique balance between subjective and objective responses in various situation.

This distinction highlights two critical dimension of quality assurance of adventurous tourism. Operational quality assurance which focusses on the service delivery by maintaining high safety standards and following standardize protocol which are essential to business side of adventures tourism. These points are helpful to minimize the risk and directed to the customers satisfaction and their safety. Experiential Quality Assurance is another dimension which focusses on the participants personal growth, perceived value, and memorable impact. This view expands the scope of quality assurance to consider not only the objective standard but also how experience related with ever individuals.

Risk is defined as potential of losing something by Beedie (1994). A lot of people take risk to gain something. If we talk about the adventures activities numerous people take risk and participates on those activities which make them physically and mentally strong, and energetic. Management of the risk is the major concern for the organization such as trekking, adventure and tour operator in adventure tourism. (Piramanayagam & Pratim, 2017). Risk management is the process of identifying the risk and ensure the safety of the staff, clients and associated people while participating the outdoor activities. Risk management in tourism includes identifying, analysing, and responding to risks which may negatively impact while performing the tourism activities. It is essential in adventure sports tourism due to inherently risky nature of the activities involved (Carter, 1991).

Ciriviri, (2019, p 11) suggest that insuring the risk management strategy for the standard tour operation to the travel agency, guides, and operational managers. Further he also suggests having proper training for risk management and to be serious on this matter. According to Alwi (2022). Risk management in adventure tourism can be described as a systematic process which identify and analyse

risk exposure, and then followed by the implementation of the appropriate measures such as control, mitigate, or remove such risk. Himalayan Trip (2024) talks about the poor risk management skill can cause the injuries and even death in trekking. It shows how important is risk management in trekking. Even a small risk must be observed through the activities.

According to Alwi (2022) adventure tourism operators have two main reasons for managing risks. To keep their staff and guest safe and to prevent financial or physical loss for their business activities. The primary duty and responsibility of the adventure tour operator is to protect everyone involved by preventing any emotional or physical harm during the trips. At the same time, they also need to protect their business from property damage, harm to their reputation, and financial losses.

2.5 Importance of Risk Management in Adventures Sports Tourism

Risk management is most important in adventurous activities to ensure the safety of the participants. Proper risk management in this industry helps to build the trust of the clients and contribute for the sustainability of the business. This leads tourism operator to deal with the legal requirements and the industry standards and reduce the chances of legal action or penalties. In adventures sports tourism business, the physical wellbeing of participant is often at risk, which needs to ensure the effective safety measures to prevent from the possible loss or damage. Accident, natural disasters, or even minor injuries can have severe consequences for both the tourist and the business which provides services.

Ensuring Safety

The priority of the adventurous tour operator is to ensure the safety of all participants of the tour or adventures activities. To ensure the safety of the participant it is always necessary to have proper risk management practices which help to prevent from the accidents and reduce it (Carter, 1991). Risk management begins with the understanding of the activity and environment, including factors such as weather conditions, terrain and equipment reliability. Tour operators are responsible to maintain quality regular check the equipment and ensure the training of the guides and other participants, pre-trip briefing. Ensuring safety is all about the planning, execution and always staying

alert. This helps creating the safe environment where participants can enjoy the adventure without worrying about their wellbeing.

Legal and Financial Protection

Effective risk management is essential to protect tourism operators from legal liability and financial losses associated with accidents and other incidents (Cloutier, 2003). The risk arises from the different adventurous activities include not only the immediate impact on participants safety, but also potential legal claims and the financial burden associated with compensation, medical expenses, or litigation cost. Accidents can lead to the potential monetary losses for operators, as they may be required to cover the cost of medical treatments, rescue operation, or damage in equipment. In addition, if any negligence or inadequate safety measures are proven there may be legal liabilities such as lawsuits or fines which can further strain the operator's financial resources. There may also be reputational damage, trust issue with customer, or hamper in business if there is not proper risk management framework.

By investing in risk management practices, tourism operators can not only protect the business from financial harm but also foster a sense of security and professionalism. Providing clear terms and conditions, including liability waivers, helps outline the responsibility both operators and the participants. These builds trust with participants and helps to build long-term relationships, create sustainable and resilient business model in the competitive field of adventure tourism.

Sustainability

Effective risk management is essential for adventure tourism business to operate sustainably, balancing the thrill of adventure with the responsibility to protect the environment and support local communities. Adventure activities often take place on remote places such as mountain rivers, forest where there are fewer human activities. By managing risk effectively, adventures tourism business can operate sustainably, ensuring that their activities do not cause long term harm to the environment or local communities (Buckley, 2007).

There are few practices which can help for sustainability in adventure tourism which involves reducing waste, conserving natural resources, and using ecofriendly equipment. Risk management plays a key role in ensuring that activities are conducted responsibly and do not exceed the carrying capacity of the environment. For instance, reduce the number of participants in adventure activities, which prevent the overcrowding at the same place at same time. Similarly, it is necessary to provide guidelines about the waste disposal, wildlife interaction and usage of water helps preserve the natural integrity of the destination.

Sustainable adventure tourism considers the wellbeing of local communities, recognizing their crucial role in maintaining the success of the industry. By integrating the sustainability into their risk management practices, it helps to reduce environmental and social risk and help to enhance the reputation of the business for those eco- conscious travellers. Sustainable operation is the commitment to the responsible tourism which balance the adventure with accountability.

2.6 Specific Risk Observed

Environmental Risk

The risk which occurs from the environment and harm human being are environmental risk. These risks are particularly relevant in adventure tourism, where activities often take place in remote areas and unpredictable natural setting. Environmental Risk includes Avalanches, Tornado, floods, extreme change in weather condition, which can endanger the safety of the tourist (Ewert and Hollenhorst, 1997). Environmental risk arises in the adventure's activities are not only dangerous but also it is unpredictable, which makes it as a critical component to manage them in adventures tourism planning. Operator must have effective measures, such as monitor weather condition, safety briefing to the participants, full prepared with the equipment used for the activities and use them properly. There should be emergency rescue plan including the evacuation with first aid training for the guides, which helps to address these risks effectively.

By understanding and preparing for environmental risk, operator can ensure safer experiences for participants while preserving the integrity of the natural landscapes where these activities take place. This balance is essential for maintaining the viability and safety of adventure tourism in the face of environmental challenges.

Operational Risks

Operational risk involved failure in equipment, inadequate staff training, and poor management practices (Beedie and Hudson, 2003). It is always essential to check the equipment very often before taking part in any adventurous activities, proper training to the staff is responsibility of the host and management should always be ready to tackle with any risk which may arise during the activities performing.

By addressing operational risks proactively, adventure tourism operators can build trust with participants and enhance their overall experience. proper equipment check, comprehensive staff training, efficient management practices are essential for maintaining safety, minimizing disruptions, and ensuring the success of adventure activities.

Human Risk

While participating on the adventurous sports there is always risk on physical and mental fitness. It is always necessary to keep the mental stability and physically fit to participate. Human risk is related to the physical and mental fitness of the tourists, including accidents due to overexertion, lack of experience or poor decision making (Pomfret, 2011). Adventure activities are physically demanding and often occur in challenging environments, requiring participants to be in good health and maintain mental focus. If these demands cannot be fulfilled it may lead to the accidents, injuries, or other adverse outcomes.

Physical fitness is a critical factor in ensuring participants safety and enjoyment. Physical fitness is required in such activities like rock climbing, trekking, mountaineering, expedition, kayaking etc. if any participants are not prepared with their physical fitness in such activities are highly increase their risk in their health. Mental fitness is also equally important as physical fitness. It helps to build self-confident and confronting fears or navigating high pressure situations. It is also crucial in emergencies, where quick decision needed to prevent further complication.

Lack of experience is another factor to contribute to human risk. Experience plays crucial role in those activities to minimize or to avoid risks. Experienced participants have more knowledge and

information about the activities which is advantages to navigate the risk. Poor decision making by participant and operators can further exacerbate human risk. Proper decision on emergency in adventure activities can mitigate the risk.

To minimize the risks arises while participating in adventures activities Nigam (2022) suggest fifteen safety measures while participating on those kinds of activities. She categories those safety measure as stay prepared, know your destination, know your sports, physical fitness, mental fitness, pack wisely, protective gears, teamwork, be in present and sum up.

2.7 Theoretical Framework

Risk Management Framework

Risk management Framework is a theoretical framework that establish principles and guidelines to which an organization should adhere to manage risk effectively. In this research it supports general risk management theory, particularly in the models of ISO 31000 framework. According to the International Organization for standardization (2009), the risk management framework is a systematic process for identifying, assessing, mitigating and monitoring risk to minimize their impact. Key features and components in this framework are as follows:

Identification of Risk

The first step of risk management framework is to identify the risk including identify potential risks and their impact to the activities and the business. For adventure sport tourism these risks can be potential hazards related to the activities performed like weather condition, geographical terrain, equipment's, skill and experienced labour in the related activity and health conditions.

Assessment of the Risk

The second component of this framework measure the severity of the impact and prioritize the impact of the identified threats. For adventure tourism evaluation of likelihood and severity of the

identified risk is must. Different techniques and research can be used to assess potential risk based on their potential impact.

Risk Mitigation

The third component of this framework is to define methods to eliminate and reduce the identified risk. In Adventurous tourism different strategies are developed and implemented to mitigate the risk. The strategies include different techniques including safety briefing, equipment checks, established emergency plan etc. Further company also implement risk transfer method like insurance requiring and sign liability waver paper.

Risk Reporting and Monitoring

This part involves regularly monitoring the current risks and risk mitigation strategies to get a gist of how impactful they are. Report includes information related to the current risk status and any adjustments that an organization can make to improve current risk mitigation strategies. Monitoring refers to review on current incident reports and conducting regular safety audits and adjusting the current procedures based on feedback and changing conditions.

3 Research Purpose

3.1 Importance of Research

Adventure tourism can turn natural obstacle into an opportunity for environmental conservation, economic growth and cultural appreciation (UNWTO, 2022). The growing popularity of adventurous sports tourism, especially trekking, highlights the importance of environmental preservation, cultural interchange and economic growth for a local public. Trekking admirers have highlighted Nepal as adventurous tourism spot due to the famous Himalayan scenery and culturally diverse in trekking routes. However, there are significant risk in the path of trekking in high altitude come along with high altitude sickness, extreme temperature, operational difficulties and safety on the path (ICIMOD, 2021)

3.1.1 National Level

The study is motivated by the need of establishing a balance between the sustainability and safety on the path of excited adventurous act. It is hope for a helpful material for the trekkers, guides, trekking companies, local communities, and policymakers involved for the sake of betterment of tourism in Nepal. Minimizing of risk and optimizing the long-term potential will benefit and make Nepal a top trekking destination (UNWTO, 2022).

3.1.2 Local Level

As an advocate for the sustainable tourism and adventure travel about Nepal, the study required to be researched in the detail to provide knowledge and recognition in the world. The study about effective risk management strategies can help the experience of trekking to be more thrilling and attractive along with preserving Nepal's natural and cultural diversity. Nepal's economy depends on the trekking sector which is still filled with the gap in the subject of risk mitigation, which is required to be studied thoroughly and suggested to the concerned stakeholders (MoCTCA, 2022).

Along the natural attraction, the local interest too led the research for a meaningful development of Adventure Sports Tourism in Nepal. Adventurous activities highlight the need of the safety by managing risk which could attract individuals interested and engaged on highly risk activities such as rock climbing, expedition, paragliding, white water rafting etc. Releasing the critical role of effective risk management for the sustaining adventure sports organization. Moreover, the risk management play the crucial role on sustaining the adventure sports organization and further it helps the significance of this research.

3.2 Problem Statement

Research in adventure sport tourism is very important as it ensures the safety of the participants, enhances the overall experience of the participants supporting the sustainable development of the tourism industry. Research in this sector helps identifying risks, improve safety protocols, develop best practices while accessing environmental impacts and promoting conservation. This research also plays an important role in understanding market trends, preserving cultural integrity and involving different communities. It also provides the data necessary for informed decision making,

balancing growth with sustainability in this dynamic industry ensuring that the industry adapts to the challenges.

The issue is about how these risks could be effectively managed as it deemed to be important to both the safety of the tourists and the longevity of the adventure tourism. It is for this reason that there is low standardization in safety measures, inadequate training of guides and lastly low adoption of risks assessment tools. Such gaps can result in accidents, injuries, and even fatalities, which has brought about negative impacts to the industry, negative impacts such as a company's poor reputation, legal lawsuits, and loss of business. Thus, such occurrences have a considerable potential to overshadow advertisement of adventure tourism destinations, and consequently, affect the societal-economic values through influx variation.

The present research is significant in this regard because this research elaborates on an active risk management approach to overcome these challenges in trekking agencies in Nepal. These research results could be useful as a basis for the advancement of safety measures, as well as in the courses of training guides, and in adjusting strategies for responding to threats in hospitality organizations. Besides, increased competition and higher levels of customer demands, necessitate that firms in adventure tourism focus on delivering safe and reliable services. Consumers avoid those operators who do not pay much attention to aspects of risks. Hence, literature review on this subject is useful when it comes to making suggestions for companies that wish to sustain their competitiveness by adopting their operations to appropriate means of managing risks.

Thus, the significance of this research regards its applicability to reduce the risks to the tourists which will further lead to safer practices, benefit the business houses, and help in the effective development of adventure tourism in Nepal. Thus, solving the problem of insufficient risk management not only increases its safety but also strengthens its credibility and Trusted Tourism and maintain value for the overall tourism business.

3.3 Research Objectives and Questions

The main purpose of this study is to identify and assess the risk management practices in adventure sports tourism, with particular focus on ensuring safety within the context of Nepal. It is the intention of this research seek to identify potential hazards, assess the existing risk management

measures, and propose suggestions that will contribute to the enhancement of safety and performance of adventure tourism sector in Nepal. The following are the primary objectives of this study.

- To identify the risk factor and the challenges faced by the adventure tourist in Nepal.
- To identify the risk management protocols adopted in adventure sports tourism industry in Nepal.

Based on these objectives, this research will provide recommendations on the issue of risk management, the improving safety measures, enhancing a training of guides and addressing other critical aspects of risk management in adventure sports tourism issues. The Primary research question guiding this study is:

How can risk management practices be improved in adventure sports tourism to ensure the safety of tourists and the sustainability of the business?

By addressing the research question this study aims to contribute to understand the risk management practices of the adventure sports tourism organizations and how they improved these practices to ensure the safety of tourist and the business sustainability. This study uses the qualitative research methodology to get the answer on this crucial topic. Furthermore, interview will be taken to collect the data. This study aims to understand the risk management practices applying by the organizations and made a recommendation based on the findings.

4 Research Methodology

According to the Shreekumar (2023), research methodology is described as structure and scientific approach which helps in collecting, interpreting, and analyzing the different data method which helps to answer the research question. There are two types of data collection methodology used for the research which are qualitative and quantitative research method. According to Shreekumar (2023), quantitative research method is used to collect numeric research data from the sample population which affect the groups or individuals. It is a numeric data collection method which collect the sample population and find the result by the questionnaire and other research methods. According to the Bhandari (2020) Qualitative research is nonnumeric data which is collected based on the observation, explanation of the questions and analyze it to understand the concept, experience, and opinion. This research method is used to understand the depth of the problem and generate the innovative ideas in research.

4.1 Research Approach

Research approach is the general framework and the strategy that confides the direction of the study course. It includes the philosophical presumption that guides the total study with the process of gathering information and evaluating data, and proper justification for choosing the certain process of gathering information and evaluating data, and proper justification for choosing the certain approach to clarify the research challenges and comfortable to be studied later. According to the Creswell and Creswell (2018), research approach can be classified in different segments as mixed method, qualitative and quantitative, either can be used as per the appropriation of the research topic to describe and clarify the research questions and goals in details.

This study adopts the qualitative research to dig down the core risks in the sector of the adventure sports tourism, especially in the context of Nepal. The study is conducted among the people related to the adventure tourism in Nepal with a motive of obtaining the core related to subject matter. Collecting data with descriptive data is key advantage of qualitative research (Denzin & Loncon 2018).

4.1.1 Case Study Approach

A case study is designed in the context of Nepal's trekking sector, which emphasizes the trekking routes as Annapurna circuit, Everest Base Camp, Langtang Valley, Gosaikunda. This assures the difficulties for trekkers, risk on the route due to the geographical structures, high altitude problems, scares of equipment in rural areas, management practices.

4.1.2 Qualitative Approach

The qualitative approach adopted in this study delves to track down the risk being faced, and management practices being implicated by the related stakeholders the research is conducted with semi-structure interviews with trekking guides, trekking agency, porters to get knowledge with their experience, strategies and faced the challenges in risk management. The qualitative data approach supports a deeper understanding of the risk management strategies, helping to answer the research questions in a way that is closely tied to the context and complexities of the study. This method provides the detailed insight necessary to draw meaningful conclusions and offer relevant recommendations for the company and the industry.

4.2 Data Collection

This subsection of methodology is data collection, which is acquired by qualitative research method with open ended questionnaires. According to Patton (2015), the best way to find about the experiences and feeling of any person related to the incident or thing is through the open-ended questions. These types of questions can cover the depth and reality of the activities. So, this study directs to the question answer with the guides, business owner and the tour operators to get the detail information about the risk management in adventurous sports tourism specially to the trekking in Nepal.

In the process of collecting data, the interview was conducted with significant professionals in the adventure sports industry, primarily focused on trekking in Nepal. These professionals were contacted through messenger call and questionnaire were mailed to three participants. Each interview session lasted approximately one hour per participant, ensuring an in-depth understanding of their insight and experiences. The study included eight participants, all of whom were actively working as trekking guides. Among them, one was freelancer with five years of experience guiding both local and international trekkers. Two participants were part time employees of trekking agencies, balancing guiding with other commitments. The remaining five participants owned trekking companies, demonstrating not only guiding experience but also management expertise. The participants had varied working experiences, ranging from 5 to 15 years in the adventure tourism sectors. The companies these participants represented offered similar services, primarily focused on trekking expedition in the Himalayan region. This included popular trekking routes like Annapurna Base Camp (ABC), Everest Base Camp (EBC), Upper Mustang, Langtang Valley. The similarity in the services and the nature of the activities meant that the risk discussed during the interviews were largely aligned. However, some differences arose based in the specific routes, client's demographics, and operational models of each company.

Questions were made according to the topic, and some follow up questions were asked to the participants for more precise and detail answers. Participants were encouraged to provide detail responses, and follow-up questions were asked to clarify or elaborate on key points. This approach ensured that the data collected was both precise and comprehensive, offering valuable insights into the practice and challenges faced by trekking guides and companies in Nepal.

4.3 Data Analysis

Data analysis is an important part of a research. According to Tukey (1977), data analysis is the course of conducting an examination about the findings in the process of research to benefit with the result in the future. Qualitative research was chosen to get the context of the risk management because it is based on the participant experience and their perception.

The thematic based data analysis is a suitable method for qualitative research method being developed by Braun and Clarke (2006). This method fits well to find out the answers based on theme. This approach allows to investigate the topic in deep with interesting experiences, perceptions, and perspectives of participants. By thematic analysis, the common themes and risk identification can be found out through the interviews. This helps to get the deeper information in explained form and get the connection between research topic, research questions and responses get from the participants.

4.4 Ethical Review

Ethical review is crucial step in research process, it ensures to take responsibility about protecting the participants rights, welfare, and privacy of participants. This study followed good scientific practices and JAMK's ethical guidelines.

Informed Consent

This thesis obtained informed consent from the participants, they were fully aware of the purpose of the research, about their role and the potential risk and the benefit from it. Participants were informed of their right to choose from variety of interview options, including email, audio recording and video calls. This shows that it gives priority to the participant according to their preference to collect the information.

Privacy and Confidentiality

This study also maintains the confidentiality by giving the importance of protecting the personal identification and personal information of the participant. This study ensures that all the personal

details were kept confidential and were only used for academic research purpose, with access restricted to authorised individuals.

Trust and Trustworthiness

The importance of building trust between the researcher and the participants were recognized throughout this research. It is vital to have trusted relationship to ensure honest and open communication for the integrity of research process. This research also emphasized to maintain transparency and the mutual respect to foster trust throughout the research.

Responsibility and Avoiding Harm

This thesis acknowledges the researchers responsibility for conducting research that benefits the adventure tourism industry. It acknowledges the potential impact of research finding and encourage their application to improve the betterment of the adventure tourism industry. Moreover, the researcher demonstrates a commitment to avoiding harm to participant's by respecting their right and ensuring their privacy is protected.

Transparency

This thesis also acknowledges the transparency and its importance, which ensures openness regarding research methods, data collection, and analysis. By being transparent, this study allows readers to assess the methodology and findings, ensuring the research credibility and reliability.

Limitation and Ethical Reflexivity

It also acknowledges the limitation and the potential biases that may affect the findings. It also engages in the ethical implications of the research outcomes and the impact these may have on the participants and broader fields of adventure tourism.

5 Research Finding

The following presented findings from the interview conducted with the participant involved in adventure sports tourism in Nepal. This collected data based on key themes that emerged from the qualitative data, highlighting key aspect of risk management practices, challenges and perspectives on safety.

These theme captures a unique dimension of risk management as it aims for the safety and satisfaction of tourist, the effectiveness of current practices, and the operational challenges faced by providers. Moreover, this research explore the role of training, use of technology, insurance as well collaborative efforts with local communities and other parties to mitigate the risk.

5.1 Overview of Risk Perception in Adventure Sports

1. Identification of Risk in Adventure Sports Tourism

What are the most common risks you encounter in your adventure tourism activities related to the safety of customers?

The study reveals that the participant constantly recognizes the multifaced risk in adventures sports tourism in Nepal as a part of the activity. They explained about the key risk they encounter includes high-altitude sickness, health issues (dizziness, headache, stomachache, gastric,), natural disaster, unpredictable weather. These risks are equally challenges to both tourists and operators in this sector.

High-Altitude Sickness

The study showed that high altitude sickness is a prominent risk factor, with symptoms such as dizziness, headache, and fatigue commonly reported by participants. They are aware of the oxygen level is low at high altitude it affects tourist which may lead to the immediate descent or medical emergency. This condition cannot impact the physical ability, but it also added the responsibility to the operator for fast response and risk mitigation. One participant share thought and incident on this:

“When the oxygen level starts to fall in high altitude it is necessary to descend or need of the emergency medical otherwise it is extremely dangerous to the guest life. So, to make the guest familiar with the high-altitude environment we take time in those area. We make sure everyone was fine, so we continuously observe them and ask them to inform if anything they feel change. There is one incident where we are in Upper Mustang trekking one of our clients feel dizziness and have high fever, we continuously check his oxygen, but it starts fall and down. So, we immediately manage the transportation send him to the city hospital. Luckily it is not too late, and he was fine after some hours of medical treatment”.

Health Issues

Problems like injuries, indigestion, stomach aches and gastric problem arises due to the unfamiliar environment and the change in food. These health issues might seem minor individual, which may reduce the energy of the tourist and impact the overall experiences. One participant shares their thoughts:

“Some changes in heath like indigestion, gas, normal headache, and stomachache are normal in trekking, because most of the trekking route are in high mountain and the change in altitude and change in the diet also create these problems. If these problems rise uncontrollably, it might need a medical emergency.

Natural Disaster

Natural disaster such as landslide and avalanches (rear) as a critical risk which need immediate threat to safety. These events are difficult to predict and can disrupt planned trip, disruption on the trekking route, delayed rescues, and escalate operational risks. These factors underscore the importance of continuous risk assessment and preparedness in management. One of the participants shares their thought:

“Natural disasters are frequent in trekking route. There are some rocky trails in route which is dangerous, its continuous fall the rock from the upper part. So, we must be incredibly careful on this trail to avoid any accidents. To prevent those accident on that trail one of us went fast and

observe if there is any danger situation and inform to another guide about the situation and move the guest as fast as possible from that place.”

Unpredictable Weather

It was identified as one of the most challenging risks in high-altitude areas. Rapid and unpredictable shift in weather is common in Himalayas. It can change to sudden snowstorms to sudden temperature drop impact visibility, mobility, and safety. These changes need to change the trip which including or even cancelling activities to prioritize safety. One of the participants thought:

“It is the most common thing in Himalayas trekking. It is exceedingly difficult to predict the weather but now a days our news forecast channel predicts 90% accurate weather. So, most of the guides and trekking company follow them in trekking.”

To conclude the responses to this question these findings in risk discover the needs for the structured and adaptable risk management practices in Nepal’s adventures tourism sectors. High-altitude sickness, health issues, natural disasters, and unpredictable weather makes proactive risk identification and mitigation essential to ensuring tourist safety and sustaining operations in this challenging environment.

2. Current Risk Management Practices and Their Effectiveness

What risk management practices do you currently apply to mitigate these risks?

For the risk management practices in adventure sports tourism, participants reveals that there are some factors such as Pre-trip briefings of the safety protocol, first aid training and preparedness of the trip, monitoring and real time adjustment, insurance and legal paperwork, assessment of the route and collaboration of local community.

Safety Protocol and Pre-Trip Briefing

Most respondent reported their organization meet the customers and provide brief information about the full itinerary. Although the customer already knows the itinerary before booking the trip,

but after their arrival the tour operator brief everything about the safety and the potential risk, dos, and don'ts to the tourist. This helps to reduce possible risk, take necessary precaution on emergency, and the behavioral guidelines to ensure safety during the activities. Route assessments, emergency preparedness, regular equipment check are another safety protocol adopted by the company. one of the participant responses:

“This is the first step of every trekking. We met the guest after their arrival and before the trip start and provide them every necessary information about the trekking including potential risk, what they can do and what not with safety instruction and answer all the questions arises during the briefing. We also make sure about their safety because every clints join the trip with full of expectation and excitements and we want them to enjoy their trip.”

Guide Training and Preparedness

It is another important risk management practices adopted one of the respondent's companies. Training to the tour guide is mandatory to identify the risk and to understand the response techniques. These training helps to cover emergency procedures, customer communication, equipment handling, providing flexibility in addressing diverse needs and unpredictable situations.

One of the respondents mentions that “large organization conduct periodic training session but not every organization do it to the trekking guide. Sometimes we must take training ourselves to be updated. This is because there are only few guides who work full time under the company but most of other guides are seasonal, so they must maintain themselves.”

Insurance and Legal Paperwork

In all respondent's companies they make sure that the customer and the operator both have insurance to cover in any health issues during the activities. They always sign the paper with the tourist by mentioning their liability toward them before the trip starts. It helps both parties to be sure what the company is liable and what not, which reduce the potential risk of conflict between them. Participant noted that it also supports the customers confidence by emphasizing safety and preparedness.

One of the participants told *“Every trekking company make a paper stating what is included in the trip price and what is not. As well they also make a paper if anything happen to the guest while participating in the trekking the company is not responsible for and make a sign to the guest. This helps the company to avoid any unnecessary legal risk.”*

Strengthen the Relation with Local Community

Collaboration with local community is especially important to reduce the risk. Participants highlight the importance of collaboration with local authorities and communities enhance the safety measures. Participants also mention to have the contact detail of the local member if any emergency occur during the trip. Local community are those who must -date information on local condition and support emergency responses in remote areas. One participant highlight

“In my opinion connection with local communities is very essential in trekking. I keep focusing to build the good relationships with them because they are the first person who are there to help if any risk arises. They know the information about their place more than anyone else. If there is landslide in any place local people are there to provide information about that, so we can take the proper decision what we exact need to do and inform to the guest.”

Altogether these risk management practices reflect the balance between the excitement of adventure sports and the safety of the participants. It also demonstrates the structure approach to manage unpredictable situation and ensure the security of the participants.

Effectiveness of the Practices

How effective do you find these practices in reducing the risks associated with your activities? Is there any indicator you use to measure their effectiveness for example tracking incidents, conduct regular audits, or collecting feedback from the participants etc?

The majority of respondent viewed these practices as effectives in minimizing risks. Safety briefings, training of the tour operator, strong relations with the local were noted as the most key factors on

risk awareness and responses. However, some respondent pointed out some areas for improvement including investment on latest technology, advanced training modules, tracking incidents, and gathering feedback from the participants. If these areas focused for improvement the effectiveness of these practices can be enhanced, ensuring continuous development and progress.

3. Challenges in Risk Management

What specific challenges do you encounter in implementing risk management practices during trekking activities (e.g., unpredictable weather, altitude sickness management, etc.)?

Respondents point out several challenges faced during the trekking trips in risk management.

Unpredictable Weather Conditions

The most pointed challenges were unpredictable weather, particularly in high altitude trekking in Himalayan region. Sudden change in weather brings changes in planned trip, it also hampers the expectations of the tourist, may arises natural disaster. In this situation tour operator need to be flexible, quick responder, informative, adaptive plans. This may not be enough in the extreme or sudden weather condition.

Limited Resources

Participant complains about the limited resources which makes them difficult in high altitude trekking. Limited budget makes difficult to purchases adequate resources such as walkie talkie for less networking places, GPS tracking, paid weather apps, frequent training sessions, adapting new technology for risk monitoring.

One participant share *“Trekking company face budget limitation that effect on other resources such as training to the guide, and purchase on advance safety measures.”*

Geographical Location

The geographical location of most of the trekking area are in remote places and in the high mountain, where there is limited accessibility of transportation, hospitals, narrow trail etc. According to the participant:

“Geographical location of the Nepal is unparalleled. Most of the trekking route are in mountain and remote area with limited access with the transportation and infrastructure. In Annapurna trail after 3 pm the climatic condition is very windy, if there is situation of evacuation we must wait until next morning. There are no other options like any transportations and hospitals.”

Unsafe and Unsecure Trekking Trail

The narrow trekking trail is another challenge noticed by the participants. The trekking trail in Nepal are narrow-rugged mountain trail with a high bluff, with falling rock from the uphill. These are the most challenging situation to make the tourist safe and the operator need to be more careful and focused and need to have experience. One of the participant shares

“I want government and other concern authorities have to focus on reconstruct of the trekking trail to more safe trekking trail, so that many tourists felt safe during the trip with less fear.”

4. Ensuring Safety Through Risk Management

In your opinion, what role does effective risk management play in ensuring participant safety and how does this impact the reputation and long-term success of your business?

This section explores how risk management practices contribute to safety during trekking activities, focusing on safety protocols, communication and the role of staff training in preventing accidents and managing risks during treks.

Safety Protocols and Procedures

Participants emphasized the importance of well-defined safety protocols to the tourist before the trip and during the trip in ensuring the safety of trekkers. They also share the emergency preparedness plans and the use of the proper equipment. One of the participants say.

“We make sure that all participants receive the detail information of the safety measures before starting the trek, which includes high altitude sickness, trail condition, geographical location to emergency evacuation procedures.”

Role of Guides and Experienced Staff

The necessary of skill and experienced guide was identified as a key factor on effective management of risk. Respondents observe the importance of the experienced guides in critical situation in assessing the safety of the route, identifying potential hazards, and prioritize the safety of the trekkers in whole trip. One participant defines.

“Experienced trekking guide as the backbone of the safety practices who are familiar about the weather pattern, predict potential hazard decide quickly in emergency and help in minimizing the risk.

Emergency Preparedness and Responses

Participants responses on emergency preparedness there is always emergency response plan before every trip. Contact of the local community people, nearby health center of every place, emergency contact person and number, in case of evacuation quick transportation contact detail etc. are ready.

One participant put their though *“there is always emergency plan ready if any uncertain things happen while on the trekking. There is always a first person to contact in case of emergency.”*

Feedback of the Customers for Continuous Improvement

The finding indicates that the feedback of the guest regarding the safety practices is essential to improve safety protocol. Based on interview responses all trekkers were encouraged to provide their feedback and share their experience on the matter of the safety so that it is easy to identify the area need to improve. One participant shares her thought *“Getting feedback from the tourist is essential to know what we are doing and what are the area to improve on our work as trekking guide.”*

5. Improving Risk Management for Sustainable Operations

How do you think improving risk management practices can contribute to the long-term sustainability and financial success of your business, particularly in maintaining customer trust and avoiding reputational damage?

Participants provided insights into strategies for enhancing risk management to support sustainable operation. Key recommendations included creating an emergency response booklet with essential contact details, identifying emergency locations and distances, and specifying the first point of contact during evacuations. Participants emphasized the importance of utilizing satellite phones and Gps tracking devices to monitor real time locations and staying updated through reliable weather news sources.

One participants say “One of my guest message me personally and say thankyou and other beautiful message because he remember the accident when we are on trip and how I deal in that situation, he was impresses with it so i feel like this is the success of my work”.

How does government authorities and community involvement affect risk management practices?

The involvement of government authorities in trekking means police, army and APF was highlighted as essential for improving trekking trails and enhancing emergency rescue capabilities

in remote areas. Participants also point out community involvement is more important in for the first hand response. Moreover, participants stressed prioritizing well qualified guides capable for responding quickly to emergencies. Continuous feedback from tourists and adjustments based on that feedback were seen as vital for maintaining safety and sustainability. These strategies reflect the participants collective observation aimed at reinforcing risk management and ensuring the sustainability of trekking operations.

6. Insurance and Financial Impact

Are there any insurance policies offered to the participating in your activities?

Participant highlighted the structured approach on it as classification of insurance policy for the staff according to the trekking altitude, provided by the company. For the restricted area like Dolpo and Mustang the guide and the porter mandatorily have insurance policy of 1million and half million accordingly. Tourist in the other hand arrange their own insurance which covers their whole activities, refund in case of trip cancellation and cover the cost in case of emergency evacuations.

How do you believe insurance policies affect the tourists' perception of safety? And so, these policies impact customer decision making when choosing your services?

Insurance policy play a significant role in enhancing the perceived safety of adventures activities.

Participants noted that *"Tourists feel more confident and secure knowing that they are financially protected, which positively influences their decision to engage in trekking"*.

This confidence not only improves participations rates but also reinforces the overall safety and sustainability of trekking operations.

Additional Thought

"Please feel free to share any additional thoughts or insights related to the topic."

For the additional thought respondent suggested to the government to be more responsible about the trekking trail as there are a lot of roads being constructed in trekking routes which makes the trekking dangerous in certain areas. As road transportation is essential for the local people but the government has to be more careful while making the roads without hampering the trekking trail. Also, another participant suggests that the trekking company should have regular and updated training which is very essential for trekking. The respondent feels that the training they already took was not enough for them to be comparatively international. It makes them feel backward when they compare themselves to others.

5.2 Summary of the Research Finding

The research findings indicate that trekking organizations have established a comprehensive framework for managing risks, although there are clear opportunities for enhancement. The key outcomes of this research include:

Effective Safety Protocols

The trekking company has implemented structured safety procedures such as regular equipment inspections, thorough pre-activity briefings, and relying on experienced guides to manage risks. These protocols form the backbone of their risk management strategy, ensuring that both staff and tourists are well-prepared for potential hazards during activities.

Challenges in Risk Management

Despite these safety measures, the companies face significant challenges, primarily on unpredictable situations such as weather conditions, geographical locations, natural disasters, limited resources, unsafe and unmanaged trekking trails, etc. Adventure sports by nature involve uncertain

environments that can shift rapidly, and these variables necessitate constant adaptability from the company.

Importance of Technology and Partnership

The study highlights the growing role of the technology in trekking for effective risk management. Accurate weather apps, satellite phones, GPS tracking, are some of the tools and technology used for the trekking. Although company uses some technological tools, there is a clear need for more sophisticated systems that can provide real data and enhance decision-making. Moreover, collaboration with local people and stakeholders is essential. Because most of the trekking routes are in remote area where there are limited sources for the emergency responses, so it is always necessary to collaborate with locals. They know more about their place and emergency responses can be done in time.

Sustainability and Environmental Concerns

The research also touches on the company's efforts to balance risk management with sustainability. Preserving natural habitats that minimizing the ecological impact of activities are increasingly integrated into the company's broader risk management strategy. As tourism grows, managing environmental risks is seen as critical to the long-term viability of adventure sports in the region.

Adaption to Future Risks

The study highlights the concern about evolving risks, particularly in the context of climate change and its potential to impact the consistency of weather patterns and the safety of adventure routes. This recognition underscores the need for forward looking strategies that account for environmental changes and other emerging challenges.

Rooms for Improvement

While the core safety protocols are functional, the finding reveals gaps in areas such as guide training, communications about effective risks, and the need for advanced technological tools likes GPS

tracking and real time weather updates. Additionally, there is a demand for more comprehensive emergency preparedness drills, which would involve both staff and participants. Also, there is not more concern about the environmental protection and sustainability of the nature.

Impact on Business Growth and Reputation

The perception of safety and the effectiveness of risk management practices have a direct influence on the company's reputation and business growth. Tourists who feel safe are more likely to return and recommend the company, making risk management a key driver of customer loyalty and positive brand image. The feedback of the customers is important to know how the overall trip goes and the any areas for the improvement. Based on the feedback the reputation of the company also determined.

5.3 Risk Identification, Assessment and Mitigation

Through qualitative interviews and questionnaire data collections and analysis, several key risks were identified in adventure sports tourism particularly focus on trekking in Nepal. The following table summarize those identified risks of different areas which is encountered by trekking operators and participants in Nepal.

Table 2. Identified Risks

Risk category	Description	Examples	Impacts	Suggested Mitigation Strategies
Environmental Risks	-Risk related to natural hazards and environmental conditions.	-Sudden weather change -High-altitude sickness	-Disruptions of trekking plans -Injuries or loss of life because of environmental hazards -Dizziness, shortness of breath, vomiting from altitude sickness	-Pre trip briefing -Monitoring weather forecast regularly -Immediate descent if needed

Operational Risks	-Risk arising from equipment failure, poor planning, or logistical challenges.	-Equipment failures (outdated and poorly maintain equipment) -Poor route planning -Logistical difficulties	-Delays in trips -Inability to respond to emergencies effectively -Safety hazards due to poor equipment or routes	-Regular check and update the equipment -Proper route assessments -Proper logistical preparation
Human Risks	-Risk caused by human factors such as inexperience, poor decision making or miscommunication.	-Lack of experience -Inadequate decision making in emergencies -Miscommunication within participants	-Accidents or injuries due to inexperience -Misjudgments in emergencies -Increased difficulty in managing group safety	-Training for guides -Clear communication protocols -Ensure safety of participants by managing groups
Health and Safety Risks	-Health related risk that can arises during adventure sports activities.	-Physical Injuries (e.g., twisted ankles, falls) -Health issues (Dehydration, Indigestion, Dizziness) -Inadequate first aid response	-Injury or health deterioration due to lack of immediate treatment -Increased risk of life-threatening condition	-First aid training -Ensure Adequate hydration and nutrition -Emergency medical assistance and evacuations
Legal and Liability Risks	-Legal risks related to insurance, liability, and compliance with local regulations.	-Insufficient insurance coverage -Ambiguous legal responsibilities -Non-compliance with regulation	-Legal disputes in case of accidents -Financial liabilities due to lack of proper insurance -Operational shutdowns due to regulatory violations	-Ensure adequate insurance policies coverage for trekkers and guides -Clarify legal responsibilities for all parties involved -Regular audits for compliance with industry stands
Cultural and communicational Risks	- Risk arising from cultural and language barriers during communication with international tourists who speak less English.	-Misunderstood safety briefings. -Cultural insensitivity -Poor group dynamics or dissatisfaction among international trekkers	-Poor group dynamics or dissatisfaction among international trekkers. -Risk of safety briefings being misunderstood. -Cultural tensions or discomfort.	-Provide clear multilingual safety material -Hire bilingual guides -Train staff in cultural sensitivity

Source: Research Interview

This table provides a clear summary of the key risks by offering a visual representation of the various categories, examples of each risk and strategies used by operators to mitigate them. The following section will delve deeper into the implication of these risks and further discussion how operators in Nepal manage them.

5.3.1 Environmental risk

Environmental risk is frequently highlighted in adventure sports tourism. These include natural hazards such as sudden weather change natural disaster like landslide, floods, avalanches. Unpredictable weather and environmental conditions are common in adventure activities in Himalayan region. High altitude sickness was noted as a frequent issue, with participants stressing that even experiences trekkers can be vulnerable to these risks. Symptoms for high altitude sickness are dizziness, shortness of breath, oxygen level fall, vomiting etc. This may take the life of the trekker when they reach to the high level.

- **Environmental Risks**

Probability: *High*

Impact: *High*

Himalayan region of Nepal is known for its unpredictable weather, which have rugged terrain. Risks such as sudden snowstorms, avalanches, heavy rainfall, and landslides are common. These factors can disrupt the planned route, delay for the trekking, or may result in life taking situation of the participants. Unpredictable weather and altitude sickness are the most danger risks which can be severe. There are some incidents of losing life or critical medical emergencies. The severity of these risks requires thorough weather monitoring system, need proper planning including emergency situations, used of specialized equipment to mitigate their impact, ensures experienced local guides and have deep knowledge and information of the trail is crucial provide all the necessary training to the guides to minimize the risks.

5.3.2 Operational Risk

Operational risks were identified in relation to equipment failures, poor route planning, and logistical challenges. Outdated or poorly maintained equipment can compromise safety, and participants noted that effective logistical preparation is essential. Issues such as insufficient maintenance and

the failure to conduct pre-trip checks were mentioned as contributing factors that could potentially escalate risks during treks.

- **Operational Risks**

Probability: *Moderate*

Impact: *High*

Operational risks are associated with the planning and execution of the trip including equipment maintenance, allocation of the resources, and logistical arrangement. Operational risks occur if there is insufficient preparation including damage or poorly maintain equipment, this leads to the safety of the participants. To minimize these risks it needs continuous check on safety equipments, updated training to the staff, adoption of the best practices in equipment handling. Furthermore, having an effective and clear operational protocols for emergency situations and ensure all staff are well trained.

5.3.3 Human Risk

Risks cause by the human factors related to trekking such as lack of experience, poor decision making under pressure, insufficient training, or miscommunication. Participants pointed out that the varying skill levels and physical fitness of trekkers can amplify the difficulty of managing these risks. Miscommunication among the teams or between guides and participants was cited as another contributing factors.

- **Human Risks**

Probability: *High*

Impact: *High*

Human risks occur due to the fault of the human being. In trekking human risk refers those factors which helps in increase in risk such as inadequate training, lack of experience misjudgment or wrong decision during emergencies. This is particularly relevant in high stress situations where quick and right judgement is necessary. Some situations like miscalculating safe alternative route because of the natural disaster, underestimating environmental hazards, neglect the participants uncomforted situations. These risks lead to the accidents, severe injuries, or even loss of life. To reduce these risks staff must have proper risk management training, emergency response training and other relevant

trainings. Always provide pre activity briefing and practice sessions for the tourist to ensure they understand the risk and be prepared for that.

5.3.4 Health and Safety Risk

The inherent health and safety challenges of adventure activities were most important. Common health issues in adventures sports include injuries, (twisted leg, fallen down, slipped in trail, rocky trail) dehydration, dizziness, constipation, indigestion, which can become critical if not managed promptly. The need for adequate first aid response capabilities was underscored, with participants noting that delays in response could worsen outcomes.

- **Health and Safety Risks**

Probability: *Moderate*

Impact: *High*

Health related risks, such as injuries, twisted leg, dehydration, indigestion, etc. These risks are often manageable with the adequate preparation and immediate medical response, but if they are not handled properly, it can be more critical. If the participants feel any uncomfot to the body during the trip related to the health and there is medical support ready it reduces the impact. To mitigate these risks its compulsory to carry the well equipped first aid kit in every trekking. Training regarded to the first aid and CPR is mandatory. Also having the proper information about the medical nearby the destination is also necessary. Introduce mandatory health screening and fitness assessment for participants before highaltitude trekking or expedition. These things helps to minimize the risks and their impact.

5.3.5 Cultural and Communicational Risks

Cultural and communicational barriers were highlighted especially when dealing with international tourists. Miscommunication due to language barriers can lead to incomplete or misunderstood safety briefings, potentially compromising the safety of participants. Participants emphasized the importance of culturally sensitive communication to enhance the effectiveness of risk management practice.

- **Cultural and Communicational Risks**

Probability: *Low*

Impact: *Moderate*

Cultural and communicational risks is very low because most of the guides knows the language. It only affects if any local guide is needed in any part of the trip. They may not know the language and also sometimes it is connected to the local community. But if there is translator it is not big problems and the impact is also moderate. To reduce the potential risks use of multilingual safety briefing by using video to make sure everyone understands it well. Training to the guide in cultural sensitivity to ensure that safety messages are communicated effectively and respectfully.

5.3.6 Legal and Liability Risks

Legal and Liability risks were noted as significant. Participants mentioned that insufficient insurance coverage, partially coverage insurance, ambiguous legal responsibilities, and non-compliance with local regulation can lead to complications. The legal challenges may arise in the event of an accident, with participants expressing the need for clearer policies and better adherence to industry standards to mitigate these risks.

- **Legal and Liability Risks**

Probability: *Low*

Impact: *High*

Although legal and liability issues are less likely to occur frequently, the potential impact of them is considerable. This includes challenges related to the permits, adherence to safety regulations, issues to the insurance claims etc. If it fails to comply with these challenges may lead to the financial loss and the reputational damage of the organization. To mitigate these risks, it is essential for operators to stay updated about the local and international legal standard, obtain comprehensive insurance coverage, make transparent records of safety incidents responses and the safety measures. Clearly outline legal liabilities and responsibilities in contracts and disclaimers provided to the participants.

The finding of this study highlights the importance of structured and adaptable risk management practices in Nepal's adventure sports tourism. Effective management requires proactive risk identification, continuous staff training, real time monitoring, and strong collaboration with local

communities. Implementing recommended strategies will enhance safety, improve tourist confidence, and contribute to the sustainability of the industry.

Table 3. Risk Assessment Matrix

Risk category	Probability	Impact
Environmental Risk	High	High
Operational Risk	Moderate	High
Human Risk	High	High
Health and Safety Risk	Moderate	High
Cultural Risk	Low	Moderate
Legal and Liability Risk	Low	High

In this format: Probability and Impact are shown with color-coded (Red = High, Yellow = Moderate, Green = Low)

6 Discussion

This research aimed to identify the risk and find out the risk management practices of adventure sports tourism of Nepal. Through a qualitative research approach, this study can identify critical themes related to how the travel organizations identify, address and mitigates risks associated with its adventure sports activities. By analyzing the collected data this study offers an in-depth understanding of the company's strengths and areas for improvement in managing risks. According to the research finding trekking companies has a solid foundation in risk management, continuous improvement and adaption are essential to maintain safety standards and business sustainability. The effectiveness of the trekking companies existing measure in the overall positive perception of the tourists and the structured approach to handling risks. However, the unpredictable nature of adventure sports requires the company to remain agile and continuously update its strategies.

The identified gaps, such as the need for more advanced training, improved communication, and the integration of innovative technology, indicate areas where the companies can enhance its operations. Furthermore, the study underscores the importance of strategic partnerships and environmental sustainability in the boarder context of risk management. The respondent's insights provide a detailed understanding of how real-world challenges influence the effectiveness of safety protocols. For instance, the emphasis on unpredictable weather highlights the need for better preparedness and decision-making. Additionally, the focus on customer satisfaction aligns with the companies' goals of building trust ensuring repeat business.

- Did I find the exact answer to the research question?

Yes, the research successfully provided comprehensive answer to the core research question. Each question was addressed through detailed analysis, allowing for a deeper understanding of companies' risk management practices.

- What are the significant risks associated with the adventure sports tourism?

The study identified a range of risks, including physical injuries, environmental hazards, and equipment maintenance and use of advance technology. These risks align with the inherent challenges of adventure sports and highlight the importance of proactive management.

- How do the companies manage these risks?

The research found that the companies employ a multi-faceted approach, including safety briefings, regular equipment checks, and relying on experienced guides. While these strategies are generally effective, there is a clear need for continuous improvement, particularly in technology use and updated guide training.

- What are the challenges and gaps in the current risk management strategies?

The study identified challenges such as unpredictable weather, the varying experience levels of participants, and the need for better communication and preparedness. Addressing these gaps will be crucial for the company to enhance its risk management framework and maintain high safety standards. The research not only answered the research questions but also provided valuable insights that can guide the company's future strategies. The findings highlight the inter-connection of participants safety, customer satisfaction, environmental sustainability, and business growth.

To provide comprehensive understanding of the research findings, it is essential to compare them with the existing literature on risk management in adventure tourism. The comparison highlights how the findings align with the established theories and practices in the field. Historically, risk assessment in outdoor recreation has been guided by structured measures, as explained by Mata, Pereira, and Carvalhinho (2020). These directives often include minimum qualification for tour leaders, limitation in participants, specific ratios between leaders and participants, the need for prior participants experience, and certified equipment check. These structured approaches align with the safety protocols adopted by the tourism organization.

The literature on adventure tourism risk management underscores not only the operational and procedural aspects but also the need for strategic preparation and education. For instance, Ciriviri, (2019) highlights the importance of guide organizations conducting regular records of activities, competency assessment, and training enhancements. This aligns with Mata, Pereira, & Carvalhinho (2022) emphasis on structured approaches that includes leader's qualifications, equipment certification and limitation on participants.

Additionally, the literature emphasized that adventure tourism is inherently linked with uncertainty challenges and the emotion tied to exploration and excitement (Wang et al, 2019). These insights

are linked with the emphasis on balancing risk, preparation and emotional engagement in adventures activities found in this study. Mata et al, (2022) highlight the risk mitigation strategy with regular equipment check, participants briefing, and training to the guides which was correlated with the findings of this study.

Moreover, the role of technology in mitigating risks, as emphasized in the research by Wang et al. (2019), is reflected in the findings from the present study. While technologies such as satellite phones, GPS tracking special watch, are used by the Nepalese trekking companies, the need for more advanced, real time technology solution is apparent. Wang et al (2019) further discuss how technology not only assist in potential risk but also enables more effective decision making on unexpected situations. It highlights the gap in Nepalese context where there need to use of latest technology, there is still dependent on traditional methods that could be upgraded with the newer and more effective tools. The incorporation of real time weather tracking and location-based data, for instance, could improve the decision-making process in trekking activities.

The comparison with Piramanayagam and Pratim (2017) and Wang et al (2019) also point out on an ongoing issue: the integration of training and the safety education for both tourist and the guides. While the literature recommends thorough going safety training and clear operational guidelines (Piramanayagan and Pratim,2017). The finding of this study highlights the needs of advance and regular training to the guides of trekking organization in Nepal. This also suggest that although there are safety protocols in place, there is always a need for the up-to-date knowledge and hands- on training is a challenge that remains under addresses in some cases.

In conclusion, while the findings of this study reflect the common elements identified in literature that also highlight areas for improvement. Specifically, the use of upgraded technology, updated and continuous guide training, and a more comprehensive approach to psychological safety stand out as key opportunity for improvement risk management in adventure tourism in Nepal.

7 Research Limitation

When conducting the research in adventure sports tourism, with focus on Nepal's Trekking there are several limitations should be considered. This study may draw data and examples from multiple trekking and adventures employees of the companies of Nepal. However, different management

practices between these companies can limit the extent to which the finding is generalized across the industry. This research is based on Nepal known for its distinct terrain and trekking conditions. Because of the geographical condition the finding may not directly apply to other regions with different geographical conditions. Interviews are done with the limited number of industry professionals and stakeholders potentially leading to a narrow perspective on risk management strategies that might not cover the full diversity of practices across the sectors.

This study focuses on trekking as a primary example of adventures sports where other adventures sports such as paragliding, rafting, bungee jumping may have different risk and different management approaches that were not addressed in this study. This study is based on qualitative research method such as thematic analysis of interviewees. This is based on personal experience and opinions of the participants which may not cover the broader industry perspectives.

This research may not cover aspect of the government's regulations and their enforcement in adventure sports tourism of Nepal which could impact the interpretation of risk management practices. There is not any external factor included such as political instability and unpredictable events which may influence the findings.

8 Conclusion and Future Recommendations

8.1 Research Implications

Recently Adventures Sports tourism is rapidly growing segment globally (Xie, & Schneider, 2004). The rising demand for this unique, thrilling and immersive experiences helps in rapid growth of this business. The sustainable development of adventures sports tourism is an important approach to balance both economic increasement and the environmental protection with no damage or less damage (Gupta, Ear, Janardhan, & Kumawat, 2004).

Regular monitoring of necessary equipment and conducting health checkup for participants before join any activities is mandatory component of effective risk management. These measures helps in minimizing the risk and ensure the safety of the participants. By reducing risk and increase safety measures ensure the sustainability and longterm growth of the industry. Aditionally taking advantages of social media as a platform to promote safety measures of adventures sports tourism

can be highly effective. Making blogs, news and the related information about it and risk management and posting on social media can play the vital role to educate and attract more people.

8.2 Future Recommendations

For the risk management and safety measures of the adventure sports tourism in Nepal the following recommendations were made to the adventure sports tourism organizations.

Adoption of Advanced Safety Technology

Adventure sports companies of Nepal should focus to adopt the modern safety technology such as paid apps for weather prediction in real time, widely use of GPS tracking system, widely use of communication devices which is helpful for the safety of the participants. These tools are extremely useful for the risk management and ensures rapid response in emergencies.

Comprehensive Risk Training Programs

It should be mandatory for the staff and guides to take the training. Training not only refers to the basic first aid training but also specialized courses in high-altitude medical responses, crisis management, safety for the customers which mitigate the international standards.

Government Involvement in Minimizing Risks

Involvement of the government and make the effective rules and regulations in risk minimization is necessary. The collaboration of government and industry stakeholders to establish standardized frameworks and risk assessment check list to use by all the adventures industry is important to ensure safety measures.

Promoting Sustainable Tourism Practices

Risk management is not only for the immediate response on risk and safety measures, but it also includes long-term strategies for environmental sustainability. For this industry continue to adopt

the ecofriendly practices to maintain trail, manage their waste by themselves, and support local ecosystem.

Preserve Trekking Route

Trekking route should be conserved for the trekkers. It should be timely maintained and reconstruct in case of damage. Government should be aware to preserve it rather than destroy. In the name of development there should not build roadway by damaging or replacing trekking trails. Governments should find alternative ways for that.

Enhanced Collaboration with Local Communities

Trekking companies should increase the collaboration with local for the safety of the participants. Collaborating with locals be beneficial for both parties in building better infrastructure and emergency supports system. This can include partnership for localized evacuation routes and community led monitoring of high-risk area.

Utilize Past Incident Records

Utilizing records of past incidents can benefit to the adventure sports operators. By collecting and reviewing information on past incidents to identify patterns and improve future risks management strategies. Investing in data analytics tools can provide valuable insights into common risk and preventive measures.

Piramanayagam and Pratim (2017) recommend adopting the Haddon matrix framework to mitigate the risk in adventure sports tourism. This includes the need to evaluate the risks across multiple dimensions such as the environment, the activities, equipment, and the participants behavior to enhance the safety measures.

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Appendices

Appendix 1. The questionnaires to the participants

Risk Management in adventure sports tourism Questionnaire

Dear Participant,

I am preparing for my thesis on risk management practices in adventure sport tourism, with the aim of improving safety for tourists and ensuring the sustainability of businesses. I would greatly appreciate your insights. Your responses will be kept confidential and used solely for academic research purposes only.

Please take a few minutes to answer the following questions.

Name:

Age:

Gender:

Name of the organization:

Your Position:

Section 1: Common Risks in Adventure Tourism

1. What are the most common risks you encounter in your adventure tourism activities related to the safety of customers? (Environmental, Cultural and communication, operational, health and safety, legal and liability risks, human risks)

2. Can you provide examples of how these risks have impacted your operations (customer safety, business reputation or operational distribution)?

Section 2: Risk Management Practices

3. What risk management practices do you currently apply to mitigate these risks (risk identification, reporting, preventive actions and staff training)?
4. How effective do you find these practices in reducing the risks associated with your activities? Is there any indicator you use to measure their effectiveness for example tracking incidents, conduct regular audits, or collecting feedback from the participants etc?

Section 3: Challenges in Risk Management

6. What specific challenges do you encounter in implementing risk management practices during trekking activities (e.g., unpredictable weather, altitude sickness management, etc.)?
7. How often do you train your staff in risk management procedures and what methods are used to assess the effectiveness of this training (post training assessments, incident tracking)?
8. In your experience, how effective is staff training in minimizing risks during adventure activities?

Section 4: Ensuring Safety Through Risk Management

9. In your opinion, what role does effective risk management play in ensuring participant safety and how does this impact the reputation and long-term success of your business?
10. What safety protocols does your organization currently have in place and how often are these protocols reviewed and updated?

Section 5: Improving Risk Management for Sustainable Operations

11. What additional safety measures or technologies could be adopted to further enhance your risk management practices?

12. How do you think improving risk management practices can contribute to the long-term sustainability and financial success of your business, particularly in maintaining customer trust and avoiding reputational damage?
13. How does government regulation and community involvement affect risk management practices?

Section 6: Emergency Response and Risk Monitoring

15. If there is any emergency come in the activities place, what are the emergency response plan? How often is this plan reviewed, and how is staff trained to implement it?
16. What technology tools or systems do you use to monitor and manage risks in real time? (Eg; GPS tracking, weather monitoring system, incident reporting apps)?

Section 7: Insurance and Financial Impact

17. Are there any insurance policies offered to the participating in your activities?
18. How do you believe insurance policies affect the tourists' perception of safety? And so, these policies impact customer decision making when choosing your services?

"Please feel free to share any additional thoughts or insights related to the topic."

Thank You!

We greatly appreciate your time and input. Your responses will help us better understand the challenges and opportunities in improving risk management within adventure tourism.