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## Risk Management In Development Pindul Cave Natural Tourism Destination

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### ABSTRACT

*Development destination tour natural bring up complexity that requires become attention important to management risk for guard sustainability and security for visitors as well as preservation environment. Study This discuss the role of risk management in developing natural tourism destinations in Pindul Cave, Mount South, Yogyakarta. The investigation use approach qualitative, with method collection the data through interview depth and observation participative. His findings show that there is the complexity of the challenges faced in risk management at Pindul Cave, especially those related to visitor safety and environmental sustainability. Risk identification includes safety concerns when adventuring in caves and environmental vulnerabilities due to increased visits. Risk management at Pindul Cave is supported by collaboration between local government, tourism operators and local communities. A holistic, participation-based approach has helped in identifying, evaluating and mitigating risks associated with destination development. These findings provide important insights for practitioners and decision makers in the tourism industry to improve risk management and maintain the sustainability of natural tourism destinations. This research also shows the need for an environmentally sensitive approach in planning and managing natural tourism destinations in the future.*

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## 1. INTRODUCTION

The development of natural tourism destinations is becoming increasingly important in the scope of global tourism. Unique natural attractions and diverse cultural riches are important assets in the development of global tourism (Isdarmanto, I. 2020). Development destination tour natural own objective separately namely, to promote natural beauty and provide unique experiences for visitors. Various effort has done for implementation development to destination tour. This however there is a number of the challenge that becomes the main obstacles are related to the complexity of risk management that arises as tourist visits increase. Pindul Cave, located in Gunung Kidul, Yogyakarta, is an example of a natural tourist destination that requires special attention in risk management, considering the uniqueness and vulnerability of its environment.

The role of risk management in developing natural tourism destinations is becoming increasingly significant because of its influence on environmental sustainability and visitor

safety (Arlinda, F., & Sulistyowati, R. 2021). Development tourist sustainable in the region nature and management source Power natural in a way wise need consider role management accurate risk (Rezvani, M., Nickraves, F., *et al.* 2022). Function management risk in development tour natural become condition main for managers and actors tourism involved in a way directly (Kyrylov, Y., Hranovska, V., *et al.* 2020). Identification of risks such as safety when adventuring in caves and environmental vulnerability due to increased visits is a major concern in efforts to maintain the sustainability of the destination tourism in Pindul Cave, Mount South, Yogyakarta. In addition, the importance of cooperation between local governments, tourism operators and local communities in risk management is also a concern in this research.

The development of natural tourist destinations is not only capable attract more visitors globally, but also must maintain environmental sustainability with notice possible risks emerged (Teguh, F. 2024). Basically risk is something circumstances beginning from a disaster yet happen. Therefore, a activity tourist must own A management good risk for prevent disaster (Bong, S., Sugiarto, S., *et al.* 2019). Risk management plays an important role in overcoming these challenges and ensuring that the development of natural tourism destinations not only provides economic benefits, but also respects existing environmental and cultural values. A holistic approach to risk management emphasizes the importance of collaboration between various stakeholders. Strong collaboration between relevant parties can help identify potential risks, develop effective mitigation strategies, and promote sustainable practices in the development of natural tourism destinations (Sirfefa, I., Wurarah, RN, *et al.* 2023). Previous research shows that a holistic, participation-based risk management approach can help in identifying, evaluating, and mitigating risks associated with developing natural tourism destinations. Like research conducted by Angela, VF (2023), strategy management risk can help develop ecotourism for become an effective means of supporting the natural conservation of Lake Tahai by combining responsible tourism activities with environmental protection. Required approach management holistic risk in manage industry based natural in effort development and sustainability Butarbutar, AR, Dewi, R., *et al.* 2024). Collaboration and networking strong between managers, private sector, stakeholders interests, and involves participation public possible For apply management possible risks investigated and evaluated with systematic (Widiyarta, A., & Arimurti K. 2023). Combine development tour through holistic approach with effective approach capable control management risks at the destination tour coast beach Paradeep, India (Choudhury, D. 2024). Risk management on *the homestay* can help the owner to understand the benefits of implementing risk management on *homestays*, can

help managers *homestay* in implement risk management effectively (Sugiarto, S., Kiswantoro, A., *et al.* 2024).

Researches the Not yet someone explain in a way in depth about the application of management approaches specific risks in development tour nature in Pindul Cave. This research attempts to fill this knowledge gap by digging deeper into the role of risk management that is implemented and integrated in the development of natural tourism destinations, especially in Pindul Cave, Mount South Yogyakarta. This research aims to provide a deeper understanding of the role of risk management so that it can be implemented effectively in the context of developing natural tourism destinations in Pindul Cave, Gunung South Yogyakarta. Study it will also investigate specific and relevant risk management strategies to improve sustainability and visitor experience at Pindul Cave focusing on environmental vulnerabilities, visitor safety.

## **2. RESEARCH METHOD**

This research uses an in-depth qualitative approach to explore a comprehensive understanding of the role of risk management in the development of the Pindul Cave natural tourism destination. Studies qualitative is an investigative process for understand problem man based on the picture complete holistic, formed by words, reported in a way detailed through informant selected and carried out in the environment truly natural (Ihalauw, JJ, Suhendroyono., *et a.* 2020). A qualitative approach was chosen because it allows researchers to explore various perspectives and experiences relevant to the subject of this research. Data is collected through two main techniques namely, in-depth interviews and participant observation. Interview deep is one of the technique capable interview provide details information with more lots and lots of pictures complete (Salim, B., & Ihalauw, JJ 2017).

In-depth interviews were conducted with stakeholders related to the development of the Pindul Cave natural tourist destination, including local government, tourism operators and local communities. The interview was designed to gain in-depth insight into the informant's understanding and experience regarding risk management at the Pindul Cave destination. Interview techniques used is interview structured. Structured interviews use pre-written interview guides, which contain a list of questions that have been carefully designed based on the research objectives (Ichsan, TN, Ihalauw, JJ, & Soeroso , A. 2023). The interviews were designed to gain in-depth insight into the informants' understanding and experiences related to risk management at the Pindul Cave tourist destination. Structured and open questions were

used to explore the informants' views about the risks faced, mitigation strategies implemented, and the role of informants in the decision making process.

Participatory observation was carried out by researchers who were directly involved in daily activities at Pindul Cave during the research period that is not enough more three month. Observation done with have direct interaction with visitors, tour operators, and the surrounding environment, so can get involved on situations that may present risks and knowing handling these risks in practice. Observation techniques are often used to understand in depth about people's way in acting, interacting, or behaving in natural situations without excessive researcher intervention (Pandey, P., & Pandey, MM 2021), (Ichsan, I., & Ali, A. 2020). Data collected through interview and observation techniques analyzed thematically using a qualitative approach. The analysis process involves coding data, searching for emerging patterns or themes, and in-depth interpretation to produce a rich and in-depth understanding of the role of risk management in the development of the Pindul Caves natural tourism destination.

### 3. RESULTS AND DISCUSSIONS

Based on the results interview with informants, this research reveals various challenges faced in risk management at the Pindul Cave natural tourist destination. One of the main findings is the safety problems that arise when visitors venture into the cave. Although there have been efforts to improve security infrastructure and monitoring, there is still a need for further improvements in this regard. There are also environmental vulnerabilities resulting from increased visits, such as natural damage and decreased water quality. This shows the need for more proactive action in maintaining the sustainability of the natural environment. As for the results interview with informant served in table following:

**Table 1.1 Interview results**

No	Informant	Findings
1	Officer security	Problem emerging security in cave: 1. Condition roads and routes 2. Usage and availability tool safety 3. Potential disaster natural like floods and landslides
2	Manager destination tour	Vulnerability environment consequence enhancement visit: 1. Damage ecosystem natural surroundings cave 2. Risk enhancement pollution environment like rubbish 3. Decline water quality in the cave

The table presents the results of interviews with informants regarding security issues and environmental vulnerability in Pindul Cave. From interviews with security officers, it was found that security issues were a major concern in managing the destination. Meanwhile, from interviews with tourist destination managers, it was revealed that increasing visits also causes environmental vulnerability which needs to be handled more seriously. These findings provide an overview of the challenges faced in risk management in natural tourism destinations and demonstrate the urgency to take more effective action in maintaining visitor safety and environmental sustainability. Strengthen cross-sectoral collaboration and implement appropriate mitigation strategies is proactive steps that can be taken to maintain the sustainability of natural tourism destinations (Maulana, AT, & Andriansyah, A. 2024). Alzoubi, HM (2022), implementation Appropriate risk mitigation not only helps protect tourist destinations from potential loss and damage, but can also improve safety, sustainability and the overall visitor experience.

Risk management at Pindul Cave is strengthened by collaboration between local government, tourism operators and local communities. This collaboration helps in jointly identifying risks and formulating effective mitigation strategies. Saputra, PS, Pustiarini, NP, *et al.* (2024), a participation-based approach also brings significant benefits in increasing the involvement of local communities in managing natural tourism destinations. Through a holistic approach, risk management at Pindul Cave has succeeded in reducing the negative impacts of identified risks. Mitigation strategies implemented include strict monitoring of visitor activities, environmental education and awareness, as well as maintenance and restoration of the natural environment. Thus, the development of natural tourism destinations does not only focus on increasing the number of visitors, but also on preserving the natural environment which is the main asset of the destination.

Based on Findings in the field show that the risks at Pindul Cave are included in the operational risk pillar, because they involve aspects related to the management and operations of tourist destinations. The challenges faced in security matters, such as road and route conditions that have the potential to endanger visitors, the availability and use of safety equipment, as well as the potential for natural disasters such as floods and landslides, are all closely related to the operational aspects of destination management. Likewise, environmental vulnerabilities resulting from increased visitation, such as damage to natural ecosystems, increased environmental pollution, and decreased water quality in caves, also have a direct impact on destination operations. Sugiarto, S., Wahjudi, J., *et al.* (2023), operational risks can caused by various factors including error source Power human, condition poor physical and

infrastructure, threats security, disruption external, and so on. Operational risk management is closely related to the management of various operational aspects within an organization or entity, including tourist destinations (Jiang, W., Yang, Q., *et al.* 2022). Through a holistic approach, risk management at Pindul Cave has succeeded in reducing the negative impacts of identified risks. Mitigation strategies implemented include strict monitoring of visitor activities, environmental education and awareness, as well as maintenance and restoration of the natural environment.

Following is table identification risks in Pindul Cave that arise Because nature and humans.

**Table 1.2 Identification Risk Operational**

No	Natural	Man
1	If there is a flood, operations will be disrupted because the river is full so the turbine attraction may not run	Safety, comfort and security are maintained, sometimes there is still communication that is not appropriate because there are 10 doors or 10 management organizations, each of which has consumer Alone
2	The high number of visitors can increase the risk of environmental pollution	The decline in service levels is due to the large number of tourists coming
3	Use of tools and infrastructure can cause geological damage such as landslides, soil erosion, or changes in the rock structure around the cave	Number of operators tourism so there is often a struggle for consumers
4	Human activities such as waste disposal cause a decrease in water quality in caves, which can have a negative impact on aquatic ecosystems and the organisms that live in them	Disappointment with the existing service because on the road many people stop the car to follow them with the operator they want so cause disturbance comfort
5	Threats to cave ecosystems can cause biodiversity loss, by causing the extinction of unique and rare species found only in caves around cave	Disobedient to rules so Bumdes do not yet have a strong commitment to provide sanctions when problems arise

Based on this table, it can be explained that the identification of operational risks in Pindul Cave includes risks originating from two main aspects, namely from the natural side and from the human side. The natural side identify that There are risks such as flooding which could disrupt the operations of tourist destinations. This can happen because the river is full so that the turbine attraction in the cave cannot run normally. Apart from that, another risk is related to the high number of visitors which can increase the risk of environmental pollution, especially the decline in water quality in the cave due to human activities such as waste disposal. Meanwhile, the human content identify that its operational risks covers issues of

visitor safety, comfort and security. This can happen because there is still inadequate communication because there are many entrances or management organizations, each of which has its own consumers. Apart from that, declining service levels due to the high number of tourists, competition between tour operators which results in competition for consumers, and non-compliance with regulations which causes weak commitment to provide sanctions when problems occur are also risks that need to be considered.

The implication of these findings is the importance of involving all stakeholders in the decision-making process regarding the development of natural tourism destinations. Cross-sectoral collaboration between government, the tourism industry and local communities must be promoted to achieve sustainability goals. In addition, there is a need for a holistic and participation-based approach in managing the risks associated with developing natural tourism destinations. Hakim, A., Ambarwati, R., *et al.* (2023), sustainable tourism requires a holistic approach in its management. Development progress can be achieved by involving active participation from various parties involved, including local government, tourism operators, local communities, environmental organizations and visitors. Cross-sectoral collaboration and active participation from various stakeholders are the keys to creating sustainable tourist destinations Amalia, E., & Pangestoeti, W (2023).

This research underlines the importance of environmental sustainability in the development of natural tourism destinations. Efforts to conserve and restore the natural environment must be a priority in planning and managing tourist destinations. The involvement of local communities in environmental conservation efforts is also important to ensure that the sustainability of the destination is maintained in the long term (Tjilen, AP, Waas, RFY, et al. 2023). In addition, the results of this research provide a deeper understanding of the complexity of risk management within the scope of natural tourism destinations. Proper identification of risks, evaluation of their impacts, and development of effective mitigation strategies are key to maintaining the sustainability of natural tourism destinations. Contribution from study This is can used for development of theory and practice in tourism risk management.

Sustainable development of natural tourism destinations requires attention to cultural diversity and the needs of local communities. Destination development tour nature in Pindul Cave is not only available provide economic benefits, but also must can help increasing the welfare and participation of local communities. Strong collaboration between various related parties is the key to achieving this goal. The research findings also highlight the importance of sustainable planning in the development of natural tourism destinations. Development strategies must take into account aspects such as environmental carrying capacity, financial

sustainability and community participation. Natural tourism destination in Pindul Cave can develop sustainably without sacrificing environmental sustainability with implement this strategy. Discussion of the results of this research also opens up space for further research in the field of tourism risk management. These findings can be a basis for further research on developing more effective mitigation strategies or evaluating the impact of implementing risk management in managing natural tourism destinations.

#### **4. CONCLUSION**

The development of natural tourist destinations is an important aspect in the increasingly growing global tourism industry. However, this development cannot be separated from the complexity of the challenges that arise, especially those related to comprehensive risk management. This research qualitatively investigates the role of risk management in the context of natural tourism destination development, with a focus on Pindul Cave, Gunung Kidul, Yogyakarta. The research results found the importance of cross-sectoral collaboration between local governments, tourism operators and local communities in managing risks related to visitor safety and environmental conservation. Implemented mitigation strategies, such as strict monitoring of visitor activities, environmental education, and restoration of the natural environment, have helped reduce the negative impacts of the identified risks.

These findings provide a deeper understanding of the complexity of risk management in the development of natural tourism destinations and emphasize the importance of a holistic and participation-based approach. In the context of developing natural tourism destinations, the involvement of all stakeholders in the decision-making process and sustainable planning is the key to achieving long-term sustainability. By implementing effective mitigation strategies and paying attention to environmental impacts, tourist destinations natural Pindul Cave can continue to develop without sacrificing environmental sustainability, while increasing economic and social benefits for local communities and visitors.

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