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Tourism disaster management dilemmas: Insights from Mandalika, Indonesia

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ABSTRACT

This study explores the dilemmas of managing tourism-related disasters in Mandalika, Indonesia. Its goal is to reframe the strategies for addressing these challenges and to better understand the implementation of tourism disaster management through a fair scheme. 315 questionnaires were distributed between September and October 2024, 292 questionnaires (92.67%) were valid, while 23 (7.33%) were rejected for not meeting the criteria. The data were analyzed using Microsoft Excel and SmartPLS 4.1.0.3. The results show that the tourism disaster management (TDM) situation in Mandalika faces a complex dilemma because the governance structure is centralized in the national tourism authority, thus limiting the role of the community and local authorities. The dilemma in TDM can be addressed when tourism authorities ensure an equitable distribution of roles, allowing for the active participation of local communities. These findings supported by the significant correlation (0.101) between local entity empowerment (ELE) and TDM, mediated by tourism safety measures and resource and tourism protection (TSM-RTP), with a p-value of 0.001. In contrast, the relationship between tourism authority (TA) and TDM, mediated by TSM and RTP, shows a weak correlation (0.020) and is not significant, with a p-value of 0.290. We suggest a real fusion and integration between ELE and TA to create positive opportunities in facing future tourism disasters. This study is the first to evaluate disaster management in Mandalika, Indonesia. Using empirical and quantitative exploratory methods, the research highlights its uniqueness and innovation by identifying a boundary between the roles of tourism authorities and local communities in managing tourism-related disasters in Mandalika, Indonesia.

1. Introduction

Research on tourism development has grown considerably. However, the evaluation of tourism disaster management, particularly when handled by a single authority as a national project developer like Mandalika, Indonesia, remains underexplored. This research seeks to be directly involved by evaluating tourism disaster management which adopts theories from Faulkner (2001); Jiang and Ritchie (2017); Ritchie and Jiang (2021); and practice regarding aspects of preparedness and mitigation to minimize the impact of disasters. This means that there will be constructive and innovative suggestions to overcome the dilemmas of tourism disaster management.

According to Filimonau and De Coteau (2020), disaster management principles must be integrated with tourism management to increase destination resilience. The success of integration also depends on the extent of the formation of a collaborative network system across tourism actors (Bhaskara et al., 2021). So, tourism governance skills require interested actors to adopt concepts that facilitate the creation of balanced innovation between the economic benefits of tourism, tourist safety and the destination environment (Dredge, 2017; Ritchie & Jiang, 2019).

A study from Benjamin et al. (2020) recommends operators and tourism boards prioritize the security and safety of tourists through adequate facilities and mitigation pathways; so that tourists no longer have to worry about making destination choices (Sharma et al., 2021). As stated by Faulkner (2001) and Faulkner and Russell (2003), the

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concentration of tourism research on conceptual, operational and disaster information is very minimal; thus, providing bad experience for acting in facing a disaster crisis. Therefore, commitment and restructuring of tourism disaster management schemes that are fairer at each phase are needed (Ritchie, 2008).

The increasing frequency of earthquakes, floods, storms, fires and volcanic activity poses challenges for the tourism sector (Cochrane, 2010). This complexity increasingly triggers psychological trauma among the public and tourists, which raises concerns and has an impact on tourists' trust in the destination (Bhaskara et al., 2021). Apart from that, the threat of disasters also results in economic uncertainty for business actors which hinder product development and investment in tourism.

Study by Bhaskara et al. (2023) states that areas hit by disasters tend to experience a decline in economic activity; this problem requires an important role from tourism authorities and local communities in dealing with the exploitation of tourism resources and the surrounding environment. For example, the ability to reduce disasters with modern detection systems combined with the uniqueness of local communities to determine the flow of resources, knowledge and information to various geographic units, social groups and tourists (Purnomo et al., 2022). So, that open discussions between tourism authorities and local communities can be a tool to build conceptual and operational strengthening in ensuring tourism sustainability.

This provides concentration for researchers to assess the role of actors in tourism disasters. Effective tourism management must address tourists' concerns by improving disaster management schemes through the readiness of actors responsible for each phase and disaster procedure (Filimonau & De Coteau, 2020).

Therefore, it is important to pay attention to tourism disaster management in dealing with disaster uncertainty. Although disaster experience has provided insight, the current focus is on overcoming dilemmas that occur in the preparation and prevention phases which are generated through an assessment of ongoing policy practices. This is related to choices in prioritizing anticipatory and mitigation practices over reconstruction (Fathani, Azmi, et al., 2023; Ritchie & Jiang, 2021).

Correlating with the previous explanation and the needs of developing countries like Indonesia, the tourism sector must be developed optimally. It is running in tandem with efforts to overcome challenges such as destination resilience and environmental sustainability, local community empowerment and infrastructure development. This holistic method not only has the opportunity to encourage economic growth and tourism competitiveness, but also ensures that people can experience the benefits of tourism evenly.

This study aims to explore the dilemmas faced by local communities and tourism authorities in tourism disaster management, and to create a new scheme by emphasizing the importance of innovative and fair collaboration for future tourism management. This study is the first to investigate and evaluate tourism disaster management with connectivity between exploratory and quantitative approaches in tourism activities in Mandalika, Indonesia.

2. Literature review

2.1. Tourism disaster management (TDM)

A study from Faulkner (2001) provides a conceptual framework as a guide in tourism disaster management. The framework includes the components and reactions involved in each stage of tourism disaster management. Such as, pre-disaster: the basis for disaster management control that works cohesively (Burling & Hyle, 1997). Pre-disaster becomes the focus which has an impact on the next stages; such as prodromal, emergency, recovery and efforts to create solutions to anticipate future disasters by predicting the level of symptoms, impacts and subsequent disasters.

Ritchie (2004) suggested a strategic approach to disaster crisis management that includes proactive pre-crisis planning, strategic implementation, and feedback. In reality, disasters cannot be avoided, but fair management patterns can reduce their effects. In addition, he provides a way to solve the complexity of disaster management in the form of a combination of concepts and practices that emphasize the importance of collaboration and motivation (Jiang & Ritchie, 2017). This goal is increasingly clear in providing opportunities for effective disaster management so that a new paradigm is formed that is fairer and more harmonious between building stakeholders and operations stakeholders.

Following the elements of the previous studies, we believe that an exclusive assessment of Mandalika tourism disaster management is necessary. The concentration built focuses on operational assessment and responsibility in producing effective TDM. This is assessed from an external perspective involving local actors and the tourist perspective.

The current situation shows that preparations are still weak to minimize the risks and impacts of disasters. Weaknesses occur because Mandalika is a special economic zone controlled by the central government through the Ministry of State-Owned Enterprises of Indonesia. Thus, the involvement of local actors and their entities becomes biased in dealing with disasters. As a result, disaster management becomes increasingly complicated when complex affairs are handled solely by the central government and do not involve local actors in tourism disaster management schemes.

2.2. Tourism design and authority

Ostrom's governance, institutional, and authority designs have provided lessons in understanding the division of labor, cooperative practices, and potential dependencies that enable diverse behavior from interested actors (Ostrom, 1990, 1996). Cooperation and bonds of dependency also have pressure and have the potential to cause conflict within the circle. The study by Ansell & Gash has made modifications and opened up space to consider who is included, who has rights to decisions, and how decisions can be implemented, controlled, and evaluated from various points of view (Ansell & Gash, 2008).

Study by Almeida et al. (2017), well-designed governance and authority can help develop tourism. Its implementation impacts the performance of tourism governance, fostering trust betweeness stakeholders. Conversely, poorly designed arrangements can produce negative impacts such as environmental social degradation and conflict (E. Cohen & Cohen, 2012). For example, in the tourism disaster aspect, the community and tourists are often used as reasons and targets for damage to the destination ecosystem (Bateman & Fleming, 2017). This can continue because tourism authorities often change their views and do not involve local entities in their management.

As a result, each interested actor runs alone and only focuses on pursuing profits. This condition often happens when authority is misused, taking place in an authoritarian and hierarchical manner, thereby damaging the legitimacy of the destination and having a sustainable negative impact. Therefore, efforts to restore tourism destinations can be made by getting used to involving community entities in every tourism activity.

2.3. Tourism safety measure (TSM)

The challenge interested actors face in the tourism sector is the ability to invest in human resources and the tourism environment (Milman et al., 1999). This point is often ignored even though the tourism sector is constantly threatened by disaster. It is important to realize the safety scheme because it ensures security above and beyond tourists' concerns. Safety starts with the community's perspective in assessing safety, and tourists have their perceptions because they are in direct contact with the community (Xie et al., 2021). Therefore, the safety of the tourism sector must focus on the risks that will arise due to not providing the necessary security, as well as not involving local

communities in creating maximum security.

Tourism safety steps are important to ensure the safety of the public and tourists during emergencies. Destinations must establish comprehensive disaster preparedness strategies, including early warnings, evacuation plans, and clear communication channels (Becken & Hughey, 2013). For example, areas prone to earthquakes, tsunamis, or hurricanes must integrate warnings with mobile technology as a basis for action and disseminate information about upcoming dangers (Alvarez et al., 2022). Learned from Japanese tourism destinations has transformed the education of residents and tourists on how to act during disasters (Acar & Tanrisevdi, 2018), providing multilingual resources that guide tourists on safety protocols (JNTO, 2020). The initiative ensures that tourists are well informed, can act quickly in an emergency, and minimizes potential risks.

Cooperation between the government, tourism board, business, and community must be reviewed to ensure tourists receive information about disaster protocols and evacuation routes. Often, there is unclear negotiation and cooperation, and there is a misunderstanding in explaining it. As a result, TDM is only used as a "trend" for existing governance, which is underestimated (Hystad & Keller, 2008). Good governance can produce preparedness and increase tourist safety. For example, trainings that involve the public and business employees at destinations to ensure adequate safety during a crisis.

2.4. Resources and tourism protection (RTP)

Johnson's study has presented a UK subject to neoliberalism and is slowly realizing that nature cannot be managed alone (Johnson et al., 2020). They must recognize that the existence and needs of the public are a priority for gaining access. Apart from that, Robina-Ramírez explain from a disaster perspective in the tourism sector, providing lessons regarding governance implementation (Robina-Ramírez et al., 2022). They must emphasize that participatory schemes to protect tourism resources open up opportunities to produce safety measures through empowerment.

Transformation is also occurring in Indonesian destinations; a study by Ahsani found positive results regarding tourism protection due to the dominance of community involvement in destination governance (Ahsani et al., 2022). Collective actor involvement not only strengthens tourism resources but increases community and tourism board awareness of the importance of ecosystems as part of tourist attractions (Fathani, Azmi, et al., 2023). Although community involvement in destination governance has positively impacted environmental protection, the question arises about how a destination protection framework can operate singly given the high threat of disasters to destinations such as Mandalika-Indonesia.

Our initial preferences suggest that destination governance and protection operate on a hierarchical conceptual basis. When receiving external attention, complex administrative procedures are immediately activated to quell external criticism. This raises concerns about governance practices that are not open to creating security for tourists and the community.

Learning from the findings of Hystad and Keller (2006, 2008), destinations must develop fair tourism between economic benefits, the environment and resilience amidst rapid tourist activity. Everything must be reorganized wisely and transparently because the upstream lacks clarity in governance gives rise to clashes of responsibilities and conflicts. Therefore, it must be done together to protect tourism resources in a cooperative scenario.

2.5. Research hypothesis

We linked the five latent variables shown in Fig. 1. Four of them are exogenous variables to explain endogenous variables, namely tourism disaster management. The previous sub-sections have described many perspectives and experiences. However, the novelty that is being elaborated is the dilemma of TDM in the special economic zone with the tagline "super priority destination in Mandalika, Indonesia".

There is a special authority that has restricted itself from the influence of external actors in tourism disaster management schemes. This has a direct influence on tourism safety measures (TSM). On the other hand, community participation in tourism governance is very minimal and has a big impact on the disaster anticipation phase.

TSM must be carried out jointly and not depend solely on each other. Reactivating local entity empowerment (ELE) is the best way because the complexity of knowledge and experience regarding the nature and conditions of nature will continue to increase. Their relationship must be promoted to increase awareness in resource and tourism protection (RTP). In the final part, we compiled a research model in Fig. 1 and equipped with a direction statement. The research hypothesis is as follows.

H1. Tourism authority (TA) efforts to restore destinations by implementing tourism safety measures (TSM).

H2. Local community empowerment (ELE) facilitates tourist safety measures at tourist destinations (TSM).

H3. Tourism safety measures (TSM) have an impact on efforts to protect tourism resources (RTP).

H4. Tourism safety (TSM) facilitates innovation in tourism disaster management (TDM).

H5. Tourism resource protection (RTP) facilitates complete tourism disaster management (TDM)

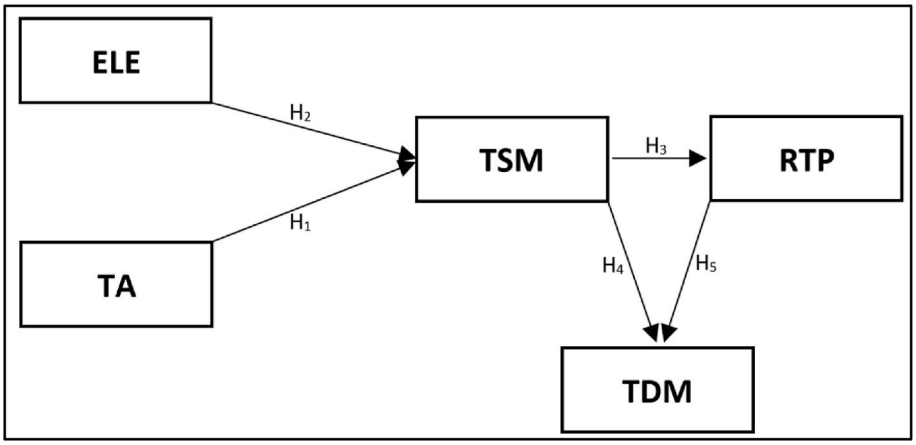

Fig. 1. Research framework.

3. Method

3.1. Research design

Field research was conducted in the special economic zone (SEZ), Mandalika, West Nusa Tenggara, Indonesia (Fig. 2). The reason is that the Mandalika area has the title of super priority destination-SPD which receives special attention from national tourism economic activities. Exploration and development of this region can help increase its tourism potential because it has significant historical, social and traditional cultural values, as well as superior destinations such as rural, nature, marine and sports tourism (Utari et al., 2024).

On the other hand, the massive increase in activity and destination development in the Mandalika area makes it one of the most vulnerable areas among other super priority destinations in Indonesia. This is caused by climate change, such as hot weather and extreme dryness during the dry season; as well as the potential for flooding when the intensity of rain is high due to tropical cyclone Seroja (Latos et al., 2023). And it is supported by Mandalika's geographical conditions which face the Indian Ocean and the Australian Sea which causes a clash of western and eastern winds (Putri et al., 2023).

Almost the entire Mandalika region is known for its high level of social wisdom and traditional culture. Along with the times, social transformation, economic investment, and the rise of rural and natural tourism; everything is developing rapidly because of the principle of openness in accepting new experiences and it is difficult to resist socio-global changes. We strive to explain how tourism development and management can go hand in hand with disaster resilience, local cultural entities and the surrounding natural environment.

The assessment framework from an external perspective comes from a collection of theories related to TDM. The aim is to solve the dilemma of tourism disaster management which is quite prone to occur in SPD Mandalika. Such as: evaluation of TDM theory and practice from Faulkner & Russell (Faulkner, 2001; Faulkner & Russell, 2003); related to collaboration and authority to build motivation in anticipating tourism disasters (Jiang & Ritchie, 2017); as well as facing the vulnerabilities (Hystad & Keller, 2006, 2008), crisis and future tourism disaster management (Becken & Hughey, 2013; Mair et al., 2016).

It is important to complete this section so that tourists do not negotiate their reasons for traveling to Mandalika. Therefore, a questionnaire approach is used as a basis for investigating the TDM dilemma; the correlation is that future tourism is influenced by development that is fair to the environment and concentrates on disaster aspects. Based on the research design, we designed variables and indicators from many references shown in Table 1.

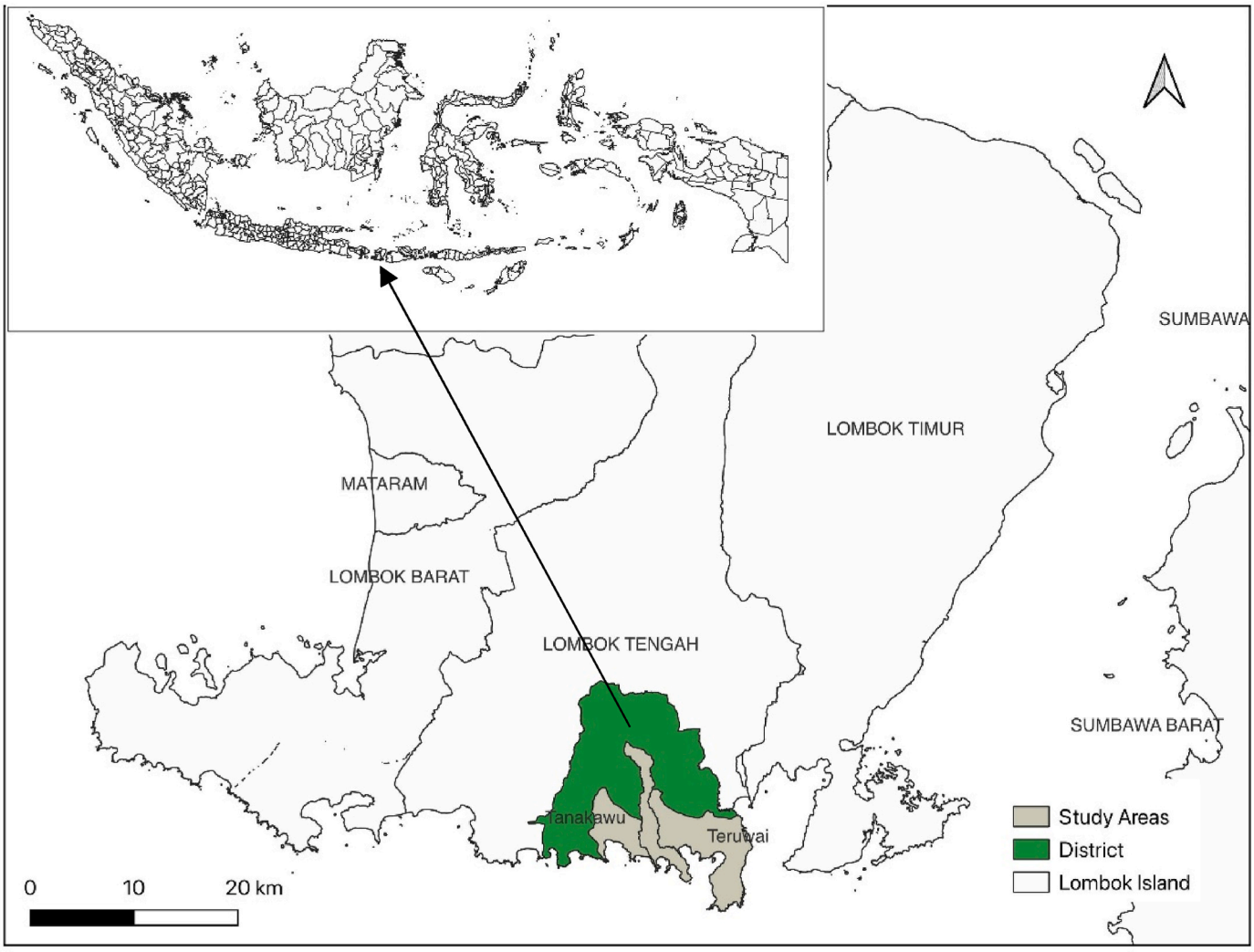

Fig. 2. Location of mandalika, west nusa tenggara province, Indonesia.
Source: modified with Q-GIS, 2025

Table 1
Research variable and indicator.

Variable	Indicator	Sources
Tourism Authority (TA)	TA1-Availability of aspects of preparedness and disaster management planning for tourism TA2-Coordination with local institutions and communities TA3-Creating and developing tourism risk communication TA4-Infrastructure and resources allocation TA5-Training and capacity development for tourism stakeholders TA6-Post-disaster recovery and rehabilitation TA7-Legislative and policy advocacy	Almeida et al. (2017); Junaid & D'Hauteserre (2017)
Empowerment Local Entity (ELE)	ELE1-Community engagement in disaster preparedness ELE2-Enhancement of competence and instruction for local stakeholders ELE3-Monetary and technical assistance for local tourism operators ELE4-Decentralization of responsibilities in disaster management ELE5-Local governance in pra and during disaster process ELE6-Enhancing local tourism supply chains	Bhaskara et al. (2021); Ritchie and Jiang (2021)
Tourism Safety Measure (TSM)	TSM1-Execution of safety protocols and standards TSM2-Preemptive alert mechanisms and instantaneous communication TSM3-Programs for educating tourists on safety and awareness initiatives are designed to inform about safety protocols, hazards, and emergency contacts upon reaching destinations TSM4-Health and sanitation protocols TSM5-Presence of security and law enforcement TSM6-Routine safety audits and risk evaluations	Becken and Hughey (2013); Xie et al. (2021)
Resources and Tourism Protection (RTP)	RTP1-Practices for sustainable resource management RTP2-Mitigation of disaster risks for prominent tourist destinations RTP3-Initiatives for environmental protection and restoration RTP4-Plans for the preservation of cultural heritage RTP5-Recovery and rehabilitation of tourism resources following a disaster RTP6-Regulatory structures and policies for resource conservation	Bianchi & Man (2021); Hystad and Keller (2008)
Tourism Disaster Management (TDM)	TDM1-Assessment of disaster risk for tourism destinations TDM2-Plans for emergency preparedness and response TDM3-Collaboration among stakeholders TDM4-Enhancement of skills and training for tourism professionals TDM5-Robust tourism infrastructure TDM6-Post-disaster recovery and business continuity strategies	Faulkner (2001); Jiang and Ritchie (2017)

3.2. Research technique

Quantitative exploratory research is used to explain the indicator variables involved in hypothesis testing. We carried out statistical calculations with partial least squares (PLS) based on structural equation modeling (SEM) adopted from Hair et al. (2014). The aim is to investigate tourism phenomena along with assessments, evaluate external views and provide opportunities to overcome tourism disaster management dilemmas.

The research respondents were selected through probability sampling; tourists visiting Mandalika have opportunities based on the specified stratification. Respondent criteria are considered based on age, gender, education level, income, and experience related to tourism disaster management. Thus, each respondent has specifications that are worthy of being used as research analysis material.

We distributed a questionnaire or quantitative survey using a Likert scale assessment of 1–5. This measures each perception or experience given by participants related to tourism disaster management in Mandalika. In addition, Mandalika, located in a coastal area, has balanced potential and challenges, such as the availability of participants, participant criteria, and level of responsiveness for the accuracy of research data.

Previously, we obtained verbal authorization from each participant involved. Participants involved in the study have agreed consciously and willingly to participate voluntarily to be involved in the research and are willing to voluntarily provide statements through their experiences while traveling in Mandalika, Indonesia.

315 questionnaires were distributed to domestic and foreign tourists who carried out tourism activities in Mandalika during the period September–October 2024. As a result, 292 (92.67%) questionnaires were considered valid and met the criteria; while 23 (7.33%) questionnaires were considered failed because they did not complete the statement (Table 2). Statistical calculations were carried out via Microsoft Excel and SmartPLS 4.1.0.3 software. Following the guidelines from Hair Jr et al. (2014), we were directly involved in modeling analysis by investigating three testing steps, namely inner, outer model and hypothesis testing. The relationship between variables is also assessed through calculating regression paths.

As conditions and limitations for producing an F-square measure with a limit of 0.150, statistical power was also evaluated using the settings from Hair Jr et al. (2014), namely with a Cronbach alpha value above 0.70; composite reliability above 0.70; and AVE above 0.50; and a p-value limit of 0.05 to set a significant threshold value as determined by Scheines et al. (1999). We also use iterative processing to evaluate variables with two types of manipulation: calculating based on latent variable-indicators and assessing latent variable relationships by evaluating external estimates. The significance of TDM endogenous variables using Bootstrap PLS was also evaluated.

Table 2
Respondent profile.

	Frequency	Total	Percentage (%)
Questionnaire	Valid Questionnaire	292	92.67
	Invalid Questionnaire	23	7.33
Gender	Male	183	62.67
	Female	109	37.33
Age Group	18-35 YO	230	85.64
	36-53 YO	62	14.36
Nationally	Domestic	210	71.90
	Foreign	82	28.10
Status	Married	117	40.06
	Single	92	31.50
	Higher Student	83	28.44

4. Result

4.1. Respondent result

We display the results of research on 315 respondents in Table 2, 292 questionnaires can be declared valid and meet the requirements with a final acceptance percentage of 92.67%. This questionnaire was dominated by 183 male tourists or 62.67%. If we look at the age group, the dominance of tourists is relatively young with an age range of 18–35 years, as many as 230 people or 85.64%. Our questionnaire was also dominated by local tourists with 210 people or 71.90%, the rest were foreign tourists with 82 people or 28.10%. The final part, the dominance of tourists visiting Mandalika is married with 117 or 40.06% and the rest are still single with 92 or 31.50% and students with 83 or 28.44%.

4.2. Measurement result (outer model)

The PLS algorithm calculation is carried out to evaluate external screening based on the consistency of indicator use and is declared valid to meet the practical size of the variable. After being measured based on the binding indicators, the outer loading was found to be valid and acceptable with a value above 0.70. The available indicators are used to show reliable variables and acceptance of the measurement model, acceptance of the indicators indicates that there is no conflict to weaken other relevant coefficients (see Table 3).

The measurement variation of tourism authority (TA) is between 0.771 and 0.917; local entity empowerment (ELE) between 0.893 and 0.906; tourism protection (RTP) between 0.758 and 0.832; tourism safety measure (TSM) between 0.876 and 0.944; tourism disaster management (TDM) between 0.826 and 0.908. We removed values that did not meet the calculation criteria because they were below the 0.70 threshold: namely TA5, ELE4, ELE5, TSM4, TSM5, TDM2, TDM4 and TDM5.

Of the four items measuring the TA variable, the highest values were found, namely TA2 (0.917) and TA3 (0.848), which shows that both items are very reflective and need to be maintained in assessing local tourism authorities. Meanwhile, the other two needs to be accelerated to better support tourism authorities in managing tourism disasters. This correlates with the ELE2 indicator which received a high score among the group (0.927), this indicator needs to be maintained because it describes complex needs, plays a role in controlling destinations and becomes the main operator when a tourism disaster occurs.

The same as the TSM4 indicator, a person in charge who is competent is needed to support tourist safety when traveling. This is done through basic mechanism development measures, preventive warnings and instant communication. So that there is no confusion for tourists to anticipate themselves in facing tourism disasters.

Outer loading increasingly explains correlations that strengthen each other and do not weaken each other. Three assessment indicators from the previous construct can provide reinforcement for the RTP variable. The RTP2 indicator (0.832) must be maintained because it departs together from the previous assessment and dominates the assessment among similar components. This explains that risk mitigation must be strengthened to support destinations that are responsible for tourism disasters. This behavior can be carried out collaboratively and/or together with all stakeholders (0.908) and does not take place alone.

As mentioned previously, 8 of the 25 indicators were removed because they were inconsistent and not convergent valid. However, other indicators show influence based on questionnaire data that has been circulated. This means that the respondent's agreement with the statement provided by the researcher is based on a Likert scale calculation of 1–5 with a value of "strongly disagree"-"strongly agree". The research results show that each indicator displayed is a collection of many important issues and needs to be maintained in tourism disaster management in Mandalika, Indonesia (see Table 3).

The entire average variance extracted or AVE of the observed constructs is above 0.50, this refers to the provisions of Chin (1998). The results of each variable show a TA value of 0.718; ELE value of 0.826; TSM value of 0.834; The RTP value is 0.629 and TDM is 0.754. All variables have been successfully validated and show acceptance for their continuation in the measurement model.

4.3. Structural model result (inner model)

We present the results of the evaluation of the inner model or structural model which consists of multicollinearity testing (VIF) with a value < 5; test results using path coefficients, p-values, upper-lower limits and effect size (F-Square), coefficient of determination (R-

Tabel 3
Measurement result.

Variable	Measurement items	Outer Loading	Cronbach's alpha	Composite reliability	Average Variance Extracted (AVE)
Tourism Authority (TA)			0.875	0.899	0.718
	TA1-Availability of preparedness and disaster management planning for tourism	0.847			
	TA2-Coordination with local institutions and communities	0.917			
	TA3-Creating and developing tourism risk communication	0.848			
	TA4-Infrastructure and resources allocation	0.771			
Empowerment Local Entity (ELE)			0.895	0.903	0.826
	ELE1-Community engagement in disaster preparedness	0.893			
	ELE2-Enhancement of competence and instruction for local stakeholders	0.927			
	ELE3-Monetary and technical assistance for local tourism operators	0.906			
Tourism Safety Measure (TSM)			0.900	0.901	0.834
	TSM1-Execution of safety protocols and standards	0.876			
	TSM2-Preemptive alert mechanisms and instantaneous communication	0.944			
	TSM3- educating tourists on safety and awareness initiatives are designed to inform about safety protocols, hazards, and emergency contacts upon reaching destinations	0.918			
Resources and Tourism Protection (RTP)			0.855	0.868	0.629
	RTP1-Practices for sustainable resource management	0.778			
	RTP2-Mitigation of disaster risks for prominent tourist destinations	0.832			
	RTP3-Initiatives for environmental protection and restoration	0.778			
	RTP4-Plans for the preservation of cultural heritage	0.758			
	RTP5-Recovery and rehabilitation of tourism resources following a disaster	0.816			
Tourism Disaster Management (TDM)			0.701	0.720	0.754
	TDM1-Assessment of disaster risk for tourism destinations	0.826			
	TDM3-Collaboration among stakeholders	0.908			

Square), Q-Square, effect size and Godness of Fit (GoF) (Hair et al., 2019).

Multi-collinear model testing or VIF is carried out to assess the situation of correlation between constructs in the multiple regression model. If the value that appears is < 5 then the model is declared fulfilled; conversely, if the value is above >5 then there is multicollinearity between constructs and recalculation must be carried out for each indicator used in the research (Hair et al., 2021). The research results show that there is no multicollinearity in the inner model calculations, because the VIF value of each variable is between 1000–2,718, which shows that the parameter estimates in PLS-SEM are robust or unbiased.

Table 4 displays the path coefficient results. Referring to Cohen (1998), he has determined the limit values for evaluating F-Square, namely: 0.02 is a small effect, 0.15 is a medium effect and 0.35 is a large effect. The five hypotheses developed previously have found similar results. It can be explained as follows:

H_1. TA shows a positive influence of 9% or 0.090 but is not significant for TSM with a p value of 0.292 which is above the value of 0.05. However, the influence of TA on TSM has a low influence with an F-Square value (0.004). The confidence interval (CI) includes zero or lies between the values −0.073 to 0.261; this relationship is insignificant at the 95% confidence level.

H_2. ELE shows a positive influence of 45.4% or 0.454 and is significant for TSM with a p value of 0.000 which is below the value of 0.05. However, the influence of ELE on TSM has a low influence with an F-Squares value of 0.105. The confidence interval (CI) does not include zero or lies between the values 0.271 to 0.639; this relationship is significant at the 95% confidence level.

H_3. TSM shows a positive influence of 68.5% or 0.685 and is significant for RTP with a p value of 0.000 which is above the value of 0.05. This value is supported by the high influence of the F-Squared value of 0.886. The confidence interval (CI) does not include zero or lies between the values 0.604 to 0.756; this relationship is significant at the 95% confidence level. This is also evidenced by the T-statistic value of 17.776, which strongly influences TSM on RTP.

H_4. TSM shows a positive influence of 64.7% or 0.647 and is significant for TDM with a p value of 0.000 which is above the value of 0.05. This value is supported by the high influence of the F-Squared value of 1.180. The confidence interval (CI) does not include zero or lies between the values 0.575 to 0.706; this relationship is significant at the 95% confidence level. The high T-Statistics value (19.482) also confirms that TSM strongly influences TDM.

H_5. RTP shows a positive influence of 68.5% or 0.685 and is significant for TDM with a p value of 0.000 which is above the value of 0.05. This value is supported by the high influence of the F-Squared value of 0.298. The Confidence Interval does not include zero or lies between the values 0.257 to 0.401, so this relationship is significant at the 95% confidence level.

The only insignificant findings are in H1 because the CI includes zero, and the P-value is large from 0.05. H2, H3, H4, and H5 have a positive and significant influence because the CI does not include zero, and the P-value is small from 0.05). On the other hand, H3 and H4 have the most decisive influence (seen from the high Path Coefficient and T-Statistics values; and the largest F-Square in H4 (1.180), which shows that TSM plays a vital role in TDM affairs in Mandalika, Indonesia.

Then, we present the results of research on calculating specific indirect effects. The results found the existence of intervening variables which influence the relationship between exogenous variables and endogenous variables. When considering the intervening variables passed by the TA variable, the results show a positive relationship with a coefficient of 2% or 0.020. This also reveals an insignificant correlation with a p-value of 0.290 or above the specified value of 0.05.

In contrast to previous results, ELE's correlation with the intervening variable provides a positive coefficient of 0.101. This implies that a one unit increase in the involvement of local community entities in tourism disaster management mediated by TSM and RTP can produce an increase of 10.1%. This finding also has statistical significance and its effect on TDM is 0.001; or below the stipulated value of 0.05. Overall it is shown in Table 5.

We displayed goodness-of-fit values and goodness-of-fit evaluations in variance-based PLS-SEM testing to conclude the prediction study in the model (see Table 6). This is described in terms of measures to declare the proposed model acceptable; such as R-Square, Q-Square, F-Square, PLS Predict and GoF (Hair et al., 2019; Sarstedt et al., 2019).

Based on the results of data processing, we found structural results (R-Square) which explain that the magnitude of the separate influence between TA and ELE which together influence TSM is 27.3% or in the weak category. Apart from that, the magnitude of the influence of TSM and RTP together on TDM is 81.1% or the strong category.

The Q-Square value provides a prediction measure for each change in exogenous variables and is able to make predictions on endogenous variables. Q-Square values that are above 0 are categorized as providing predictive relevance and fulfilling practical rules (Hair et al., 2014, 2019). Our results found that the observed variables had a range of moderate and high values (0.265–0.454). The F-Square values of all constructs observed in the study show the dominance of large effect sizes and are in accordance with the provisions of (Henseler & Sarstedt, 2013).

Based on the processing results of 17 indicator observations on the RMSE and MAE values of 13 measurement items; shows the number of measurement items in the PLS model with lower RMSE and MAE values than the linear regression model. These results indicate that the proposed PLS model has medium predictive power. Lastly, the research model suitability value or GoF is 0.359 or high. The following is the

Tabel 5
Result of indirect effect.

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values
ELE - > TSM - > RTP - > TDM	0.101	0.103	0.030	3.379	0.001
TA - > TSM - > RTP - > TDM	0.020	0.020	0.019	1.059	0.290

Table 4
Significant path coefficient result of direct effect of inner model.

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	Path Coefficient Confidence Interval (95%)		P-Values	F-Square
					2.5%	97.5%		
H_1:TA- > TSM	0.090	0.094	0.085	3.054	−0.073	0.261	0.292	0.004
H_2:ELE- > TSM	0.454	0.452	0.094	4.828	0.271	0.639	0.000	0.105
H_3:TSM- > RTP	0.685	0.687	0.039	17.776	0.604	0.756	0.000	0.886
H_4:TSM- > TDM	0.647	0.645	0.033	19.482	0.575	0.706	0.000	1.180
H_5:RTP- > TDM	0.325	0.327	0.037	8.866	0.257	0.401	0.000	0.298

Table 6
Final assessment of inner measurement models.

Items	R2	Q2	F2	Effect	Goodness of Fit (GoF)	SRMR
Tourism Safety Measure	0.273	0.265	0.233	Moderate	0.359	0.093 Acceptable Fit
Resources and Tourism Resource	0.468	0.454	0.886	Strong		
Tourism Disaster Management	0.811	0.375	Dependent Variable			

research structural model shown in Fig. 3.

5. Discussion

This research has conducted an evaluation of tourism disaster management in Mandalika, Indonesia (see Figs. 2 and 3). The research results show that the contextual elements and situations of TDM face a complex dilemma, because the governance structure is only centralized in certain authorities or national tourism institutions, thus limiting the role and involvement of local communities and authorities.

As a result, there is no synchronization and they do not go hand in hand, which gives rise to great speculation from an external perspective. This makes it difficult for destinations to develop because tourists' decisions really depend on aspects of safety, comfort and disaster anticipation. The results have the potential to influence tourists' decisions and choices to return to Mandalika, Indonesia.

Our research is the first research and is different from other research because the empirical factors have boundaries between special authorities and local community entities, so there are additional factors that were not previously included in research. From a conceptual and managerial perspective, these findings can increase understanding of the importance of unity in tourism disaster management governance which cannot be separated from the involvement of local entities.

Apart from that, the experience aspect of local actors is very much in control of natural conditions regarding the environment. This is because they have lived and grown for a long time with their natural condition. So that every change, potential and threat of disaster, can be known based on their experience. This is proven by the positive and significant path of the ELE variable towards tourism disaster management when passing the intervening variables TSM and RTP. In contrast, the TA variable shows insignificant and weak results (see Table 5).

This finding is very interesting, considering that the prevailing belief in TA to increase tourist safety and protection in TDM does not appear to be significant. This result is in line with the thoughts and predictions of Faulkner (2001) and Faulkner and Russell (2003), that the large effect is only centered on local community involvement in disaster management. On the other hand, when the two components are separated in proposal and involvement, the resilience of the destination is weak and development is slow.

The involvement of local communities who are close to tourists is able to intervene, educate and influence tourists informally (Bhaskara et al., 2021; Hystad & Keller, 2008). This is evidenced by the potential for great disaster; so that mitigation, preparation and preparedness can be received from the explanation and presence of local communities (Jiang & Ritchie, 2017; Ritchie & Jiang, 2021). Based on the findings, the component of local community entities as the frontline is very important for tourists.

This further strengthens previous findings from Becken and Hughey (2013) and Ritchie and Jiang (2021) that safety schemes begin with the perspectives and actions of local communities in assessing the safety of tourists. So that tourists have additional insight that influences their actions because they are in direct contact with the community (Fathani, Putera, et al., 2023; Filimonau & De Coteau, 2020).

Apart from that, the results are also strengthened by information from local business groups who have experience in attracting potential tourists. Tourism interest fluctuates based on the season, and tourism authorities also do little to reconstruct disaster facilities and are weak in providing innovation. So the destinations being promoted appear to be saturated and make it difficult for tourists to negotiate reasons for returning to Mandalika.

As found by Lenggogeni and Syafrizal (2023), tourists' decisions are determined by the magnitude of the threats and obstacles they face when enjoying tourism activities. Moreover, the risks of tourism travel are related to natural disasters in the context of developing countries, such as Mandalika Indonesia. Therefore, it is necessary to encourage improvements in disaster facilities due to worrying natural conditions

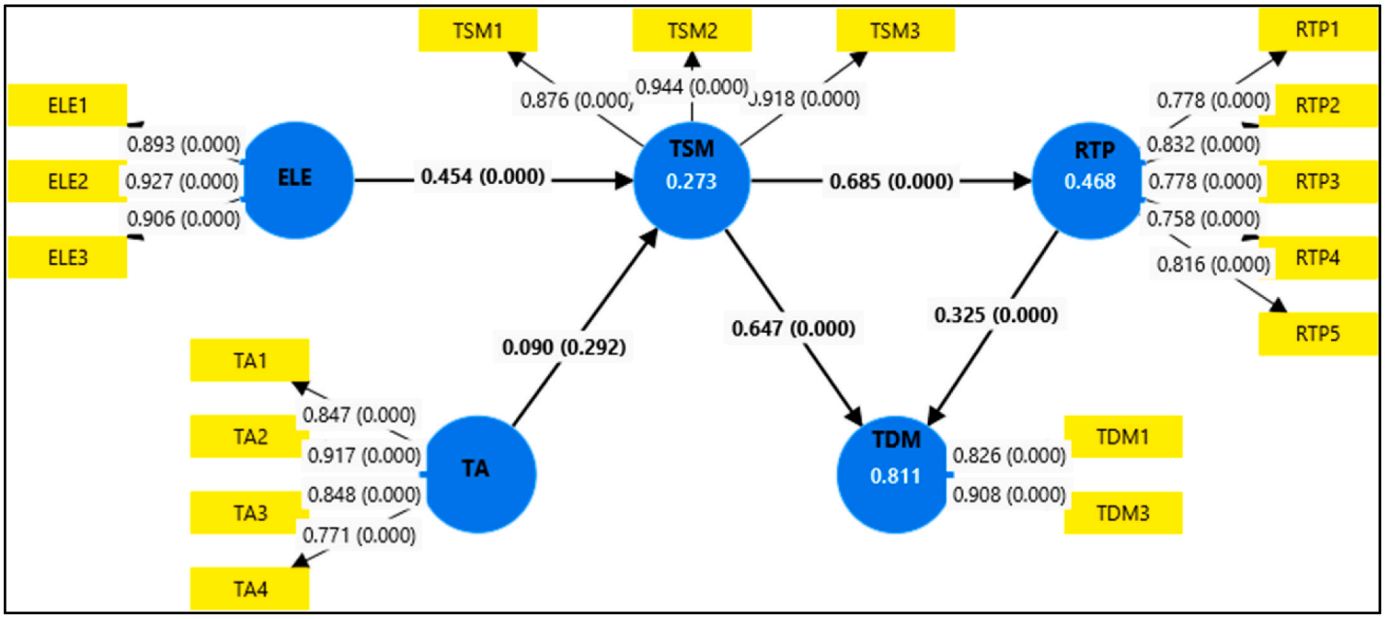

Fig. 3. Evaluation of inner model.

(Bateman & Fleming, 2017; Robina-Ramírez et al., 2022). This cannot be separated from the role of local communities and groups who are the main actors in the prodromal phase during a disaster, so their responsibility in ensuring tourist trust must also be considered.

In addition, it is important to recognize that tourists need attention and protection from tourism authorities for their concerns regarding comfort and safety (Almeida et al., 2017; Jamal & Higham, 2021). Even though the destination is relatively new and is in the super priority destination category, they must work together and take a lot of action so that TDM can continue even in complicated conditions. As a result, the relationship between the community, local groups and tourism authorities can become a unity that cannot be separated from external perceptions, namely tourists. This is in line with and has been emphasized by Jiang and Ritchie (2017), that tourism disaster management schemes must be carried out jointly, going hand in hand between the environment and destination development which so far has only focused on economic aspects.

The dilemma of tourism disaster management in Mandalika shows the importance of a transformation that brings together tourism authorities and local communities and is committed to facing the challenges of tourism disasters. Cooperative forms of awareness and equality must be activated because of super priority tourism governance. When complex situations and disasters come together, it is hoped that they will be solid in overcoming disasters and their impacts.

6. Conclusion

Research on tourism is a topic that never fades and is widely reviewed by researchers based on empirical, methodological and conceptual perspectives. However, specific research on tourism disaster management is a crucial topic and little discussed by other researchers. For example, the journey in disaster management thinking is slow to produce policy resolutions; and agreeing on fair cooperation for the progress of tourism in facing future disasters.

The research findings emphasize overcoming the tourism disaster management dilemma with fair and inclusive cooperation in crisis management. This includes stages, components, conceptual, operational and strategic factors that are interrelated and built on the principles of trust and commitment. Equality in cooperation is believed to facilitate destination expansion and effective communication about shared goals to reach consensus on tourism disaster management decisions. Therefore, these results suggest adopting a relational paradigm that is not just documentation but is actively implemented in tourism disaster management schemes.

A theoretical contribution, the research offers an understanding of the standard relationship that cannot be separated between the community and tourism authorities related to tourism disaster management. Even though, this destination is classified as a priority destination. This component cannot be weakened, the community plays a vital role in developing and maintaining the destination; it arises naturally because it has coexisted with nature. Therefore, they should not be solely assigned to practice or operations but should be actively involved in every phase of tourism conceptual design.

In this managerial update, we provide suggestions to tourism authorities to be fairer and fully understand the character of local communities in each destination, especially, when a new destination is proposed as a priority target destination. It is therefore important to carry out in-depth understanding and research in many methods, such as an exploratory sequential approach. This is important for destination resilience in overcoming dilemmas that will arise in the future. Therefore, the role of local communities must be activated and worked together to minimize conflicts in managing tourism disasters. Future research should emphasize the collaborative dimension of networks to obtain many opportunities and positive results that can be achieved in tourism disaster management.

CRediT authorship contribution statement

Roni Ekha Putera: Writing – original draft, Validation, Supervision, Project administration, Methodology, Conceptualization. **Aqil Teguh Fathani:** Writing – original draft, Visualization, Software, Methodology, Investigation, Formal analysis. **Sari Lenggogeni:** Writing – review & editing, Writing – original draft, Validation, Supervision, Project administration, Methodology, Investigation, Conceptualization. **Asrinaldi:** Writing – review & editing, Writing – original draft, Visualization, Validation, Supervision, Project administration, Methodology, Investigation, Formal analysis, Conceptualization.

Ethical statement

The participants in this study were completely approved in this research. We obtained verbal authorization from each participant involved. Participants involved in the study have agreed consciously and willingly to participate voluntarily to be involved in the research and are willing to voluntarily provide statements through their experiences while traveling in Mandalika, Indonesia.

The ethical team of the Faculty of Social and Political Science, Universitas Andalas, assessed this study. Ethical statement number B/275/UN16.08.D/TP.February 02, 2024. The "experience" of respondents who enjoy tourism activities in Mandalika is only used as a basis for conducting and testing research, not for asking, taking, and/or injuring research respondents. Hence. This research has satisfactorily satisfied the criteria and does not require further ethical approval for research protocols and ethics in the scope of social sciences.

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Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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References

Acar, V., & Tanrisevdi, A. (2018). Understanding the behaviors of Japanese tourists on guided Tours. In *Tourist behavior* (pp. 19–35). Cham: Springer. https://doi.org/10.1007/978-3-319-78553-0_2.

Ahsani, R. D. P., Wulandari, C., Dinata, C., Azmi, N. A., & Fathani, A. T. (2022). The challenges and opportunities for developing community-based tourism in Indonesia. *Journal of Governance, 7*(4). https://doi.org/10.31506/jog.v7i4.16232

Almeida, J., Costa, C., & Nunes da Silva, F. (2017). A framework for conflict analysis in spatial planning for tourism. *Tourism Management Perspectives, 24*, 94–106. https://doi.org/10.1016/j.tmp.2017.07.021

Alvarez, S., Bahja, F., & Fyall, A. (2022). A framework to identify destination vulnerability to hazards. *Tourism Management, 90*, Article 104469. https://doi.org/10.1016/j.tourman.2021.104469

Ansell, C., & Gash, A. (2008). Collaborative governance in theory and practice. *Journal of Public Administration Research and Theory, 18*(4), 543–571. https://doi.org/10.1093/jopart/mum032

Bateman, P. W., & Fleming, P. A. (2017). Are negative effects of tourist activities on wildlife over-reported? A review of assessment methods and empirical results. *Biological Conservation, 211*, 10–19. https://doi.org/10.1016/j.biocon.2017.05.003

Becken, S., & Hughey, K. F. D. (2013). Linking tourism into emergency management structures to enhance disaster risk reduction. *Tourism Management, 36*, 77–85. https://doi.org/10.1016/j.tourman.2012.11.006

Benjamin, S., Dillette, A., & Alderman, D. H. (2020). "We can't return to normal": Committing to tourism equity in the post-pandemic age. *Tourism Geographies, 22*(3), 476–483. https://doi.org/10.1080/14616688.2020.1759130

Bhaskara, G. I., Filimonau, V., Wijaya, N. M. S., & Suryasih, I. A. (2021). The future of tourism in light of increasing natural disasters. *Journal of Tourism Futures, 7*(2), 174–178. https://doi.org/10.1108/JTF-10-2019-0107

Bhaskara, G. I., Filimonau, V., Wijaya, N. M. S., & Suryasih, I. A. (2023). Innovation and creativity in a time of crisis: A perspective of small tourism enterprises from an emerging destination. *Tourism Management Perspectives, 46*, Article 101093. https://doi.org/10.1016/j.tmp.2023.101093

Burling, W. K., & Hyle, A. E. (1997). Disaster preparedness planning: Policy and leadership issues. *Disaster Prevention and Management: An International Journal, 6*(4), 234–244. https://doi.org/10.1108/09653569710179075

Cochrane, J. (2010). The sphere of tourism resilience. *Tourism Recreation Research, 35*(2), 173–185. https://doi.org/10.1080/02508281.2010.11081632

Cohen, J. (1998). *Statistical power analysis for the behavioral sciences* (1st ed.). Routledge. https://doi.org/10.4324/9780203771587

Cohen, E., & Cohen, S. A. (2012). Current sociological theories and issues in tourism. *Annals of Tourism Research, 39*(4), 2177–2202. https://doi.org/10.1016/j.annals.2012.07.009

Dredge, D. (2017). Policy and regulatory challenges in the tourism collaborative economy. In *Collaborative economy and tourism* (pp. 75–93). Cham: Springer. https://doi.org/10.1007/978-3-319-51799-5_6.

Fathani, A. T., Azmi, N. A., Purnomo, E. P., Tham, S. A., & Ahmad, R. (2023). A systematic review of tourism governance: Sustainable tourism governance model post COVID-19. *Jurnal Borneo Administrator, 19*(1), 35–50. https://doi.org/10.24258/jba.v19i1.1125

Fathani, A. T., Putera, R. E., Asrinaldi, A., Valentina, T. R., Hariyati, D., Holidin, D., & Agustiyara, A. (2023). A systematical review of tourism disaster management: Insights from Indonesian's journey. *E3S Web of Conferences, 464*, Article 05002. https://doi.org/10.1051/e3sconf/202346405002

Faulkner, B. (2001). Towards a framework for tourism disaster management. *Tourism Management, 22*(2), 135–147. https://doi.org/10.1016/S0261-5177(00)00048-0

Faulkner, B., & Russell, R. (2003). Chaos and complexity in tourism: In search of a new perspective. In L. Fredline, L. K. Jago, & C. Cooper (Eds.), *Progressing tourism research - bill faulkner* (pp. 205–219). https://doi.org/10.21832/9781873150498-015. Multilingual Matters.

Filimonau, V., & De Coteau, D. (2020). Tourism resilience in the context of integrated destination and disaster management (DM2). *International Journal of Tourism Research, 22*(2), 202–222. https://doi.org/10.1002/jtr.2329

Hair, J. F., Hult, G. T. M., Ringle, C. M., Sarstedt, M., Danks, N. P., & Ray, S. (2021). *Partial least squares structural equation modeling (PLS-SEM) using R*. Springer International Publishing. https://doi.org/10.1007/978-3-030-80519-7

Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review, 31*(1), 2–24. https://doi.org/10.1108/EBR-11-2018-0203

Hair, J. F., Sarstedt, M., Hopkins, L., & Kuppelwieser, V. G. (2014). Partial least squares structural equation modeling (PLS-SEM). *European Business Review, 26*(2), 106–121. https://doi.org/10.1108/EBR-10-2013-0128

Henseler, J., & Sarstedt, M. (2013). Goodness-of-fit indices for partial least squares path modeling. *Computational Statistics, 28*(2), 565–580. https://doi.org/10.1007/s00180-012-0317-1

Hystad, P., & Keller, P. (2006). Disaster management: Kelowna tourism industry's preparedness, impact and response to a 2003 major forest fire. *Journal of Hospitality and Tourism Management, 13*(1), 44–58. https://doi.org/10.1375/jhtm.13.1.44

Hystad, P., & Keller, P. (2008). Towards a destination tourism disaster management framework: Long-term lessons from a forest fire disaster. *Tourism Management, 29*(1), 151–162. https://doi.org/10.1016/j.tourman.2007.02.017

Jamal, T., & Higham, J. (2021). In T. Jamal, & J. Higham (Eds.), *Justice and tourism*. Routledge. https://doi.org/10.4324/9781003143055.

Jiang, Y., & Ritchie, B. (2017). Disaster collaboration in tourism: Motives, impediments and success factors. *Journal of Hospitality and Tourism Management, 31*, 70–82. https://doi.org/10.1016/j.jhtm.2016.09.004

Jnto, J. N. T. O. (2020). Safety tips for travelers in Japan. *Japan national tourism organization*. https://www.jnto.go.jp/safety-tips/eng/index.html.

Johnson, T., Dawes, C., Fowler, J., & Smirnov, O. (2020). Slowing COVID-19 transmission as a social dilemma: Lessons for government officials from interdisciplinary research on cooperation. *Journal of Behavioral Public Administration, 3*(1). https://doi.org/10.30636/jbpa.31.150

Latos, B., Peyrillé, P., Lefort, T., Baranowski, D. B., Flatau, M. K., Flatau, P. J., Riama, N. F., Permana, D. S., Rydbeck, A. V., & Matthews, A. J. (2023). The role of tropical waves in the genesis of tropical cyclone Seroja in the maritime continent. *Nature Communications, 14*(1), 856. https://doi.org/10.1038/s41467-023-36498-w

Lenggogeni, S., & Syafrizal. (2023). The post-COVID-19 road-based tourism market: Negotiation of travel constraints. *Transportation Research Interdisciplinary Perspectives, 22*, Article 100908. https://doi.org/10.1016/j.trip.2023.100908

Mair, J., Ritchie, B., & Walters, G. (2016). Towards a research agenda for post-disaster and post-crisis recovery strategies for tourist destinations: A narrative review. *Current Issues in Tourism, 19*(1), 1–26. https://doi.org/10.1080/13683500.2014.932758

Milman, A., Jones, F., & Bach, S. (1999). The impact of security devices on tourists' perceived safety: The central Florida example. *Journal of Hospitality & Tourism Research, 23*(4), 371–386. https://doi.org/10.1177/109634809902300403

Ostrom, E. (1990). *Governing the commons: The evolution of institutions for collective action*. Cambridge University Press.

Ostrom, E. (1996). Crossing the great divide: Coproduction, synergy, and development. *World Development, 24*(6), 1073–1087. https://doi.org/10.1016/0305-750X(96)00023-X

Purnomo, E. P., Fathani, A. T., Kasiwi, A. N., & Tenorio, C. B. (2022). How does government policy support sustainable tourism in dealing with COVID-19 pandemic? *Journal of Sustainability Science and Management, 17*(2), 170–186. https://doi.org/10.46754/jssm.2022.02.013

Putri, N. S. E., Wijaya, D. D., Abdillah, M. R., Tanuwijaya, Z. A. J., Wibowo, S. T., & Kuntjoro, W. (2023). Characterizing the tropical cyclone Seroja using the Indonesian CORS network. *Natural Hazards, 119*(3), 1819–1838. https://doi.org/10.1007/s11069-023-06181-w

Ritchie, B. (2004). Chaos, crises and disasters: A strategic approach to crisis management in the tourism industry. *Tourism Management, 25*(6), 669–683. https://doi.org/10.1016/j.tourman.2003.09.004

Ritchie, B. (2008). Tourism disaster planning and management: From response and recovery to reduction and readiness. *Current Issues in Tourism, 11*(4), 315–348. https://doi.org/10.1080/13683500802140372

Ritchie, B., & Jiang, Y. (2019). A review of research on tourism risk, crisis and disaster management: Launching the annals of tourism research curated collection on tourism risk, crisis and disaster management. *Annals of Tourism Research, 79* (October), Article 102812. https://doi.org/10.1016/j.annals.2019.102812

Ritchie, B. W., & Jiang, Y. (2021). Risk, crisis and disaster management in hospitality and tourism: A comparative review. *International Journal of Contemporary Hospitality Management, 33*(10), 3465–3493. https://doi.org/10.1108/IJCHM-12-2020-1480

Robina-Ramírez, R., Sánchez, M. S. O., Jiménez-Naranjo, H. V., & Castro-Serrano, J. (2022). Tourism governance during the COVID-19 pandemic crisis: A proposal for a sustainable model to restore the tourism industry. *Environment, Development and Sustainability, 24*(5), 6391–6412. https://doi.org/10.1007/s10668-021-01707-3

Sarstedt, M., Hair, J. F., Cheah, J.-H., Becker, J.-M., & Ringle, C. M. (2019). How to specify, estimate, and validate higher-order constructs in PLS-SEM. *Australasian Marketing Journal, 27*(3), 197–211. https://doi.org/10.1016/j.ausmj.2019.05.003

Scheines, R., Hoijtink, H., & Boomsma, A. (1999). Bayesian estimation and testing of structural equation models. *Psychometrika, 64*(1), 37–52. https://doi.org/10.1007/BF02294318

Sharma, G. D., Thomas, A., & Paul, J. (2021). Reviving tourism industry post-COVID-19: A resilience-based framework. *Tourism Management Perspectives, 37*(December 2020), Article 100786. https://doi.org/10.1016/j.tmp.2020.100786

Utari, B. A., Arsallia, S., Ramdani, M. A., Rahmafitria, F., Belgiawan, P. F., Dirgahayani, P., & Nasution, R. A. (2024). Tourist destination choice on five priority destinations of Indonesia during health crisis. *Journal of Destination Marketing & Management, 32*, Article 100880. https://doi.org/10.1016/j.jdmm.2024.100880

Xie, C., Zhang, J., & Morrison, A. M. (2021). Developing a scale to measure tourist perceived safety. *Journal of Travel Research, 60*(6), 1232–1251. https://doi.org/10.1177/0047287520946103