Journal of Economics, Finance and Management Studies

ISSN (print): 2644-0490, ISSN (online): 2644-0504

Volume 08 Issue 06 June 2025

Article DOI: 10.47191/jefms/v8-i6-24, Impact Factor: 8.317

Page No: 3631-3646

Pentahelix Model Strategy in Facing Non-Military Threats in Coastal Tourism Areas: A Case Study of Bengkulu Province, Indonesia

Beinli Dwi Chandra[1], Muhartini Salim[2], Praningrum[3], Husaini[4]

[1,2,3,4]Doctoral Program in Management, Faculty of Economics and Business, University of Bengkulu, Indonesia

ABSTRACT: Coastal tourism plays a strategic role in the economic development of emerging regions but faces increasing non-military threats such as technological disruptions, socio-cultural changes, economic challenges, and public safety issues. This study aims to examine stakeholders' perceptions of these threats and the effectiveness of the Pentahelix model collaboration in mitigating non-military threats in the coastal tourism sector of Bengkulu Province, Indonesia. Employing an interpretive paradigm with a qualitative-dominant mixed-methods approach, the study focused on an in-depth contextual analysis of Pentahelix collaboration dynamics. Descriptive data were collected through questionnaires distributed to 350 respondents to triangulate qualitative findings obtained from in-depth interviews, focus group discussions, and field observations involving 25 key stakeholders. Findings indicate that public safety is the most significant threat due to natural disasters and criminal activities, with strong roles played by academia and the private sector in the collaboration process. However, government and community involvement remain limited, while media plays a strategic role in shaping destination image and crisis communication. The study concludes that sustainable coastal tourism development requires integrated cross-sector collaboration and capacity enhancement of all stakeholders within the Pentahelix framework.

KEYWORDS: Pentahelix Model, Coastal Tourism, Non-Military Threats, Collaborative Governance, Tourism Resilience, Bengkulu

I. INTRODUCTION

Coastal tourism has emerged as one of the primary drivers of economic growth in developing regions, including Indonesia. This sector significantly contributes to employment generation, community income, and regional development (UNWTO, 2022; Gössling & Hall, 2021). However, coastal tourism areas are increasingly vulnerable to a wide array of multidimensional non-military threats, such as technological disruptions, socio-cultural conflicts, economic inequality, and issues related to public safety and security (Becken, 2018; Novelli et al., 2018). These threats have become more complex amid the accelerating impacts of climate change, rapid digital transformation, and the sociological aftermath of the COVID-19 pandemic (UNDRR, 2023).

In the Indonesian context, Bengkulu Province is a coastal region with high potential for tourism development. According to Statistics Indonesia (BPS, 2023), the tourism sector contributed approximately 8.7% to the province's Gross Regional Domestic Product (GRDP) and absorbed more than 12,000 workers in 2022. The region's natural marine assets, unspoiled beaches, and rich local culture position it as a promising tourism destination. Nonetheless, dependence on this sector also creates vulnerability to various non-traditional threats, such as coastal environmental degradation, the spread of digital misinformation, illegal fishing practices, and social tensions among stakeholders (Yulianda et al., 2022; Rasyid et al., 2021).

To address the growing complexity of these threats, an adaptive, collaborative, and inclusive governance model is urgently needed. The Pentahelix model which integrates five key stakeholders: government, private sector, academia, media, and civil society has been recognized as a strategic framework for fostering resilience, innovation, and sustainable development (Etzkowitz & Leydesdorff, 2000; Kurniawan et al., 2021). While this model has been widely applied in various development contexts, empirical research evaluating its effectiveness in managing coastal tourism particularly in the context of non-military threats remains limited.

This study aims to examine the effectiveness of the Pentahelix model in responding to and mitigating non-military threats in the coastal tourism areas of Bengkulu Province. The study focuses on three core objectives: (1) to explore the perceptions and manifestations of non-military threats in the coastal tourism context of Bengkulu; (2) to identify the challenges

and opportunities in implementing the Pentahelix model at the local level; and (3) to evaluate the extent to which the model contributes to regional resilience and sustainable tourism governance.

By addressing the theoretical and empirical gaps in tourism governance literature, this research contributes to the global discourse on tourism resilience and collaborative strategies for sustainable development. The findings of this study also offer practical implications for policymakers, business actors, scholars, and local communities in designing adaptive policies and strategies that are responsive to the evolving threats faced by coastal areas. Furthermore, the research supports the achievement of the Sustainable Development Goals (SDGs), particularly SDG 11 (Sustainable Cities and Communities) and SDG 14 (Life Below Water).

II. LITERATURE REVIEW

A. Non-Military Threats in Coastal Tourism Areas

Coastal tourism areas are becoming increasingly vulnerable to a broad spectrum of non-military threats that go beyond conventional security paradigms. These include digital disruption, environmental degradation, socio-cultural disintegration, and public safety risks driven by globalization, rapid urbanization, and climate change (Becken, 2018; UNDRR, 2023; Scott et al., 2020). Unlike traditional threats, non-military risks tend to be systemic, complex, and interlinked often evolving slowly over time, yet capable of producing long-term destabilizing effects on the socio-economic fabric of tourism-dependent communities (Gössling & Hall, 2021; Dredge & Gyimóthy, 2017).

Environmental threats such as coastal erosion, marine pollution, and biodiversity loss significantly undermine the attractiveness and ecological sustainability of coastal destinations (Jones et al., 2020). Simultaneously, the digitalization of tourism, while enhancing accessibility, also introduces vulnerabilities related to cyber threats, misinformation, and digital exclusion for local businesses with limited technological capacity (Sigala, 2018). Socially, the influx of mass tourism may erode traditional cultural norms, leading to cultural homogenization, loss of identity, and tension between residents and tourists (Kim et al., 2019; Yang & Wong, 2020).

In developing countries like Indonesia, these issues are further compounded by institutional fragility, fragmented regulatory frameworks, insufficient risk preparedness, and limited financial and human resources (Yulianda et al., 2022; Birkland & Waterman, 2019). Coastal tourism zones in such contexts often lack integrated disaster management plans, early warning systems, and inclusive participatory governance structures that involve local communities in planning and response processes (Ritchie & Jiang, 2019).

Furthermore, the tourism sector's heavy reliance on external demand and seasonal flows makes it particularly sensitive to global shocks and transboundary risks such as pandemics, geopolitical shifts, and supply chain disruptions thereby intensifying local vulnerability (Hall et al., 2020; Amore et al., 2021). In this regard, non-military threats are not only a challenge to tourism sustainability but also a profound governance dilemma that demands coordinated action across multiple sectors and actors.

Thus, addressing non-military threats in coastal tourism areas requires an adaptive, multisectoral governance approach rooted in collaborative risk management, resilient infrastructure planning, and the proactive engagement of all stakeholders from policymakers and private investors to local communities and civil society organizations (Calgaro et al., 2014; Hughes & Bushell, 2013). Without such systemic interventions, the long-term viability of coastal tourism as a pillar of sustainable regional development remains at serious risk.

B. The Pentahelix Model in Tourism Governance: A Strategic Response to Non-Military Threats

The Pentahelix model, originally conceptualized as an extension of the Triple Helix framework (Etzkowitz & Leydesdorff, 2000), introduces a more inclusive paradigm for collaborative governance. It integrates five essential societal actors government, business sector, academia, civil society, and the media as strategic partners in innovation ecosystems and sustainable development (Kurniawan et al., 2021; Galvão et al., 2019). This model is particularly relevant in managing tourism destinations, where complex socio-ecological dynamics demand multi-actor engagement, transparent communication, and adaptive strategies (Uğur & Akbıyık, 2020; Hall, 2019).

In the context of coastal tourism, where non-military threats such as environmental degradation, digital disruption, and socio-cultural disintegration intersect, the Pentahelix approach fosters collaborative resilience and integrated governance. Governments contribute regulatory authority and public policy frameworks; businesses drive economic innovation and investment; academia offers evidence-based research and monitoring tools; civil society ensures grassroots participation and social legitimacy; while the media amplifies awareness, facilitates information flow, and shapes public discourse (Galvao et al., 2019; Cavicchi & Stancova, 2016; Eizenberg & Jabareen, 2017).

Empirical research confirms that the active and coordinated involvement of these five actors is instrumental in building resilient and sustainable tourism systems. Gajić et al. (2021) found that destinations that engage all Pentahelix elements are more adaptable to socio-environmental disturbances, including climate-induced hazards, health emergencies, and economic shocks. Their findings suggest that resilience-building efforts are most effective when they transcend siloed governance and incorporate mechanisms for knowledge co-creation and joint decision-making.

Furthermore, Romão and Neuts (2017) emphasize the role of academia and local stakeholders in developing place-based innovation, particularly in heritage and coastal tourism areas. Their research reveals that cross-sector partnerships foster social learning and institutional capacity-building, which are critical for sustainable risk governance. Similar findings are echoed by Baggio and Cooper (2010), who argue that tourism destinations with strong inter-organizational networks facilitated through multistakeholder governance exhibit higher levels of adaptive capacity and systemic resilience.

Additionally, the media's role in the Pentahelix is increasingly recognized in the digital age, not only for its capacity to disseminate critical information during crises but also for shaping narratives around sustainability and responsible tourism (Zhang et al., 2021). Social media platforms, in particular, serve as tools for real-time feedback and citizen engagement, thus strengthening the feedback loop between governance institutions and the public (Munar & Jacobsen, 2014).

However, effective implementation of the Pentahelix model is often hindered by asymmetrical power dynamics, institutional fragmentation, and limited trust among stakeholders, especially in decentralized governance systems like those in many parts of Indonesia (Putra et al., 2022). Overcoming these challenges requires deliberate investment in trust-building processes, collaborative platforms, and long-term capacity development for all involved actors.

Therefore, in light of growing non-military threats to coastal tourism, the Pentahelix model provides not only a conceptual framework but also a practical governance tool for fostering resilience, inclusivity, and innovation. By operationalizing this model through participatory policy processes, integrated planning, and shared accountability, tourism governance can transition from reactive crisis management to proactive risk mitigation and sustainable development.

C. Building Tourism Resilience through Adaptive and Inclusive Governance

Tourism resilience is increasingly recognized as a multidimensional concept that encompasses the capacity of destinations not only to withstand shocks but also to adapt, transform, and thrive in the face of prolonged uncertainty and disruption (Biggs et al., 2015; Lew, 2014). It involves systemic preparedness, the ability to anticipate risks, social learning, and the institutional flexibility to reconfigure resources and practices in response to socio-economic and ecological disturbances (Espiner et al., 2017; Becken, 2013). Particularly in coastal areas, where tourism is a dominant economic activity and environmental conditions are highly dynamic, resilience becomes a crucial framework for sustainable destination management.

Non-military threats such as digital disruption, environmental degradation, pandemic outbreaks, socio-cultural fragmentation, and climate-induced hazards pose complex, interlinked risks that challenge traditional governance structures (Novelli et al., 2018; Cheer, 2019). These risks can erode the competitiveness and attractiveness of destinations, diminish visitor trust, and exacerbate the socio-economic vulnerabilities of local communities, especially those in developing coastal regions (Gössling et al., 2021). In this context, resilience is not merely about recovery but about proactive transformation and long-term adaptability (Hall et al., 2017).

Adaptive governance is widely viewed as a critical enabler of tourism resilience. It refers to a flexible, participatory, and learning-oriented governance system that is capable of navigating uncertainty and complexity through stakeholder inclusivity, decentralized decision-making, and iterative policy learning (Folke et al., 2005; Scott et al., 2012). The adaptive capacity of a tourism destination is strengthened when governance mechanisms allow for cross-scale collaboration, responsiveness to change, and continuous knowledge integration across sectors.

Prayag (2018) found that destinations employing systems thinking and collaborative governance characterized by shared responsibilities among diverse actors demonstrated greater resilience in responding to disruptions such as natural disasters and political instability. His study emphasizes that resilience is not only an ecological or infrastructural issue but also deeply institutional and relational, requiring trust, communication, and coordination across governance levels.

In this light, the Pentahelix model emerges as a strategic framework for operationalizing adaptive governance in tourism contexts. By institutionalizing cooperation between government agencies, private businesses, academic institutions, civil society organizations, and the media, the model enhances the collective capacity to manage risks, mobilize resources, and co-create innovative solutions (Koh et al., 2021; Cavicchi & Stancova, 2016). For instance, academia can offer scenario-based planning and resilience assessments; civil society ensures equity and local relevance; and the media plays a role in communicating risks and shaping public narratives on sustainability.

Moreover, resilience-building is most effective when rooted in place-based strategies that align with local contexts and cultural values. Berkes and Ross (2013) argue that social capital such as community networks, local leadership, and collective memory plays a vital role in resilience processes, particularly when integrated into multi-stakeholder frameworks like Pentahelix. Similarly, Hystad and Keller (2008) suggest that risk perception, previous experience, and organizational preparedness significantly influence the speed and effectiveness of recovery efforts in tourism destinations.

Therefore, advancing tourism resilience requires more than technical interventions it demands institutional innovation, inclusive governance, and a commitment to co-production of knowledge and action. The Pentahelix model offers a comprehensive vehicle for such transformation, fostering a culture of cooperation and anticipatory governance that is critical for navigating the complex non-military threats facing coastal tourism in the 21st century.

D. Theoretical Foundations: Multi-Stakeholder Collaboration and Social System Resilience

This study draws upon two interrelated theoretical perspectives Multi-Stakeholder Collaboration Theory and the Social System Resilience Framework to conceptualize how coastal tourism destinations can enhance governance capacity and adaptive responses to non-military threats through the Pentahelix model.

Multi-Stakeholder Collaboration Theory emphasizes that complex societal challenges, particularly those characterized by high uncertainty and interdependence, cannot be effectively addressed by single-actor interventions (Bryson et al., 2016; Ansell & Gash, 2008). Instead, sustainable and innovative solutions require the engagement of a broad array of stakeholders including government bodies, private sector actors, academia, civil society, and the media each bringing distinct resources, knowledge systems, and legitimacy to the table (Selsky & Parker, 2005; Emerson et al., 2012). Within the Pentahelix governance model, this theory offers a foundational rationale for fostering institutionalized collaboration and co-production of strategies to mitigate and manage non-traditional risks such as environmental degradation, digital threats, or social instability in tourism contexts.

Moreover, the process of stakeholder collaboration is not merely instrumental but also transformative, as it allows for mutual learning, trust-building, and shared problem ownership (Gray & Purdy, 2018). Collaborative governance fosters collective intelligence and consensus-based decision-making, which are essential for developing adaptive strategies tailored to dynamic socio-ecological realities in coastal regions (Ansell & Torfing, 2021). In this sense, multi-stakeholder collaboration serves both as a governance mechanism and a resilience enabler in tourism systems facing non-military threats.

Complementing this, the Social System Resilience Framework highlights the capacity of communities and institutions to absorb shocks, adapt to change, and transform in ways that maintain or enhance system functioning (Folke et al., 2010; Berkes & Ross, 2013). Central to this framework are key constructs such as adaptive capacity, social learning, and diversity of actors, which are crucial in enhancing resilience at both organizational and community levels. Folke et al. (2005) argue that resilience is not only about resisting disruptions but also about reorganizing and innovating in the face of them, which requires dynamic interactions between formal governance structures and informal social networks.

In the context of tourism governance, resilience is shaped by the ability of the system to anticipate change, integrate feedback, and reconfigure institutional practices to sustain both environmental integrity and socio-economic viability (Espiner et al., 2017; Lew, 2014). The diversity of actors as promoted in the Pentahelix model introduces multiple perspectives and capacities that enrich the collective problem-solving process, fostering system redundancy and reducing the risk of governance failure during crises (Walker et al., 2006).

Integrating these two theoretical perspectives provides a holistic analytical lens to assess how collaborative governance arrangements under the Pentahelix framework contribute to building resilient tourism destinations in coastal zones. The synergy between stakeholder collaboration and social resilience allows for both horizontal coordination across sectors and vertical adaptability over time attributes that are vital in responding to non-military threats that are complex, diffuse, and often emergent.

For instance, during the COVID-19 pandemic, destinations with strong stakeholder networks, community engagement, and participatory governance mechanisms demonstrated faster recovery and greater flexibility in adapting tourism operations and public health protocols (Koh et al., 2021; Hall et al., 2020). Similarly, studies have shown that destinations integrating stakeholder-driven planning and adaptive institutions are more capable of navigating climate-induced threats, such as sea-level rise or extreme weather events (Pelling & High, 2005; Baggio et al., 2010).

Therefore, the fusion of multi-stakeholder collaboration theory and social system resilience theory provides a robust framework to evaluate how the Pentahelix model functions not only as a coordination platform but also as a strategic resilience-building mechanism in the face of 21st-century threats to tourism governance.

E. Research Gap

Although scholarly interest in tourism resilience has expanded significantly over the past two decades, particularly in the aftermath of global disruptions such as the COVID-19 pandemic and climate-induced disasters, the literature remains predominantly centered on acute shocks like natural hazards (e.g., tsunamis, hurricanes, and earthquakes) and economic volatility (Biggs et al., 2012; Hall et al., 2020; Prayag, 2020). These studies typically frame resilience in terms of crisis recovery or disaster risk reduction, with less emphasis on chronic, complex, and systemic threats that emerge gradually and operate across multiple domains (Novelli et al., 2018; UNDRR, 2023).

In particular, non-military threats such as technological disruption, digital misinformation, social fragmentation, resource conflict, and environmental degradation driven by human activity are underrepresented in the tourism resilience literature despite their growing relevance (Bec et al., 2016; Cheer & Lew, 2018; Gossling & Hall, 2021). These threats often operate below the threshold of immediate crisis yet cumulatively erode the socio-institutional and ecological fabric of tourism destinations, especially in vulnerable coastal zones. The subtle and diffuse nature of these non-traditional threats challenges conventional resilience frameworks that are often reactionary and event-specific (Calgaro et al., 2014).

Furthermore, while the Pentahelix model which emphasizes synergetic collaboration among five key societal actors (government, private sector, academia, civil society, and media) has gained traction in development studies and innovation ecosystems (Carayannis & Campbell, 2009; Trigueros-Preciado et al., 2020), its application within tourism governance, especially under the context of non-military threats, remains theoretically underdeveloped and empirically limited. Most existing research on the Pentahelix focuses on innovation ecosystems (Hidayat et al., 2020), digital governance (Rachmawati et al., 2023), or urban development (Etzkowitz & Zhou, 2018), rather than the adaptive governance of coastal tourism destinations.

In the Indonesian context, while coastal regions are increasingly exposed to multi-dimensional vulnerabilities ranging from illegal fishing and climate-induced coastal erosion to social discontent and poor digital literacy the governance response often remains fragmented and reactive, with limited empirical evaluation of integrated models like Pentahelix (Rahman et al., 2021; Putra & Ardianto, 2022). Specifically, Bengkulu Province despite its strategic location along the western coast of Sumatra and its potential for ecotourism development has received minimal scholarly attention regarding the institutional mechanisms that can build long-term resilience against non-military threats.

Additionally, a key research gap exists in terms of evaluating how and to what extent the Pentahelix model enhances social system resilience, particularly in its capacity to facilitate adaptive governance, shared risk ownership, and multi-actor learning under conditions of persistent uncertainty (Folke et al., 2010; Baggio & Sainaghi, 2016). There is also a lack of context-sensitive empirical studies that test the operationalization of collaborative frameworks like Pentahelix in Global South contexts, where institutional capacities, stakeholder dynamics, and risk perceptions are often different from those in developed regions (Hall, 2019). Therefore, this study addresses these gaps by:

1. Shifting the analytical focus of tourism resilience from natural disasters and economic crises to non-military threats that are systemic, chronic, and socio-technological in nature;
2. Empirically evaluating the Pentahelix model in the context of coastal tourism governance in Indonesia, particularly in Bengkulu Province, which has been overlooked in prior research;
3. Examining the operational dynamics facilitators and barriers of cross-sectoral collaboration in building adaptive capacity, using real-world insights from local stakeholders;
4. Contributing a contextualized framework for integrating multi-stakeholder collaboration into tourism resilience strategies, with implications for policy and practice across similar developing coastal regions.

III. METHOD, DATA, AND ANALYSIS

A. Research Philosophy and Design

This study employed an interpretive paradigm with a qualitative dominant mixed-methods approach (Creswell & Plano Clark, 2017). The design prioritized in-depth contextual analysis of Pentahelix collaboration dynamics while incorporating descriptive statistics to triangulate qualitative findings.

B. Research Setting

Focused on coastal tourism areas in Bengkulu Province, Indonesia a region facing significant non-military threats: 1) Technological: Inadequate digital infrastructure**,** 2) Socio-cultural: Erosion of local traditions**,** 3) Economic: Seasonal income instability, 4) Safety: Coastal erosion and tourist security

C. Research Respondents

This study employed two primary data sources: qualitative informants and quantitative respondents. For the qualitative phase, a total of 25 key informants were purposively selected to represent the five stakeholder groups within the Pentahelix framework government, private sector, academia, media, and the community. These informants participated in in-depth interviews and two Focus Group Discussions (FGDs), enabling a comprehensive exploration of the collaborative dynamics in addressing non-military threats to coastal tourism in Bengkulu Province. The selection criteria emphasized the informants' active involvement and professional experience in tourism governance, local policy implementation, and cultural preservation within coastal areas. Purposive sampling was used to select 25 key informants across the Pentahelix framework:

Table 1: Respondent Characteristics

Stakeholder	Participants	Selection Criteria
Government	6	Tourism policymakers, coastal area managers
Private Sector	5	Hotel/resort owners, tour operators
Academia	4	Tourism/cultural studies researchers
Media	4	Journalists covering tourism/environment
Community	6	Local leaders, tourism workers

Complementing the qualitative data, a structured questionnaire was distributed to 350 respondents across multiple coastal tourism sites in Bengkulu Province, including Bengkulu City, Seluma, Central Bengkulu, North Bengkulu, South Bengkulu, Kaur, and Mukomuko. These respondents were selected using a stratified purposive sampling approach to ensure representativeness across demographic profiles such as age, gender, education level, occupation, and frequency of tourism visits. The quantitative phase aimed to capture patterns of threat perception, collaboration effectiveness, and public engagement within the Pentahelix model through validated Likert-scale items. This dual approach enabled triangulation between qualitative insights and descriptive statistical trends to enhance the robustness and contextual relevance of the findings.

D. Data Collection Procedures

Data was gathered through four-phase triangulation:

1. In-depth interviews: Semi-structured protocols (60-90 mins), audio-recorded and transcribed.
2. FGDs: Moderated discussions using scenario-based triggers (e.g., "Responding to coastal erosion crises").
3. Participant observation: 40+ hours documenting stakeholder interactions in tourism zones.
4. Questionnaires: 350 validated instruments with Likert scales (1-5) assessing threat perception and collaboration efficacy.

Secondary data: Bengkulu Tourism Office statistics (2021-2023), environmental reports, and regional development plans.

E. Data Analysis

1. Thematic analysis (Braun & Clarke, 2006) for qualitative data using NVivo 12: Coding: Open → Axial → Selective stages and theme development: Collaboration drivers/barriers, threat mitigation strategies
2. Descriptive statistics: SPSS v26 for questionnaire data (frequencies, cross-tabulations).

F. Validity and Reliability

1. Triangulation: Cross-verified findings across methods, sources, and researchers (Denzin, 2017).
2. Member checking: Draft results shared with participants for validation.
3. Intercoder reliability: Cohen's $\kappa = 0.82$ (substantial agreement).
4. Audit trail: Documentation of analytical decisions.

G. Ethical Considerations

1. Written consent obtained with confidentiality guarantees.
2. Anonymity maintained through coding (e.g., GOV-03, COM-12).
3. Research permit issued by Bengkulu Provincial Government (No. 12/PP/2023).

IV. RESULT AND DISCUSSION

A. RESULT

1) Respondent Demographics

The demographics of the respondents in this study include age, gender, educational attainment, occupation, and number of visits.

Table 1: Respondent Demographics

Demographics variable	Description	Total	Percentage (%)
Age	18 – 34 Years	158	45,1
	35 – 44 Years	135	38,6
	44 – 55 Years	35	10
	> 50 Years	22	6,3
Gender	Male	195	55,7
	Female	155	44,3
Educational Attainment	Senior High School	188	53,7
	Diploma	10	2,9
	Undergraduate (Bachelor)	130	37,1
	Postgraduate	22	6,3
Occupation	Student	150	42,9
	Civil Servant (PNS)	70	20
	Private Employee	55	15,7
	Entrepreneur	75	21,4
Number Of Visits	3-5 times	130	37,1
	6-9 times	161	46,0
	≥ 10 times	59	16,9

Source: Processed Primary Data (2025)

Based on data from 350 respondents, the demographic profile indicates that most visitors to coastal tourism areas in Bengkulu Province fall within the productive age group. A significant portion, 45.1%, are aged between 18 and 34 years, followed by 38.6% aged 35 to 44 years. Only 16.3% are over the age of 44. These findings suggest that coastal tourism in Bengkulu is particularly attractive to younger generations, who are generally more open to cultural, nature-based, and technology-integrated tourism experiences.

In terms of gender, the distribution is relatively balanced, with 55.7% male respondents and 44.3% female. This indicates that coastal tourism appeals equally across genders. Therefore, Pentahelix-based development strategies must be designed to be inclusive and gender-responsive, addressing safety, access to information, and opportunities for equal participation across stakeholder groups.

Educational background data show that a majority of respondents have completed secondary education. Approximately 53.7% hold a senior high school diploma, 37.1% hold a bachelor's degree, and only 6.3% have completed postgraduate education. This distribution highlights the need for public communication, particularly regarding non-military threats in coastal areas, to be adapted to general literacy levels—favoring practical, accessible, and visual-based approaches for wider reach and understanding.

Occupationally, most respondents identified as university students (42.9%), followed by entrepreneurs (21.4%), civil servants (20.0%), and private-sector employees (15.7%). This indicates strong engagement from younger, educated individuals who are academically active, while also reflecting the involvement of both informal sectors and government employees. The active participation of students provides a strategic advantage in promoting multisector collaboration within the Pentahelix framework, as they are directly experiencing the tourism environment and its challenges.

Regarding frequency of visits, a majority of respondents have visited coastal tourism destinations between 6 and 9 times (46.0%), followed by those with 3 to 5 visits (37.1%). Only 16.9% have visited more than 10 times. This pattern reflects a developing sense of loyalty and recurring engagement, while also signaling the need to enhance tourism experience quality.

Doing so may encourage repeat visits and foster sustained community involvement in tourism development with a resilience-oriented approach.

2) Descriptive Analysis of Respondents' Perceptions

The descriptive analysis of respondents' perceptions in this study is divided into two main sections, reflecting the analytical focus on the development of coastal tourism in Bengkulu Province. This division provides a comprehensive and systematic understanding of the investigated phenomenon. The two sections are as follows:

Respondents' Perceptions on the Pentahelix Model

The survey conducted with 350 respondents reveals that all five key actors in the Pentahelix model play a significant role in the development of tourism in Bengkulu Province, with an overall average score of 3.56. This value indicates a general agreement among respondents regarding the contribution of each stakeholder, although variations exist between groups:

1. Academia received the highest score of 3.79, signifying their dominant role in providing quality human resources and offering policy consultation services. They are perceived as capable of bridging the needs of the tourism industry with applicable research findings and innovations.
2. Business actors ranked second with an average score of 3.65. They are actively involved in delivering tourism services and fostering local tourism communities. However, a relatively lower score in investment-related statements suggests that financial support and investment policies remain significant challenges.
3. Media followed closely with a score of 3.64. Their role in disseminating tourism-related information and serving as a communication bridge among stakeholders is highly appreciated. Nonetheless, their effectiveness in promoting destinations is considered suboptimal and in need of further enhancement.
4. Community members obtained a score of 3.48. They are recognized for their vital role in preserving the environment and maintaining social stability in tourist areas. Nevertheless, their involvement in tourism policy formulation and strategic planning is perceived as limited.
5. Government scored the lowest at 3.27. While acknowledged as a regulator and infrastructure provider, the effectiveness of government policies and support for MSMEs (Micro, Small, and Medium Enterprises) is perceived as inadequate. This highlights the need for improved implementation of inclusive public policies that support tourism development.

Overall, these findings emphasize the importance of strengthening synergy among the Pentahelix actors, particularly by enhancing policy effectiveness, community participation, and the optimization of tourism promotion and investment at the regional level.

Respondents' Perceptions on Non-Military Threats

Respondents' assessments of various non-military threats in the coastal tourism sector reveal diverse perceptions across four main aspects: technology, socio-cultural, economic, and public safety.

1. Technological Aspect (Average Score: 3.44 – High)
   Respondents demonstrated a strong appreciation for the use of technology, particularly internet media, in supporting tourism promotion. The highest score (3.97) was recorded for the statement regarding internet use as a promotional tool, indicating widespread acceptance of digitalization. However, a slightly lower score (3.34) on the direct application of technology at tourist sites suggests existing challenges in technical implementation or digital infrastructure. This implies a need to enhance practical integration of technology to enrich the tourism experience.
2. Socio-Cultural Aspect (Average Score: 3.18 – Fairly High)
   Perceptions of socio-cultural threats were moderate. The community has begun to recognize the influence of tourists on local social and cultural dynamics, as reflected by a high score (4.03) concerning changes in lifestyle and norms due to tourist presence. However, concerns about the erosion of traditional customs (2.17) and potential intergroup conflicts (2.57) were rated lower. This suggests that although cultural changes are occurring, they are not yet perceived as serious threats requiring immediate mitigation.
3. Economic Aspect (Average Score: 2.94 – Low)
   The economic aspect was perceived as the least threatening. Respondents believe that the coastal community's economy is not highly dependent on the tourism sector, as indicated by a low score (2.20) on the economic impact of tourism. Moreover, competition between local and non-local business actors was not considered disruptive (3.65). These findings suggest that the coastal economy remains diverse and is not yet significantly reliant on the tourism industry.
4. Public Safety Aspect (Average Score: 3.41 – High)

Public safety was perceived as the most critical threat. The highest score (4.23) was given to statements regarding coastal abrasion, indicating that natural disasters are directly felt by the community and pose real barriers to sustainable tourism. Concerns about transportation safety standards and lack of safety warning information further reinforce the perception that public safety should be prioritized in coastal tourism development.

In conclusion, public safety emerges as the most concerning non-military threat due to the recurrent impact of natural disasters such as coastal abrasion. While technology has been broadly adopted for tourism promotion, its application still faces implementation challenges. Socio-cultural changes are acknowledged but not yet deemed severe threats. The economic aspect is viewed as the least threatening, reflecting a low level of dependency on tourism income within coastal communities.

3) Focus Group Discussion (FGD) Findings

A series of Focus Group Discussions (FGDs) were conducted involving diverse stakeholders, including representatives from government agencies, academic institutions, micro, small, and medium enterprises (MSMEs), local communities, and media outlets. The discussions aimed to explore and synthesize perspectives on the non-military threats and strategic opportunities for sustainable tourism development in the coastal regions of Bengkulu Province. The FGD results revealed a number of critical and multidimensional challenges, as outlined below:

1. Environmental and Disaster-Related Threats
   Stakeholders from the Tourism Agency and the Regional Political and National Unity Agency (Kesbangpol) highlighted environmental degradation as a primary threat. Issues such as coastal abrasion, shoreline change, tidal waves, and sedimentation were identified as critical challenges threatening both the ecological stability and tourism viability of the coastal zones.
2. Human Resource and Budget Constraints
   Many agencies expressed significant constraints in terms of funding and skilled personnel. These limitations hinder the implementation of risk mitigation programs, capacity building for tourism personnel, and the holistic development of tourist destinations. A lack of technical training and workforce specialization further exacerbates the problem.
3. Socio-Economic Issues
   FGD participants emphasized structural socio-economic challenges, including high poverty rates, limited educational access, and inadequate support for MSMEs. These issues are compounded by the absence of accurate and validated social data, which impedes effective policy targeting and program planning.
4. Regulatory and Institutional Barriers
   A recurrent theme in the discussion was the complexity of overlapping regulations and fragmented authority across government levels. Participants noted the lack of effective coordination among institutions, which results in inefficient program execution and inconsistent policy outcomes in coastal area development.
5. Tourism Development Opportunities
   Despite the aforementioned challenges, participants acknowledged growing tourism demand and the emergence of new tourism potential that could boost local revenue (PAD). However, the current state of destination management and supporting infrastructure was deemed insufficient to accommodate this growth sustainably.
6. Role of MSMEs and Local Communities
   FGD findings revealed that MSMEs have not yet been fully integrated into the tourism ecosystem. Moreover, local communities remain underrepresented in tourism planning, promotion, and environmental protection initiatives. Their limited involvement hinders the equitable distribution of tourism-related economic benefits.
7. Role of Media and Academics
   Media representatives emphasized the growing relevance of digital platforms in tourism promotion. Meanwhile, academic participants stressed the importance of research, education, and the preservation of local culture and ecosystems as foundational pillars for sustainable tourism development.

4) Interview Findings

The qualitative data collected through interviews with stakeholders from the government, business sector, media, community leaders, and academia have enriched the findings of this study and confirmed the significance of non-military threats affecting the sustainability of coastal tourism in Bengkulu Province, Indonesia. The insights drawn from these interviews provide a holistic perspective that complements the survey-based quantitative results. Key themes that emerged from the data include: (1) security concerns, (2) human resource constraints, (3) barriers to MSME empowerment, (4) infrastructure and innovation gaps, (5) media influence, and (6) the role of academia in sustainable tourism planning.

1. Security as a Non-Military Threat to Tourism

Security emerged as a predominant issue inhibiting tourism development. Interviewees from Kelawi and Lempuing communities, alongside local media representatives (RBTV and RBKORAN), raised concerns about illegal levies (pungli), extortion, and organized criminal acts in tourist areas. These threats discourage tourism activity and tarnish the destination image. Additionally, the presence of unregulated nightlife establishments has contributed to increased criminal activity, particularly during night hours, further exacerbating the sense of insecurity. Such circumstances not only affect tourists' willingness to visit but also undermine the livelihood of local entrepreneurs and the broader community whose income relies on tourism.

2. Human Capital Deficiencies
   Another major concern highlighted during interviews was the lack of adequate education and training for local youth. Interviewees emphasized that young people possess significant potential as future tourism actors, but the absence of accessible, skill-based education in remote coastal areas limits their ability to participate in tourism development. Without investment in local capacity building, communities risk becoming passive observers of external tourism-driven activities in their own regions. This underscores the importance of implementing community-based tourism education programs that emphasize empowerment and inclusion.
3. Barriers to MSME Empowerment
   MSMEs are the backbone of local economic development in coastal areas, yet several obstacles hinder their growth. According to Ibu Hasni from Sungai Suci, land monopolies by certain parties restrict the equitable development of micro-enterprises. This structural inequality means that the economic benefits of tourism are unevenly distributed, favoring a minority while marginalizing the broader community. Although efforts such as local product galleries and small business collaborations have been initiated, they remain insufficient without broader support in licensing, training, and market access, as echoed by legal and business practitioners like Jonaidi from Ikadin.
4. Infrastructure and Innovation Gaps
   Despite Bengkulu's natural beauty, many tourist destinations lack basic facilities such as clean public toilets, clear signage, and proper accommodations. According to media interviews, the visitor experience is often incomplete, as destination promotion overly emphasizes scenery without offering a comprehensive, comfortable experience. There is a pressing need to develop creative economic products, tourism events, and visitor-centric amenities to improve competitiveness. Furthermore, tourism management innovation remains low, hampering the long-term appeal and sustainability of the destinations.
5. Media's Role in Shaping Destination Image
   Media representatives emphasized the dual role of traditional and social media in shaping public perception. Negative news such as cases of extortion or inadequate infrastructure tends to spread faster and dominate public discourse. This necessitates a proactive media strategy to highlight positive developments, unique experiences, safety, and community involvement. Furthermore, social media platforms must be leveraged through compelling and creative content to elevate Bengkulu's tourism image on a national and international level.
6. Academic Perspectives on Sustainable Development
   Academics from the University of Bengkulu stressed the need for evidence-based policy formulation in tourism. Their insights highlighted the importance of integrating environmental carrying capacity, socio-cultural dynamics, and inclusive economic impacts in development planning. Furthermore, the role of universities in training local talent, conducting impact assessments, and supporting policy design was considered critical. Collaborative governance between academia, government, communities, and private sectors was viewed as essential for a holistic and sustainable tourism framework.

B. DISCUSSION

This study provides valuable insights into the dynamics of coastal tourism development in Bengkulu Province through the Pentahelix model framework and the identification of nonmilitary threats influencing tourism sustainability. The findings offer empirical support for the crucial roles of diverse stakeholders, as well as the complex challenges that must be addressed to achieve resilient and inclusive tourism growth.

1. The Role of Pentahelix Actors in Tourism Development
   The strong agreement among respondents regarding the importance of the Pentahelix components academia, business, media, community, and government as pillars of tourism development aligns with the foundational principles of the Pentahelix model as a comprehensive multi-stakeholder governance framework (Carayannis & Campbell, 2011). This model emphasizes synergy among academia, industry, government, community, and media to drive innovation and sustainable

development (Carayannis et al., 2018). The highest evaluation of academia's role supports studies highlighting universities' functions in knowledge generation, innovation facilitation, and policy support to enhance tourism competitiveness (Lopez-Sánchez et al., 2019). Conversely, the low perception of government effectiveness reflects bureaucratic challenges and limited policy implementation in tourism governance (Bramwell & Lane, 2011; Gursoy et al., 2017), consistent with Institutional Theory which underscores how institutional arrangements and regulations shape organizational behavior and development outcomes (Scott, 2014). Furthermore, the insufficient community involvement in policy formulation confirms critiques regarding the marginalization of local voices in tourism planning, which may hinder social sustainability and equitable benefit distribution (Aref et al., 2020; Scheyvens, 2007). These findings reinforce the importance of the Community-Based Tourism (CBT) framework, which advocates for empowering local communities to maintain ownership, cultural preservation, and livelihood resilience (Tosun, 2000).

2. Nonmilitary Threats and Tourism Sustainability

   The identification of public safety as the most dominant nonmilitary threat aligns with literature on risk and crisis management in tourism. According to Crisis and Disaster Theory in tourism, natural disasters and safety concerns significantly affect destination image, tourist perceptions, and visitation patterns (Ritchie, 2004; Hall, 2010). Coastal erosion and related environmental hazards threaten critical physical infrastructure and ecological foundations essential for tourism sustainability, necessitating integrated risk management strategies (Becken & Hughey, 2013). The high appreciation of technology in tourism promotion corresponds with global trends emphasizing digitalization's role in enhancing destination marketing, visitor engagement, and competitiveness (Li et al., 2020; Sigala, 2020). However, challenges in technology implementation at the field level reflect the Technology Acceptance Model (TAM), which posits that effective adoption depends on perceived usefulness, ease of use, and infrastructure readiness (Davis, 1989; Venkatesh et al., 2003). Moderate concern over socio-cultural threats indicates early recognition of tourism's impacts on local norms and lifestyles, consistent with findings in Tourism Social Impact Theory (Andereck & Nyaupane, 2011). The low perception of economic dependence on tourism suggests a diversified coastal economy that may buffer dependency risks, but also highlights suboptimal economic benefits from tourism a common challenge in developing destinations (Sharpley & Telfer, 2015).

3. Stakeholder Challenges and Opportunities

   Focus Group Discussions and interviews provided rich qualitative context to quantitative results. Environmental degradation and disaster risk management emerged as urgent issues, underscoring the necessity for Integrated Coastal Zone Management (ICZM) approaches that balance ecological conservation with socio-economic development (Christie et al., 2017). Human resource limitations and MSME empowerment barriers highlight the relevance of Human Capital Theory in tourism development, emphasizing investment in education, skills, and entrepreneurial capacity to sustain competitive advantage (Becker, 1964; Prideaux et al., 2021). Addressing these constraints through training and institutional support can foster inclusive growth and community resilience (Scheyvens & Russell, 2012). Infrastructure and innovation gaps further support arguments that destination competitiveness relies on continuous innovation and quality enhancement in services and facilities (Porter, 1990; Buhalis & Amaranggana, 2014). The critical role of media in shaping destination image aligns with Agenda-Setting Theory, which asserts that media coverage influences public perceptions and tourism demand (McCombs & Shaw, 1972; Pan et al., 2020). Social media, in particular, presents new opportunities for destination branding and crisis communication that must be strategically managed to mitigate negative publicity (Ayeh et al., 2013). Finally, the role of academia as a knowledge intermediary and capacity builder resonates with the Triple Helix Theory (Etzkowitz & Leydesdorff, 2000), emphasizing collaborative governance among universities, government, and industry for innovation and sustainable development. Calls for evidence-based policies and holistic frameworks reflect a global consensus that tourism sustainability requires integrative approaches incorporating environmental, socio-cultural, and economic dimensions (UNWTO, 2022).

V. CONCLUSION

This research confirms that effective coastal tourism development in Bengkulu Province depends fundamentally on the collaborative engagement of all Pentahelix actors. Academia and business sectors are pivotal drivers, yet government agencies and local communities need to elevate their participation to foster sustainable and resilient tourism ecosystems. Addressing nonmilitary threats such as environmental risks, public safety issues, and workforce challenges requires coordinated strategies underpinned by sound governance and technology integration. Digital transformation stands as a significant opportunity to enhance tourism promotion and operational efficiency, contingent upon investments in infrastructure and capacity building. Ultimately, the study substantiates the necessity of a comprehensive governance framework that harmonizes social, economic, environmental, and cultural factors to realize the long-term sustainability and competitiveness of coastal tourism destinations.

VI. IMPLICATION, LIMITATION, AND SUGGESTIONS

A. Implications

Theoretical implications: This study contributes to the theoretical advancement of tourism governance by empirically validating the applicability of the Pentahelix model within a coastal tourism context, effectively bridging Institutional Theory, Community-Based Tourism (CBT), and Triple Helix frameworks. The findings underscore the critical importance of multi-actor collaboration as a key mechanism to enhance destination sustainability and resilience. Furthermore, this research extends crisis management and risk theories in tourism by incorporating nonmilitary threats as significant variables that influence destination competitiveness and sustainability. The integration of the Technology Acceptance Model (TAM) enriches the theoretical understanding of digital innovation adoption processes in tourism governance. Additionally, the empirical evidence supports Media Agenda-Setting Theory by highlighting the pivotal role of media in shaping stakeholder perceptions and facilitating effective crisis communication in tourism settings. Collectively, these theoretical contributions offer a robust, multidimensional foundation for future empirical studies and provide a comprehensive lens for analyzing sustainable tourism governance in complex socio-economic and environmental contexts.

Practical implications: Based on the findings of this study, Government Authorities should strengthen governance capacities by formulating evidence-based policies and promoting inter-agency coordination mechanisms to promptly address nonmilitary risks, including public safety hazards and environmental threats, thereby safeguarding tourism assets and stakeholders. Academic Institutions are encouraged to deepen collaborative efforts with businesses and local communities through research and capacity-building programs aimed at fostering innovation, knowledge transfer, and sustainable tourism development. Businesses and SMEs must harness digital technologies for marketing, service delivery, and operational management, while actively engaging in community-based tourism initiatives to ensure the generation and equitable distribution of economic benefits. Media Organizations hold a strategic position in constructing and maintaining positive destination images through responsible reporting and by facilitating timely and transparent crisis communication to mitigate reputational risks. Local Communities require empowerment via inclusive participation in tourism planning and management, ensuring that socio-economic benefits are fairly distributed and that cultural heritage is preserved.

B. Limitations

This study's findings are geographically confined to Bengkulu Province, which may limit the generalizability of the results to other regions with differing socio-cultural and economic conditions. Moreover, the qualitative components, including focus group discussions and stakeholder interviews, involved a relatively small number of participants, which may not fully encompass the diversity of stakeholder perspectives.

C. Suggestions

Future research should broaden the geographic scope and increase sample sizes to improve the representativeness and generalizability of findings across diverse contexts. Longitudinal studies are recommended to capture the evolving dynamics of tourism governance and the longitudinal impacts of nonmilitary threats on destination sustainability. Additionally, further investigations could examine the intricate roles of digital technologies and social media in crisis management and destination marketing by employing mixed-methods approaches. Integrating quantitative data with qualitative insights would yield a more nuanced and comprehensive understanding of the interactions among technological, social, and environmental factors in tourism governance.

REFERENCES

1) Amore, A., Hall, C. M., & Jenkins, J. (2021). They never said "come here and let's talk about it": Exclusion and non-decision-making in the rebuild of Christchurch's damaged tourism infrastructure. *Tourism Geographies*, 23(1-2), 251-272. https://doi.org/10.1080/14616688.2019.1586986
2) Andereck, K. L., & Nyaupane, G. P. (2011). Exploring the nature of tourism and quality of life perceptions among residents. *Journal of Travel Research*, 50(3), 248-260. https://doi.org/10.1177/0047287510362918
3) 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
4) Ansell, C., & Torfing, J. (2021). *Handbook on theories of governance* (2nd ed.). Cheltenham, UK: Edward Elgar Publishing.
5) Aref, F., Gill, S. S., & Aref, F. (2020). Tourism development in local communities: As a community development approach. *Journal of Community Development*, 51(2), 143-159. https://doi.org/10.1080/15575330.2020.1728585

6) Ayeh, J. K., Au, N., & Law, R. (2013). Predicting the intention to use consumer-generated media for travel planning. *Tourism Management*, 35, 132-143. https://doi.org/10.1016/j.tourman.2012.06.010
7) Baggio, R., & Cooper, C. (2010). Knowledge transfer in a tourism destination: The effects of a network structure. *The Service Industries Journal*, 30(10), 1757-1771. https://doi.org/10.1080/02642060802624395
8) Baggio, R., & Sainaghi, R. (2016). Mapping time series into networks as a tool to assess the complex dynamics of tourism systems. *Tourism Management*, 54, 23-33. https://doi.org/10.1016/j.tourman.2015.10.008
9) Bec, A., McLennan, C. L., & Moyle, B. D. (2016). Community resilience to long-term tourism decline and rejuvenation: A literature review and conceptual model. *Current Issues in Tourism*, 19(5), 431-457. https://doi.org/10.1080/13683500.2015.1083538
10) Becken, S. (2013). Developing a framework for assessing resilience of tourism sub-systems to climatic factors. *Annals of Tourism Research*, 43, 506-528. https://doi.org/10.1016/j.annals.2013.06.002
11) Becken, S. (2018). Tourism and climate change: Evaluating the extent of policy integration. *Journal of Sustainable Tourism*, 26(7), 1120-1136. https://doi.org/10.1080/09669582.2018.1433180
12) 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
13) Becker, G. S. (1964). *Human capital: A theoretical and empirical analysis, with special reference to education*. Chicago, IL: University of Chicago Press.
14) Berkes, F., & Ross, H. (2013). Community resilience: Toward an integrated approach. *Society & Natural Resources*, 26(1), 5-20. https://doi.org/10.1080/08941920.2012.736605
15) Biggs, D., Hall, C. M., & Stoeckl, N. (2012). The resilience of formal and informal tourism enterprises to disasters: Reef tourism in Phuket, Thailand. *Journal of Sustainable Tourism*, 20(5), 645-665. https://doi.org/10.1080/09669582.2011.630080
16) Birkland, T. A., & Waterman, S. (2019). Is federalism the reason for policy failure in Hurricane Katrina? *Publius: The Journal of Federalism*, 39(4), 693-712. https://doi.org/10.1093/publius/pjp021
17) Bramwell, B., & Lane, B. (2011). Critical research on the governance of tourism and sustainability. *Journal of Sustainable Tourism*, 19(4-5), 411-421. https://doi.org/10.1080/09669582.2011.580586
18) Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77-101. https://doi.org/10.1191/1478088706qp063oa
19) Bryson, J. M., Crosby, B. C., & Stone, M. M. (2016). Designing and implementing cross-sector collaborations: Needed and challenging. *Public Administration Review*, 75(5), 647-663. https://doi.org/10.1111/puar.12432
20) Buhalis, D., & Amaranggana, A. (2014). Smart tourism destinations. In Z. Xiang & I. Tussyadiah (Eds.), *Information and communication technologies in tourism 2014* (pp. 553-564). Springer. https://doi.org/10.1007/978-3-319-03973-2_40
21) Calgaro, E., Lloyd, K., & Dominey-Howes, D. (2014). From vulnerability to transformation: A framework for assessing the vulnerability and resilience of tourism destinations. *Journal of Sustainable Tourism*, 22(3), 341-360. https://doi.org/10.1080/09669582.2013.826229
22) Carayannis, E. G., & Campbell, D. F. J. (2009). "Mode 3" and "Quadruple Helix": Toward a 21st century fractal innovation ecosystem. *International Journal of Technology Management*, 46(3-4), 201-234. https://doi.org/10.1504/IJTM.2009.023374
23) Carayannis, E. G., & Campbell, D. F. J. (2011). Open innovation diplomacy and a 21st century fractal research, education and innovation (FREIE) ecosystem: Building on the Quadruple and Quintuple Helix innovation concepts. *Journal of the Knowledge Economy*, 2(3), 327-372. https://doi.org/10.1007/s13132-011-0058-3
24) Carayannis, E. G., Grigoroudis, E., Stamati, D., & Valvi, T. (2018). *Helix trilogy: The Triple, Quadruple, and Quintuple innovation helices from a theory, policy, and practice set of perspectives*. Cham, Switzerland: Springer.
25) Cavicchi, A., & Stancova, K. C. (2016). Food and gastronomy for sustainable place development: A multidisciplinary analysis of different theoretical approaches. *Sustainability*, 8(5), 419. https://doi.org/10.3390/su8050419
26) Cheer, J. M. (2019). Tourism resilience in the global South: Towards an equitable and sustainable industry. *Journal of Sustainable Tourism*, 27(7), 917-921. https://doi.org/10.1080/09669582.2019.1630713
27) Cheer, J. M., & Lew, A. A. (2018). *Tourism, resilience and sustainability: Adapting to social, political and economic change*. Abingdon, UK: Routledge.

28) Christie, P., Bennett, N. J., Gray, N. J., Wilhelm, T. A., Lewis, N. A., & Parks, J. (2017). Why people matter in ocean governance: Incorporating human dimensions into large-scale marine protected areas. *Marine Policy*, 84, 273-284. https://doi.org/10.1016/j.marpol.2017.08.002
29) Creswell, J. W., & Plano Clark, V. L. (2017). *Designing and conducting mixed methods research* (3rd ed.). Thousand Oaks, CA: Sage.
30) Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13(3), 319-340. https://doi.org/10.2307/249008
31) Denzin, N. K. (2017). *The research act: A theoretical introduction to sociological methods*. Abingdon, UK: Routledge.
32) Dredge, D., & Gyimóthy, S. (2017). Collaborative economy and tourism: Critical perspectives, questionable claims, and silenced voices. *Tourism Recreation Research*, 42(3), 286-302. https://doi.org/10.1080/02508281.2017.1304690
33) Eizenberg, E., & Jabareen, Y. (2017). Social sustainability: A new conceptual framework. *Sustainability*, 9(1), 68. https://doi.org/10.3390/su9010068
34) Emerson, K., Nabatchi, T., & Balogh, S. (2012). An integrative framework for collaborative governance. *Journal of Public Administration Research and Theory*, 22(1), 1-29. https://doi.org/10.1093/jopart/mur011
35) Espiner, S., Orchiston, C., & Higham, J. (2017). Resilience and sustainability: A complementary relationship? Towards a practical conceptual model for the sustainability–resilience nexus in tourism. *Journal of Sustainable Tourism*, 25(10), 1385-1400. https://doi.org/10.1080/09669582.2017.1281929
36) Etzkowitz, H., & Leydesdorff, L. (2000). The dynamics of innovation: From National Systems and "Mode 2" to a Triple Helix of university–industry–government relations. *Research Policy*, 29(2), 109-123. https://doi.org/10.1016/S0048-7333(99)00055-4
37) Etzkowitz, H., & Zhou, C. (2018). *The Triple Helix: University–industry–government innovation and entrepreneurship* (2nd ed.). Abingdon, UK: Routledge.
38) Folke, C., Hahn, T., Olsson, P., & Norberg, J. (2005). Adaptive governance of social-ecological systems. *Annual Review of Environment and Resources*, 30, 441-473. https://doi.org/10.1146/annurev.energy.30.050504.144511
39) Folke, C., Carpenter, S. R., Walker, B., Scheffer, M., Chapin, T., & Rockström, J. (2010). Resilience thinking: Integrating resilience, adaptability and transformability. *Ecology and Society*, 15(4), 20. https://doi.org/10.5751/ES-03610-150420
40) Galvão, A., Mascarenhas, C., Marques, C., Ferreira, J., & Ratten, V. (2019). Triple Helix and its evolution: A systematic literature review. *Journal of Science and Technology Policy Management*, 10(3), 812-833. https://doi.org/10.1108/JSTPM-10-2018-0103
41) Gössling, S., & Hall, C. M. (2021). Pandemics, tourism and global change: A rapid assessment of COVID-19. *Journal of Sustainable Tourism*, 29(1), 1-20. https://doi.org/10.1080/09669582.2020.1758708
42) Gössling, S., Scott, D., & Hall, C. M. (2021). Pandemics, tourism and global change: A rapid assessment of COVID-19. *Journal of Sustainable Tourism*, 29(1), 1-20. https://doi.org/10.1080/09669582.2020.1758708
43) Gray, B., & Purdy, J. M. (2018). *Collaborating for our future: Multistakeholder partnerships for solving complex problems*. Oxpord, UK: Oxford University Press.
44) Gursoy, D., Saayman, M., & Sotiriadis, M. (2017). *Collaboration in tourism businesses and destinations: A handbook*. Leeds, UK: Emerald Group Publishing.
45) Hall, C. M. (2010). Crisis events in tourism: Subjects of crisis in tourism. *Current Issues in Tourism*, 13(5), 401-417. https://doi.org/10.1080/13683500.2010.491900
46) Hall, C. M. (2019). Constructing sustainable tourism development: The 2030 agenda and the managerial ecology of sustainable tourism. *Journal of Sustainable Tourism*, 27(7), 1044-1060. https://doi.org/10.1080/09669582.2018.1560456
47) Hall, C. M., Scott, D., & Gössling, S. (2020). Pandemics, transformations and tourism: Be careful what you wish for. *Tourism Geographies*, 22(3), 577-598. https://doi.org/10.1080/14616688.2020.1759131
48) Hidayat, A., Rafiki, A., & Nasution, M. D. T. P. (2020). The Penta Helix collaboration model in developing creative industries in North Sumatra, Indonesia. *Journal of Science and Technology Policy Management*, 11(2), 165-189. https://doi.org/10.1108/JSTPM-12-2018-0123
49) Hughes, M., & Bushell, H. (2013). A typology of governance networks for tourism. *Journal of Destination Marketing & Management*, 2(2), 81-90. https://doi.org/10.1016/j.jdmm.2013.04.001
50) Hystad, P. W., & Keller, P. C. (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

51) Jones, P., Hillier, D., & Comfort, D. (2020). The sustainable development goals and the tourism and hospitality industry. *Athens Journal of Tourism*, 7(1), 7-18. https://doi.org/10.30958/ajt.7-1-1
52) Kim, K., Uysal, M., & Sirgy, M. J. (2019). How does tourism in a community impact the quality of life of community residents? *Tourism Management*, 36, 527-540. https://doi.org/10.1016/j.tourman.2012.09.005
53) Koh, E., Fakfare, P., & Putra, I. K. D. (2021). Resilience strategies of tourism businesses in Bali during COVID-19. *Tourism Recreation Research*, 46(2), 221-234. https://doi.org/10.1080/02508281.2021.1898794
54) Kurniawan, J. H., Subagiyo, A., & Putra, A. S. (2021). Penta helix model in the development of marine tourism in East Java. *Journal of Marine Science and Technology*, 24(1), 1-10. https://doi.org/10.14710/ik.ijms.24.1.1-10
55) Lew, A. A. (2014). Scale, change and resilience in community tourism planning. *Tourism Geographies*, 16(1), 14-22. https://doi.org/10.1080/14616688.2013.864325
56) Li, J., Xu, L., Tang, L., Wang, S., & Li, L. (2020). Big data in tourism research: A literature review. *Tourism Management*, 68, 301-323. https://doi.org/10.1016/j.tourman.2018.03.009
57) Lopez-Sánchez, J. A., Santos, M. L., & Ramos, F. (2019). The role of universities in knowledge transfer for tourism development. *Journal of Science and Technology Policy Management*, 10(1), 12-30. https://doi.org/10.1108/JSTPM-12-2017-0064
58) McCombs, M. E., & Shaw, D. L. (1972). The agenda-setting function of mass media. *Public Opinion Quarterly*, 36(2), 176-187. https://doi.org/10.1086/267990
59) Munar, A. M., & Jacobsen, J. K. S. (2014). Motivations for sharing tourism experiences through social media. *Tourism Management*, 43, 46-54. https://doi.org/10.1016/j.tourman.2014.01.012
60) Novelli, M., Burgess, L. G., Jones, A., & Ritchie, B. W. (2018). 'No Ebola…still doomed' – The Ebola-induced tourism crisis. *Annals of Tourism Research*, 70, 76-87. https://doi.org/10.1016/j.annals.2018.03.006
61) Pan, S. L., Zhang, S., Carter, S., & Monod, E. (2020). Addressing new venture legitimacy using social media. *Journal of Business Venturing*, 35(3), 105947. https://doi.org/10.1016/j.jbusvent.2019.105947
62) Pelling, M., & High, C. (2005). Understanding adaptation: What can social capital offer assessments of adaptive capacity? *Global Environmental Change*, 15(4), 308-319. https://doi.org/10.1016/j.gloenvcha.2005.02.001
63) Porter, M. E. (1990). *The competitive advantage of nations*. Newyork: Free Press.
64) Prayag, G. (2018). Symbiotic relationship or not? Understanding resilience and crisis management in tourism. *Tourism Management Perspectives*, 25, 133-135. https://doi.org/10.1016/j.tmp.2017.11.012
65) Prayag, G. (2020). Time for reset? COVID-19 and tourism resilience. *Tourism Geographies*, 22(3), 710-723. https://doi.org/10.1080/14616688.2020.1760921
66) Prideaux, B., Thompson, M., & Pabel, A. (2021). Lessons from COVID-19 can prepare global tourism for the economic transformation needed to combat climate change. *Tourism Geographies*, 23(3), 667-678. https://doi.org/10.1080/14616688.2020.1762117
67) Putra, I. K. D., & Ardianto, A. (2022). Community-based tourism in Bali: A resilience perspective. *Journal of Sustainable Tourism*, 30(1), 1-19. https://doi.org/10.1080/09669582.2021.1921145
68) Putra, I. K. D., Astuti, N. W., & Suardana, I. W. (2022). Penta helix collaboration model for tourism village development in Bali. *Journal of Destination Marketing & Management*, 24, 100711. https://doi.org/10.1016/j.jdmm.2022.100711
69) Rachmawati, T. A., Putro, H. P. H., & Kismartini, K. (2023). Digital transformation of tourism governance: The role of Penta helix collaboration in Indonesia. *Journal of Science and Technology Policy Management*, 14(1), 123-141. https://doi.org/10.1108/JSTPM-04-2022-0062
70) Rahman, M. K., Gazi, M. A. I., Bhuiyan, M. A., & Rahaman, M. A. (2021). Effect of Covid-19 pandemic on tourist travel risk and management perceptions. *PLOS ONE*, 16(9), e0256486. https://doi.org/10.1371/journal.pone.0256486
71) Rasyid, A., Kadir, S., & Djafar, S. (2021). Coastal tourism development strategy in Bengkulu Province, Indonesia. *Journal of Environmental Management and Tourism*, 12(1), 186-194. https://doi.org/10.14505/jemt.12.1(49).16
72) Ritchie, B. W. (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
73) Ritchie, B. W., & 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, 102812. https://doi.org/10.1016/j.annals.2019.102812

74) Romão, J., & Neuts, B. (2017). Smart tourism, territorial capital, and sustainable regional development: Experiences from Europe. *Land Use Policy*, 68, 466-474. https://doi.org/10.1016/j.landusepol.2017.08.010
75) Scheyvens, R. (2007). Exploring the tourism-poverty nexus. *Current Issues in Tourism*, 10(2-3), 231-254. https://doi.org/10.2167/cit318.0
76) Scheyvens, R., & Russell, M. (2012). Tourism and poverty alleviation in Fiji: Comparing the impacts of small- and large-scale tourism enterprises. *Journal of Sustainable Tourism*, 20(3), 417-436. https://doi.org/10.1080/09669582.2011.629063
77) Scott, D., Hall, C. M., & Gössling, S. (2020). A review of the IPCC Fifth Assessment and implications for tourism sector climate resilience and decarbonization. *Journal of Sustainable Tourism*, 29(1), 1-24. https://doi.org/10.1080/09669582.2020.1830771
78) Scott, W. R. (2014). *Institutions and organizations: Ideas, interests, and identities* (4th ed.). Sage.
79) Selsky, J. W., & Parker, B. (2005). Cross-sector partnerships to address social issues: Challenges to theory and practice. *Journal of Management*, 31(6), 849-873. https://doi.org/10.1177/0149206305279601
80) Sharpley, R., & Telfer, D. J. (2015). *Tourism and development: Concepts and issues* (2nd ed.). Bristol, UK: Channel View Publications.
81) Sigala, M. (2018). New technologies in tourism: From multi-disciplinary to anti-disciplinary advances and trajectories. *Tourism Management Perspectives*, 25, 151-155. https://doi.org/10.1016/j.tmp.2017.12.003
82) Sigala, M. (2020). Tourism and COVID-19: Impacts and implications for advancing and resetting industry and research. *Journal of Business Research*, 117, 312-321. https://doi.org/10.1016/j.jbusres.2020.06.015
83) Statistics Indonesia (BPS). (2023). *Bengkulu Province in figures 2023*. BPS-Statistics of Bengkulu Province.
84) Tosun, C. (2000). Limits to community participation in the tourism development process in developing countries. *Tourism Management*, 21(6), 613-633. https://doi.org/10.1016/S0261-5177(00)00009-1
85) Trigueros-Preciado, S., Pérez-González, D., & Solana-González, P. (2020). The Penta Helix model for regional innovation: The case of the Valencia region in Spain. *European Planning Studies*, 28(1), 1-20. https://doi.org/10.1080/09654313.2019.1677551
86) Uğur, N. G., & Akbıyık, A. (2020). Impacts of COVID-19 on global tourism industry: A cross-regional comparison. *Tourism Management Perspectives*, 36, 100744. https://doi.org/10.1016/j.tmp.2020.100744
87) UNDRR. (2023). *Global assessment report on disaster risk reduction 2023*. United Nations Office for Disaster Risk Reduction.
88) UNWTO. (2022). *Tourism in the 2030 agenda*. World Tourism Organization. https://doi.org/10.18111/9789284422114
89) Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly*, 27(3), 425-478. https://doi.org/10.2307/30036540
90) Walker, B. H., Anderies, J. M., Kinzig, A. P., & Ryan, P. (2006). Exploring resilience in social-ecological systems through comparative studies and theory development: Introduction to the special issue. *Ecology and Society*, 11(1), 12. https://doi.org/10.5751/ES-01573-110112
91) Yang, Y., & Wong, K. K. F. (2020). The influence of cultural distance on China inbound tourism flows: A panel data gravity model approach. *Asian Geographer*, 29(1), 21-37. https://doi.org/10.1080/10225706.2012.662342
92) Yulianda, F., Fahrudin, A., Bengen, D. G., & Krisanti, M. (2022). Coastal tourism vulnerability and adaptation strategies in Indonesia. *Journal of Coastal Conservation*, 26(1), 1-15. https://doi.org/10.1007/s11852-021-00839-y
93) Zhang, L., Yang, S., Wang, D., & Law, R. (2021). The impact of crises on hotel room demand: The case of Hong Kong. *Tourism Management Perspectives*, 37, 100781. https://doi.org/10.1016/j.tmp.2020.100781.