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PROPERTY MANAGEMENT SYSTEMS AND HOTEL EMPLOYEE PERFORMANCE IN SOUTH SULAWESI: THE MEDIATING ROLE OF SYSTEM BENEFITS

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Article Info	Abstract
<p>Keywords: Property Management System; employee performance; system benefits; hospitality technology; mediation effect.</p> <p>Received: December 21, 2025</p> <p>Approved: June 8, 2026</p> <p>Published: June 29, 2026</p>	<p>The rapid digitalization of the hotel industry has accelerated the adoption of Property Management Systems (PMS), which promise to improve operational efficiency and service delivery. Despite this, many hotels have not been able to fully translate PMS effectiveness into improved employee performance because the practical benefits perceived by employees are often overlooked. Previous studies have largely emphasized the direct effects of information systems on performance, while less attention has been allocated to the underlying mechanisms explaining how PMS effectiveness contributes to employee work outcomes. Therefore, this study aims to examine the interrelationship between PMS effectiveness, system benefits, and employee performance quality, with particular focus on the mediating role of system benefits. Using a quantitative approach, data were collected from 170 guest service agents employed in star-rated hotels in South Sulawesi, Indonesia. These data were analyzed using Partial Least Squares Structural Equation Modelling (PLS-SEM). The findings reveal that PMS effectiveness has a significant positive effect on both system benefits and employee performance quality. More importantly, system benefits have been found to significantly mediate the relationship between PMS effectiveness and employee performance, indicating that the successful translation of technological effectiveness into work quality depends on the extent to which employees experience practical operational benefits from the system. Unlike previous hospitality technology studies, which have primarily examined direct relationships between information systems and employee outcomes, this study conceptualizes system benefits as a distinct operational mechanism through which PMS effectiveness translates into employee performance quality. This approach extends existing technology acceptance and information systems success perspectives by emphasizing employee-perceived operational value rather than system usage alone. In addition, this study provides empirical evidence from the underexplored context of developing tourism regions and mid-scale hotels, while offering practical implications for optimizing PMS implementation to enhance workforce productivity and service quality. Nevertheless, the findings should be interpreted with caution, because the study relies on self-reported cross-sectional data collected from guest service agents working in three-star and below hotels in South Sulawesi. This factor limits causal inference and generalizability</p>



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INTRODUCTION

The rapid advancement of digital technology has fundamentally transformed operational practices across the hospitality industry (Buhalis et al., 2023). Hotels have been increasingly required to adopt technology-based information systems to enhance efficiency, service quality, and decision-making processes in a highly competitive environment (Wynn & Lam, 2023; Tashpulatova & Suyunova, 2024). Among the most widely implemented systems is the Property Management System (PMS), which functions as an integrated platform for managing front-office operations, reservations, billing, guest records, housekeeping coordination, and managerial reporting (Bouchareb, 2023). Recent studies confirm that PMS adoption enables hotels to improve operational consistency, reduce manual errors, accelerate service delivery, and support data-driven managerial decisions in increasingly dynamic hospitality markets (Ivanov et al., 2022; Polischuk et al., 2023). However, the presence of technology alone does not automatically guarantee improved organizational outcomes, particularly when system utilization is not aligned with employee capabilities and operational demands (Navimipour & Soltani, 2016).

In practice, many hotels continue to experience difficulties in maximizing the effectiveness of PMS implementation. Although PMS has been widely recognized as an essential operational tool, its contribution to employee performance often remains inconsistent due to variations in system usability, employee readiness, technological support, and the extent to which employees perceive direct benefits from using the system (Walston et al., 2014; Commey et al., 2023). This indicates that the relationship between PMS implementation and work performance is not merely technical, but also behavioral and operational. Employees are more likely to perform effectively when the system not only functions properly, but also provides practical advantages such as ease of work, faster task completion, accurate information access, and smoother service coordination (Jovanovi et al., 2016; Gunaseelan et al., 2024). Therefore, understanding PMS solely as a technological investment is insufficient. It must also be examined in terms of how its effectiveness can be converted into meaningful operational benefits for employees.

Existing literature has extensively examined the relationship between information systems and employee or organizational performance within the hospitality sector. Previous studies have generally concluded that effective technological systems can positively influence work productivity, service efficiency, and managerial control (Melin-González & Bulchand-Gidumal, 2016; Ratna et al., 2018). Nevertheless, the majority of these studies have focused predominantly on direct-effect relationships, while treating information systems as independent drivers of performance improvement. Limited scholarly attention has been devoted to explaining the underlying mechanism through which PMS effectiveness produces better employee outcomes, particularly the mediating role of perceived system benefits. As a result, an important theoretical gap remains unresolved, namely whether PMS effectiveness directly enhances employee performance, or whether such improvement occurs because employees first experience practical operational benefits that facilitate their work processes. Addressing this issue is essential to reaching a more comprehensive explanation of technology-enabled performance in hotel operations (Tulus Harefa et al., 2024; Wirdhawan & Wibisono, 2024).

According to Statistics Indonesia (BPS, 2025), the number of hotels and other accommodation establishments in Indonesia reached 34,702 businesses in 2025, showing



continued growth compared to previous years. The accommodation sector generated IDR 258.31 trillion in revenue in 2024. This reflects increasing demand for accommodation services and the growing competitiveness of the hospitality industry. As the number of accommodation businesses continues to expand, BPS emphasizes that improvements in service quality and operational efficiency must be supported by the adoption of information technology to maintain competitiveness (BPS, 2025). Furthermore, recent studies on hospitality digitalization indicate that hotels are increasingly adopting integrated digital systems to support reservation management, inventory control, financial administration, customer service, and interdepartmental coordination (Ramdhan & Suharto, 2024). Integrated hotel management systems enable faster operational processes, improve information accuracy, facilitate real-time decision making, and enhance guest service quality (Ramdhan & Suharto, 2024). Nevertheless, the adoption and optimization of digital technologies remain uneven, particularly among medium-scale and independent hotels outside major tourism destinations.

Limitations related to investment capacity, technological readiness, employee digital competence, and system integration continue to constrain the effective utilization of digital systems (Ramdhan & Suharto, 2024). Consequently, understanding how Property Management System (PMS) effectiveness translates into operational benefits and employee performance has become vital for hospitality digitalization and tourism competitiveness in Indonesia. Despite the growing adoption of PMS in the hospitality industry, previous studies have predominantly focused on the direct relationship between information systems and organizational outcomes. Limited attention has been given to the mechanisms through which PMS effectiveness influences employee performance quality, particularly through perceived system benefits. This gap is especially evident in developing tourism destinations and medium-scale hotels, where digital transformation remains uneven.

Research on hospitality information systems has consistently reported positive relationships between technological capabilities and organizational outcomes. However, three important gaps remain. First, most PMS-related studies focus on direct effects of technology on operational performance, service efficiency, or employee productivity. Additionally, as with performance quality in general, less attention has been paid to understanding the underlying mechanisms through which PMS effectiveness influences employee outcomes. Second, constructs such as perceived usefulness, user satisfaction, and net benefits have been widely examined within Technology Acceptance Model (TAM) and Information Systems Success Model frameworks, yet few studies have explicitly conceptualized operational system benefits as a distinct mediating mechanism in hotel PMS environments. Third, empirical evidence from developing tourism regions remains limited, particularly in medium-scale hotels, in which digital transformation is still evolving and technological utilization varies considerably among employees.

Addressing these gaps is important because employee performance is unlikely to be influenced solely by the technical effectiveness of a system. Rather, technological effectiveness may improve performance only when employees experience tangible operational benefits that facilitate their daily work activities. Therefore, this study proposes a mediation framework that positions PMS benefits as the explanatory mechanism linking PMS effectiveness and employee performance quality.

This issue is particularly relevant in the context of South Sulawesi, Indonesia, where the hospitality sector continues to grow alongside regional tourism development.



The expansion of star-rated hotels in cities such as Makassar, Parepare, Palopo, and Bulukumba has encouraged the adoption of digital hotel management systems. However, many mid-scale and lower-tier hotels still face challenges related to technological readiness, employee digital competence, and the optimization of PMS features in day-to-day operations (Daniel Adolf Ohyver et al., 2024). In many cases, a PMS is adopted as an operational necessity, yet its actual utilization remains suboptimal, limiting its contribution to employee productivity and service quality. This suggests that the successful implementation of PMS in developing tourism regions cannot be assessed merely in terms of system availability, but also by how effectively the system generates practical benefits which support employee work performance (Muhtasom et al., 2025; Suardana et al., 2020).

The present study is also theoretically grounded in broader information systems literature, particularly the Technology Acceptance Model (TAM) (Davis, 1989) and the Information Systems Success Model (IS Success Model). TAM states that users are more likely to utilize technological systems when they perceive the technology as useful and supportive of their work activities (Davis, 1989), while the IS Success Model emphasizes that system quality and information system effectiveness contribute to user satisfaction and performance outcomes through perceived benefits and system usage (DeLone & McLean, 2003). In this study, PMS effectiveness reflects a system's quality dimension, whereas PMS benefits represent the operational usefulness perceived by employees, which subsequently influences employee performance quality. Integrating these perspectives provides a stronger theoretical foundation for explaining how hospitality technology contributes to workforce performance improvement.

Based on these considerations, this study aims to examine the interrelationship between PMS effectiveness, PMS benefits, and employee performance quality among guest service agents working in star-rated hotels in South Sulawesi, Indonesia. This study specifically investigates whether system benefits significantly mediate the relationship between PMS effectiveness and employee performance. The novelty of this research lies in the integration of system benefits as a mediating construct within the PMS–performance framework, providing a deeper theoretical explanation beyond the direct-effect models commonly used in previous hospitality information system studies. In addition, this study offers empirical evidence from the underexplored context of developing tourism regions and mid-scale hotels. This contributes to both the advancement of hospitality technology literature, and to practical strategies for hotel digitalization and workforce performance improvement.

Literature Review

Effectiveness of Property Management System

Property Management Systems (PMS) are evaluated in terms of how effectively the system can be used to perform operational tasks accurately, efficiently, and in accordance with organizational needs. In the hospitality context, PMS effectiveness is reflected in the system's ability to support front-office transactions, room management, guest data processing, billing accuracy, internal coordination, and managerial reporting in a timely and reliable manner (Bouchareb, 2023; Zhou & Liu, 2022a). A system can be considered effective when it reduces manual workload, minimizes operational errors, and enables employees to complete assigned tasks with greater speed and consistency. Previous



information systems literature has emphasized that technological effectiveness is closely associated with system usability, compatibility with job requirements, and user confidence in operating the system (Navimipour & Soltani, 2016).

The effectiveness of PMS in hotel operations is not determined solely by technological sophistication, but by how well the system supports employee task execution in practical situations. Employees who interact with effective digital systems are more likely to experience smoother workflows, easier access to information, and faster service coordination, all of which contribute to better individual work outcomes (Ratna et al., 2018). Therefore, PMS effectiveness can be understood as the degree to which hotel information technology successfully facilitates employee duties, while supporting operational control and service consistency.

Although PMS effectiveness and PMS benefits are closely related, both constructs represent conceptually different dimensions within hospitality information systems research. PMS effectiveness refers to the technical and functional capability of the system to operate accurately, reliably, and in accordance with operational requirements. In contrast, PMS benefits refer to the practical and perceived operational advantages experienced by employees as a consequence of using the system, such as work convenience, faster task completion, reduced operational burden, and improved coordination. Therefore, effectiveness emphasizes system capability, whereas benefits emphasize user-perceived operational value derived from the system. This distinction is important, because a technologically effective system may not necessarily generate meaningful benefits if employees do not experience direct usefulness in their daily work processes.

Benefits of Property Management System

PMS benefits are the practical advantages perceived by employees and hotel management as a result of using the system in daily operations. These benefits may include time efficiency, task simplification, information accuracy, reduction of repetitive manual work, better interdepartmental communication, and improved decision support (Commey et al., 2023; Walston et al., 2014). In the context of hotel services, the benefits of PMS become evident when employees are able to perform reservations, check-in/check-out procedures, room status monitoring, and guest request handling more effectively than under manual or fragmented systems.

The perception of benefits is important, because employees tend to accept and utilize technological systems more intensively when they experience direct operational value from the technology (Jovanovi et al., 2016). A PMS which is technologically available but does not provide tangible convenience may fail to influence employee behavior and work quality. Consequently, system benefits function as the operational translation of technological effectiveness. This means that employees do not only use a system because it exists, but because the system demonstrably helps them perform their jobs more productively and accurately.

Employee Performance Quality

Employee performance quality refers to the extent to which employees are able to complete work tasks efficiently, accurately, consistently, and in line with service standards established by the organization. Employee performance quality is particularly critical in

hotel operations, because service encounters involve speed, precision, responsiveness, and guest satisfaction. Guest service agents, as front-line employees, are expected to manage multiple operational tasks simultaneously, while maintaining service excellence and communication efficiency.

Previous studies have indicated that employee performance is strongly influenced by the degree of alignment between job characteristics and technological support available in the workplace (Melin-González & Bulchand-Gidumal, 2016; Gunaseelan et al., 2024). When employees are supported by information systems that simplify work procedures, provide accurate information, and reduce unnecessary operational burdens, they are more likely to achieve higher productivity and work quality. Therefore, employee performance quality in this study is viewed as an outcome that may be strengthened when hotel employees operate within an effective PMS environment and experience substantial system-related benefits.

Hypotheses Development

The PMS Effectiveness and PMS Benefits

An effective Property Management System is expected to generate greater operational benefits for its users. This is because system functionality determines whether employees can experience convenience, speed, and accuracy in completing their duties. A system that performs reliably allows hotel employees to process guest transactions more efficiently; accurately coordinate room availability; and access operational information without delay. Previous studies suggest that the more effective a technological system is in supporting work processes, the greater the perceived usefulness and operational value reported by users (Walston et al., 2014; Commey et al., 2023). Thus, PMS effectiveness is logically associated with the benefits gained from system utilization.

H1: PMS effectiveness significantly influences PMS benefits.

PMS Effectiveness and Employee Performance Quality

Technological effectiveness has been widely acknowledged as an important determinant of employee work outcomes. In hotel environments, an effective PMS can help employees reduce service errors, accelerate task completion, improve communication among departments, and handle operational responsibilities more confidently. This means that employees working with an effective PMS are empowered to achieve higher levels of productivity and service consistency than those working with less supportive systems. Prior research also confirms that the compatibility between information systems and job requirements positively contributes to individual performance improvement (Ratna et al., 2018; Navimipour & Soltani, 2016). Therefore, PMS effectiveness is expected to have a direct positive relationship with employee performance quality.

H2: PMS effectiveness significantly influences employee performance quality.

PMS Benefits and Employee Performance Quality

The practical benefits derived from PMS use are also expected to improve employee performance quality. Employees who perceive that a PMS simplifies their work, reduces unnecessary repetition, provides accurate information, and facilitates service coordination are more likely to complete tasks effectively and with fewer operational

mistakes. In this sense, the value of technology lies not only in its existence but in the operational convenience and support it provides to users. Earlier studies have indicated that when employees perceive strong technological benefits, they tend to show improved efficiency, higher confidence, and better overall work outcomes (Jovanovi et al., 2016; Tulus Harefa et al., 2024). Therefore, PMS benefits should positively influence employee performance quality.

However, while PMS benefits share conceptual similarities with perceived usefulness, net benefits, and user satisfaction, they are not identical constructs. Perceived usefulness primarily reflects an individual's cognitive belief that a system enhances job performance, whereas user satisfaction represents an affective evaluation of the user's experience with the system. Similarly, net benefits in the Information Systems Success Model are commonly assessed at broader organizational or system levels, encompassing both individual and organizational outcomes. In contrast, PMS benefits in this study refer specifically to employee-perceived operational advantages experienced during daily hotel operations, including faster task completion, reduced operational burden, improved coordination, greater service efficiency, and enhanced service delivery. Therefore, PMS benefits are conceptualized as a contextualized operational construct that explains how PMS effectiveness translates into improved employee performance quality within hotel settings.

This distinction marks an important contribution of the present study. Previous hospitality technology research has largely focused on perceived usefulness, satisfaction, or general system outcomes, whereas the present study emphasizes employee-perceived operational benefits as the explanatory mechanism linking PMS effectiveness and employee performance quality.

H3: PMS benefits significantly influence employee performance quality.

The Mediating Role of PMS Benefits

Although PMS effectiveness may directly influence employee performance, the improvement in work quality may not occur automatically without employees experiencing the operational benefits generated by the system. In other words, a technologically effective PMS is likely to enhance employee performance, when the system creates practical advantages such as ease of operation, faster information processing, and smoother coordination. This indicates that system benefits may serve as an important explanatory mechanism linking technological effectiveness with work outcomes. Recent performance management and information systems studies have also emphasized that perceived usefulness and operational support frequently function as mediating channels through which technological resources affect employee productivity (Wirdhawan & Wibisono, 2024; Tulus Harefa et al., 2024). Accordingly, PMS benefits are expected to mediate the relationship between PMS effectiveness and employee performance quality.

H4: PMS benefits significantly mediate the relationship between PMS effectiveness and employee performance quality.

Figure 1. depicts the study framework and the hypothesized causal effect between the study variables.

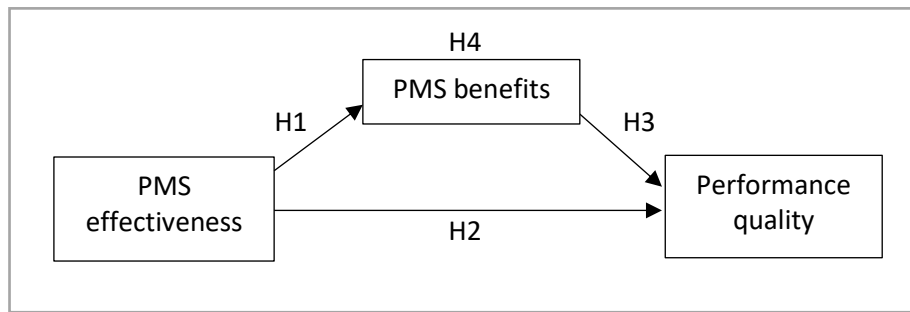


Figure 1. Research Model
Source: Research Data,2025

METHODOLOGY

This study uses a quantitative, cross-sectional research design to examine the mediating effect of PMS benefits on the relationship between PMS effectiveness and employee performance quality in the hotel industry. A quantitative approach was considered appropriate in order to test the causal relationships among predefined latent variables and to statistically verify the proposed mediation model.

The population of this study consisted of guest service agents (GSAs) working in star-rated hotels across four major cities in South Sulawesi, Indonesia, namely Makassar, Parepare, Palopo, and Bulukumba. These cities were selected because they represent important tourism growth areas in the province and show a relatively high concentration of hotel operations which serve both domestic and regional visitors. In addition, the distribution of hotels across these cities provides a relevant operational setting for examining the implementation of hotel information systems in emerging tourism destinations.

This study has specifically focused on three-star and below hotels. The selection of this hotel category was made deliberately for both practical and theoretical reasons. First, three-star and lower-tier hotels constitute the dominant segment of hotel establishments in South Sulawesi, making them more representative of the region's hospitality industry structure. Second, compared with four- and five-star hotels, which generally have more advanced digital infrastructure, standardized operating procedures, and highly trained personnel, mid-scale and lower-tier hotels often experience greater variation in system adoption, employee technological readiness, and optimization of PMS usage. This provides a more critical empirical setting to observe whether PMS effectiveness can meaningfully generate operational benefits and improve employee performance quality. Previous hospitality technology studies also suggest that the influence of digital systems tends to be more observable in medium-scale operational environments, in which technology utilization is still evolving rather than fully institutionalized (Hou & Fan, 2024; Wynn & Lam, 2023).

A purposive sampling technique has been employed to select respondents who met the study criteria, namely guest service agents who actively used PMS in their daily hotel operations. Guest service agents were chosen because they are front-line employees directly involved in reservations, check-in and check-out procedures, guest data input, billing coordination, and service communication, making them the most relevant users for

evaluating PMS effectiveness and perceived system benefits. The minimum sample size was determined using G*Power analysis, indicating that at least 119 respondents were required to achieve adequate statistical power. Accordingly, this study successfully collected data from 170 respondents representing 85 hotels, thereby exceeding the minimum requirement for structural model testing.

Data were collected using a structured questionnaire distributed face-to-face over a three-month period from October to December 2023. The questionnaire consisted of four sections: respondent demographic profile, PMS effectiveness, PMS benefits, and employee performance quality. All measurement items were adapted from previous validated studies and modified to fit the context of hotel front-office operations. Responses were measured along a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Prior to the main survey, a pilot test was conducted to assess item clarity, validity, and internal reliability.

The collected data were coded and screened using IBM SPSS Statistics version 24 before analysis via Partial Least Squares Structural Equation Modelling (PLS-SEM). Harman's single-factor test was first employed to assess the possibility of common method bias following the recommendation of Podsakoff et al. (2003). Subsequently, PLS-SEM was applied in two analytical stages: evaluation of the measurement model and evaluation of the structural model. PLS-SEM was considered suitable for this study because it is highly effective for testing predictive causal relationships, mediation effects, and latent variable interactions, particularly in hospitality and tourism research involving complex behavioural constructs and moderate sample sizes (Ali et al., 2018; Richter et al., 2016).

To minimize the potential influence of common method bias, several procedural remedies were implemented during data collection. Respondent anonymity and confidentiality were assured, participation was voluntary, and respondents were informed that there were no right or wrong answers. In addition, questionnaire items were organized according to construct categories and presented using clear and concise wording in order to reduce evaluation apprehension and response consistency tendencies.

FINDINGS AND DISCUSSION

PLS-SEM assessment

To test the proposed relationships among PMS effectiveness, PMS benefits, and employee performance quality, this study employed Partial Least Squares Structural Equation Modelling (PLS-SEM). The use of PLS-SEM was considered appropriate, because the present study aimed to simultaneously assess the reliability of the measurement items and the predictive relationships among latent variables within the proposed mediation framework. Following the standard analytical procedure, the assessment was conducted in two consecutive stages, namely measurement model evaluation and structural model evaluation.

Measurement model

The measurement model was assessed by examining indicator loadings, internal consistency reliability, convergent validity, and discriminant validity. As reported in Table 2, the majority of indicator loadings were above the recommended threshold of 0.70,

indicating acceptable item reliability. Although several indicators recorded loadings between 0.40 and 0.70, these items were retained because the corresponding constructs still demonstrated satisfactory levels of composite reliability and average variance extracted. This was consistent with Hair et al.'s (2017) recommendation that moderately loaded indicators may be preserved when overall construct validity remains adequate. In particular, the indicator EFFE2 demonstrated a loading value below the ideal threshold. However, the indicator was retained, because the overall construct still achieved acceptable composite reliability and convergent validity standards. In addition, EFFE2 was theoretically relevant in representing operational aspects of PMS effectiveness that were considered important within hotel front-office activities. Following Hair et al. (2017), indicators with moderate loadings may be preserved when they contribute to content validity and do not substantially reduce construct reliability.

The reliability statistics further confirmed that all constructs met the acceptable internal consistency criteria. Cronbach's alpha values ranged from 0.662 to 0.740, while composite reliability values ranged from 0.705 to 0.777. These values indicate that the indicators used in this study consistently measured the intended latent variables. In addition, all AVE values exceeded the minimum threshold of 0.50, suggesting that each construct possessed sufficient convergent validity by explaining more than half of the variance of its indicators.

To ensure that each latent construct was empirically distinct, discriminant validity was examined using the heterotrait-monotrait ratio (HTMT). The HTMT values shown in Table 3 were all below 0.90, confirming that PMS effectiveness, PMS benefits, and employee performance quality each represented conceptually separate constructs. Overall, the measurement model fulfilled the required standards of reliability and validity, indicating that the data were suitable for hypothesis testing in the structural model.

Table 2: Measurement Model Assessment

Constructs	Loadings	Cronbach's alpha	Composite reliability	AVE
<i>PMS Effectiveness</i>		0.725	0.777	0.562
EFFE1	0.794			
EFFE2	0.466			
EFFE3	0.825			
EFFE4	0.849			
<i>PMS Benefits</i>		0.662	0.705	0.592
BENE2	0.852			
BENE3	0.659			
BENE4	0.783			
<i>Performance Quality</i>		0.740	0.755	0.566
PQ1	0.699			
PQ2	0.857			
PQ3	0.780			
PQ4	0.658			

Source: Research Data

Next, in evaluating the discriminant validity, the heterotrait-monotrait (HTMT) ratio of correlation was employed. It is important to note that all HTMT values were observed to be below 0.90, which indicates confirmation of the discriminant validity of the scales, per the criteria set forth by Ringle et al. (2015) (see Table 3).



Table 3: Heterotrait-monotrait ratio (HTMT)

	PMS Benefits	PMS Effectiveness	Performance Quality
PMS Benefits			
PMS Effectiveness	0.705		
Performance Quality	0.482	0.497	

Source: Research Data

Structural model

After establishing the adequacy of the measurement model, the next step was testing the hypothesized structural relationships. Prior to hypothesis testing, collinearity diagnostics were conducted using the Variance Inflation Factor (VIF). All VIF values were found to be substantially below the critical threshold of 3.3, indicating that multicollinearity was not a concern and that the predictor constructs could be interpreted reliably.

The significance of the structural paths was then assessed using a bootstrapping procedure with 5,000 resamples. The results demonstrate that PMS effectiveness has a strong positive and statistically significant influence on PMS benefits ($\beta = 0.519, p < 0.001$). This indicates that when the PMS operates efficiently, accurately, and in line with operational requirements, employees are more likely to perceive substantial practical advantages from the system. In other words, technological effectiveness appears to be foundational to functional system benefits in hotel daily operations.

The analysis also reveals that PMS effectiveness exerts a positive direct effect on employee performance quality ($\beta = 0.265, p = 0.005$). This suggests that employees working with an effective PMS are able to complete operational duties with better speed, consistency, and precision. Likewise, PMS benefits significantly influence employee performance quality ($\beta = 0.230, p = 0.006$), indicating that the practical convenience derived from PMS utilization contributes meaningfully to the improvement of employee work outcomes.

With respect to explanatory power, PMS effectiveness accounted for 26.2% of the variance in PMS benefits ($R^2 = 0.262$), indicating a moderate explanatory contribution. Meanwhile, PMS effectiveness and PMS benefits jointly explained 13.1% of the variance in employee performance quality ($R^2 = 0.131$). Although this percentage may be categorized as modest, such a result remains acceptable considering that employee performance in hotel settings is influenced by numerous additional organizational, interpersonal, and environmental factors beyond information system variables. While this explains only a modest proportion of variance in employee performance quality, it is consistent with the multidimensional nature of employee performance in hospitality settings. Employee performance is influenced not only by technological factors but also by organizational culture, leadership support, employee engagement, training quality, work environment, and managerial practices. Consequently, PMS effectiveness and system benefits should be viewed as important, but not exclusive, determinants of employee performance quality.

The relatively low explanatory power suggests opportunities for future research to integrate organizational and behavioural variables into hospitality technology frameworks. Future studies may incorporate leadership support, digital competence, organizational culture, employee motivation, and training effectiveness to obtain a more comprehensive understanding of performance determinants in hotel operations.



Table 4. Structural estimates (path analysis)

	Beta (β)	T-Statistics	P-Values	VIF	f^2	R^2	Q^2
H1: EFFE -> BENE	0.519***	9.151	0.000	1.000	0.355	0.262	0.144
H2: EFFE -> PQ	0.265**	2.841	0.005		0.150	0.131	0.064
H3: BENE -> PQ	0.230**	2.755	0.006				

Note: *** $p < 0.001$, ** $p < 0.01$

Source: Research Data

In terms of model fitness, as depicted in Table 4, PMS effectiveness can statistically significantly explain the 26.2% ($R^2 = 0.262$) variance of PMS benefits. The former and latter constructs constitute a 13.1% ($R^2 = 0.131$) variance of performance quality. Per Cohen (1988), it is suggested that the degree of variance in the PMS benefits explained by the PMS effectiveness is deemed to be substantial. However, variance in performance quality attributed to both PMS effectiveness and PMS benefits is considered to be small.

On the other hand, it is discovered that the f^2 structural model shows a large effect size spectrum for the PMS effectiveness towards PMS benefits ($f^2=0.355$). Whereas the effect size of PMS effectiveness and PMS benefits ($f^2=0.109$) on performance quality is considered medium. As for the model's predictive utility, the Q^2 values for all frameworks comprising the interrelationship between PMS effectiveness, PMS benefits and performance quality exceeded zero. Based on these predictive relevance results, all frameworks examined in this study can be deemed to offer substantial predictive models, per Henseler et al. (2012).

Mediation Effect

To further examine the indirect mechanism proposed in this study, the mediating role of PMS benefits was tested using the bootstrapping indirect effect approach with bias-corrected confidence intervals. As presented in Table 5, the indirect path from PMS effectiveness to employee performance quality through PMS benefits was found to be positive and statistically significant ($\beta = 0.120$, $p = 0.011$), with the confidence interval ranging from 0.033 to 0.214 and excluding zero.

Table 5. Mediation effects testing (indirect path analysis)

Path Analysis	Beta (β)	P-Values	Confidence Interval (Bias Corrected)		Result
			2.5%	97.5%	
EFFE -> BENE -> PQ	0.120**	0.011	0.033	0.214	Significant

Note: *** $p < 0.001$, ** $p < 0.01$

Source: Research Data

Table 5 confirms that PMS benefits serve as a significant mediator in the proposed model. The contribution of PMS effectiveness to employee performance quality does not occur solely through direct technological support, but also through the practical operational value that employees derive from the system. Therefore, the more effective the PMS is in facilitating work processes, the greater the benefits perceived by employees, which subsequently enhance their performance quality.

Discussion

This study provides strong empirical support for the proposition that PMS effectiveness is a fundamental driver of both perceived system employee performance quality in hotel operations. The significant positive relationship between PMS effectiveness and PMS benefits indicates that hotel employees are more likely to perceive a digital system as valuable when the system performs reliably, responds efficiently, and fits the operational realities of front-office service work. This result is consistent with the argument of Walston et al., who emphasized that users tend to recognize technological benefits when information systems demonstrably simplify work processes and reduce procedural burden. Similarly, Commey et al. found that the usefulness of hotel property systems is strongly associated with their operational functionality rather than their mere availability. In the present study, this suggests that PMS effectiveness is the baseline technological condition that enables employees to perceive convenience, utility, and efficiency in their daily tasks.

The direct positive influence of PMS effectiveness on employee performance quality further confirms that the role of hotel information systems extends beyond administrative support and directly affects front-line service execution. Guest service agents are required to process reservations, handle guest arrivals and departures, manage billing records, and coordinate with other departments under high service speed and accuracy demands. Under such circumstances, an effective PMS reduces time loss, minimizes manual recording errors, and provides immediate access to operational information, thereby allowing employees to perform more consistently. This finding supports previous evidence, as reported by Ratna et al., that alignment between technological systems and job characteristics significantly improves individual performance outcomes. It also reinforces Melin-González and Bulchand-Gidumal's claims that hotel technology contributes positively to employee productivity when system functionality is embedded within daily operational workflows.

Another notable finding is that PMS benefits significantly influence employee performance quality. Employees likely do not improve their work performance solely because a PMS is installed within the hotel, but because they gain practical and operationally relevant advantages through their use of the system. These benefits may include faster transaction completion, easier retrieval of guest data, smoother communication between departments, and reduced repetition of clerical tasks. When employees perceive that the system genuinely assists their responsibilities, they are likely to demonstrate stronger task confidence, higher efficiency, and more accurate service delivery. This finding is in line with Jovanovi et al., who argued that the behavioral acceptance of hospitality technology is closely linked to the extent of convenience and productivity experienced by employees. In the same vein, Tulus Harefa et al. noted that technological systems generate performance improvement when users perceive clear instrumental value in relation to their job completion.

More importantly, the mediation analysis reveals that PMS benefits significantly mediate the relationship between PMS effectiveness and employee performance quality. This result provides a deeper theoretical explanation than the conventional direct-effect model commonly presented in prior hospitality information system studies. The finding implies that technological effectiveness alone is insufficient to guarantee improved employee outcomes unless the system can generate practical utility which is consciously appreciated by users. In other words, PMS effectiveness influences performance not only



because the technology works, but because the technology creates operational benefits that make employee tasks easier, faster, and more manageable. This confirms that perceived system benefit acts as the translating mechanism through which technological capability is converted into behavioral productivity. Such a conclusion extends the technological-performance discourse advanced by Wirdhawan and Wibisono, who have suggested that system value is often realized through employee-perceived usefulness, rather than technical presence alone.

From a theoretical perspective, these findings reinforce the argument proposed in the Technology Acceptance Model that employee behavior toward information systems is strongly influenced by perceived usefulness rather than technological presence alone. The findings also extend the IS Success Model by demonstrating that the operational value generated by PMS serves as an intermediary mechanism linking system effectiveness with employee performance outcomes (DeLone & McLean, 2003). This suggests that hospitality digitalization should not merely prioritize software implementation, as stakeholders must also ensure that employees experience meaningful operational support from the technology. Compared with previous hospitality technology studies that primarily focused on direct technological impacts, the present study provides a more behaviorally oriented explanation of how employees internalize technological value in service operations.

The contextual significance of these findings is particularly evident in South Sulawesi, where many three-star and below hotels remain in a transitional phase of hospitality digitalization. Unlike larger chain hotels with standardized technology ecosystems, mid-scale and lower-tier hotels often operate with uneven employee digital competence, varying levels of PMS optimization, and limited technological support. Under these circumstances, the success of PMS implementation becomes highly dependent on whether the system is able to deliver immediate and visible work-related benefits to front-line employees. The present findings therefore suggest that in developing tourism regions, digital transformation should not be interpreted merely as software adoption, but also in terms of successful alignment between system functionality, employee usability, and operational benefit realization. This contextual insight provides an important contribution by showing that the effectiveness of hotel digital systems in emerging destinations is deeply influenced by how employees internalize and utilize the practical value of the technology.

Taken together, the discussion confirms that PMS effectiveness, PMS benefits, and employee performance quality are not independent constructs but part of an interconnected operational mechanism. PMS effectiveness provides the technological foundation, PMS benefits represent the employee-perceived operational translation, and employee performance quality emerges as the final behavioral outcome. Such a holistic understanding offers a more comprehensive explanation of how hotel information systems contribute to front-line performance and highlights that the real success of hospitality digitalization lies not only in the installation of systems, but in the creation of meaningful technological value for employees.

Although the model explains a modest proportion of variance in employee performance quality, this finding is consistent with the multidimensional nature of employee performance in hospitality settings. Employee performance is influenced by technological factors but also by organizational culture, leadership support, employee engagement, training quality, work environment, and managerial practices. Consequently,



PMS effectiveness and system benefits should be viewed as important, but not exclusive, determinants of employee performance quality.

The relatively low explanatory power suggests opportunities for future research to integrate organizational and behavioral variables into hospitality technology frameworks. Future studies may incorporate leadership support, digital competence, organizational culture, employee motivation, and training effectiveness in order to reach a more comprehensive understanding of performance determinants in hotel operations.

Policy Implications

The findings of this study provide several important policy implications for strengthening digital transformation in the hospitality sector, particularly in developing tourism regions such as South Sulawesi. First, hotel digitalization policies must extend beyond the mere promotion of technology adoption and place stronger emphasis on system effectiveness and user-centered implementation. The results demonstrate that the presence of PMS alone is insufficient to improve employee performance unless the system functions reliably and produces practical operational benefits for employees. Therefore, tourism authorities and industry stakeholders should encourage hotels to adopt PMS platforms that are not only technologically available, but also operationally compatible with hotel service workflows.

Second, workforce digital competency should form an integral part of hospitality development policy. Since PMS benefits significantly mediate the relationship between system effectiveness and employee performance, hotel employees must be equipped with the skills required to fully utilize PMS features in day-to-day service delivery. This indicates the need for structured digital literacy training, PMS-based operational certification, and continuous workplace upskilling programs, particularly for front-line hotel staff in medium-scale and lower-tier establishments.

Third, the findings also suggest the importance of establishing regional hospitality digital standards that guide hotels in selecting, implementing, and evaluating hotel information systems. Such standards may include minimum criteria for PMS usability, employee adaptability, operational integration, and service efficiency outcomes. By providing a clearer digital transformation framework, policymakers can reduce disparities in technology utilization across hotel categories and improve the long-term competitiveness of regional hospitality businesses.

Theoretical Implications

This study contributes to the hospitality information systems literature by offering a more comprehensive explanation of the relationship between hotel digital technology and employee work outcomes. Previous studies have largely treated information systems as direct predictors of employee or organizational performance. However, the present findings demonstrate that the relationship is more complex and behaviorally mediated than previously assumed.

The most important theoretical contribution of this study lies in confirming PMS benefits as a significant mediating construct between PMS effectiveness and employee performance quality. This indicates that technological effectiveness does not automatically translate into improved employee performance, unless and until employees perceive clear functional and operational benefits from the system. In this sense, the study extends the



direct-effect technological performance model toward a more process-oriented explanatory framework in which system capability, perceived usefulness, and behavioral productivity are structurally interconnected.

Furthermore, this study enriches hospitality digitalization research by providing empirical evidence from mid-scale hotels in developing tourism destinations, a context that has remained relatively underrepresented in previous PMS and hotel information system studies. As such, the findings broaden the geographical and operational applicability of hospitality technology theories, particularly in understanding how digital systems function within resource-constrained and technologically transitional environments.

Practical Implications

The findings of this study demonstrate that the successful implementation of PMS can provide substantial practical advantages for hotel management in improving front-line employee performance. Hotels should therefore view PMS not merely as an administrative software investment, but as an operational productivity tool directly influencing employee speed, work accuracy, service coordination, and guest handling efficiency.

First, hotel managers should prioritize the selection of PMS platforms that are user-friendly, responsive, and compatible with daily service tasks. A technologically sophisticated system will have limited impact if employees perceive it as difficult to operate or disconnected from their operational routines. Thus, system usability and employee acceptance should become key considerations in PMS procurement and implementation.

Second, hotels need to invest continuously in PMS training and practical skill reinforcement. Since employee-perceived system benefits significantly influence work performance, employees must be given sufficient technical familiarity to ensure that PMS features are utilized optimally rather than minimally. Regular simulation-based training, refresher sessions, and operational troubleshooting support could substantially improve employee confidence in using the system.

Third, hotel management should routinely evaluate whether PMS implementation genuinely reduces operational inefficiencies and supports service quality improvement. Monitoring employee feedback, task completion speed, reservation accuracy, and interdepartmental coordination can help hotels assess whether the PMS is functioning as a performance-enhancing tool. In this regard, the practical success of PMS lies not only in installation, but in its concrete and measurable contributions to employee productivity and guest service excellence.

CONCLUSION

This study concludes that PMS effectiveness plays a significant role in improving both the perceived benefits of the system and the performance quality of hotel employees. An effective PMS enables hotel employees to perform operational tasks with greater accuracy, consistency, and efficiency, while also generating practical benefits that simplify work processes and support daily service execution. The findings further confirm that PMS benefits significantly mediate the relationship between PMS effectiveness and employee performance quality. This further indicates that employee performance improves not merely because a digital system is available, but because employees experience direct operational value from using the system.



These results also suggest that the success of hotel digitalization is determined not only by technological implementation, but by the extent to which technology produces meaningful usability and practical convenience for employees. In developing hospitality environments such as South Sulawesi, where digital adoption is still evolving, the ability of PMS to generate visible employee benefits becomes a critical factor in achieving improved service performance.

This study has several limitations. First, the use of self-reported questionnaire data may have introduced respondent bias. Second, the cross-sectional design limits causal interpretation. Third, the sample was restricted to guest service agents working in three-star and below hotels in South Sulawesi, limiting generalizability to other hotel categories and regions. Future studies are encouraged to employ longitudinal designs, multiple data sources, and broader geographical coverage while incorporating specific organizational and behavioral determinants of employee performance.

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DIASPORA TOURISM FOR NATIONAL DEVELOPMENT FROM A SOCIAL PRACTICE THEORY PERSPECTIVE: A SCOPING REVIEW

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Article Info	Abstract
<p>Keywords: Diaspora tourism, cultural and heritage identity, social engagement and social capital, national development, policy, scoping review.</p> <p>Received: November 28, 2025</p> <p>Approved: June 10, 2026</p> <p>Published: June 29, 2026</p>	<p>Diaspora tourism has gained increasing attention in tourism studies. However, its contribution to national development remains fragmented. This study aims to reposition diaspora tourism as a strategic mechanism for national development. Social Practice Theory is used as a lens to examine the relationship between diaspora tourism and national development. A scoping review approach was adopted for analysing 143 abstracts from peer-reviewed journal articles. The study combines text mining and visualisation techniques using Voyant Tools with manual keyword categorisation to identify key research patterns. The findings show three interconnected clusters within diaspora tourism research: (1) heritage and cultural identity connections, (2) destination development potential, and (3) social engagement and social capital formation. Based on these findings, the study proposes a conceptual framework positioning diaspora tourism as a process that links meanings associated with identity and heritage, competences related to social engagement and social capital building, and materials reflected in the enabler of development outcomes, as in infrastructure, accessibility, and connectivity, as well as, governance and policy integration. This study contributes to the literature by reframing diaspora tourism as a strategic resource and highlighting its potential to support sustainable and participatory national development.</p>

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INTRODUCTION

Diaspora communities or populations living outside their ancestral homelands often engage in travel as a means of reconnecting with their origins. Hence, travel and tourism play a central role in how diaspora individuals reconnect with their roots (Mensah, 2015), engage with cultural traditions (Zhu & Airey, 2021), and negotiate their sense of belonging (Filep et al., 2022). This form of travel, commonly termed diaspora tourism or roots tourism, differs fundamentally from mainstream leisure tourism in that it is driven by genealogical motivations, cultural continuity, familial ties, and emotional meaning-making (Mohammed et al., 2023; Otoo et al., 2021; Zou et al., 2021). As a growing niche market shaped by migration history, identity, nostalgia, and cultural reconnection, diaspora tourism has attracted increasing scholarly and policy attention (Adamson, 2025).

The significance of diaspora tourism extends across economic, social, and cultural dimensions. Economically, it contributes to national development through financial remittances and investments (Nnabuihe et al., 2024; Vong et al., 2017), as well as support for informal sectors during homeland visits (Karayanni et al., 2019). Socially, diaspora tourism fosters community development and enhances social engagement, particularly in rural areas (Ali et al., 2023; Del Soldato & Massari, 2024; Nnabuihe et al., 2024). Culturally, diaspora tourists serve as ambassadors for their ancestral destinations, encouraging others to visit (Rapoport, 2019; Vong et al., 2017) while simultaneously contributing to the preservation and long-term sustainability of cultural heritage through their desire to reconnect with their roots (Joseph, 2011). Together, these economic, social, and cultural contributions demonstrate the multifaceted role of diaspora tourism in supporting national development.

Given these multifaceted contributions, diaspora tourism has increasingly been recognised as a strategic consideration in national development agendas. Diaspora visits to the homeland carry the potential to strengthen both cultural and national identity over the long term (Joseph, 2011; Wapmuk & Ibonye, 2023). Wapmuk and Ibonye (2023), for instance, specifically examine how diaspora tourism can be integrated into foreign policy frameworks to build sustained, collective commitment to national development. Their findings indicate that sustained interactions between diaspora communities and their ancestral homeland can generate social, cultural, and economic benefits that contribute to national development.

In addition, Marić et al., (2026) underscore the critical role of diaspora investment in economic development, emphasizing that diaspora mobility transcends cultural reconnection and holds significant developmental value. Aryee (2025) explores how diaspora travel contributes to the construction and negotiation of identity, reaffirming the centrality of identity formation within transnational mobility experiences. Despite growing recognition of its contribution to national development, diaspora tourism remains theoretically and practically underdeveloped (Ferdous, 2025). Existing research has primarily focused on identity, heritage, and homeland attachment, with limited attention to development outcomes and policy implications. Moreover, few studies have applied theoretical frameworks to explain how diaspora tourism contributes to national development.

This gap underscores the necessity for further investigations, particularly regarding how diaspora tourism can play a role in governance and national development policies.

The study addresses this gap by applying two perspectives. First, it employs a scoping review methodology. By systematically mapping existing literature, a scoping review allows for the identification of patterns in current research for future direction, particularly in the policy and governance. Second, this study draws on Social Practice Theory (SPT), also known as practice theory (Reckwitz, 2002), as its analytical lens. This theory is used to understand diaspora tourism as a multidimensional practice connected to national development and governance.

Social Practice Theory examines how activities become embedded in social life, focusing on the interconnections between meanings, materials, and competencies/knowledge that together constitute a social practice (Shove et al., 2012). Applying Social Practice Theory to diaspora tourism is particularly apt in the context of contemporary global dynamics, including accelerating mobility and migration, intensifying globalisation, and the growing commercialisation of tourism (Lamers et al., 2017; Y. Zhu, 2023). Rooted in the foundational works of Durkheim, Giddens, and Bourdieu, the theory positions social practices, rather than individual actors or social structures alone, as the primary unit of analysis (Greene, 2025; Lamers et al., 2017). This perspective provides a useful lens for understanding how diaspora tourism practices are shaped by the interaction of cultural meanings, material resources, and social competences within transnational contexts.

Earlier contributions to this theoretical tradition are also notable. Durkheim's concept of collective effervescence, the intense shared emotional experience that generates solidarity and collective identity, provides an important foundation for understanding the social dimensions of diaspora tourism, where shared emotions, memories, and cultural symbols are experienced collectively (Domaneschi, 2025). Giddens later contributed the concept of structuration, arguing that social structures and individual agency are mutually constituted through everyday social practices (Kennedy et al., 2015; Seidman, 2017). Bourdieu extended this by emphasising habitus, the internalised dispositions shaped by social experience, class position, education, and cultural capital, which unconsciously guide how individuals act within social fields (Kennedy et al., 2015; Seidman, 2017). Building on these foundations, Shove et al. (2012) repositioned practice theory at the intersection of materiality, meaning, and practical knowledge, providing the core framework adopted in this study (Ariztía, 2017). Together, these theoretical contributions offer comprehensive foundation for examining diaspora tourism as a socially embedded practice with potential implications for identity formation, cultural preservation, and national development.

This study addresses two objectives. First, it explores how diaspora tourism has been conceptualised in relation to national development within the existing literature. Second, it develops a framework based on Social Practice Theory to explain diaspora tourism practices and inform policy recommendations for diaspora tourism development. By integrating a scoping review and the theoretical lens, the study maps key themes, identifies research gaps, and proposes a conceptual framework that can support future research and evidence-based policy development in diaspora tourism. In doing so, the study contributes to the literature by advancing a theoretically informed understanding of how diaspora tourism practices can be linked to broader national development outcomes.

METHODOLOGY

This scoping review follows Arksey and O’Malley’s (2005) framework, which is suitable for examining emerging, multidisciplinary research domains. In the context of diaspora tourism, this procedure provides a strong methodological foundation for mapping the landscape of diaspora tourism research. It can also identify the gap and future research direction. The key procedures of a Scoping Review (Arksey & O’Malley, 2005) employed in this study are as follows:

1. **Identifying Research Questions.** This stage establishes the focus of inquiry based on key concepts. The study addresses the following research questions:
 - RQ1.** What are the key themes and patterns in the existing literature on diaspora tourism practice and its connections to national development?
 - RQ2.** What conceptual framework, grounded in social practice theory, can be proposed to guide the development of diaspora tourism in support of national development?
2. **Identifying and Selecting Relevant Studies.** This study adopts a systematic literature review approach to construct the dataset. The search was conducted in the Scopus database, focusing on international peer-reviewed journal articles. A combination of keywords related to diaspora tourism practices, cultural identity, and national development was used to retrieve relevant studies. To ensure the relevance and quality of the dataset, a set of inclusion criteria was established. The selected studies were required to meet the following criteria: (1) published between 2020 and 2024; (2) classified as peer-reviewed journal articles; (3) written in English; and (4) focused on diaspora tourism practices, cultural identity, or national development. The initial search yielded 302 articles. After removing duplicate records and conducting a manual screening of abstracts to assess relevance, a total of 143 articles were retained for analysis. The overall search and selection process is illustrated in Table 1.

Table 1. The Search Strategy

No.	Variation	Keywords in Boolean Search	Numbers of article
1	Diaspora tourism concepts	(“diaspora tourism” OR “root tourism”) AND ((culture OR cultural) AND identity)	215
2	Diaspora tourism and social practice theory	(“diaspora tourism” OR “root tourism”) AND (culture OR cultural) AND (tourism OR hospitality OR travel) AND (“social practice theory” OR “practice theory”)	29
3	Diaspora and national development	(“diaspora tourism OR root tourism”) AND (national OR country OR development OR economy OR policy OR culture OR cultural OR identity OR social OR practice)	58
Overall			302
Duplication removed			42
Excluded (data with no abstract, the research does not mention diaspora tourism)			117
Total for analysis			143

Source: Research data



3. **Charting Collating, Categorizing, and Reporting the data.** Rather than using conventional data charting techniques, this study transformed the dataset into a word-mapping analytical framework to capture the underlying meanings embedded in prior research. The abstracts of the 143 selected articles were analysed using Voyant Tools, a web-based, open-source platform for computational text analysis. The analysis applied the t-distributed stochastic neighbour embedding (t-SNE) algorithm to visualize the semantic relationships among keywords in a two-dimensional space (Vincenzo, 2026). Keywords that cluster closely together indicate strong co-occurrence patterns, reflecting dominant themes and conceptual linkages within existing research narratives. This stage synthesizes the mapped data to identify thematic clusters. Finally, consultation with research team members was conducted to refine interpretations and enhance practical relevance.

FINDINGS AND DISCUSSION

Findings

In presenting the results, four key aspects are addressed: (1) the number of articles analysed by year, (2) the countries or regions covered in the studies, (3) the mapping of abstracts using Voyant Tools to identify dominant research themes in diaspora-related studies, and (4) keyword analysis to support and validate the themes identified from the abstract mapping within the dataset. The dataset consists of 143 articles published from 2000 to 2024.

In terms of the first aspect, the data shows that the number of publications increased steadily from 2020 to 2023. However, a decrease is observed in 2024. This decline may indicate a potential fluctuation in publication trends, as illustrated in Table 2.

Table 2. The number of articles on diaspora tourism in 2020 – 2024

Year	Number of Abstract
2020	12
2021	21
2022	38
2023	44
2024	28
Total	143

Source: Research Data

Second, based on the geographical scope of diaspora tourism research, the data indicates that a significant number of studies were conducted in the context of the Global South, particularly in Asia and Africa. These include China, India, South Korea, Indonesia, Ghana, Nigeria, and Ethiopia. In addition, the presence of nationality-based terms such as “Chinese-Swedish,” “African American,” and “Korean-American” highlights the importance of hybrid and transnational identities in diaspora tourism research. The detailed distribution of countries and regions is presented in Table 3.

Table 3. The context of diaspora tourism found in the abstract

Region (Country)	Example of Author(s)
Africa: Ghana, Nigeria, Ethiopia, Tanzania, Senegal, Morocco	Ghana: Dillette (2021), Adu-Ampong & Dillele (2024) Nigeria: Umejei (2023) Ethiopia: Gedecho, et al. (2023)
Asia: China, Japan, India, South Korea, Indonesia, Malaysia, Thailand, Myanmar	China: Liu & Chen (2024); Zeng & Xu (2021); Li & Chan (2020); Liang et al. (2023); Zhu (2023); Huang & Zhang (2024); Cao (2023); Xie et al. (2024) India: Nanjangud & Reijnders (2022); Bhat (2023); du Prez & Govender (2020) Indonesia: Cahyanto et al. (2023); Doombos et al. (2023)
Middle East: Israel, Palestine, Iraq, Egypt	Israel and Palestine: Yohanan (2024); Schneider (2020); Järvi (2024) Iraq and Palestine: Chneider E. (2020) Egypt: Maxwell et al. (2024)
Europe: Hungary, Croatia, Germany, Italy, Sweden, Netherlands, Portugal, Ukraine, Cyprus	Sweden: Prince (2022); Wackenhut (2022) Hungary: András & Reijnders (2020) Italy: Schneider (2020) Netherlands: Nanjangud & Reijnders (2022)
America: US, Canada, Brazil, Guyana	United States: Darvai (2024); Potter et al. (2024); Gedecho et al. (2024) Brazil: Melville (2024) Canada: (Roberts, 2022)
Oceania: Australia, Fiji, Samoa, Vanuatu, Cook Islands.	Australia: Kantel & Jooduthir (2023)
Transnational/Hybrid Nationality	Hungarian-Australian: Kantek et al. (2023); Andits (2020) Turkish-German: Kılınç (2023); Çiki (2022) Chinese-Sweden: Licata & Osanami Törngren (2024) Korean-American: Ponting (2022) African-American: Robert & Matos (2022), Gillespie et al. (2024) Swedish-American: Mehtiyeva & Prince (2020)

Source: Research Data

The third aspect of the result is an analysis of the abstracts, which was conducted to identify the main patterns and themes within the dataset. The abstracts were analyzed using Voyant Tools. In total, the research corpus consists of 26,157 words with 4,298 unique word forms. The vocabulary density is 0.164, indicating a moderate level of lexical diversity. The readability index is 17.041, suggesting that the texts are relatively complex and characterized by advanced academic language. In addition, the average sentence length is 26.1 words, reflecting a dense and formal academic writing style. The most frequent terms in the corpus included: *tourism* (312), *diaspora* (242), *study* (150), *research* (109), and *travel* (105).

This distribution confirms that the academic discourse is primarily concentrated on the intersection of research on tourism, diaspora, and travel. To identify deeper thematic structures within the literature, the t-SNE (t-distributed Stochastic Neighbor Embedding) algorithm was employed to visualize semantic clusters, enabling the identification of five distinct thematic groups that reflect the organizational structure of diaspora tourism research. The t-SNE visualization illustrates the semantic structure of the 143 article abstracts analyzed in this study (see Figure 1). The horizontal (X) and vertical (Y) axes do not represent specific quantitative variables; rather, they serve as coordinate markers generated by the t-SNE algorithm to map high-dimensional textual relationships into a three-dimensional space. Articles positioned near one another share similar vocabularies and thematic orientations, while those positioned further apart reflect divergent conceptual emphases.

The scattered plot visualization is explained in Figure 1. It reveals a clear conceptual organization of diaspora tourism research, illustrated by distinct keyword concentrations that correspond to three thematic clusters. Each cluster is anchored by tightly grouped terms that represent dominant conceptual orientations in the literature. The analysis reveals that diaspora tourism is structured around three interrelated dimensions: (1) diaspora tourism: heritage and cultural identity connections, (2) potential for destination development, and (3) social engagement to social capital for development. The mapping result is as follows:

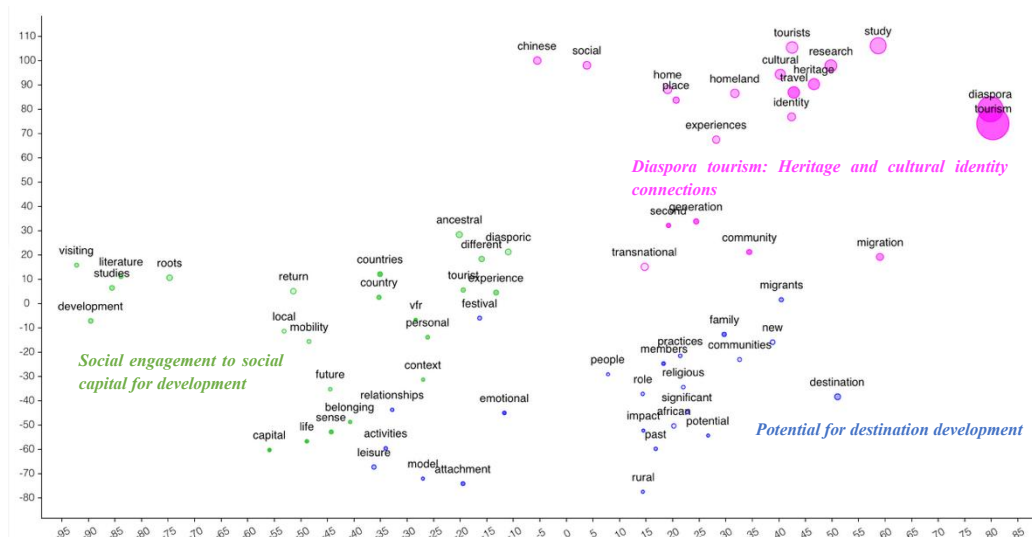


Figure 1. Scatter plot mapping of literature based on t-SNE algorithm by Voyant Tools

Fourth, in addition to the abstract mapping, a manual analysis of keywords was conducted. Similar keywords were grouped into categories and aligned with the identified themes. This process aimed to validate and complement the results obtained from the abstract mapping by providing a more refined thematic classification. The categorized keywords and their corresponding themes are presented in the following table (Table 4).

Table 4. The category of keywords associated with the themes

Themes	Category	Keywords
Diaspora tourism: Heritage and Cultural Identity Connection	Identity, heritage, roots	Diaspora, identity, heritage/cultural heritage, roots tourism, ancestral tourism, homeland, belonging, memory, nostalgia, genealogy, ancestry, ethnic identity
	Global mobility	Migration, transnationalism, diaspora groups, immigrant, return immigrant, second-generation, mobility, Visiting friends and relatives (VFR).
Social engagement for social capital development	Representations	Cultural representations, authenticity, appropriation, media/digital media, film tourism, narrative
	Spiritual journey	Religious tourism, pilgrimage, sacred sites, spirituality, ritual, Christianity, Islam
	Network builder	Social capital, community, relationship, engagement, network, trust
Potential for destination development	Tools of development	Development, economic development, tourism development, diaspora investment, remittance, policy, marketing, sustainability

Source: Research Data

Table 4 presents the categories of keywords associated with the identified themes. The coding was conducted manually on both author keywords and index keywords to provide a deeper interpretation of the meanings embedded within each theme derived from the abstract analysis.

The results show that the theme “*diaspora tourism: heritage and cultural identity connection*” is primarily associated with categories such as identity, heritage, and global mobility, highlighting the central role of belonging, memory, and transnational movement in diaspora tourism. Meanwhile, the theme “*potential for destination development*” reflects the economic and policy-oriented dimensions of diaspora tourism, including investment, marketing, and sustainability. Furthermore, the theme “*social engagement for social capital development*” encompasses representations, spiritual journeys, and network-building processes, indicating that diaspora tourism contributes not only to cultural expression but also to the formation of social capital through community interaction, religious practices, sense of belonging, and trust-based networks.

This manual keyword classification complements the abstract mapping by providing a more nuanced understanding of how diaspora tourism is conceptualized across identity, development, and social engagement dimensions. The following section presents the results and interpretation of the clusters identified through the mapping of previous studies.

Cluster 1: Diaspora Tourism, Heritage, and Cultural Identity Connection

The first cluster represents the core conceptual domain of diaspora tourism, emphasizing the central role of heritage and cultural identity in shaping travel motivations and experiences. The scatter plot mapping generated through the t-SNE analysis reveals a dense concentration of keywords such as *diaspora*, *tourism*, *identity*, *heritage*, *cultural*, *homeland*, and *experiences*, indicating that existing research is anchored in heritage and cultural identity-based perspectives. This clustering suggests that diaspora tourism is predominantly conceptualized as a process of reconnecting with ancestral roots and cultural heritage. This interpretation is further reinforced by the manual thematic mapping of keywords, as presented in Table 4. The theme “*diaspora tourism: heritage and cultural*



identity connection” is supported by two main categories: (1) *identity, heritage, and roots*, and (2) *global mobility*.

The first category includes keywords such as *identity, heritage, roots tourism, ancestral tourism, belonging, memory, and nostalgia*, highlighting the symbolic and emotional dimensions of diaspora travel. Meanwhile, the second category, reflected in terms such as *migration, transnationalism, second-generation, and visiting friends and relatives (VFR)*, emphasizes the role of mobility in shaping diasporic experiences. Together, both approaches, scatter plot mapping and manual coding, demonstrate a high level of consistency, confirming that identity and heritage remain the dominant lenses through which diaspora tourism is understood.

The findings further indicate that diaspora tourism plays a significant role in shaping and negotiating identity across diverse contexts. Identity is often reconstructed through engagement with heritage and ancestral homelands, particularly in cases such as the Chinese diaspora (Wang, 2020; Zhang, 2021) and African diaspora roots tourism (Dillette, 2021, 2022). At the same time, identity is deeply intertwined with memory, nostalgia, and emotional belonging, especially in contexts marked by displacement and historical trauma, such as Cyprus and Palestine (Mesaritou, 2023; Järvi, 2024). Furthermore, diaspora identity is increasingly understood as hybrid and transnational, shaped by multi-generational experiences and interactions between home and host societies (Nanjangud & Reijnders, 2022; Doornbos et al., 2023). In addition, identity is not only personal but also socially and politically constructed, as evidenced in studies on cultural appropriation, state-led heritage narratives, and national identity formation (Cho, 2020; Molnár, 2023; Zhu, 2023).

In relation to mobility, diaspora tourism is closely linked to transnational identity, particularly within the context of multigenerational experiences of global travel. Mobility enables diaspora individuals to navigate between home and host countries, resulting in hybrid and fluid identities shaped by cross-border interactions (Nanjangud & Reijnders, 2022; Doornbos et al., 2023). This is especially evident among second-generation diaspora, who often engage in travel as a means of exploring their cultural background and negotiating their sense of belonging. These findings collectively suggest that diaspora tourism is not merely a form of heritage travel, but a dynamic and multidimensional process through which identity is continuously constructed at the intersection of mobility, memory, and socio-cultural context.

Cluster 2: Social engagement to social development for development

The second cluster focuses on the relational and experiential dimensions of diaspora tourism, particularly the role of social engagement in generating social capital. Based on the scatter plot mapping, this cluster is characterized by a grouping of keywords such as *visiting, return, roots, belonging, relationships, activities, life, and leisure*. The proximity of these terms indicates that diaspora tourism is strongly grounded in everyday social practices and lived experiences, emphasizing interaction, participation, and relational engagement rather than purely economic or heritage-based motivations.

This pattern is further supported by the manual categorisation of keywords presented in Table 4. The theme “*social engagement for social capital development*” is associated with three key categories: (1) *representations*, (2) *spiritual journey*, and (3) *network builder*. The first category includes keywords such as *cultural representation*,

authenticity, media, and narrative, highlighting how diaspora identities are expressed and constructed through symbolic and mediated forms. The second category, *spiritual journey*, encompasses *religious tourism, pilgrimage, sacred sites, and ritual*, reflecting the importance of faith-based and spiritual practices in shaping diaspora experiences. The third category, *network builder*, includes *social capital, community, relationships, engagement, network, and trust*, emphasizing the role of social interaction in forming and sustaining connections across transnational spaces.

Diaspora tourism facilitates various forms of social engagement that strengthen emotional bonds, sense of belonging, and transnational relationships. Through activities such as visiting friends and relatives (VFR), ancestral return journeys, and participation in cultural or religious events, diaspora tourists actively engage with both family networks and local communities (Li & Chan, 2020; Kelly, 2022; Gedecho et al., 2023). These interactions generate both bonding social capital within diaspora communities and bridging social capital with local stakeholders (Roberts & Matos, 2022; Licata & Törngren, 2024). Moreover, social engagement in diaspora tourism extends beyond interpersonal relationships to broader socio-cultural and developmental outcomes. Diaspora individuals often act as cultural intermediaries and connectors, facilitating knowledge exchange, cultural transmission, and cross-cultural understanding (Davari & Jang, 2024; Bhamidipati, 2024). In addition, engagement-driven activities such as festivals, religious gatherings, and community events contribute to collective identity formation and community cohesion, which are essential components of social sustainability.

These findings suggest that diaspora tourism operates as a mechanism through which everyday social interactions are transformed into social capital. This process links micro-level experiences, such as emotional attachment and belonging to macro-level outcomes, including community resilience, network formation, and sustainable development. Therefore, social engagement can be understood not merely as an experiential outcome of diaspora tourism, but as a critical pathway through which diaspora tourism contributes to broader social and developmental processes (Adinolfi, 2018).

Cluster 3: Potential for Destination Development

The third cluster highlights the socio-economic and spatial dimensions of diaspora tourism, particularly its potential for destination development. Based on the scatter plot mapping, a distinct grouping of keywords emerges around terms such as *development, destination, community, family, religious, rural, migration, and impact*. The proximity of these terms suggests that diaspora tourism is closely associated with local socio-economic structures and place-based interactions, indicating that it extends beyond individual travel motivations toward broader developmental implications.

The theme “*potential for destination development*” is primarily associated with the category *tools of development*, which includes keywords such as *economic development, tourism development, diaspora investment, remittance, policy, marketing, and sustainability*. A significant body of research highlights the economic contributions of diaspora through remittances, investments, and the consumption of local products, which directly stimulate local economies and tourism revenues (Seraphin et al., 2020; Dana et al., 2021). In addition, diaspora tourism is increasingly recognized as a strategic tool for destination marketing and business development, particularly through diaspora networks, food tourism, and digital engagement (Arasli et al., 2021; Bowen, 2022; Zengeya et al.,

2023). Several studies also emphasize the role of diaspora as social capital in tourism recovery and crisis management, where diasporic communities contribute through knowledge transfer, advocacy, and transnational connections (Cahyanto et al., 2023). Beyond economic contributions, diaspora tourism also supports broader development processes through policy integration and institutional engagement, as governments seek to harness diaspora potential for national development and tourism planning (Kessy & Shayo, 2022; Aleksanyan, 2022). Moreover, the literature highlights the importance of diaspora in sustaining rural and community-based tourism through partnerships, cultural preservation, and local engagement (Žabčić et al., 2024; Nigro et al., 2024).

An important insight emerging from both analytical approaches is the positioning of *spiritual journey*. While manually categorized under *social engagement for social capital development* (Cluster 2), the abstract mapping reveals that spiritual and religious elements are also closely linked to development-related terms. This suggests that spiritual journey in diaspora tourism is inherently multidimensional. It functions not only as a form of cultural and emotional engagement but also as a potential niche market within diaspora tourism. For many diaspora travellers, return journeys are motivated not only by the desire to reconnect with cultural roots and identity but also by spiritual and religious purposes, which contribute to their sense of well-being (Anderson, 2019).

Taken together, these findings suggest that diaspora tourism should be understood as a multidimensional development mechanism that connects economic activities, cultural practices, and transnational networks to support sustainable destination development.

Discussion

These findings are discussed through Social Practice Theory, which conceptualizes human activities as the integration of meanings, materials, and competences (Shove et al., 2012). The practice of diaspora tourism is shaped by the *meaning* embedded in diaspora tourism experiences, which include identity, heritage, culture, and spirituality. These dimensions reflect the motivations and symbolic significance of travel, where diaspora individuals engage in journeys not only to reconnect with their cultural roots but also to negotiate their sense of belonging within transnational contexts (Graf, 2017; Kantek et al., 2023). The dominance of identity-related themes confirms that diaspora tourism is deeply embedded in symbolic and emotional meanings, particularly in relation to memory, belonging, and cultural continuity (Fu et al., 2025; Marschall, 2017). However, recent findings suggest that different generations may perceive diaspora tourism differently, particularly in relation to the meaning of heritage and cultural identity. For example, second-generation diaspora communities may experience identity confusion as they navigate dual cultural identities and negotiate their sense of belonging between their ancestral homeland and host society (Tran, 2025; Zheng et al., 2025). In this context, diaspora tourism serves not only as a form of mobility but also as an intergenerational cultural transmission mechanism, enabling second- and third-generation diaspora communities to reconnect with their ancestral homeland (Chattoraj & Basu, 2025; Ferdous, 2025; Graf, 2017; Huang et al., 2016).

The second dimension is the *competence* that can be reflected in the social engagement and social capital formation. Within Social Practice Theory, competence may include the social and cultural capacities that enable diaspora communities to engage with relatives, local communities, and cultural practices. These engagements may subsequently



foster the formation of social capital through trust-building, emotional connection, and social networks (Adinolfi, 2018; Li, 2020). Activities such as visiting friends and relatives (Capistrano & Bernardo, 2018; Kwon, 2024), participating in cultural and religious practices (Anderson, 2019; Joseph, 2011; Umejei, 2023), and interacting with local communities foster emotional connections and relational networks (Gedecho et al., 2024; Zou et al., 2021). These interactions generate both bonding and bridging social capital, as well as transnational networks characterized by trust and reciprocity. However, this competence, the social engagement, may vary across generation. The first generation may maintain strong ties to the homeland, while the second and third generations may experience weaker connections. However, the diaspora tourism provides opportunity to reconnect with their roots. For example, second-generation immigrants often engage in homeland visits to explore cultural identity and heritage, which can redefine their sense of belonging and identity (Ferdous, 2025; Huang et al., 2013; Pelliccia, 2018). Such engagement is not always experienced through direct physical visits alone. Increasingly, social media and digital technologies enable diaspora communities to remain connected with their cultural roots, heritage, and transnational networks. In some cases, these platforms also facilitate reconnection beyond immediate kinship ties, allowing individuals to engage with broader diaspora communities and shared cultural identities.

The third dimension, diaspora tourism contributes to *materials*, which are reflected in development outcomes. These include economic development (e.g., remittances, investment, and local business support) (Betancourt, 2024; Ferdous & Das, 2025; Law et al., 2013), destination development (e.g., rural tourism, cultural tourism, and niche markets such as spiritual tourism) (Bowen, 2022; Nnabuihe et al., 2024), and social and cultural development (e.g., community cohesion and cultural sustainability) (Davari & Jang, 2024; Wang et al., 2024; Wang & Witte, 2023). These outcomes highlight the tangible contributions of diaspora tourism to local and national economies. However, several economic challenges remain in the development of diaspora tourism. These include the risk of overdependence on diaspora remittances and tourism-related income (Hartmann & Krueger, 2024), as well as the uneven distribution of economic benefits, where certain regions may benefit more significantly while others remain underdeveloped (Iliev, 2018). In addition, diaspora tourism marketing remains relatively limited, as diaspora communities are often overlooked as a distinct tourism market segment. Consequently, destinations may risk losing valuable socio-economic opportunities that could otherwise be generated through diaspora tourism development (Zengeya et al., 2023). Furthermore, another important aspect within the material dimension is the presence of enabling factors that support the achievement of the development outcomes discussed above. These include both tangible and intangible forms of infrastructure and accessibility, such as transportation connectivity, visa facilitation, and digital infrastructure (Mahieu, 2019; Varelas & Papageorgiou, 2026; Yuli et al., 2023). Although these enabling factors may not be explicitly reflected in the thematic mapping, they are implicitly essential in facilitating diaspora mobility, engagement, and the broader developmental outcomes of diaspora tourism.

These development outcomes are not achieved in isolation but are shaped by governance and policy integration. Tourism policies, migration policies, and institutional support play a crucial role in enabling diaspora engagement and maximizing its

developmental impact. The proposed recommendation, based on the social practice theory lens, is presented in the following table.

Table 5. The policy recommendations based on the social practice theory

No	Factors	Aims	Policy Focus (The Materials)	Example and Recommendations
1.	The Meaning	Strengthening the meaning of diaspora tourism through cultural and heritage conservation, as well as prevention over commercialisation on the cultural and heritage performance.	Cultural and heritage management and governance.	Include heritage tours, ceremonies, and cultural re-enactments (Mensah, 2015; Sommario et al., 2026).
2.	The Competence	Enhancing the competence through activate social engagement to build the social capital.	Social capital building	Foster diaspora-local partnerships and transnational networks (Li, 2020; Van Leeuwen, 2020)
			Local welfare	Promote job creation, equitable benefits, and cultural sustainability (Ferrari et al., 2022; Tobing et al., 2024)
3.	The Materials	Improving the infrastructure, accessibility, and connectivity.	Infrastructure and travel accessibility development	Simplify visas, offer subsidies, and improve infrastructure (Mahieu, 2019; Yuli et al., 2023).
			Digital tools & data	Use digital platform and data driven strategies to engage diaspora (Varelas & Papageorgiou, 2026b).

Source: Research Data

The table outlines policy recommendations grounded in Social Practice Theory, organised around three core factors shaping diaspora tourism. The first factor, **meaning**, centres on preserving cultural and heritage values as the primary agenda for diaspora tourists visiting their homeland, while also guarding against the over-commercialisation of cultural and heritage resources. The recommended policy direction therefore emphasises robust management and governance of cultural and heritage assets. The second factor, **competence**, seeks to strengthen social engagement and foster social capital through two interrelated policy areas: social capital building and local welfare enhancement. The third factor, **materials**, addresses the need to improve infrastructure, accessibility, and connectivity as essential enablers of diaspora tourism. The policy also functions as tangible materials that shape diaspora tourism practices and drive their broader contribution to local and national development.

Hence, this framework highlights that diaspora cannot be viewed merely as a segment of tourists, but as a strategic resource that contributes to national development. By linking identity-driven experiences, social engagement, and development outcomes, diaspora tourism can function as a transformative mechanism that bridges transnational connections with local development agendas.

CONCLUSION

This study examines the thematic structure of diaspora tourism research and proposes policy recommendations for diaspora tourism development through the lens of Social Practice Theory. The findings indicate three interconnected themes that shape diaspora tourism practices: (1) diaspora tourism related to cultural and heritage identity; (2) social engagement which can lead to social capital formation; and (3) the potential contribution of diaspora tourism to destination and national development. Together, these themes demonstrate that diaspora tourism extends beyond a simple return-to-roots journey and should instead be understood as a multidimensional social practice embedded within cultural, social, and developmental processes.

Drawing on Social Practice Theory, the proposed framework illustrates how meanings associated with heritage and cultural identity interact with competences such as social engagement and social capital formation. These practices are further enabled by material conditions, including infrastructure, accessibility, digital connectivity, and governance support. Through the interaction of these dimensions, diaspora tourism has the potential to contribute to social, economic, and cultural development of a nation. The study therefore argues that diaspora tourism should be positioned as a strategic component of tourism governance and national development policy rather than being treated solely as a niche heritage tourism activity.

In addition, this study contributes to the literature in three important ways. First, it reconceptualizes diaspora tourism as a social practice that links heritage and identity with social engagement and broader development outcomes. Second, it extends the application of Social Practice Theory into tourism governance and policy discussions, offering a more integrative perspective on how diaspora tourism can support sustainable and participatory development agendas. Third, from a methodological perspective, the study demonstrates the value of combining text mining techniques with qualitative coding to generate a more comprehensive understanding of thematic patterns within diaspora tourism research.

Nevertheless, this study has several limitations. The analysis relies primarily on abstract-level data, which may not fully capture the complexity and depth of empirical findings presented in individual studies. In addition, the proposed framework remains conceptual and requires further empirical validation. Future research may therefore investigate the relationships between diaspora tourism, social capital, governance, and development outcomes through qualitative, quantitative, or mixed-method approaches. Further studies may also explore generational differences among diaspora communities, particularly regarding identity negotiation, emotional attachment, and patterns of engagement with the homeland. Such research would provide deeper insight into the evolving and increasingly dynamic nature of diaspora tourism in contemporary transnational societies.

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APPENDIX

Dataset of the 143 articles can be access in this link: <http://bit.ly/47Gc7uO>.

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GOVERNMENT-LED DMO AND COLLABORATIVE GOVERNANCE PRACTICES: CASE STUDY IN LABUAN BAJO, FLORES, INDONESIA

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Article Info	Abstract
<p>Keywords: Government-led DMO, Collaborative governance, Destination management, Participatory leadership, Sustainable tourism, Island tourism destination</p> <p>Received: April 30, 2026</p> <p>Approved: June 2, 2026</p> <p>Published: June 29, 2026</p>	<p>Sustainable tourism in island destinations requires governance approaches that balance ecological preservation, community well-being, and economic development. The present study examines the collaborative governance practices of the Tourism Authority Board in Labuan Bajo, Flores, Indonesia, a government-led Destination Management Organisation (DMO). Employing a qualitative case study design, data were collected through semi-structured interviews with informants representing government agencies, private sector actors, local communities, NGOs, and media, complemented by document analysis and field observations across Komodo National Park, Labuan Bajo, and surrounding areas in Flores, Lembata, and Alor. The findings indicate that the Board effectively coordinates across multiple agencies and jurisdictions, aligning national and regional tourism strategies. However, community stakeholders report limited influence in decision-making process. Mechanisms such as multi-stakeholder workshops, regional forums, and community networks facilitate local participation and adaptive governance. The study proposes a hybrid institutional model integrating participatory governance, cross-sector coordination, and transformational leadership, enhancing policy coherence, stakeholder engagement, and sustainable tourism outcomes. The research demonstrates that government-led DMOs can act as orchestrators of inclusive and adaptive governance, bridging centralized authority with local priorities in complex island tourism destination systems.</p>

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INTRODUCITON

The governance of island tourism destinations requires integrated and adaptive approaches that balance ecological preservation, community well-being, and economic development. In archipelagic contexts such as Indonesia, governance complexity is intensified by geographical fragmentation, overlapping jurisdictions, and uneven institutional capacity. These conditions often lead to coordination failures, environmental degradation, and social inequality when governance systems lack contextual adaptability and participatory mechanisms (Naqvi, Ahmed, & Pervez, 2023; UN Tourism, 2024).

Indonesia, an archipelagic nation comprising more than 17,000 islands, provides a distinctive setting for examining tourism governance. Rich in marine and cultural resources, Indonesia holds significant potential to utilise tourism as a driver of regional development, environmental conservation, and cultural revitalization. Within this context, East Nusa Tenggara (NTT) Province—particularly the islands of Flores, Lembata, and Alor—offers a compelling case study. The region's rich ecological diversity and cultural heritage position it as an emerging hub for sustainable tourism development.

Despite these advantages, tourism development in eastern Indonesia faces persistent structural challenges. Limited infrastructure, fragmented administration, and weak intergovernmental coordination hinder equitable and sustainable growth (World Bank, 2020). The designation of Labuan Bajo as a Key Tourism Destination in 2016, subsequently formalised through Presidential Regulation No. 32/2018, led to the establishment of the Labuan Bajo Flores Tourism Authority Board (BPOLBF) as a government-led DMO. The Board is tasked with managing a defined tourism zone in Parapuar, Labuan Bajo, while coordinating broader development across the Floratama area, which encompasses Flores, Lembata, Alor, and parts of Bima. While BPOLBF addresses coordination challenges inherent in multi-island governance, the centralised nature of its authority risks marginalising local stakeholders if not complemented by collaborative mechanisms (Naqvi et al., 2023).

Recent scholarship emphasises the critical role of destination governance leadership—the capacity of governing authorities to coordinate diverse actors, foster stakeholder participation, and adapt governance strategies to socio-ecological contexts—in achieving sustainable tourism outcomes (de Araujo & Scott, 2018; Wan et al., 2022). Destination Management Organisations (DMOs) have therefore evolved from primarily marketing-oriented institutions into multi-stakeholder governance mechanisms responsible for aligning government agencies, private sector actors, and local communities toward shared development goals. Effective destination governance leadership requires a careful balance between centralised decision-making authority and meaningful participatory engagement, ensuring that strategic priorities do not marginalise local stakeholders while maintaining institutional coherence. Contemporary scholarship further demonstrates that multi-stakeholder participation enhances sustainability performance while strengthening the legitimacy and accountability of policy processes (Panagiotopoulou & Skoultos, 2025).

Within government-led DMOs, transformational leadership serves as a critical governance mechanism that enables collaboration among diverse stakeholders while maintaining strategic direction. Rather than merely coordinating administrative functions,



transformational leaders facilitate the development of shared goals, trust, and collective commitment, which are essential for effective destination governance. Recent tourism governance scholarship increasingly suggests that successful destinations are governed through network-based arrangements in which outcomes depend not only on formal authority but also on the ability of leaders to align the interests of public agencies, private-sector actors, and local communities around a common vision (Beritelli et al., 2021; Nunkoo, 2022).

This perspective aligns closely with collaborative governance theory, which conceptualises leadership as a form of meta-governance that shapes the conditions under which stakeholders engage, cooperate, and mobilise collective resources (Emerson et al., 2012; Torfing et al., 2020). From this viewpoint, transformational leadership contributes to governance effectiveness by fostering principled engagement, strengthening relational trust, and creating shared motivation among actors who may otherwise possess divergent interests. The significance of transformational leadership therefore, lies not simply in inspiring followers but in building the institutional and relational foundations necessary for sustained collaboration.

Studies of destination governance further indicate that transformational leaders enhance stakeholder commitment by articulating long-term strategic visions and encouraging mutual accountability across organisational and administrative boundaries (Bass & Riggio, 2006; Sharma & Kaur, 2023). In complex tourism destinations, where governance responsibilities are distributed across multiple actors, these leadership practices help reduce coordination failures and improve policy coherence. Consequently, the effectiveness of government-led DMOs depends not only on their formal authority but also on their capacity to cultivate trust-based relationships and facilitate cooperation among interdependent stakeholders (Dredge et al., 2021; Wang & Ap, 2022).

Evidence from Indonesian DMO initiatives reinforces this argument by demonstrating that government leadership and participatory governance are not necessarily contradictory. Empirical findings show that structured mechanisms for community involvement in planning and implementation can enhance socio-economic resilience and environmental stewardship while preserving strategic coordination and administrative coherence (Harefa, 2025; Purwanti et al., 2024). Taken together, these studies suggest that transformational leadership functions as a bridging mechanism between centralised governance and collaborative participation, enabling government-led DMOs to balance strategic control with stakeholder empowerment in pursuit of sustainable destination development.

Despite the growing body of literature on collaborative destination governance, empirical research on government-led DMOs in archipelagic contexts remains notably limited. Existing studies have predominantly focused on land-based destinations, metropolitan tourism regions, or geographically integrated destinations where governance structures, stakeholder networks, and administrative jurisdictions are relatively consolidated. Such contexts differ substantially from archipelagic destinations, where geographical fragmentation, inter-island connectivity constraints, overlapping administrative boundaries, and uneven distributions of tourism resources create distinct governance challenges (Rahayu, Damayanti, & Mahardika, 2024; Sekianti & Sucipto, 2024).

More importantly, current empirical studies provide only limited insight into how government-led DMOs coordinate multiple islands while balancing centralised strategic control with local stakeholder participation. Although collaborative governance theory emphasises multi-actor engagement, consensus-building, and shared decision-making, relatively little empirical evidence explains how these governance mechanisms operate in highly dispersed island systems characterised by asymmetrical power relations, varying institutional capacities, and geographically distant stakeholders. Consequently, the applicability of conventional collaborative governance models to island destinations remains insufficiently tested.

From a theoretical perspective, several issues remain underdeveloped. First, the interaction between collaborative governance and destination governance theories has rarely been examined in contexts where a government agency assumes a dominant coordinating role. Existing studies often assume relatively balanced stakeholder relationships, providing limited explanation of how government-led coordination can simultaneously foster collaboration, maintain legitimacy, and avoid excessive centralisation. Second, the concepts of institutional legitimacy, stakeholder trust, and local agency have not been adequately explored within fragmented island governance systems, where physical separation may affect participation, representation, and accountability. Third, limited attention has been paid to the mechanisms through which centralised destination leadership can achieve strategic coherence across multiple islands while accommodating diverse local interests and development priorities.

A significant empirical and theoretical gap remains in understanding governance arrangements that enable government-led DMOs to effectively manage island tourism destinations. While collaborative governance literature in tourism offers important insights, it provides limited explanation of how governance structures, stakeholder configurations, and coordination mechanisms operate in geographically dispersed island systems. Addressing this gap is essential for advancing destination governance theory and for developing context-sensitive understanding of how government-led collaborative governance can enhance destination competitiveness, institutional legitimacy, and sustainable tourism development in archipelagic contexts.

This study addresses this gap by examining BPOLBF's governance leadership across Flores, Lembata, and Alor in implementing collaborative governance principles. A qualitative case study approach is employed, using interviews, document analysis, and field observations to analyse governance processes and stakeholder engagement. Figure 1 depicts the geographic context of East Nusa Tenggara, highlighting the dispersed configuration of Flores, Lembata, and Alor within Indonesia's island tourism landscape.



Figure 1. Island Configuration of Flores, Lembata, and Alor within East Nusa Tenggara (NTT) Province

Recent literature in destination governance indicates that, although governing bodies often perform relatively well in coordinating across governmental and tourism-related actors, they commonly face challenges in promoting inclusive local participation and sustaining meaningful stakeholder engagement. These challenges are increasingly documented in research on sustainable destination governance, particularly regarding the complexity of multi-stakeholder frameworks and the need for greater integration of community voices in decision-making processes (Panagiotopoulou & Skoultzos, 2025; Amni Zarkasyi Rahman et al., 2025). Studies suggest that effective governance of tourist destinations requires institutional arrangements that balance inter-agency coordination with participatory mechanisms that empower local communities and stakeholders to co-shape tourism planning and management (Panagiotopoulou & Skoultzos, 2025).

This study contributes to the literature by proposing a hybrid institutional model for island tourism governance. It addresses the current research gap by positioning DMO performance within archipelagic governance, leadership, and institutional adaptation, offering insights into government-led models that operate across multiple islands rather than single-destination contexts. Practically, the study provides actionable guidance for policymakers and practitioners seeking to balance top-down authority with bottom-up participation in sustainable island tourism development.

Aligned with this aim, this study advances an integrated inquiry into island tourism governance in the Flores–Lembata–Alor region by addressing the following research questions: (1) How is island tourism governance currently structured and implemented across the Flores–Lembata–Alor destinations? (2) How can a government-led DMO model effectively integrate participatory governance, cross-sector coordination, and transformational leadership? and (3) What innovative institutional structure can simultaneously manage a defined tourism zone in Labuan Bajo while coordinating development across island destinations of Flores, Lembata, and Alor? Correspondingly, the study pursues three primary objectives: to analyse the existing governance arrangements of island tourism destinations in the region; to develop

a government-led DMO framework that embeds participatory governance, cross-sector coordination, and transformational leadership; and to examine the institutional innovation required to reconcile centralised authority with inclusive, multi-level stakeholder engagement. By integrating collaborative governance principles within a government-led structure, this research proposes a hybrid institutional model capable of aligning strategic oversight with participatory processes, thereby advancing sustainable tourism development in complex archipelagic systems.

Literature Review

Island Tourism Destination Governance and the Archipelagic Tourism Systems Approach

Island destinations are characterised by ecological sensitivity, spatial fragmentation, and multi-level institutional complexity. These conditions heighten governance challenges, particularly when tourism becomes a primary economic driver (Hall & Scott, 2021; Naqvi, Ahmed, & Pervez, 2023). Contemporary research highlights that effective governance in island tourism requires the integration of economic, environmental, and sociocultural objectives through adaptive, collaborative, and multi-stakeholder arrangements (Sarhan et al., 2024; Shang et al., 2025; Kesuma et al., 2025; Basyar et al., 2025). The archipelagic tourism systems approach provides a holistic lens to understand and manage tourism in multi-island regions. Unlike single-island management frameworks, this approach treats archipelagos as interconnected systems, recognising that islands are linked through mobility, resource flows, socio-economic networks, and shared ecological processes (Meneghello, 2024). By adopting this perspective, governance can move beyond fragmented, island-by-island strategies toward integrated, system-level planning that balances regional development, community engagement, and environmental stewardship.

Naqvi et al. (2023) highlight that sustainable island tourism depends on coordinated actions among government institutions, private actors, and local communities. Similarly, Hall and Scott (2021) argue that adaptive and network-based governance is essential to manage climate uncertainty, fragile ecosystems, and fluctuating tourism markets. Incorporating the archipelagic tourism systems perspective strengthens these arguments by emphasising the importance of inter-island linkages and network resilience, ensuring that policy interventions in one island consider spillover effects on others (Farsari & Prastacos, 2022).

Studies in UNESCO-type destinations demonstrate that collaborative governance strengthens policy coherence and helps navigate overlapping jurisdictions typical of island regions (UN Tourism, 2024; Guo & Li, 2025). Archipelagic systems thinking reinforces this, as governance mechanisms must coordinate not only vertically across national, provincial, and local levels but also horizontally across islands with shared tourism infrastructure, ecosystems, and cultural heritage.

Emerging scholarship has increasingly emphasised the importance of multi-level coordination and community-embedded governance. Farsari and Prastacos (2022) show that coordination between national and local authorities enhances institutional alignment, while Hoarau and Kline (2021) underscore that inter-island network resilience depends on transparent communication and participatory processes. Island resilience frameworks



increasingly recognise participatory governance as a mechanism for embedding community values into decision-making, thereby improving environmental stewardship and long-term development outcomes (Leguía-Cruz et al., 2024; Newig et al., 2023). Integrating an archipelagic systems lens highlights the need for cross-island participatory platforms, which allow communities from different islands to co-create sustainable tourism strategies and share best practices.

In Indonesia, research identifies persistent coordination barriers between national ministries, provincial bodies, and local governments—particularly in dispersed small-island clusters—rooted in overlapping authority, unclear division of responsibilities, and weak harmonisation mechanisms (Surahmi, Kartika Sari, & Supriyanti, 2025; Indrayanti & Rahayu, 2025). Strengthening governance capacities, data-driven planning, and institutional trust is therefore considered essential for improving competitiveness and sustainability in emerging destinations (Dredge et al., 2021; Hall et al., 2022; OECD, 2022; Newig et al., 2023). The archipelagic tourism systems approach adds an additional layer of strategic insight, advocating for regional planning instruments that recognise islands as interdependent nodes within a broader tourism network, rather than isolated units. Destination governance in archipelagic systems is inherently complex due to spatial fragmentation, administrative boundaries, and diverse stakeholder interests across multiple islands. Effective governance therefore requires integrated mechanisms that go beyond single-destination management, emphasising collaboration, coherence, and system-wide accountability. Table 1 synthesises key elements of destination governance that are particularly relevant to archipelagic contexts, drawing from recent scholarly perspectives. These elements collectively illustrate how governance structures can support sustainable, inclusive, and coordinated tourism development across interconnected islands.

Table 1. Elements of Destination Governance in Archipelagic Systems

Aspect	Explanation	Example
Multi-sectoral Actors	Inclusion of government, private sector, communities, and academia enhances participatory governance and collaboration in tourism development (Aribowo et al., 2022; Indrianti et al., 2024; Newig et al., 2023).	Joint management forums and multi-agency planning across islands.
Participation	Multi-stakeholder engagement increases legitimacy, co-ownership, and cross-sector engagement in destination planning (Meliana, Geusan Akbar, & Kania, 2025).	Inter-island community consultations on tourism plans.
Transparency	Collaborative governance frameworks build accountability and trust between actors by formalizing roles and shared responsibilities (Ansell & Gash, 2023).	Public release of governance and financial reports covering all islands.
Coordination	Reduces overlapping authority, enhances synergy, and connects islands (Farsari et al., 2025).	Multi-level and inter-island meetings between agencies.
Strategic Vision	Ensures long-term policy coherence and system-level planning (Epifani & Valente, 2023).	Archipelagic tourism master plans aligned with national and regional goals.
Monitoring & Evaluation	Assesses programme effectiveness and inter-island impacts (Panagiotopoulou & Skoultzos, 2025)	Annual review of destination performance across multiple islands.



Aspect	Explanation	Example
Legal Framework	Formal collaborative mechanisms harmonise regulations, integrate actors, and provide legitimacy for cross-sector decision making (Meliana, Geusan Akbar, & Kania, 2025).	Regional conservation and tourism regulations applicable to the archipelago.

Source: Researcher, 2026

As shown in Table 1, destination governance in archipelagic systems depends on the interaction of institutional, participatory, and strategic dimensions rather than isolated policy instruments. Multi-sectoral involvement, transparency, and coordination strengthen trust and reduce fragmentation, while strategic vision and monitoring ensure long-term coherence across islands. Supported by an enabling legal framework, these governance elements provide a foundation for managing archipelagic destinations as integrated systems, allowing tourism development to balance competitiveness, sustainability, and equity across island communities.

Indeed, destination governance is evolving toward network-based, system-oriented models that emphasise collaboration, transparency, and long-term strategic vision. For archipelagic regions, governance must bridge fragmented jurisdictions and link ecological protection, community participation, and regional development (Naqvi et al., 2023). The archipelagic tourism systems approach enriches this perspective by highlighting the interdependence of islands, promoting coordinated governance, and supporting resilient tourism networks that can adapt to socio-environmental and market fluctuations.

Government-Led DMO: Integrating Participatory Governance, and Cross-Sector Coordination

The role of DMOs has transformed from promotional agencies into strategic governance institutions that coordinate stakeholders, align policies, and manage destination-wide sustainability and competitiveness (UN Tourism, 2021). Contemporary analyses (2020–2025) have increasingly highlighted the importance of hybrid, government-led DMOs capable of integrating state authority with participatory governance. OECD (2022) and Naqvi et al. (2023) argue that hybrid or government-led DMOs are more effective in developing destinations where institutional capacity varies and market coordination is weak. Case studies in Southeast Asian and island contexts further show that hybrid governance arrangements in destination management can bridge national priorities and local needs while mitigating bureaucratic fragmentation (Putra, 2024; Rahaju et al., 2026).

Wan, Li, and Lau (2022) demonstrate that public–private partnerships enhance resilience during crises, especially when tourism-dependent islands face shocks such as pandemics or natural disasters. However, government-led DMOs continue to face challenges including overlapping mandates, siloed bureaucracy, and limited local participation, particularly where institutional roles are unclear and coordination mechanisms remain weak (Kemenparekraf, 2020; Kusumah, 2024). The contemporary literature identifies five governance dimensions that determine DMO effectiveness:

- Institutional integration across central, provincial, and local agencies (UN Tourism, 2024);



- Cross-sector coordination with environmental, transport, and creative economy sectors (Kemenparekraf, 2023);
- Integrated funding models combining government budgets with private and donor financing (OECD, 2022);
- Strategic alignment with national, regional, and local development frameworks (Guo & Li, 2025);
- Multi-stakeholder involvement through inclusive participation mechanisms (Nicholas et al., 2024).

Government-led DMOs have traditionally functioned as central integrators, orchestrators, and enablers of tourism governance through hierarchical coordination mechanisms. In this model, public authorities assume primary responsibility for aligning stakeholders, formulating policy, and directing tourism development processes. However, in dispersed and culturally embedded island destinations such as Flores, Lembata, and Alor, the limitations of hierarchical governance become increasingly evident due to fragmented geographies, strong local customary institutions, and uneven administrative reach. As a result, there is a gradual shift toward adaptive network governance, in which coordination is distributed across multiple actors and legitimacy is co-produced through collaboration rather than centralised authority.

The growing recognition of collaborative and adaptive governance approaches has prompted scholars and practitioners to explore institutional arrangements that extend beyond conventional government-led DMOs. While DMOs remain important mechanisms for strategic coordination, destination branding, and policy implementation, their effectiveness may be constrained in contexts where local participation, community ownership, and place-specific knowledge are critical to tourism development outcomes. This challenge has stimulated interest in governance models that can complement formal state-led structures while enhancing stakeholder engagement at the local level.

Within this evolving governance landscape, the Tourism Management Organisation (TMO) prototype initiated by local actors in Flores—facilitated through the Swiss State Secretariat for Economic Affairs (SECO) tourism development project in collaboration with the Ministry of Tourism of the Republic of Indonesia between 2015 and 2019—provides a notable example of an alternative yet complementary governance arrangement. Rather than functioning as a substitute for government-led DMOs, TMOs emerged as intermediary governance platforms that bridge formal policy structures and community-level tourism management. Their primary role is to facilitate horizontal coordination among village communities, tourism awareness groups (Pokdarwis), customary leaders, local entrepreneurs, and other destination stakeholders who are often insufficiently represented within formal government-led governance processes.

In practice, TMOs perform several functions traditionally associated with destination governance, including stakeholder coordination, conflict mediation, collective planning, knowledge sharing, and the mobilisation of local resources. However, unlike DMOs, whose authority is often derived from formal governmental mandates, TMOs rely primarily on negotiated legitimacy, social trust, and voluntary collaboration. Their capacity to influence

tourism development therefore stems less from hierarchical authority and more from their ability to build consensus, strengthen local networks, and facilitate collective action among diverse actors. This governance logic reflects a shift from command-and-control approaches toward more relational and participatory forms of destination management.

The significance of the TMO model extends beyond its operational role in tourism development. Conceptually, it illustrates how destination governance can evolve from a predominantly state-centric system toward a hybrid governance arrangement in which authority, responsibility, and decision-making are distributed across multiple actors and institutional levels. Rather than concentrating governance functions within a single organisation, hybrid arrangements combine the strategic leadership and regulatory capacity of government-led DMOs with the participatory and locally embedded capabilities of community-based organisations such as TMOs. This creates opportunities for more responsive and context-sensitive governance while maintaining broader strategic coherence.

From this perspective, the Flores TMO experience represents more than a localised institutional innovation; it provides empirical insight into the broader evolution of destination governance toward polycentric systems. Such systems are characterised by multiple centres of decision-making that interact through cooperation, negotiation, and mutual adjustment rather than strict hierarchical control. Tourism management becomes embedded within local social structures, while state actors continue to provide strategic direction, policy support, and institutional coordination. The TMO case therefore offers an important illustration of how hybrid governance arrangements can reconcile centralised destination objectives with community participation and local agency, contributing to more adaptive, legitimate, and sustainable tourism governance outcomes.

The Significance of Collaborative and Transformational Leadership

Destination leadership is a critical determinant of the effectiveness of government-led DMOs, particularly within complex, multi-actor and multi-scalar tourism systems (Scott et al., 2019; Bellini et al., 2017). Contemporary scholarship converges around two complementary leadership paradigms—collaborative leadership and transformational leadership—which together provide the relational and strategic capacities required to govern fragmented and dynamic destination environments (Ansell & Gash, 2020; Bass & Avolio, 1994; Dredge, 2016).

Collaborative leadership emphasises trust-building, shared accountability, and joint problem-solving among governmental, private-sector, and community stakeholders, enabling collective action in complex governance settings (Ansell & Gash, 2020; Chrislip & Larson, 1994; Dredge, 2016). By fostering sustained dialogue and coordinated action, it reduces institutional fragmentation and strengthens participatory governance in contexts characterised by dispersed authority and competing interests (Ansell & Gash, 2008; Harrison & DeVere, 2022; Wan et al., 2022; Yuldosheva, 2025). In this capacity, collaborative leadership operates as a coordination architecture—facilitating cross-sector alignment and enhancing coherence across governance levels.

Transformational leadership, in contrast, provides strategic direction through the articulation of a long-term vision, institutional reform, and the empowerment of stakeholders



to co-create sustainable destination futures (Nguyen, Wechtler, & Lai, 2025; Lestari, 2025). Emerging empirical evidence indicates that transformational leadership strengthens adaptive capacity, innovation, and strategic learning—capabilities that are indispensable for destinations confronting environmental uncertainty, socio-economic transitions, and market volatility (SEGITTUR & Andrades, 2024).

Within government-led DMOs, these leadership paradigms should not be viewed as competing alternatives but as mutually reinforcing dimensions of effective governance. The ability to balance top-down strategic authority with bottom-up participatory engagement is critical for orchestrating multi-level governance, mitigating institutional silos, and ensuring meaningful stakeholder inclusion (Meliana et al., 2025; Santos & Rodrigues, 2025; Waligo & Ruhanen, 2024). In this sense, destination leadership functions as an institutional integrator—aligning actors, mobilising resources, and steering long-term destination transformation toward sustainable and resilient outcomes.

Table 2 contrasts these two leadership models, clarifying their distinct orientations, mechanisms, and implications within government-led DMOs.

Table 2. Collaborative and Transformational Leadership in Government-led DMOs

Aspect	Collaborative Leadership	Transformational Leadership
Focus	Trust-building, co-production, shared responsibility	Vision-setting, innovation, institutional change
Mechanisms	Dialogue, mutual learning, stakeholder engagement	Empowerment, inspiration, strategic direction
Strengths	Enhances legitimacy, inclusion, resilience	Drives long-term change, innovation, adaptability
Challenges	Time-intensive, requires consensus	Risk of over-reliance on individual leaders
Government Role	Facilitator, mediator, network orchestrator	Visionary, strategic agent, innovation champion

Source: Researcher, 2026

As summarised, collaborative and transformational leadership serve complementary functions in government-led DMOs rather than mutually exclusive roles. Collaborative leadership strengthens trust, inclusiveness, and shared ownership among diverse stakeholders, while transformational leadership provides strategic direction and drives systemic change. When effectively combined, these leadership approaches enable DMOs to balance participatory governance with visionary policy-making, enhancing both short-term coordination and long-term destination transformation. Simultaneously, collaborative and transformational leadership foster adaptive governance, enabling destinations to respond to ecological, social, and economic challenges while advancing long-term sustainability (Wan et al., 2022; SEGITTUR & Andrades, 2024).

METHODOLOGY

Labuan Bajo is a small coastal town located on the western tip of Flores Island, East Nusa Tenggara, Indonesia. Historically it is a fishing village that has rapidly transformed into the primary gateway for tourism to Komodo National Park, a UNESCO World Heritage site



known for the Komodo dragon, rich marine biodiversity, and pristine terrestrial landscapes. The town has experienced significant tourism-driven growth, including the expansion of hotels, resorts, and transportation infrastructure.

The research also covers Komodo National Park and the surrounding areas in Flores, Lembata, and Alor, which represent varying levels of tourism development and governance challenges. These areas collectively provide a rich context for studying destination governance, as they face ecological pressures, land-use conflicts, and social tensions arising from rapid tourism growth. Local communities in these regions experience both economic opportunities and challenges linked to modernisation, while multiple stakeholders—including government agencies, private-sector actors, NGOs, and media—engage in complex, multi-scalar governance arrangements.

Concurrently, Labuan Bajo, Komodo National Park, and the surrounding island clusters across western Flores, eastern Flores, Lembata, and Alor constitute a strategically significant spatial assemblage of emerging island destinations in eastern Indonesia. As illustrated in Figure 2, Labuan Bajo, located on the western tip of Flores, functions as the primary gateway hub and service node, concentrating tourism infrastructure such as accommodation, transport access (including Komodo International Airport), and visitor services that connect domestic and international tourist flows into the broader archipelagic landscape. From this gateway, tourism circulation extends westward and northward into the core conservation and attraction zone of Komodo National Park—encompassing Komodo Island, Rinca Island, Padar Island, and surrounding marine protected areas—where high-value ecological assets, including endemic species such as the Komodo dragon and globally significant coral reef systems, generate strong conservation-tourism interface pressures.



Figure 2. Map of the Labuan Bajo–Komodo National Park

Beyond this core, the destination system expands eastward and northeastward toward Flores, Lembata, and Alor, forming a discontinuous yet functionally interconnected seascape of secondary destinations, cultural villages, dive sites, and emerging community-based tourism



areas. This spatial configuration reflects a multi-scalar tourism landscape characterised by a dominant gateway (Labuan Bajo), a high-protection conservation nucleus (Komodo National Park), and peripheral island networks that absorb tourism diffusion while retaining strong customary governance structures and lower-density visitation patterns. Within this uneven spatial structure, sustainable tourism management, multi-stakeholder coordination, and adaptive destination leadership become essential to reconcile intensified tourism growth pressures in the core zones with ecological carrying capacity limits and socio-cultural integrity across the peripheral island communities.

This study employed a qualitative descriptive case study design to examine tourism governance practices in the Labuan Bajo–Flores destination under the government-led DMO model implemented by the Flores Tourism Authority Board (BPOLBF). A qualitative case study approach was considered appropriate because it enables an in-depth exploration of governance processes within their real-world context, particularly in destinations characterised by complex stakeholder interactions, institutional diversity, and evolving policy environments (Braun & Clarke, 2022; Naeem et al., 2023). The Labuan Bajo–Flores destination provides a strategically significant case due to its archipelagic geography, ecological sensitivity, social vulnerability, and designation as a national priority tourism destination. A single-case design was selected to generate contextually rich insights with broader theoretical relevance for destination governance in fragmented island settings.

Research was conducted across key tourism sites, including Komodo National Park, Labuan Bajo, and selected areas in Flores, Lembata, and Alor. These locations were chosen because they represent varying levels of tourism development, ecological pressure, community participation, and governance complexity. Data collection was undertaken between January and April 2025 using multiple sources of evidence to support methodological triangulation and enhance the credibility of findings.

Three complementary methods were employed. First, document analysis examined policy and planning documents, including the *Labuan Bajo Flores Tourism White Paper* (2024), the BPOLBF Strategic Plan 2025–2029, relevant government regulations, institutional reports, and selected academic literature. These materials provided insights into formal governance structures, policy objectives, and institutional arrangements. Second, field observations were conducted at tourism and community sites to assess governance-related dynamics, including ecological pressures, community responses to land-use changes, stakeholder interactions, and tensions between tourism-driven modernisation and social inclusion. Observations were carried out at different times of day to capture variations in tourism activity, community engagement, and environmental conditions. Third, semi-structured interviews were conducted with 21 key informants representing government agencies, private-sector tourism actors, local communities, non-governmental organisations, and media organisations. Interviews explored perceptions of institutional coordination, collaborative governance, stakeholder participation, leadership practices, and challenges associated with sustainable tourism development.

Data from documents, observations, and interviews were analysed iteratively through thematic analysis to identify recurring patterns, relationships, and governance mechanisms

across stakeholder groups. The integration of multiple data sources enabled triangulation between policy intentions, observed practices, and stakeholder experiences, providing a comprehensive understanding of tourism governance within a multi-actor and multi-scalar destination system.

Ethical considerations were incorporated throughout the research process. Participation in interviews was voluntary, and all participants were provided with information regarding the purpose of the study, the use of research data, and their right to withdraw at any stage without consequence. Informed consent was obtained from all interview participants prior to data collection. To protect confidentiality, personal identifiers were removed during data analysis and reporting, and interview responses were anonymised where appropriate. The study adhered to accepted principles of research ethics concerning informed consent, confidentiality, privacy, and responsible data management.

To complement documentary and observational data, qualitative insights were gathered from 21 key informants representing government agencies, private-sector tourism actors, local communities, non-governmental organisations (NGOs), and media organisations. Data collection focused on stakeholders directly involved in tourism planning, destination management, community engagement, and policy implementation, enabling the study to capture diverse perspectives on governance processes across multiple institutional levels.

Documentary analysis and field observations were conducted between January and April 2025, while interviews and written responses were collected between March and April 2025. Semi-structured interviews were conducted either in person or through WhatsApp-based communication, depending on participants' availability and geographic location. Face-to-face interviews took place at government offices, community centres, and selected field sites, while WhatsApp interviews allowed engagement with participants located in geographically dispersed areas across the destination. The semi-structured format enabled the researcher to explore key themes while allowing participants to elaborate on issues emerging from their experiences and organisational roles. Interview discussions focused on stakeholder collaboration, institutional coordination, leadership practices, decision-making processes, and local participation in tourism governance.

To supplement interview data, several participants provided written qualitative responses through Google Forms. These responses followed the same thematic framework as the interview protocol and were used to gather additional reflections from stakeholders who were unavailable for synchronous interviews. Accordingly, data obtained through Google Forms are treated as supplementary written qualitative responses rather than semi-structured interviews.

Informants were selected using purposive sampling, with participants chosen based on their direct involvement in tourism governance, destination planning, policy implementation, or community-based tourism initiatives. Selection criteria also emphasised participants' ability to provide informed perspectives on inter-organisational collaboration, multi-level governance, and stakeholder engagement. The final sample consisted of 21 informants, including 14 males and 7 females, ensuring representation across government, private-sector, community, civil society, and media stakeholders. To capture the complexity of destination governance,



participants were drawn from local, district, provincial, and destination-management levels, thereby incorporating perspectives from both policy-making and operational contexts.

This sampling strategy was designed not to achieve statistical representation but to obtain information-rich cases capable of illuminating governance dynamics within the Labuan Bajo–Flores tourism destination. The diversity of stakeholder backgrounds, organisational roles, and geographical locations enhanced the breadth of perspectives captured and strengthened the study’s capacity to examine tourism governance as a multi-actor and multi-scalar process.

Table 3 presents a detailed overview of the informants, including stakeholder category, institutional role, gender, and rationale for inclusion. The 21 informants were purposively selected to represent the principal stakeholder groups involved in tourism governance, including government agencies, private-sector actors, local communities, NGOs, and media organisations. The sample was designed to capture diverse perspectives across policy, operational, and community levels, thereby reflecting the multi-actor and multi-scalar nature of tourism governance in the Labuan Bajo–Flores destination. Rather than seeking statistical representativeness, participant selection focused on identifying information-rich cases capable of providing detailed insights into institutional coordination, stakeholder collaboration, and local participation in tourism development.

The adequacy of the sample was assessed through theoretical saturation. During data collection and preliminary analysis, interview and written-response data were reviewed iteratively to identify recurring themes and governance patterns. Saturation was reached when additional data no longer generated substantially new insights regarding leadership, coordination mechanisms, stakeholder engagement, and destination management. The credibility of the findings was further enhanced through triangulation across multiple stakeholder groups and data sources, including interviews, documentary evidence, and field observations, enabling the validation of emerging themes and reducing dependence on any single source of information.

Table 3. Overview of The Informants

#	Stakeholder Type	Position / Role	Gender	Reason for Inclusion
1	Government	Head/Director of BPOLBF Planning Unit	M	Policy and strategic planning insights
2	Government	Tourism Development Officer, Labuan Bajo	F	Local implementation perspective
3	Government	Environmental Conservation Officer, Komodo NP	M	Ecological monitoring knowledge
4	Government	Provincial Tourism Representative	M	Multi-district governance coordination
5	Private Sector	Manager, Komodo Island Tour Operator	M	Operational & economic perspective
6	Private Sector	Hotel Manager, Labuan Bajo	F	Tourism infrastructure & local economy
7	Private Sector	Travel Agency Owner	M	Local tour coordination & stakeholder engagement
8	NGO	Environmental NGO Project Manager	M	Conservation initiatives & advocacy
9	NGO	Community Development Officer	F	Grassroots participation in tourism



#	Stakeholder Type	Position / Role	Gender	Reason for Inclusion
10	Community	Village Head, Flores	M	Land-use and social issues representation
11	Community	Community Tourism Leader, Manggarai	F	Local tourism operations and participation
12	Community	Fishermen Association Chair, Komodo	M	Socio-economic and ecological impacts
13	Community	Cultural Group Leader, Flores	F	Traditional practices & community voice
14	Media	Local Journalist	M	Media coverage & public communication
15	Media	Tourism Blogger / Influencer	F	Public perception and awareness
16	Government	Local Planning Bureau Officer	M	Data and policy analysis
17	Private Sector	ITDC Manager, Labuan Bajo	M	Tourism business perspective
18	NGO	NGO Research Officer	M	Monitoring collaboration & participation
19	Community	Fisherman Group Representative, Flores	M	Impacts of tourism on agriculture
20	Community	Women’s Cooperative Leader, Labuan Bajo	F	Gender and social inclusion in tourism
21	Government	Office of Komodo National Park	M	Carrying Capacity Policy

Source: Researcher, 2025

Data were analysed using Braun and Clarke’s reflexive thematic analysis (RTA) approach (Braun & Clarke, 2022; Naeem et al., 2023). The analysis involved iterative familiarisation with interview transcripts, written responses, field notes, and documentary materials, followed by the generation of initial codes informed by both the empirical data and the study’s conceptual focus on destination governance, collaborative governance, leadership, and stakeholder participation. Codes were subsequently organised into broader themes, which were reviewed and refined to identify recurring patterns related to governance coordination, policy implementation, stakeholder collaboration, and local participation. The resulting thematic framework informed the development of an analytical narrative linking empirical findings to broader theoretical debates on tourism governance in archipelagic destinations. To enhance the trustworthiness of the findings, methodological triangulation was undertaken across interviews, documents, and field observations, while member checking was conducted with selected participants to validate preliminary interpretations. Consistent with qualitative case study research, the study aims for analytical rather than statistical generalisation, contributing contextually grounded insights to the broader literature on destination governance (Coombs, 2022).

Direct engagement in fieldwork further provided grounded, experiential insights into relational governance dynamics. Observations revealed persistent tensions between national development priorities and local community concerns, underscoring that effective destination management requires attention not only to tourism growth, but also to participation, social equity, and ecological sustainability. Accordingly, this study advocates for a context-sensitive and inclusive governance approach under BPOLBF, emphasising multi-stakeholder collaboration, adaptive management, and strategic destination leadership.



FINDINGS AND DISCUSSION

Governance and Collaborative Arrangements in Island Tourism Destinations

The governance of island tourism destinations in eastern Indonesia involves a complex, multi-scalar network of actors. At the regional level, the Board for the Development of Labuan Bajo–Flores Tourism (BPOLBF) serves as the central coordinating agency, responsible for aligning policies, implementing strategic plans, and overseeing sustainable tourism initiatives. Key formal instruments include the *Labuan Bajo Flores Tourism White Paper (2024)*, the BPOLBF Strategic Plan (2025–2029), and relevant provincial and district regulations. These documents define the roles, responsibilities, and procedural mechanisms for inter-agency collaboration.

The Board operates as a boundary-spanning organisation, mediating between central and regional authorities while seeking to align national tourism strategies with local implementation priorities. Such positioning reflects collaborative and multi-level governance principles in destination management (Dredge et al., 2021; Zhang & Ryan, 2024). At the same time, fragmented coordination across districts and uneven stakeholder participation constrain institutional legitimacy and policy coherence. Community actors—including village officials, customary leaders, and local tourism representatives—report limited influence in decision-making processes, suggesting that formal inclusion does not necessarily translate into meaningful empowerment (Tolkach & King, 2022). Strengthening inter-jurisdictional coordination and participatory mechanisms is therefore essential for building trust, enhancing adaptive capacity, and achieving integrated destination governance (Sigala, 2023).

Interviews with 21 key informants revealed differentiated experiences of collaboration across the governance network. Government officials, representatives from state-owned enterprises, industry associations, and national media generally described the Board's collaborative arrangements as effective, noting that formalised meetings, joint planning sessions, and working groups facilitated policy alignment, improved communication, and provided predictable engagement. Conversely, community-based informants—including local tourism associations and customary leaders—perceived collaboration as still developing and not fully inclusive, citing weak inter-regional coordination, limited structured forums, and occasional misalignment between local priorities and regional planning. These findings suggest power asymmetries, where actors with institutional authority benefit more, while local communities face barriers to substantive decision-making (Ansell & Gash, 2020; Emerson & Nabatchi, 2022). The governance network was found to encompass a variety of actors with distinct roles and collaboration mechanisms, summarized in Table 4.

Table 4. Variety of Actors, Roles, and Collaboration Mechanism

Actor Category	Specific Actors	Roles Responsibilities	& Collaboration Mechanisms	Observed Challenges / Notes
Government	BPOLBF, provincial tourism office, district planning bureaus	Policy formulation, strategic planning, licensing, monitoring tourism activities, coordinating stakeholders	Multi-stakeholder meetings, working groups, joint planning sessions	Community representatives report limited inclusion in decision-making; coordination across districts sometimes weak
Private Sector	Tour operators, hotels/resorts, industry associations	Service delivery, destination promotion, investment, compliance with regulations	Engagement in Board-led forums, public-private partnerships	Smaller operators sometimes excluded from formal planning; influence concentrated among larger businesses
NGOs/Civil Society	Environmental NGOs, community development organisations	Conservation programmes, community empowerment, advocacy for sustainable practices	Project-based collaboration, consultation with BPOLBF and local government	Participation depends on project funding and access; limited influence in high-level policy decisions
Community Actors	Village officials, customary leaders, local tourism associations, cooperative groups	Local tourism operations, cultural programming, advocacy for community interests	Consultation in meetings, ad hoc participation in Board events	Often face barriers to formal decision-making; inclusion in planning forums limited; engagement usually reactive rather than proactive
Media / Information Actors	Local journalists, tourism bloggers, national media	Reporting, public awareness, influencing perception of governance	Information exchange via press releases, media briefings, Board communications	Limited capacity to influence internal decision-making; primarily serve as external observers and communicators

Source: Researcher, 2025

A core enabling factor in DMO performance is communication. Effective communication supports coordination, trust-building, and information sharing, while gaps can lead to fragmented implementation and weak stakeholder ownership. Table 5 provides an overview of key positive observations and persistent challenges in DMO communication practices:

Table 5. Strengths and Challenges of DMO Communication Practices

Theme	Positive Observations	Challenges
Institutional Role	Effective mediation between central and regional governments	Limited authority in peripheral regions
Stakeholder Involvement	Multi-sector actor inclusion	Uneven community participation and weak ownership
Programme Execution	Improved inter-agency communication	Lack of structured, routine coordination
Information & Media	Centralised data and promotion	Limited local media engagement

Source: Researcher, 2025



As illustrated in Table 5, DMOs demonstrate strengths in institutional mediation, inter-agency communication, and centralised information management, but these are constrained by structural and participatory challenges, including limited authority in peripheral regions, uneven stakeholder engagement, and insufficiently routinised coordination. Addressing these communication challenges is essential for strengthening DMO effectiveness, enhancing local ownership, and ensuring more inclusive and coherent destination governance.

The Labuan Bajo–Flores case illustrates the paradox of formal coordination with limited grassroots inclusion. While the Board demonstrates strong institutional mediation, constraints remain in participatory inclusion, inter-regional integration, and local legitimacy. Sustainable governance in archipelagic contexts requires institutionalised multi-actor engagement, adaptive mechanisms, and equitable power-sharing. Establishing recurring stakeholder forums, participatory monitoring, and transparent benefit-sharing can strengthen the Board as a transformative DMO, aligning national tourism objectives with socio-ecological sustainability across Flores, Lembata, and Alor.

Developing a Government-Led DMO Framework: Participatory Governance, Cross-Sector Coordination, and Transformational Leadership

Field research across Komodo National Park, Labuan Bajo, and surrounding areas in Flores, Lembata, and Alor reveals that the Board for the Development of Labuan Bajo–Flores Tourism (BPOLBF) functions as a multi-destination coordinating body responsible for aligning policies, integrating strategic planning, and facilitating tourism development across multiple administrative jurisdictions. Interviews with 21 key informants, including government officials, private-sector actors, community leaders, and NGOs, highlight differentiated experiences of the Board’s governance performance across three interrelated dimensions: participatory governance, cross-sector coordination, and transformational leadership.

Participatory governance is perceived as emergent but uneven. Community informants reported limited yet increasing opportunities to engage in tourism planning processes, primarily through consultative forums, working groups, or project-based involvement. Village leaders and customary representatives described participation as largely advisory rather than decision-making in nature, while NGO actors emphasised that although community engagement exists in implementation phases, structured mechanisms for continuous feedback, monitoring, and co-evaluation remain underdeveloped. This indicates that participatory governance is still in a formative stage, with inclusion primarily occurring through consultation rather than institutionalised co-governance arrangements.

Cross-sector coordination is more strongly institutionalised. Government officials and industry stakeholders consistently noted that the Board plays a central role in mediating between provincial and district authorities, aligning national tourism priorities with regional development strategies, and facilitating inter-agency collaboration. Private-sector actors highlighted the value of multi-stakeholder forums and joint planning sessions, which improve coordination across tourism operators, infrastructure developers, and government agencies. However, informants also noted access asymmetries, particularly for smaller enterprises and peripheral communities, which often remain outside formal coordination platforms.



Transformational leadership emerged as a key enabling mechanism underpinning the Board's governance functions. Empirical evidence indicates that leadership practices extend beyond administrative coordination to include strategic visioning, mediation, and relational trust-building across fragmented governance levels. Board leaders consistently frame Labuan Bajo–Flores as a unified destination system requiring integrated management across ecological, economic, and social domains. Government officials described instances where leaders actively reframed conflicts between conservation authorities and tourism developers by shifting negotiations toward shared concerns such as carrying capacity, long-term destination branding, and sustainability objectives.

Field evidence further shows that transformational leadership is operationalised through both formal and informal mechanisms. These include regular multi-stakeholder coordination forums, ad hoc mediation during inter-organisational disputes, and site-level engagement visits to emerging tourism zones such as Parapuar. Private-sector actors characterised Board officials as “boundary spanners” who translate policy objectives into operational terms while simultaneously communicating industry constraints back to government institutions. Community informants emphasised that trust is strengthened through direct engagement in villages, informal dialogue with customary leaders, and follow-up actions on grievances, which collectively reinforce perceptions of accountability and relational legitimacy.

Nevertheless, the data also reveal structural constraints that limit the full realisation of transformational leadership. Although Board leaders are effective in facilitating dialogue and generating temporary consensus, their capacity to enforce decisions across decentralized administrative jurisdictions remains limited. This produces a governance dynamic in which trust and coordination are continuously negotiated rather than institutionally secured. Smaller community groups, in particular, remain unevenly integrated into leadership-mediated processes, reflecting persistent asymmetries in access and influence.

Observational data and document analysis, including the *Labuan Bajo Flores Tourism White Paper* (2024) and the BPOLBF Strategic Plan (2025–2029), corroborate these findings by demonstrating the Board's role in enabling integrated destination planning across Flores, Lembata, and Alor. Designated tourism zones such as Parapuar illustrate how governance principles are operationalised at site level, balancing ecological sensitivity, community interests, and tourism development objectives.

Overall, the findings suggest that effective government-led DMO frameworks depend on the convergence of participatory governance, cross-sector coordination, and transformational leadership. While centralised coordination provides strategic coherence, governance effectiveness ultimately depends on relational leadership practices that build trust, facilitate mediation, and enable adaptive collaboration. In this sense, transformational leadership functions less as hierarchical control and more as a network-enabling mechanism that sustains cooperation across fragmented institutional and geographical landscapes.

Institutional Innovation to Reconcile Centralised Authority with Inclusive, Multi-Level Stakeholder Engagement

The Labuan Bajo–Flores case exemplifies the opportunities and challenges of a government-led, authority-based destination management model. The Board for the Development of Labuan Bajo–Flores Tourism (BPOLBF) was established under Presidential Regulation No. 32/2018, operating under the Ministry of Tourism, with a mandate to accelerate national tourism development in super-priority destinations. Its dual functions include: (a) authoritative management of a 400-hectare area in Parapuar Forest, West Manggarai, and (b) coordination across 11 districts in Flores, Lembata, Alor, and Bima (the Floratama region). While the authoritative function grants the Board full control over planning, development, and investment licensing within Parapuar, the coordinating role involves harmonising policies, strategies, and cross-sector collaboration with local governments, communities, and private actors. The interviews examined issues of collaboration, institutional coordination, and participatory practices. The qualitative findings are summarised in Table 6.

Table 6. Actor, Key Insight and Observed Challenges

Category	Number of Informants	Key Insights on Collaboration	Observed Challenges
Government Agencies	6	Noted effective cross-district coordination and alignment with national tourism policies. Emphasized structured planning meetings.	Coordination is sometimes fragmented across districts; community input limited.
Private Sector	4	Highlighted participation in joint planning sessions and policy dialogues. Recognised Board’s role in promotional campaigns.	Smaller businesses reported limited access to decision-making forums; larger operators dominate influence.
Community Representatives	6	Provided feedback on tourism village programmes and local development initiatives. Expressed desire for more structured participation.	Felt largely excluded from substantive decision-making; engagement mostly consultative.
NGOs/Civil Society	3	Participated in conservation and capacity-building initiatives; supported adaptive governance projects.	Limited influence in high-level planning; dependent on project-based engagement.
Media	2	Observed DMO communication and policy dissemination; reported on stakeholder interactions.	Limited capacity to influence governance; often external observers rather than participants.

Source: Researcher Analysis (2026)

Key qualitative insights from the interviews reveal divergent perceptions of collaboration across stakeholder groups. Informants from government, the private sector, and national media generally perceive collaboration as effective, emphasising improved communication, stronger policy alignment, and more predictable patterns of engagement. In contrast, community representatives, local leaders, and local media view collaboration as not yet optimal, citing weak inter-regional coordination, limited stakeholder inclusion, and the absence of structured participatory forums. Power asymmetries remain evident: actors with formal authority—such as government officials and state-owned enterprises—benefit from

established decision-making structures, while local stakeholders continue to face barriers to meaningful participation (Andhika, 2025; Ginanjar et al., 2024; Lestari, 2025).

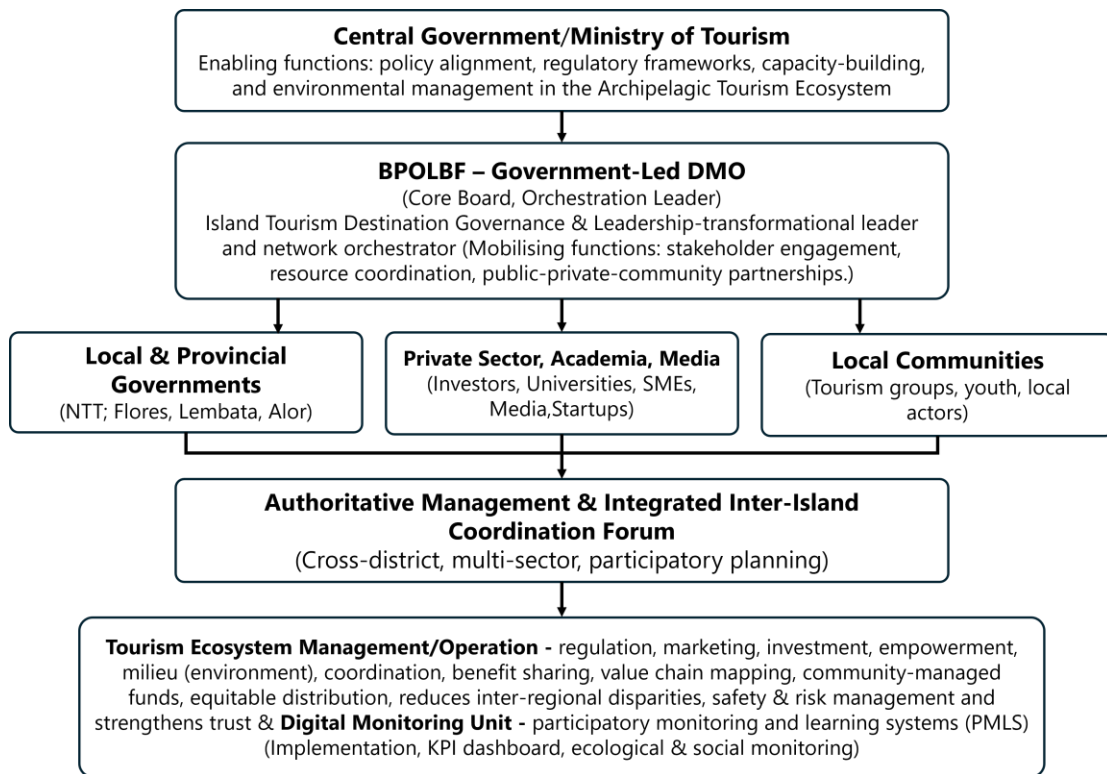
Despite these challenges, participatory governance and adaptive practices are beginning to emerge. The Board has introduced dialogical mechanisms—such as Regional Head Communication Forums, multi-stakeholder workshops, and strengthened community networks—to better incorporate local perspectives and ease tensions between national priorities and community interests.

The findings further suggest that institutional innovation is essential for reconciling centralised authority with inclusive, multi-level stakeholder engagement. In practice:

- Participatory governance mechanisms provide structured yet flexible channels for community input, enabling the co-production of local tourism initiatives while maintaining strategic oversight.
- Cross-sector coordination facilitates alignment across national, provincial, and district levels, while also harmonising efforts among government, private sector, and civil society actors.
- Transformational leadership is reflected in the Board's ability to orchestrate diverse stakeholders, fostering trust, a shared vision, and adaptive decision-making processes. Leaders' relational legitimacy empowers communities and strengthens participatory monitoring, thereby supporting more equitable benefit sharing (Yuli et al., 2025; Sutrisno et al., 2025; Andrades & SEGITTUR, 2024).

Simultaneously, these mechanisms allow the Board to balance authoritative control in core tourism zones with inclusive collaboration across multiple islands, providing a model for sustainable, equitable, and adaptive destination governance. As illustrated in Figure 3, a hybrid institutional model integrates participatory governance, cross-sector coordination, and transformational leadership, positioning BPOLBF as the central orchestrator that mediates between strategic national objectives and local development priorities (Ardana et al., 2025; Rasoolimanesh et al., 2024)

Figure 3. Hybrid Institutional Model For Island Tourism Governance by Government-Led DMO



Source: Researcher, 2026

As depicted in Figure 3, the hybrid model balances top-down policy coherence with bottom-up participation. Central government provides legitimacy and strategic alignment, while BPOLBF functions as a transformational leader and network orchestrator connecting local governments, private actors, and communities. The establishment of an inter-island coordination forum and a dedicated operations and monitoring unit ensures integrated planning, implementation, and performance oversight. Collectively, this governance arrangement enhances coordination, accountability, and adaptive capacity in managing island tourism destinations as interconnected systems rather than isolated units.

Indeed, Island Tourism Destination Governance Leadership is explicitly embedded at the DMO core to guide vision, coordination, and stakeholder engagement across archipelagos. The model ensures top-down oversight from the DMO while maintaining bottom-up participation from local governments and communities. Operationalisation relies on digital monitoring, inter-island coordination, and adaptive management, ensuring sustainability, inclusivity, and resilience.

This model integrates destination leadership and governance orchestration by linking visionary leadership with participatory mechanisms, cross-sector coordination, and adaptive management. It operationalises six interrelated governance dimensions—regulation, marketing, investment, empowerment, milieu (environment), and coordination—thereby balancing strategic top-down direction with bottom-up stakeholder inclusion. In this hybrid

configuration, destination leadership is not confined to governmental authority alone, but distributed across institutional and non-institutional actors who collectively shape tourism development trajectories. Accordingly, tourism governance in Flores, Lembata, and Alor is framed as a dynamic process of co-production, where policy direction, resource management, and value creation emerge through continuous interaction between state agencies, private sector actors, community institutions, and civil society organisations (Holladay et al., 2024; Farsari et al., 2025).

In terms of participatory development processes, implementation has largely taken the form of multi-stakeholder engagement platforms, community-based tourism initiatives, and consultative planning mechanisms facilitated by government bodies and destination management institutions. Actors such as regional tourism authorities, BPOLBF, district governments, village administrations, Pokdarwis (tourism awareness groups), customary leaders, NGOs, and private operators participate in varying degrees of decision-making, ranging from policy formulation and investment planning to site-level tourism management and cultural resource stewardship. In practice, participation often manifests through workshops, planning forums, co-management arrangements at tourism sites, and collaborative marketing initiatives, reflecting an incremental shift toward more inclusive governance arrangements rather than fully decentralised authority.

However, the implementation of participatory governance across different levels of authority also reveals significant structural and institutional constraints. At the macro level, overlapping mandates between national, regional, and destination-level institutions can create coordination inefficiencies and fragmented decision-making. At the meso level, intermediary organisations such as destination management bodies often face limitations in enforcement capacity, financial autonomy, and institutional continuity. At the micro (community) level, participation may be constrained by uneven capacity, limited access to information, elite capture within local institutions, and dependency on external facilitation. These constraints are further compounded by asymmetries in power, resources, and technical knowledge among actors, which can lead to symbolic rather than substantive participation.

Despite these challenges, the hybrid DMO model remains a critical governance innovation for archipelagic tourism systems, as it enables adaptive management and iterative learning across scales. Table 7 operationalises this model by translating its governance logic into concrete functional domains—demonstrating how leadership, coordination, sustainability, and empowerment are embedded within a government-led yet participatory framework. Ultimately, the effectiveness of this model depends not only on institutional design, but also on the quality of inter-actor relationships, the depth of participation, and the capacity to continuously negotiate a balance between development objectives and socio-ecological sustainability.

Table 7. Role of Hybrid DMO Model and Actions

Dimension / Function	Role in Hybrid DMO Model	Recommendations / Actions
Island Tourism Leadership	Provides visionary, transformational, and facilitative guidance	Align cross-island planning, foster innovation, ensure inclusivity

Dimension / Function	Role in Hybrid DMO Model	Recommendations / Actions
Enabling Governance	Build collaborative ecosystem, inclusive regulation, participatory governance	Strengthen cross-sectoral policies, transparent decision-making
Mobilising Actors	Activate stakeholders, resources, investment, knowledge networks	Facilitate PPPs, community engagement, MSME empowerment
Collaborative Governance	Mediate conflicts, orchestrate forums, build trust	Multi-stakeholder platforms, quarterly coordination, shared planning
Results & Monitoring	Supervise programme implementation, track KPIs	Digital dashboards, open-data reporting, adaptive evaluation
Sustainability & Milieu	Integrate environmental, cultural, and social safeguards	Carrying capacity studies, zoning, ecological monitoring; safety and risk management system in tourism
Local Empowerment	Build institutional and community capacity	Leadership training, participatory tourism planning

Source: Researcher,2026

As summarised in Table 7, the hybrid DMO model functions as both a strategic leader and an enabling platform. It combines transformational leadership with collaborative governance to mobilise actors, coordinate across islands, and ensure sustainability and local empowerment. By linking clear roles with targeted actions—ranging from digital monitoring to participatory planning—the model provides a practical roadmap for strengthening destination governance, enhancing accountability, and fostering inclusive and resilient island tourism development. In this model, governance leadership is the central orchestrating function of the Board, connecting national strategic priorities with local island-specific dynamics. It integrates:

- Enabling functions: policy alignment, regulatory frameworks, capacity-building, and environmental management.
- Mobilising functions: stakeholder engagement, resource coordination, public-private-community partnerships, and a safety & risk management system in tourism .
- Operational oversight: implementation, supervision, and evaluation through digital monitoring and KPIs.

By institutionalising collaboration, adaptive leadership, and data-informed decision-making, the hybrid DMO model strengthens legitimacy, aligns inter-island development, and enhances the resilience and sustainability of Labuan Bajo–Flores and surrounding small islands. This approach demonstrates that government-led DMOs can simultaneously serve as regulatory enablers, mobilisers of multi-actor collaboration, and facilitators of local empowerment, bridging national objectives with community-driven outcomes.

Persistent governance challenges—limited participatory inclusion, uneven inter-regional integration, and weak local legitimacy—cannot be addressed through structural reforms alone and require institutionalised processes that embed collaboration, accountability, and trust. Formalising recurring stakeholder forums, participatory monitoring and learning systems (PMLS), and transparent benefit-sharing mechanisms offers a coherent and mutually reinforcing governance approach.

Multi-level stakeholder forums, convened across local, inter-regional, and strategic scales, serve as a key mechanism for building trust, coordination, and legitimacy within the



hybrid tourism governance system. When these forums rotate across locations and are accompanied by formally documented institutional responses, they strengthen transparency and accountability, thereby reducing perceptions of exclusion. Trust is further reinforced through Participatory Monitoring and Learning Systems (PMLS), which position local actors as co-producers of knowledge by combining technical indicators (e.g., visitor flows and environmental carrying capacity) with locally defined measures (e.g., cultural integrity and livelihood outcomes). Public dissemination of monitoring results, alongside value chain mapping and community-managed benefit-sharing mechanisms, enhances transparency, reduces information asymmetry, and fosters a more equitable distribution of tourism benefits across core and peripheral regions.

Despite these mechanisms, conflicts among actors remain evident across Flores, Lembata, and Alor, particularly between conservation and development priorities, customary land governance and formal regulations, and local communities and private investors. The increasing penetration of capitalist investment in peripheral communal areas generates both development opportunities and structural risks, including land commodification, unequal bargaining power, cultural disruption, and spatially uneven benefit distribution. While investment can stimulate infrastructure development and employment, weak regulatory enforcement and limited local capacity often exacerbate dependency relations and inter-regional disparities. Consequently, sustainable trust-building depends not only on participatory platforms and monitoring systems, but also on robust governance capacity to mediate conflicts, regulate investment flows, and ensure socially embedded and equitable tourism development.

Collectively, these measures institutionalise voice, evidence, and fairness, transforming participation from symbolic consultation into durable collaborative governance. This integrated framework enables the Board to function as a credible network orchestrator, aligning strategic coordination with local empowerment, accountability, and long-term sustainability.

CONCLUSION

This study finds that the Tourism Authority Board in the Labuan Bajo–Flores, Lembata, and Alor destination represents an emerging hybrid model of government-led DMO and tourism governance that strengthens cross-sector and cross-regional coordination while maintaining strong state authority. Although the Board has improved policy alignment and institutional coordination across multiple jurisdictions, local participation remains largely consultative and uneven. As a result, the governance system reflects a technocratic and centralised orientation, where collaboration is facilitated but not yet fully institutionalised as shared decision-making. Persistent challenges include overlapping mandates, fragmented authority across administrative levels, and limited inclusion of marginalised groups such as local communities, women, and youth.

Theoretically, the study advances understanding of hybrid DMOs as meta-governance actors that operate at the intersection of state control and collaborative governance. It demonstrates that in islands and multi-scalar tourism systems, DMOs function not only as coordinating institutions but also as strategic intermediaries that shape conditions for



collaboration across fragmented governance landscapes. However, the findings also reveal inherent tensions within hybrid governance models, particularly between centralised authority and meaningful participation, highlighting that coordination capacity alone is insufficient without institutionalised mechanisms for inclusive decision-making.

Practically, the study suggests that government-led DMOs should evolve toward an authoritative–facilitative governance model. This requires strengthening inter-agency coordination while simultaneously institutionalising participatory structures that enable meaningful involvement of local communities, women, and youth. Key priorities include harmonising overlapping mandates across governance levels, establishing durable cross-regency and inter-island coordination platforms, and embedding community participation into planning, monitoring, and evaluation processes. In addition, the development of integrated data systems and transparent benefit-sharing mechanisms is essential to enhance accountability and reduce territorial inequalities in tourism development outcomes.

Despite these contributions, the study has several limitations. First, it is based on a single-case design, which limits generalisability beyond the Labuan Bajo–Flores context. Second, although data triangulation was employed, access constraints meant that some high-level policy processes could not be fully observed in real time. Third, the study primarily captures stakeholder perceptions rather than longitudinal governance performance outcomes, which may limit insights into long-term institutional change.

Future research could address these limitations by conducting comparative studies across multiple island destinations to examine variations in hybrid DMO performance under different institutional settings. Longitudinal research would also be valuable in assessing how governance reforms evolve over time and how participatory mechanisms influence destination sustainability outcomes. Further studies may additionally explore the role of digital governance tools and data-driven platforms in strengthening coordination, transparency, and stakeholder inclusion in government-led tourism systems.

In sum, this study contributes to advancing a more nuanced understanding of hybrid tourism governance by demonstrating that effective destination management in complex island systems depends not only on centralized coordination but also on the institutionalisation of inclusive, trust-based, and adaptive governance practices.

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A CRITICAL ANALYSIS OF NARRATIVE STRATEGY IN PRIORITY TOURISM DESTINATIONS: THE CASE OF BOROBUDUR

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Article Info	Abstract
<p>Keywords: ambidextrous storytelling, resource orchestration, competitive dynamics, Borobudur DSP, narrative strategy.</p> <p>Received: December 19, 2025</p> <p>Approved: May 29, 2026</p> <p>Published: June 29, 2026</p>	<p>The transformation of global tourism requires destination management strategies that extend beyond physical development toward the orchestration of symbolic and narrative resources. In the Borobudur Super Priority Destination (DSP), narrative functions as a strategic asset shaping destination identity, competitiveness, and sustainability. However, fragmented institutional coordination, top-down storytelling, limited community participation, and weak digital narrative integration have created a gap between policy aspirations and local cultural realities. This study adopts a qualitative policy-oriented case study approach centered on Presidential Regulation (Perpres) No. 88 of 2024 concerning the Borobudur–Yogyakarta–Prambanan (BYP) National Tourism Destination Master Plan. The analysis combines qualitative document analysis with an integrative review of Scopus-indexed literature on tourism storytelling, organizational ambidexterity, resource orchestration, and destination governance. The findings reveal that the disconnection between policy design, institutional orchestration, and local meaning-making processes generates narrative fragmentation that weakens destination competitiveness and authenticity. In response, this paper proposes the Ambidextrous Narrative Orchestration framework, which conceptualizes destination competitiveness as the outcome of dynamic interactions among ambidextrous governance, narrative strategic assets, and adaptive resource orchestration. The study contributes theoretically by extending ambidexterity and orchestration perspectives into culture-based tourism narrative management while offering practical insights for collaborative and narrative-driven tourism governance.</p>

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INTRODUCTION

Over the past two decades, the global tourism landscape has experienced profound transformations. Heightened demands for sustainability, increasing inter-destination competition, and the evolving expectations of tourists for meaningful and authentic experiences have catalyzed a paradigm shift in destination management strategies. Within this dynamic context, narratives have transcended their traditional role as mere promotional tools. Instead, they have emerged as strategic instruments in value creation, place-making, and destination differentiation (Bassano et al., 2019; Zhang & Ramayah, 2024). A growing body of literature indicates that compelling destination narratives can foster emotional engagement, reinforce identity, and enhance long-term appeal (Dionisio & Nisi, 2021; Guleria et al., 2024).

These developments have led to the emergence of the *storynomics* approach, which conceptualizes storytelling as a dual vehicle for generating both economic and cultural value. Central to this approach is the integration of narratives within the design of tourism experiences, leveraging cultural heritage, indigenous creativity, and digital technologies (Kasemsarn et al., 2023). This integration is especially relevant in the post-pandemic era, wherein destinations are compelled not only to restore economic vitality but also to rebuild cohesive narratives that unify local stakeholders under a vision of sustainability (Muangasame & Tan, 2023).

In this milieu, destination narratives must be viewed as dynamic and adaptive rather than linear or static. Narratives embedded in local traditions and values must be continuously reframed to accommodate external shocks and global expectations. The framework of *ambidextrous storytelling* offers a strategic lens to simultaneously exploit existing cultural assets while exploring innovative narrative expressions (Maclean et al., 2021; Vo Thanh et al., 2020). This dual capacity necessitates agile narrative governance that aligns with both socio-cultural evolution and technological disruption. As such, narrative ambidexterity enables destinations to remain relevant while preserving cultural authenticity.

Despite its strategic potential, the implementation of storytelling within destination governance, particularly in developing countries, continues to face substantial barriers. Zins & Abbas Adamu (2024) reveal that many Destination Marketing Organizations (DMOs) deploy narratives without theoretical grounding, often relying on generic archetypes that fail to balance cultural integrity and innovation. Similarly, Bassano et al. (2019) caution that narratives devoid of community involvement risk undermining authenticity and inclusivity. These critiques resonate in the Indonesian context, especially within the development of five Super Priority Destinations (Destinasi Super Prioritas/DSP), where top-down narrative construction remains prevalent, and grassroots participation in narrative formation is minimal. One of the most prominent examples is the development of the Borobudur Temple Compounds as a strategic cultural tourism destination in Indonesia.

The Borobudur Temple Compounds, located in Borobudur and Mungkid Districts, Central Java, Indonesia, is one of the world's most significant Buddhist heritage sites and was officially inscribed as a UNESCO World Heritage Site in 1991. The complex consists of Borobudur Temple, Mendut Temple, and Pawon Temple, which collectively represent the spiritual stages toward Nirvana in Buddhist cosmology (UNESCO, 2025). The site is internationally recognized for its monumental Buddhist architecture, extensive stone

reliefs, and cultural-historical significance dating back to the 8th and 9th centuries during the Syailendra Dynasty (UNESCO, 2025). In addition, the surrounding area includes several cultural villages and community-based tourism destinations that preserve local traditions, crafts, and cultural practices.

The Ministry of Tourism (Kemenpar) of the Republic of Indonesia plays a central role in formulating the strategic roadmap for tourism development in the Borobudur area, including through the establishment of the Borobudur Authority Agency (Badan Otorita Borobudur/BOB), which is responsible for integrating cultural heritage preservation with sustainable tourism initiatives. The tourism potential of Borobudur Temple is reflected in the increasing number of tourist arrivals, reaching approximately 230,095 international tourists and 1,055,934 domestic tourists in 2024, based on data published by Badan Pusat Statistik Kabupaten Magelang, which cites the Dinas Pariwisata, Kepemudaan, dan Olahraga Kabupaten Magelang. However, despite strong institutional efforts to strengthen destination branding and tourism infrastructure, empirical observations indicate a disconnect between policy-driven narratives and organically evolving community discourses. This fragmentation creates a narrative dissonance between top-down tourism visioning and bottom-up cultural realities, posing challenges for the development of inclusive, authentic, and resilient destination narratives.

This narrative dissonance constitutes the central problem addressed in this study. Specifically, the prevailing approach to destination narrative construction in Indonesia's DSP framework, exemplified by Borobudur, operates through a centralized, monumentalist logic that privileges institutional voice while marginalizing community co-authorship. This top-down orientation creates three interrelated challenges: (1) narratives that lack cultural resonance with local communities, (2) limited adaptive capacity to respond to shifting tourist expectations and external disruptions, and (3) fragmented stakeholder alignment that undermines sustainable tourism development. The persistence of this problem, despite growing scholarly attention to participatory and adaptive storytelling, signals a critical implementation gap that demands both theoretical and empirical investigation.

To address this issue, the *resource orchestration* perspective provides an insightful explanatory framework. It posits that narratives, as intangible cultural assets, require strategic curation, integration, and mobilization to generate competitive advantage. The ability of tourism organizations to orchestrate resources through ambidextrous learning mechanisms is pivotal in enhancing organizational agility and resilience. In tandem, digital transformation within tourism underscores the importance of establishing digital trust and collaborative governance, particularly to avoid the atomization of narrative ecosystems (Nanchen et al., 2021).

Equally important, the roles of local actors in constructing and sustaining destination narratives are often marginalized in formal tourism strategies. Bertella (2023) underscores the significance of small-scale actors in peripheral regions who serve as vital agents in crafting place-based meanings and delivering culturally resonant experiences. Unfortunately, narrative planning that is overly centralized often fails to reflect the multilayered socio-cultural dynamics present in local contexts. This disconnect can dilute narrative effectiveness and hinder participatory tourism development.

In the case of Borobudur, the dominant narrative approach has historically focused on monumentalism which emphasizes historical and spiritual dimensions in a fixed, monolithic fashion. Such a strategy limits the scope for reinterpretation and constrains

community co-authorship. In contrast, contemporary narrative strategy should embrace dialogic construction, enabling the blending of traditional elements with modern visitor expectations. The transmedia storytelling framework proposed by Dionisio & Nisi (2021) exemplifies how multifaceted narratives can expand engagement and democratize narrative ownership.

Conceptually, the intersection of storytelling, ambidexterity, and resource orchestration offers a fertile ground for rethinking strategic narrative design. This integrative approach facilitates the reconciliation of cultural depth with managerial agility, enabling destinations to simultaneously preserve heritage and innovate adaptively. However, a critical examination of the existing literature reveals three significant gaps.

First, while ambidextrous organizational learning has been extensively studied in corporate and innovation management contexts, its application to narrative strategy in destination governance remains theoretically underdeveloped. Existing tourism studies predominantly treat ambidexterity as an operational capability rather than as a communicative and cultural construct.

Second, resource orchestration theory has been applied to tangible assets and dynamic capabilities in tourism (Sirmon et al., 2011), yet its extension to intangible narrative resources, particularly in heritage-based destinations, has received scant attention. The mechanisms through which DMOs can curate, bundle, and deploy narrative assets across multiple stakeholder groups remain underspecified.

Third, empirical research integrating these domains within developing country contexts is notably absent. Studies in Southeast Asia have examined storytelling practices (Kasemsarn et al., 2023) and sustainability governance (Muangasame & Tan, 2023) separately, but none have systematically investigated how these elements interact to shape destination narrative resilience. This absence is particularly pronounced in Indonesia's DSP framework, where the tension between centralized governance and community-based narrative construction presents a compelling empirical puzzle.

Accordingly, this study advances the field by proposing and empirically examining an integrative conceptual framework that synthesizes ambidextrous storytelling with resource orchestration theory. The novelty of this contribution is threefold. First, it reconceptualizes destination narratives not merely as promotional content but as strategic, communicative, and social resources subject to orchestration dynamics—thereby extending resource orchestration theory into the cultural-symbolic domain. Second, it operationalizes ambidextrous storytelling as a governance mechanism that enables destinations to simultaneously exploit established cultural narratives while exploring emergent, community-driven narrative innovations. Third, by grounding this framework in the empirical context of Borobudur DSP, this study provides context-sensitive insights into narrative governance challenges specific to heritage destinations in developing economies.

This paper aims to critically investigate the practices and theoretical underpinnings of narrative strategies within the DSP framework, using Borobudur as a focal case. It explores how ambidextrous storytelling can be operationalized as an orchestration strategy that empowers local actors, aligns institutional and grassroots narratives, and fosters long-term sustainability.

Specifically, this study addresses the following research questions:

1. How do institutional and community-based narratives currently coexist and conflict within Borobudur's destination governance?

2. What mechanisms enable or constrain ambidextrous storytelling practices in the orchestration of destination narrative resources?
3. How can an integrative framework of ambidextrous storytelling and resource orchestration inform more inclusive and adaptive narrative strategies for heritage-based destinations?

In doing so, this paper contributes a conceptual model that reframes narratives as orchestrable strategic resources, offering both theoretical advancement and practical implications for destination managers navigating the complexities of heritage tourism in the post-pandemic era.

METHODOLOGY

This study adopts a qualitative policy-oriented case study design to examine how storytelling, ambidexterity, and resource orchestration are conceptually embedded within Indonesia's tourism governance framework, particularly in the context of the Borobudur DSP.

The study is centered on the analysis of **Presidential Regulation (Perpres) No. 88 of 2024 concerning the National Tourism Destination Master Plan for Borobudur–Yogyakarta–Prambanan (BYP) 2024–2044** as the primary institutional framework guiding long-term tourism development and destination governance. The master plan is specifically designed to address several major challenges in the development of the BYP Tourism Destination Area, including high population density, inadequate connectivity, insufficient basic public services, and the need to strengthen destination management, particularly the management of cultural heritage sites. Within this framework, the Borobudur Main Tourism Area (Kawasan Pariwisata Utama/KTA Borobudur) is designated as the primary focus of tourism development, integrating tourism governance, cultural heritage preservation, spatial planning, infrastructure development, environmental sustainability, and regional economic integration.

The research also combines two additional sources of evidence: (1) integrative literature review, and (2) analytical reflection grounded in tourism governance debates to strengthen analytical rigor through triangulation and to provide a more comprehensive interpretation of the institutional logic underlying tourism destination governance.

Integrative Literature Review

In addition to policy analysis, this study employs an integrative review of scholarly literature to develop the conceptual foundation of the study. The literature review focused on three interrelated concepts: storytelling in tourism, organizational ambidexterity, and resource orchestration. Relevant academic articles were identified through Scopus-indexed journals to ensure the quality and international relevance of the references used.

The literature selection process involved keyword-based searches using combinations of terms such as “tourism storytelling,” “destination storytelling,” “organizational ambidexterity in tourism,” “resource orchestration,” “destination governance,” and “sustainable tourism management.” Articles were selected based on three criteria: (1) relevance to tourism or destination management contexts, (2) conceptual or empirical discussion of storytelling, ambidexterity, or resource orchestration, and (3) publication in peer-reviewed international journals.



Analytical Reflection and Interpretive Strategy

The term “analytical reflection” in this study refers to an interpretive analytical process through which the findings from policy documents and scholarly literature are critically compared and contextualized within the realities of tourism governance. This approach does not rely on personal opinion or anecdotal observation; instead, it involves theoretically informed interpretation grounded in existing debates on destination governance, institutional coordination, and sustainable tourism management.

The analytical reflection was conducted by comparing the normative aspirations articulated in Perpres No. 88/2024 with governance challenges frequently identified in tourism governance literature. Through this interpretive process, the study evaluates how policy narratives may facilitate or constrain the implementation of collaborative and inclusive storytelling practices.

This interpretive orientation is informed by strategic management perspectives, particularly ambidexterity and resource orchestration theory. Ambidexterity is used to assess how tourism governance simultaneously balances preservation-oriented and innovation-oriented strategies, while resource orchestration provides an analytical lens for examining how institutional actors mobilize and coordinate cultural, social, and organizational resources within destination development.

FINDINGS AND DISCUSSION

Critical Analysis of Strategic Narrative Dynamics in Borobudur DSP

This section presents the findings and discussion regarding the strategic development of the Borobudur DSP through the perspectives of ambidexterity, resource orchestration, and competitive dynamics. The analysis compares the main findings with the directions outlined in Presidential Regulation No. 88 of 2024 and relevant previous studies. The discussion also identifies several gaps between strategic planning and practical implementation.

Table 1. Comparative Analysis of Borobudur DSP Development: Findings, Master Plan Alignment, and Previous Research Perspectives

Findings	Relevant Master Plan	Previous Research	Discussion
Borobudur’s competitive advantage lies in inimitable resources such as cultural heritage, spiritual values, and emotional connections.	The master plan positions Borobudur as a world-class cultural tourism destination rooted in heritage and living culture.	Ndubisi & Nair (2023).	The findings demonstrate that Borobudur’s intangible assets possess strong strategic value. The key challenge is integrating these cultural resources into cohesive, immersive, and emotionally meaningful visitor experiences.
The development of Borobudur DSP reflects an ambidextrous approach that combines cultural heritage preservation with tourism experience innovation.	The master plan emphasizes balancing heritage conservation and destination innovation through the integration of Borobudur–Yogyakarta–Prambanan.	March (1991); Vo Thanh et al. (2020); Zehrer & Hallmann (2015).	The findings indicate that restricting temple access while introducing thematic travel circuits already reflects ambidexterity. However, implementation remains suboptimal because narrative innovation and community participation are still limited.



Findings	Relevant Master Plan	Previous Research	Discussion
Local communities are still positioned mainly as operational actors rather than co-creators of destination narratives.	The master plan emphasizes community empowerment and the development of culturally based tourism villages.	Cerquetti et al. (2022); Bertella (2023); Afandi et al. (2025).	Although training and certification programs have been implemented, their transformative impact remains limited because communities are not fully involved in cultural interpretation and meaning-making processes. Stronger participatory engagement is necessary to sustain destination authenticity.
BPOB has not yet functioned effectively as a strategic orchestrator and remains predominantly administrative.	The master plan emphasizes collaborative governance and institutional strengthening among stakeholders in destination management.	Sirmon et al. (2011); Idisondjaja et al. (2023); González-Rodríguez et al. (2023).	Theoretically, destination management requires orchestration capability to integrate resources and stakeholder interests. In practice, BPOB has not fully performed its role as a strategic facilitator, resulting in fragmented coordination across institutions.
Infrastructure development has accelerated, but cultural and narrative dimensions remain weakly integrated.	The master plan targets the development of an integrated tourism ecosystem based on both infrastructure and cultural heritage.	Latifah (2024); Sasongko et al. (2025).	Development efforts continue to focus heavily on physical infrastructure such as roads, bridges, and tourism zones. This imbalance risks weakening Borobudur's distinctiveness as a cultural tourism destination if symbolic and local cultural enrichment are not reinforced.
Borobudur's tourism narrative remains top-down and elitist, making it less adaptive to contemporary tourist dynamics.	The master plan promotes cultural narrative revitalization through community participation and local identity strengthening.	Zins & Abbas Adamu (2024); Kasemsarn et al. (2023); Muangasame & Tan (2023).	There is a gap between government-led narratives and authentic local experiences. Previous studies emphasize that successful destination branding depends on co-created and locally grounded storytelling that generates emotional resonance for tourists.

Source: Authors

Theoretical Foundations: Ambidexterity, Orchestration, and Competitive Dynamics

Contemporary strategies for managing tourism destinations necessitate a multidimensional and adaptive approach, transcending the conventional focus on infrastructure development and promotional efforts. The intricate interplay of evolving tourist behaviors, volatile global market trends, and escalating demands for cultural heritage preservation underscores the urgency of long-term, flexible governance models. Within this framework, three interrelated theoretical constructs—ambidexterity, resource orchestration, and competitive dynamics—emerge as pivotal analytical lenses to understand and enhance the strategic capabilities of destination management organizations.

Ambidexterity: Balancing Preservation and Innovation

Ambidexterity, as conceptualized by March (1991), refers to an organization's ability to simultaneously engage in exploitation (the optimization of existing assets and competencies) and exploration (which entails the pursuit of novel solutions, narrative innovation, and creative strategies for destination development). Within the framework of the Borobudur DSP, this dual capacity becomes particularly salient, as the imperative to



preserve cultural heritage intersects with rising expectations for technologically advanced and experience-oriented innovations.

Zehrer & Hallmann (2015) underscore the critical role of stakeholder involvement in navigating the inherent tension between organizational stability and transformation. This aligns with Vo Thanh et al. (2020), who argue that ambidexterity in tourism is not merely a matter of balancing exploration and exploitation, but also necessitates the active and concurrent engagement of both internal stakeholders such as governmental and managerial actors, and external stakeholders, including communities and visitors. Maclean et al. (2021) contend that narrative innovation in destination branding cannot be sustained unless supported by participatory leadership and collective meaning-making processes, thereby reinforcing the need for distributed agency in shaping destination identity.

From an operational perspective, Ahani et al. (2019) reveal that online tourist reviews provide rich data streams that can function as real-time indicators of emerging narrative preferences, offering valuable inputs for the development of adaptive storytelling strategies. In parallel, the integration of Smart Tourism Technologies embodies exploratory mechanisms that enhance tourist engagement during both pre-visit planning and in-destination experiences, thereby expanding the narrative dimensions of place.

Borobudur, in this context, exhibits latent potential for ambidextrous strategy through the restriction of physical temple visits as an act of exploitative conservation, coupled with exploratory initiatives such as thematic travel circuits and the revitalization of localized cultural narratives.

Resource Orchestration: Consolidating Strategic Assets

Sirmon et al. (2011) conceptualize resource orchestration as a dynamic managerial capability involving the acquisition, bundling, and strategic leveraging of diverse resources. Within the context of tourism destinations, this orchestration encompasses not only physical infrastructure and financial capital, but also intangible and symbolic assets, such as cultural narratives, social trust, and the quality of inter-organizational relationships that underpin collaborative governance structures.

Idisondjaja et al. (2023) highlighted the importance of orchestration capabilities in shaping sustainable value creation by DMOs. BPOB as the manager of the Borobudur DSP needs to be seen not just as an administrative institution, but as an orchestrator capable of bridging strategic visions across actors. González-Rodríguez et al. (2023) showed that stakeholder participation directly improves the tourist experience and the quality of destination management.

Competitive Dynamics: Responding to Competition Adaptively

Chen & Miller (2015) define competitive dynamics as a series of strategic responses enacted in reaction to the actions and market signals emitted by rival entities. Within the tourism sector, such dynamics encompass a spectrum of adaptive strategies, including the alignment with evolving travel trends, responsiveness to global market expectations, and the continuous repositioning of destination branding to sustain competitive relevance. The Borobudur DSP, in this regard, operates within a crowded competitive landscape, contending not only with prominent domestic destinations like Bali and Mandalika but also with internationally renowned World Heritage sites across Southeast Asia.

Ndubisi & Nair (2023) emphasize the importance of understanding inimitable versus imitable resources in strengthening destination image. An authentic image is more difficult to imitate and has a long-term effect on competitiveness, so a strategy is needed that can maintain and develop this uniqueness sustainably. This becomes increasingly important in the face of the pressures of homogenization of the tourism market that lead to uniformity of experience. In the context of Borobudur, the competitive advantage clearly lies in the globally recognized cultural heritage, including iconic architecture and high spiritual values. However, if this heritage is only used as an object without revitalizing the narrative and emotional connection with tourists, then this advantage will lose its significance. Consequently, a strategic shift toward adaptive, participatory, and locally embedded storytelling becomes imperative to preserve cultural relevance and enhance differentiation in an increasingly homogenized tourism market.

Furthermore, Dionisio & Nisi (2021) highlight the strategic value of transmedia storytelling in crafting immersive, multilayered narrative experiences. By leveraging cross-platform communication, destinations can create cohesive and resonant stories that not only deepen tourists' engagement but also promote more meaningful, thematic, and experience-oriented travel behaviors. However, the success of such approaches is dependent on narrative coherence and continuity across media formats and among the stakeholders involved in content creation and delivery. Without alignment between narrative producers, platforms, and audience expectations, the intended emotional connection and strategic differentiation may weaken, reducing the overall impact of the storytelling initiative.

As noted by Baker & Crompton (2000), both service quality and experiential satisfaction significantly influence tourist loyalty and the intention to revisit a destination. Recent findings by Hidayah et al. (2025) further demonstrate that even in the case of Borobudur, tourist satisfaction is strongly shaped by destination image, service quality, and sustainability considerations. Their findings further indicate that tourist evaluations of service quality are not only driven by functional aspects but are also deeply shaped by perceived value and emotional resonance. This underscores the notion that strategic experience management constitutes an essential component of competitive dynamics in tourism, wherein emotional engagement and meaning co-creation become critical drivers of sustained competitive advantage.

Consequently, competitive dynamics within the tourism sector should not be narrowly interpreted as mere product differentiation, but rather as the differentiation of meanings that are co-constructed through interactions between destinations and visitors. These meanings are cultivated through the enhancement of perception, emotional involvement, and immersive experiences that collectively foster long-term loyalty and destination attachment.

Analytical Reflections: Practice and Policy in DSP Borobudur

The development of the Borobudur DSP represents a pivotal shift in Indonesia's tourism policy, reflecting a dual orientation toward enhancing global competitiveness while ensuring local sustainability. Through an integrative planning paradigm encompassing infrastructure, tourism ecosystem governance, institutional strengthening, and cultural narrative revitalization, the government has designated Borobudur as one of the five national priority destinations. Nonetheless, a discernible gap remains between strategic

planning and field-level implementation, as well as between the envisioned narrative and the experiential reality encountered by visitors and local stakeholders.

As a UNESCO-designated World Heritage Site since 1991, Borobudur carries both the symbolic weight of historical legacy and the strategic promise of cultural capital. Its development trajectory not only mirrors national economic and geopolitical aspirations but also constitutes a contested space wherein meanings are continuously negotiated among the state, local communities, and global tourism markets. In this regard, Perpres No. 88 of 2024 serves as a critical legal instrument that consolidates the spatial and strategic integration of Borobudur, Yogyakarta, and Prambanan into a unified long-term development blueprint. The regulation underscores the imperative of safeguarding cultural heritage, fostering synergy among diverse actors, and enabling institutional transformation through collaborative governance mechanisms. By institutionalizing multi-actor participation and heritage-based planning, the policy aims to ensure that development efforts do not merely commodify heritage, but rather reinforce its significance through inclusive, context-sensitive strategies that balance preservation with innovation.

Nevertheless, the institutional transformation of the BPOB into a Public Service Agency has yet to materialize into an effective strategic orchestrator. In practice, BPOB continues to function predominantly in an administrative capacity, rather than fulfilling a strategic role as a narrative facilitator and integrator of multi-stakeholder interests. This institutional inertia is further compounded by limited coordination capabilities, inadequate adaptive human resources, and the absence of structured deliberative mechanisms.

Moreover, the current narrative development approach remains entrenched in a form of elitist symbolism that inadequately reflects evolving social dynamics and the increasingly sophisticated preferences of contemporary tourists. Dominant heritage and spiritual narratives, primarily orchestrated by state actors, continue to be delivered through top-down channels, thereby constraining the emergence of inclusive and participatory storytelling frameworks, as observed by Zins & Abbas Adamu (2024). This is problematic, especially in light of the growing recognition as highlighted by Kasemsarn et al. (2023) and Muangasame & Tan (2023) that successful destination branding increasingly depends on the co-creation of authentic, locally grounded experiences. These experiences should emerge not only from curated heritage but also from the everyday practices, values, and aspirations of local communities, thereby fostering emotional resonance and sustainable visitor engagement.

This phenomenon is further exacerbated by the limited integration of local community capacity-building initiatives into the broader framework of destination narrative strategies. While human resource training and tourism certification programs implemented in the Borobudur region have demonstrated preliminary progress toward community empowerment (Sunartono, 2023), their transformative impact remains constrained. Without a comprehensive narrative framework that positions local communities not merely as service providers but as co-creators of meaning and cultural interpretation, these efforts risk becoming superficial. As underscored by Cerquetti et al. (2022) and Bertella (2023), meaningful community participation in narrative co-production constitutes a fundamental pillar for the long-term sustainability and authenticity of tourism destinations (Afandi et al., 2025).

At the policy level, infrastructural development within Borobudur and its surrounding areas has experienced significant acceleration. Cross-ministerial coordination

has facilitated the construction and revitalization of nearly 73 kilometers of roads and bridges, as well as tourism-supportive zones such as the Kujon Art Village and several initiatives under the *Sarhunta* program targeting tourism villages. These are commendable steps toward strengthening the physical backbone of the destination ecosystem. However, the prevailing emphasis on tangible infrastructure development risks marginalizing the cultural and narrative layers that are essential for sustaining Borobudur's distinctive identity as a world-class cultural tourism site (Latifah, 2024; Sasongko et al., 2025). To preserve its uniqueness and relevance, strategic equilibrium must be achieved between material enhancement and symbolic enrichment rooted in local values and living heritage.

A salient example of this ambivalent strategic orientation is the restriction of tourist access to the upper levels of the Borobudur Temple, which has been implemented alongside the introduction of thematic travel circuits. While, in principle, this dual approach reflects an ambidextrous strategy that balances the imperatives of heritage conservation with the pursuit of experiential innovation, it remains constrained by the absence of an alternative narrative that is both culturally resonant and rooted in local community values. As a result, the initiative risks being perceived as performative rather than transformative. Moreira et al. (2025) caution that destination narratives which remain static and fail to adapt to evolving tourist expectations are likely to lose relevance rapidly. Without continuous narrative renewal that integrates local identity and visitor engagement, such strategies may ultimately undermine the intended objectives of both preservation and innovation.

The limitations of the current narrative strategy also extend to the domains of communication design and distribution channels. In an increasingly digitalized tourism landscape, the competitive advantage of a destination is no longer determined solely by its physical attributes, but rather by its capacity to cultivate emotional connections with visitors through diverse and integrated digital platforms. As noted by Zhang & Ramayah (2024), the implementation of transmedia storytelling wherein narrative content is cohesively disseminated across multiple media formats is essential for sustaining tourist engagement in the digital age.

Regrettably, there is scant evidence of a coherent cross-channel communication strategy being systematically employed to manage the Borobudur narrative. This signals a persistent gap between strategic intent and the operationalization of narrative management. As argued by Abubakar & Mavondo (2014), tourists' perceptions of service quality and experiential value are significantly shaped by emotional and social factors, the dimensions that have not yet been adequately integrated into Borobudur's narrative architecture. Reinforcing this perspective, Ahani et al. (2019) emphasize that online reviews and user-generated content serve as critical indicators of tourist expectations and experiential preferences, which can inform the iterative redesign of destination storytelling. Without incorporating these dynamic feedback loops, destination narratives risk stagnation and disconnection from evolving visitor sensibilities.

From a strategic standpoint, analytical reflections on the Borobudur DSP underscore the critical need to differentiate between imitable and inimitable resources. As articulated by Ndubisi & Nair (2023), elements such as cultural heritage, embedded social values, and emotional connections represent unique sources of competitive advantage that are inherently difficult to replicate. These intangible assets should therefore be fully leveraged within the framework of narrative-based tourism development. While Borobudur possesses these distinctive attributes, the principal challenge lies in effectively integrating

them into a cohesive and immersive visitor experience that conveys meaning and fosters long-term engagement.

One illustrative example is Borobudur Highland, a tourism complex developed in the Menoreh hills featuring five thematic zones which holds significant potential to serve as a laboratory for narrative-driven tourism innovation (Oktavia, 2021). However, in the absence of genuine community engagement and the co-creation of grounded, cross-channel narratives, there is a substantial risk that this initiative will evolve into an exclusive enclave, detached from the local socio-cultural milieu and alienating the very communities it is meant to represent and empower.

This reflection affirms that effective destination orchestration cannot be sustained through formal institutional structures alone. As highlighted by González-Rodríguez et al. (2023) and Zehrer & Hallmann (2015), the depth and quality of collaboration among stakeholders serve as critical determinants in fostering adaptive capacity and long-term sustainability in tourism destinations. In the case of Borobudur, persistent role fragmentation among the Kemenpar, the Borobudur Authority (BPOB), local governments, and community actors presents a systemic barrier. This institutional disjunction hampers the integration of policies, the coherence of destination narratives, and the consolidation of shared competitiveness across governance and operational levels.

In conclusion, the Borobudur DSP stands at a critical juncture between the dominant logic of physical infrastructure development and the imperative for holistic narrative orchestration. The ongoing institutional and policy transformations must be met not only with reformative intent but also with genuinely transformative strategies. Key interventions include strengthening tourism human capital through narrative-based capacity-building, leveraging digital technologies as platforms for meaning dissemination, and co-creating narratives that are grounded in the lived experiences of local communities. As emphasized by Maclean et al. (2021), an effective narrative strategy extends beyond communicative output; it serves as a mechanism for constructing collective identity and a strategic instrument for cross-actor orchestration. Ultimately, empirical insights from Borobudur's practices and policies underscore the necessity of integrating symbolic, structural, and digital dimensions in shaping a globally competitive and locally meaningful destination. Absent a comprehensive paradigm shift, Borobudur risks becoming an architecturally magnificent yet narratively hollow site.

Synthesis Strategy: Towards Inclusive Transformation

A critical dimension of strategic synthesis lies in the capacity to align narratives, policies, and technological systems into a coherent and mutually reinforcing framework. In this regard, Perpres No. 88 of 2024 provides a formalized legal foundation for integrative development across the BYP corridor. However, as evidenced by empirical observations, the disjunction between policy formulation and field-level implementation highlights the weak operationalization of this strategic vision.

For instance, while the construction of approximately 73 kilometers of roads and bridges signifies substantial progress in physical infrastructure, the corresponding cultural and narrative dimensions have not been afforded commensurate strategic attention. In the absence of a well-articulated narrative framework and an innovative system for meaning dissemination, development initiatives risk becoming technically efficient yet symbolically hollow. Maclean et al. (2021) emphasize that narrative strategy transcends mere

communication; it is a vehicle for constructing collective identity and facilitating cross-actor orchestration.

Accordingly, strategic investments must prioritize narrative-based human resource development, the integration of smart tourism technologies, and the establishment of a collaborative digital ecosystem. These elements are indispensable in translating theoretical frameworks into actionable practices, thereby ensuring that infrastructural advancement is anchored in cultural resonance and long-term destination sustainability.

Strategic synthesis should not be construed as a compromise between theory and practice. It should involve the deliberate construction of reflective and forward-looking interconnections between conceptual frameworks and real-world dynamics. In the context of Borobudur, this entails the formulation of policy designs that simultaneously address three interdependent dimensions: symbolic (heritage and spirituality), structural (institutions and infrastructure), and digital (communication systems and technological platforms). The enhancement of institutional orchestration, the active involvement of communities in narrative co-production, and the reconfiguration of communication channels represent three interlocking pillars of synthesis. As emphasized by Romero-Medina et al. (2024), in the absence of these interconnected efforts, destination management risks devolving into administrative formalism that fails to address the evolving complexities of the global tourism landscape.

Borobudur DSP holds significant potential to serve as a national model for narrative-based tourism transformation. However, realizing this potential depends on the ability of its management strategy to effectively bridge the gap between theoretical idealism and practical intricacies. As Dionisio & Nisi (2021) argue, a compelling destination narrative is one that functions as a platform for the articulation and negotiation of shared values—across the state, local communities, and tourists—thereby fostering inclusive identity formation and sustainable place-based engagement.

Conceptual Model: Ambidextrous Narrative Orchestration

The conceptual model proposed in this study represents an integrative synthesis of the theoretical foundations of ambidexterity, resource orchestration, and competitive dynamics as previously discussed. The visual representation of the model is structured into three interrelated layers—Dynamic Mechanism, Narrative Strategic Assets, and Strategic Output—each serving as a systemic depiction of the ambidextrous narrative management process within destination governance.

In the first layer, Dynamic Mechanism, the flow of three strategic stages is shown: ambidexterity, orchestration, and competitive dynamics. These stages reflect the conceptual framework underlying the destination strategy transformation process (Chen & Miller, 2015; March, 1991; Sirmon et al., 2011). Ambidexterity is represented in the form of tension between the exploitation of heritage values (e.g. Borobudur spirituality) and the exploration of contemporary narratives through thematic travel routes, new experience designs, and digitalization of interpretation (Dionisio & Nisi, 2021; Kasemsarn et al., 2023). The orchestration stage assumes the active role of management institutions such as BPOB in organizing resources in an adaptive, collaborative, and value-oriented manner (Idisondjaja et al., 2023). This process is strengthened by the existence of feedback loops from the community and tourists who play a role in adjusting the strategy continuously (Luštický & Štumpf, 2021).



The second layer, Narrative Strategic Assets, contains elements of symbolic and functional resources that form the basis for the formation of destination narratives. Components such as Cultural Storytelling, Relevant and Inclusive Narratives, and Media, Digital Platforms, and Experiential Events are concrete forms of values managed in the narrative orchestration process (Bassano et al., 2019; Zhang & Ramayah, 2024). This is where the role of Community-Based Resource Activation and Institutional Governance becomes very important. The participation of local actors as producers of meaning and owners of narratives is the main prerequisite so that the narratives formed are not top-down, but rather originate from the socio-cultural roots of the region (Bertella, 2023; Cerquetti et al., 2022).

The third layer, Strategic Output, represents the results of the narrative orchestration process that is carried out ambidextrously. The main targeted outputs are Narrative Coherence, Sacred Narrative Identity, and Sustainable Destination Competitiveness. The three are interrelated in creating a strategic position for a destination at the national and global levels. When the narrative that is built is able to harmonize the values of sacredness, community involvement, and technological adaptation, then the destination's excellence will be formed sustainably (Maclean et al., 2021; Moreira et al., 2025).

This model further illustrates that narrative differentiation cannot be achieved solely through promotional campaigns or surface-level branding efforts. Instead, it must be rooted in the reconstruction of authentic visitor experiences, the emotional engagement of tourists, and the collective agency of local stakeholders in reinterpreting cultural values in ways that are both contextually grounded and strategically oriented. Such an approach aligns with the principles of strategic storytelling, which moves beyond mere information dissemination to actively reshape public perceptions and co-create meaning within destination contexts (Vo Thanh et al., 2020; Zhang & Ramayah, 2024).

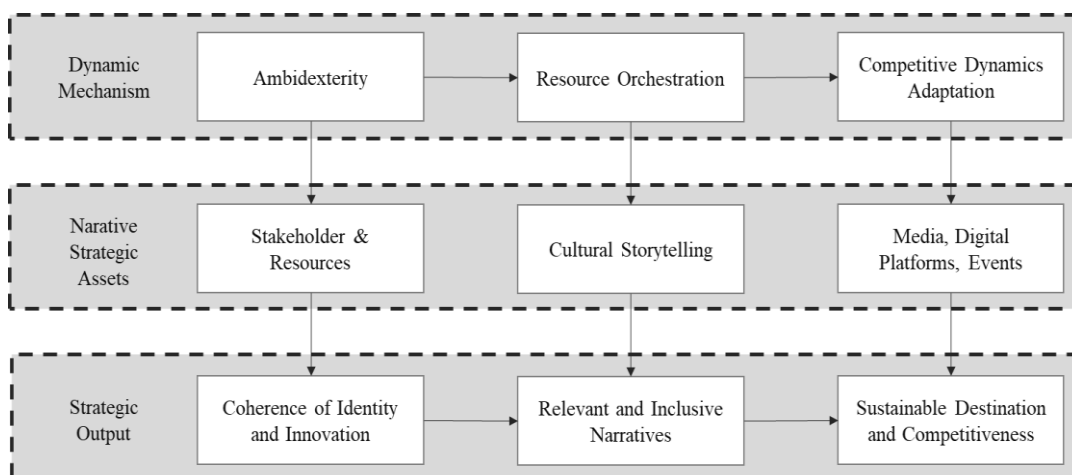


Figure 1. Ambidextrous Narrative Orchestration Model for Competitive Tourism Strategy

Viewed through the lens of strategic management, the operational dynamics of Borobudur’s tourism governance can be understood as a dynamic mechanism that continuously mediates the interaction between ambidexterity, resource orchestration, and destination competitiveness. In this mechanism, ambidexterity enables destination actors to simultaneously pursue heritage preservation and experiential innovation, while resource

orchestration determines how cultural, institutional, technological, and community-based resources are mobilized, integrated, and aligned across multiple governance levels. The effectiveness of this strategic flow depends not only on formal coordination structures, but also on the adaptive capacity of institutions to respond to evolving tourist expectations, digital communication patterns, and local socio-cultural transformations. Consequently, competitiveness within the Borobudur DSP should not be interpreted as a static outcome derived solely from infrastructural superiority, but rather as an emergent capability produced through continuous negotiation between conservation imperatives, narrative renewal, stakeholder collaboration, and market responsiveness.

Within this dynamic mechanism, narrative strategic assets constitute the central intangible resources through which Borobudur differentiates itself from competing destinations. These assets encompass both symbolic and functional dimensions, including cultural storytelling, sacred historical meanings, local traditions, collective memory, community practices, digital narrative content, and the institutional legitimacy attached to Borobudur as a UNESCO World Heritage Site. Symbolically, these assets reinforce emotional attachment, authenticity, and identity construction among visitors and local communities. Functionally, they operate as strategic instruments that facilitate destination branding, stakeholder alignment, tourism experience design, and transmedia communication across digital platforms. When effectively orchestrated, narrative strategic assets enable the destination to transform cultural heritage from a passive historical artifact into an active source of experiential and competitive value creation. Conversely, fragmented governance and top-down storytelling practices risk weakening narrative authenticity and reducing the capacity of these assets to generate long-term strategic advantage.

The strategic output of this integrated process is reflected in the emergence of narrative coherence, sacred narrative identity, and sustainable destination competitiveness. Narrative coherence refers to the alignment between policy narratives, visitor experiences, community participation, and digital communication strategies, thereby producing a consistent and credible destination image across multiple touchpoints. At the same time, sacred narrative identity preserves the spiritual and historical significance of Borobudur by ensuring that modernization and tourism commercialization do not erode its deeper cultural meanings. Through the integration of ambidextrous governance and narrative-based resource orchestration, Borobudur can cultivate a form of sustainable competitiveness that is not exclusively dependent on physical infrastructure or mass tourism expansion, but rather rooted in authenticity, collective identity, adaptive innovation, and inclusive stakeholder collaboration. In this sense, the future resilience of the Borobudur DSP will largely depend on its ability to institutionalize narrative orchestration as a core strategic capability within Indonesia's broader tourism governance architecture.

CONCLUSION

This paper has explored the strategic dynamics of narrative management in the Borobudur DSP through an integrative framework grounded in the concepts of ambidexterity, resource orchestration, and competitive dynamics. The conceptual analysis and critical analytical reflection reveal that the effectiveness of a narrative strategy is inherently tied to a destination's capacity to balance the preservation of heritage values



with the pursuit of contemporary innovation. The proposed *Ambidextrous Narrative Orchestration* model underscores the necessity of aligning strategic mechanisms, narrative-based assets, and competitive outputs to achieve sustainable and distinctive destination positioning in an increasingly dynamic tourism landscape.

The principal conclusion of this study is that adopting an ambidexterity approach in destination management is insufficient if interpreted solely through an administrative or procedural lens. True ambidexterity demands the strategic translation of exploration and exploitation into narrative forms which is articulated through thematic experiential pathways, the digital mediation of cultural interpretation, and the activation of community-rooted meanings. While March (1991) underscored the productive tension between exploration and exploitation, this study contends that, within the Borobudur context, such tension must be mediated by an acute sensitivity to local identities and evolving social dynamics (Kasemsarn et al., 2023), ensuring that innovation does not come at the expense of cultural authenticity.

Furthermore, the proposed conceptual model underscores that competitive dynamics in the tourism sector are not solely driven by promotional efforts or visual branding, but are fundamentally contingent upon the capacity to disseminate and manage narratives in a manner that is both contextually relevant and adaptively responsive. As Zhang & Ramayah (2024) emphasize, narrative influence is only impactful when delivered through channels aligned with audience media consumption preferences. Consequently, the strategic design of digital content distribution systems, the activation of social media engagement, and the integration of transmedia storytelling elements emerge as critical imperatives for amplifying the reach, resonance, and competitive positioning of the Borobudur narrative.

To translate these strategic insights into actionable implementation, it is recommended that the Indonesian government particularly Kemenpar and the BPOB initiate the development of a dedicated Narrative Governance Roadmap for the Borobudur DSP as an operational complement to Perpres No. 88 of 2024. This roadmap should establish measurable strategic priorities, institutional responsibilities, participatory coordination mechanisms, and narrative performance indicators that integrate cultural preservation, community engagement, and digital storytelling into destination governance practices. Concrete actions may include the formation of multi-stakeholder storytelling forums at the regional level, the integration of local cultural narratives into official tourism digital platforms, the provision of funding schemes for community-based creative storytelling initiatives, and the implementation of transmedia communication strategies that connect physical tourism experiences with digital engagement ecosystems. Equally important, periodic evaluation mechanisms should be institutionalized to monitor narrative authenticity, stakeholder participation, visitor emotional engagement, and the long-term sustainability of destination competitiveness. Through such coordinated actions, Borobudur can evolve beyond a heritage attraction into a globally resonant and locally grounded narrative destination capable of sustaining both cultural significance and strategic competitiveness.

The theoretical implications of this study lie in its contribution to extending the application of ambidexterity and orchestration frameworks into the domain of culture-based tourism narrative strategies. The proposed model not only delineates the structural

relationships among key variables, but also underscores the strategic significance of symbolic assets in enhancing destination competitiveness.

The practical implications of this study highlight the urgency of repositioning institutional roles, particularly that of the BPOB, from conventional administrative entities into proactive strategic orchestrators. Institutional legitimacy and effectiveness in tourism governance are contingent upon the ability to facilitate adaptive and collaborative relationships across stakeholder groups. This involves not only aligning local community interests with broader national development agendas, but also redesigning narrative interaction mechanisms to be participatory, inclusive, and sustainable.

The policy implications derived from this study underscore the need to embed narrative strategies as an integral component of national tourism planning and regulatory frameworks. While Perpres No. 88 of 2024 provides a spatial and sectoral blueprint for regional development, it falls short in explicitly addressing the narrative dimension of destination competitiveness. As such, it is imperative to formulate policies that promote the co-creation of narratives, empower local communities as active storytellers, and facilitate the development of digital distribution channels rooted in local cultural values.

Notwithstanding its contributions, this study remains conceptual and policy-oriented in nature, thereby opening several avenues for future research. Subsequent studies may empirically examine the operational effectiveness of ambidextrous narrative orchestration through qualitative fieldwork, stakeholder interviews, or mixed-method approaches involving tourists, local communities, and destination management organizations. Comparative studies across Indonesia's DSP such as Labuan Bajo, Mandalika, or Lake Toba may also provide deeper insights into how differing governance structures and socio-cultural contexts influence narrative competitiveness and collaborative orchestration. Furthermore, future research should explore the role of emerging technologies including artificial intelligence, immersive media, and data-driven personalization in reshaping destination storytelling and visitor engagement. Such inquiries would not only refine the proposed conceptual framework, but also contribute to the broader advancement of tourism governance scholarship in understanding how destinations can remain culturally authentic while strategically adaptive within increasingly digital and competitive tourism ecosystems.

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A STRATEGIC FRAMEWORK FOR SUSTAINABLE TOURISM DEVELOPMENT: LINKING CULTURE, DESTINATION MANAGEMENT, AND MULTI-STAKEHOLDER COLLABORATION CASE STUDY OF BATURADEN, INDONESIA

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Article Info	Abstract
<p>Keywords: ABCDE Model; Cultural Management; Destination Management; Sustainable Tourism; Structural Equation Modelling; Stakeholder Collaboration; Baturaden Tourism Area; Banyumas, Indonesia</p> <p>Received: October 1, 2025</p> <p>Approved: November 28, 2025</p> <p>Published: June 29, 2026</p>	<p>The purpose of this study is to design an integrated model that links destination management and cultural management as a strategic framework for promoting sustainable tourism in the Baturaden tourism destination, Banyumas Regency, Indonesia. Based on the theory of Bentler and Ping Chou (1987), this research model uses 30 research indicators, then the number of samples used is 30 times 10, i.e 300 samples. The population of this study was multi-stakeholder, which included academics, businesses, communities, government, media, and visitors. The sampling system used was non-probability sampling, with a purposive sampling method. This study uses SEM analysis techniques employing SmartPLS to process data. Statistical analysis confirms that both cultural management and destination management exert significant positive effects on sustainable tourism ($p < 0.05$). Although destination management shows a stronger coefficient, cultural management remains essential for sustaining tourism development. The study introduces the ABCDE Model for Integrated Sustainable Tourism, which conceptualizes the dynamic relationship between Cultural Management, Destination Management, and Sustainable Tourism. This model is supported by five principal actors: A – Academician, contributing research and knowledge development; B – Business, providing investment and innovation; C – Community, preserving cultural identity and ensuring local participation; D – Destination Governance, ensuring policy coherence and strategic coordination; and E – Exposure Media, enhancing visibility and public engagement. The ABCDE Model thus provides a holistic approach to achieving sustainable tourism through synergistic, multi-stakeholder collaboration. To further strengthen and validate this model, additional empirical testing in diverse regional contexts is recommended. In policy terms, the ABCDE Model offers a concise strategic roadmap that local governments can adopt to integrate culture, governance, and sustainability into a single, measurable development framework.</p>



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INTRODUCTION

Tourism remains a vital engine of regional development, yet its sustainability increasingly depends on how destinations integrate cultural assets, governance structures, and sustainability practices in a coherent management strategy. Rather than relying solely on broad universal theories such as the classic *Sustainable Development Theory* or traditional *Management Theory*, recent scholarship suggests that destination governance, collaborative stakeholder management, and holistic sustainability frameworks provide more relevant conceptual tools for understanding and managing modern tourism systems. For instance, the OECD Tourism Trends and Policies 2022 advocates for building resilience in tourism ecosystems through diversified governance, stakeholder collaboration, and adaptive destination management (OECD, OECD Tourism Trends and Policies, 2022). Similarly, sustainability-oriented tourism management is receiving renewed scholarly attention: a recent bibliometric study finds that research is shifting from pure competitiveness to sustainability-oriented models, indicating a need for broader, integrative frameworks (Rocio, Jaime, & Cinta, 2023).

Moreover, destination-level conceptual tools have advanced. Valente and colleagues (2023) propose a Sustainable Tourism Assessment Index (STAI) for assessing a destination's readiness to implement sustainable tourism trajectories, combining environmental, social, and governance indicators in a place-based package (Epifani & Valente, 2023). This kind of framework offers a valuable template for measuring outcomes in settings like Baturaden.

On the link between culture and destination competitiveness, recent empirical work demonstrates the importance of culture for tourism performance: a longitudinal study across 39 countries finds that national cultural values and practices significantly influence tourism competitiveness (Kumar, Kumar, & Nicolau, How does culture influence a Country's travel and tourism competitiveness? A longitudinal frontier study on 39 countries, 2024). Although this study is at the national level, its results underscore the potential importance of culture at smaller scales when properly managed.

Based on Banyumas Regency Regional Regulation Number 5 of 2018 concerning the Regional Tourism Development Master Plan (RIPKDA) for 2018–2033, Baturaden is designated as a strategic tourism area (KSP). This policy emphasizes the region's importance as a priority for tourism development. Nevertheless, the practical implementation of this mandate still faces challenges, particularly in integrating cultural preservation with destination management to ensure sustainable tourism outcomes. This condition forms the basis for developing an integrated model that connects these dimensions within the Baturaden tourism context.

Consequently, the potential of cultural tourism to attract visitors and enhance the local economy remains underutilized (Wibowo, Palar, & Wardhani, 2023). The linkage between culture and tourism is widely recognized as a critical factor in destination competitiveness (Richards, 2018); (Ritchie & Crouch, *The Competitive Destination A Sustainable Tourism Perspective*, 2003)).

Figure 1 below displays a map of the Baturaden tourist area, which has 11 attractions classified as theme parks. Furthermore, there are 47 natural attractions, including waterfalls, ponds, springs, tourist villages, waterfalls, hot springs, botanical gardens, and rivers surrounded by bamboo gardens.



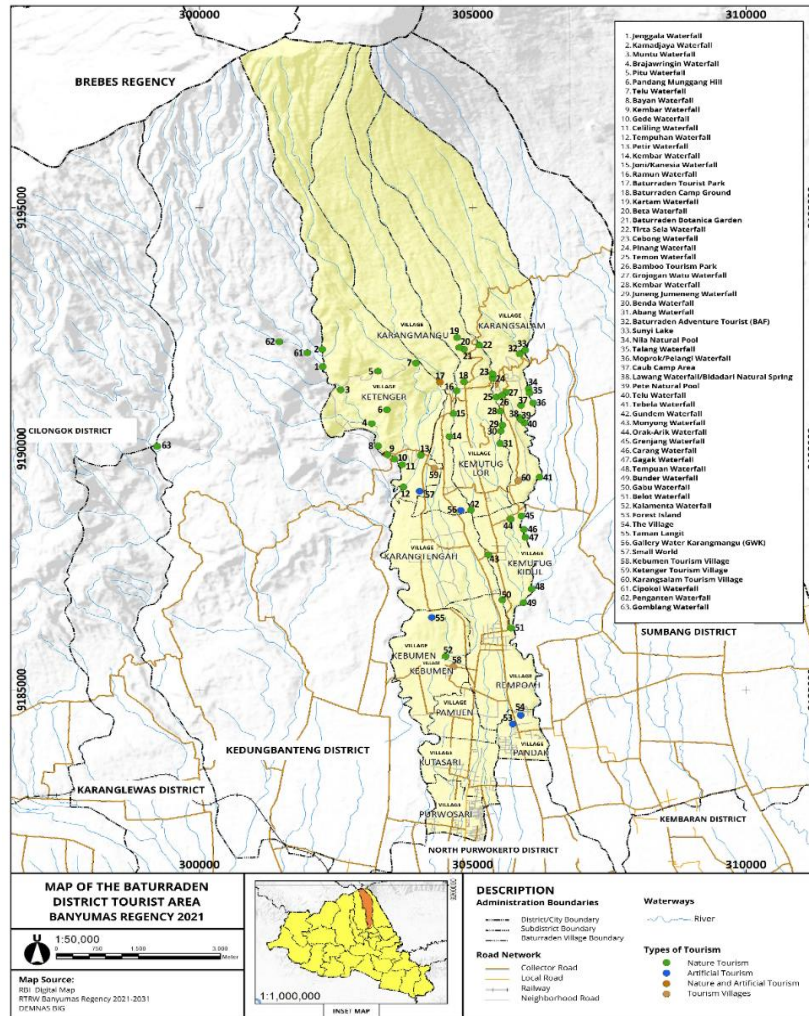


Figure 1. Baturaden Tourism Area Map
Sources: Primary Data (2021)

The following is a mapping some previous researches that raise the topics of cultural management, destination management, and sustainable tourism:

Table 1. Previous research on cultural management, destination management, and sustainable tourism

Topic	Title/Author	Explanation
Cultural Tourism & Cultural Management	<i>Cultural Tourism: The Partnership Between Tourism and Cultural Heritage Management</i> . Routledge (McKercher & Hilary, 2002)	One of the foundational works explaining how culture must be professionally managed to generate tourism value.
	Cultural tourism: A review of recent research and trends. <i>Journal of Hospitality and Tourism Management</i> , 36, 12–21 (Richard, 2018)	Reviews global trends in cultural tourism and highlights gaps regarding integration with sustainability
Destination management stakeholder coordination	Destination competitiveness: Determinants and indicators. <i>Current Issues in Tourism</i> , 6(5), 369–414 (Dwyer & Kim, 2003)	Shows the importance of integrated destination factors.
	The new frontiers of destination management: Applying variable geometries to tourism governance. <i>Journal of Travel Research</i> , 53(4), 403–417 (Beritelli, Bieger, & Laesser, 2013;	Key reference on destination governance discussing government roles and multi-actor coordination.



		Beritelli, Pietro; Bieger, Thomas; Laesser, Christian; (2013)	
		The Competitive Destination: A Sustainable Tourism Perspective. <i>CABI</i> (Ritchie & Crouch, 2003)	Demonstrates how destination management influences long-term sustainability.
Sustainable Tourism		Critical research on the governance of sustainable tourism. <i>Journal of Sustainable Tourism</i> , 19(4-5), 411-421 (Bramwell & Lane, 2011)	Explains governance mechanisms needed for sustainability transitions
		Sustainable Tourism for Development: Guidebook. <i>Madrid: UNWTO</i> (World Tourism Organization, 2013)	Provides an authoritative sustainability model commonly referenced in policy and academic discussions.
		Sustainable rural tourism strategies. <i>Journal of Sustainable Tourism</i> , 2(1-2), 102-111 (Lane, 1994)	Early foundational work differentiating economic, environmental, and social sustainability.
Multi-Actor/ Pentahelix Collaboration Models		Pentahelix Model Application for Tourism Development Strategy. <i>International Journal of Linguistics, Literature and Culture</i> , 12-20 (Nainggolan, Ardika, Ardhana, & Setiawan, 2020).	Concludes that multi-actor collaboration is essential, but that such collaboration is currently weak; strengthening the role of government in coordinating these actors through a proper Pentahelix approach is critical for sustainable tourism development in their studied region
		The multi-stakeholder role in Asia sustainable ecotourism: A systematic review. <i>PSU Research Review</i> , 8(3), 940-958 (Salman, Jaafar, Mohamad, Ebekozien, & Rasul, 2024)	Concludes that multi-stakeholder collaboration is critical for ecotourism sustainability but uneven in practice; policy support, institutional incentives and capacity building are repeatedly recommended to make collaboration meaningful rather than tokenistic.
Studies Linking Culture, Destination Management, and Sustainability		Achieving the SDGs through cultural tourism: Evidence from practice in the TExTOUR project. <i>European Journal of Cultural Management and Policy</i> , 14, Article 12238 (Ottaviani, Luca, & Aberg, 2024)	Finds that community-based cultural tourism projects (in 8 European territories) can help achieve Sustainable Development Goals (SDGs) by preserving heritage, generating local income, and enhancing social inclusion, demonstrating a strong link among cultural activities, destination governance, and sustainability.
		Cultural heritage and sports tourism: A systematic literature review of sustainable destination management practices. <i>Frontiers in Sports and Active Living</i> , 7 (Rangkuti, et al., 2025)	Synthesizes how heritage (culture) and sports tourism can be jointly managed for sustainability; highlights governance, community engagement, and sustainable indicators — aligns with <i>Cultural Management, Destination Governance, and Sustainable Tourism</i> interactions

Source: Research Data

It can be explicitly state: 1) Cultural tourism research exists but rarely integrates culture, destination, and sustainability (McKercher & du Cros; Richards); 2) Destination governance studies exist but do not connect cultural pathways (Beritelli et al.; Ritchie & Crouch); 3) Sustainability frameworks are well developed (Bramwell & Lane; UNWTO),



but lack integration with cultural identity formation; 4) Pentahelix studies exist, but none propose an ABCDE-style empirically derived model integrating SEM results.

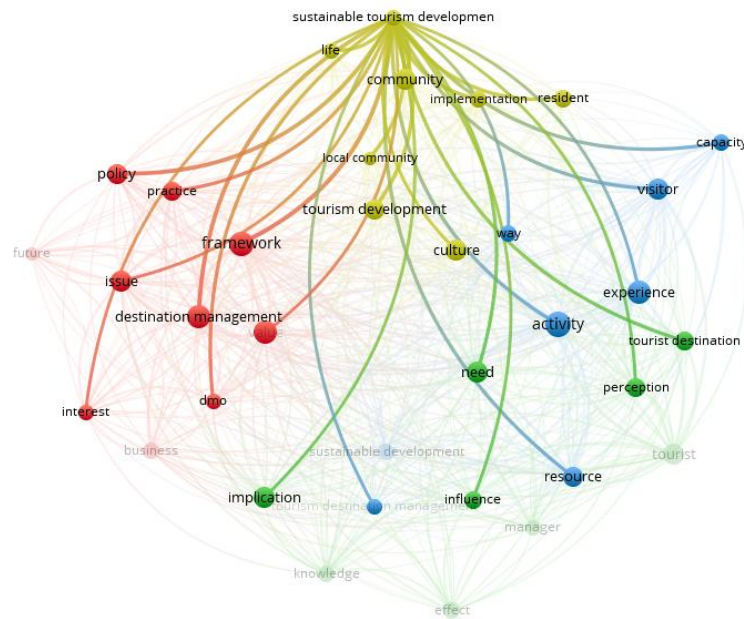


Figure 2. Network Visualization of Sustainable Tourism Development
Source: VOS viewer, 2025

Figure 2 presents the filtered bibliometric network of 255 articles on sustainable tourism development, resulting in four thematic clusters. The analysis reveals that *destination management* and *cultural aspects* frequently co-occur, indicating their centrality in sustainability discussions. However, limited integration between these two themes suggests a research gap that this study addresses through the proposed ABCDE Model for Integrated Sustainable Tourism. The bibliometric analysis indicates that existing studies on sustainable tourism development have primarily focused on either *destination management* or *cultural aspects* as separate themes. However, research integrating these two dimensions within a comprehensive sustainability framework remains limited. Most previous studies have discussed cultural heritage preservation or destination competitiveness in isolation, with few addressing how cultural management can be systematically aligned with destination governance to achieve long-term sustainability.

Addressing this gap, the present study seeks to develop an integrative model that connects cultural management, destination management, and sustainable tourism. Specifically, the objectives of this research are:

1. Examine how Cultural Management affects Destination Management quality in a culturally rich, yet underdeveloped, tourism area.
2. Analyze how Cultural Management and Destination Management jointly influence Sustainable Tourism outcomes.
3. Formulate an empirically grounded, context-sensitive framework for sustainable tourism in Baturaden, suitable for application by local stakeholders and policymakers.

This study is grounded in Sustainable Development Theory, which emphasizes the balanced pursuit of economic, social, and environmental objectives to ensure the long-term viability of development initiatives (World Commission on Environment and Development [WCED], 1987). Within the tourism context, this theory provides the foundation for understanding Sustainable Tourism as a process that harmonizes environmental conservation, community well-being, and economic growth (Butler, 2007; Bramwell & Lane, 2011). Accordingly, Sustainable Tourism serves as the endogenous variable in this study, representing the ultimate goal of achieving balanced and responsible tourism development.

Supporting this, Management Theory particularly in the areas of strategic and organizational management explains how effective planning, coordination, and stakeholder collaboration can enhance organizational and destination performance (Koontz & Wehrich, 2010). This theoretical lens informs the role of Destination Management as a mediating variable, emphasizing managerial processes such as governance, stakeholder coordination, and policy implementation that link cultural resources to sustainable outcomes.

The concept of Cultural Management aligns with these theories by emphasizing the preservation, utilization, and commercialization of local culture as strategic resources for tourism development (Richards, 2018; (Smith, 2003)). Through effective cultural management, local communities contribute to sustainability goals while maintaining cultural integrity. Thus, within the framework of Sustainable Development Theory and Management Theory, Cultural Management functions as an exogenous variable influencing Destination Management, which in turn facilitates the achievement of Sustainable Tourism.

Table 2. Hypothesis

Hypothesis 1	Causal effect relationship between Cultural Management and Destination Management.
H_0	: There is no significant effect of Cultural Management on Destination Management in Baturaden Tourism Area
H_1	: There is a significant effect of Cultural Management on Destination Management in Baturaden Tourism Area
Hypothesis 2	Causal effect relationship between Cultural Management and Sustainable Tourism.
H_0	: There is no significant effect of Cultural Management on Sustainable Tourism in Baturaden Tourism Area
H_1	: There is a significant effect of Cultural Management on Sustainable Tourism in Baturaden Tourism Area
Hypothesis 3	Causal effect relationship between Destination Management on Sustainable Tourism
H_0	: There is no significant effect between Destination Management on Sustainable Tourism in Baturaden Tourism Area
H_1	: There is significant effect between Destination Management on Sustainable Tourism in Baturaden Tourism Area

Source: Primary data (2025).

METHODOLOGY

Baturaden was selected as the study location because it is officially designated as a Strategic Tourism Area (KSP) in the *Banyumas Regency RIPKDA 2018–2033*, making it a priority for regional tourism development. Despite this status, the area continues to face challenges in aligning cultural preservation with destination management. Baturaden’s



significance is further supported by data from BPS (2015–2021) showing an annual average of over 780,000 domestic visitors, and Central Java tourism statistics reporting approximately IDR 10.37 billion in yearly tourism revenue. These conditions highlight the need for an integrated model to strengthen sustainable tourism practices in Baturaden.

Given that the study seeks to validate an integrated model using Partial Least Squares Structural Equation Modeling (SmartPLS), a quantitative design provides the methodological rigor necessary to assess both the measurement model (validity and reliability of indicators) and the structural model (the strength and significance of inter-variable paths). Moreover, the approach allows for the examination of mediating effects specifically, the role of Destination Management in linking Cultural Management to Sustainable Tourism outcomes based on empirical data collected from stakeholders in the Baturaden Tourism Area.

Thus, rather than describing phenomena qualitatively, this design focuses on testing theoretical linkages empirically to produce a model that can inform policy and practical strategies for sustainable tourism management in Banyumas Regency. The study explicitly adopts a comparative methodology. Comparative methodology refers to a systematic research strategy for analyzing similarities and differences across multiple cases to identify patterns, develop explanations, and build theoretical generalizations (Ragin, 2014).

This study uses structural equation modeling as a quantitative analysis by applying SmartPLS. The unit of analysis in this study comprises the Penta Helix stakeholders within the Baturaden Tourism Area, which include: (1) the community (residents, village tourism managers, and cultural practitioners), (2) visitors, (3) the private sector (operators of tourist attractions, hotels, and restaurants), (4) the government (tourism area managers and related agencies), (5) academics (lecturers, researchers, and consultants), and (6) the media (print and broadcast). These groups collectively represent the network of actors whose collaboration is essential for achieving integrated and sustainable tourism governance in Banyumas Regency.

In determining the sample size, this study follows the guidelines for Structural Equation Modeling (SEM). Bentler and Chou recommend a ratio of five to ten observations per estimated parameter (Bentler & Chou, 1987), while Sagan emphasizes that SEM requires a minimum of 200 cases to ensure statistical robustness. Given that the proposed model involves 30 observed indicators, a conservative ratio of 10 observations per indicator was adopted, resulting in a total sample of 300 respondents (Sagan, 2019). This sample size meets the criteria for SEM using Partial Least Squares (SmartPLS) and ensures adequate statistical power for model estimation and hypothesis testing.

The questionnaire in this study consists of three latent variables: Cultural Management, Destination Management, and Sustainable Tourism, operationalized through 30 reflective indicators. Each indicator was measured using a five-point Likert scale ranging from (1) *strongly disagree* to (5) *strongly agree*.

The sampling technique used in this study is non-probability purposive sampling, involving 300 respondents drawn from stakeholders in the Baturaden Tourism Area. The respondents represent the Penta Helix components: Academics (A), Business (B), Community (C), Government (G), and Media (M) who are directly involved in or influence cultural and destination management practices.

Although visitors (V) were initially considered as respondents to capture perceptions of tourism satisfaction, they were not included in the Penta Helix categorization. Instead, their responses were used as supporting data to triangulate stakeholder perspectives rather than as a core component of the model.

Validity and reliability were evaluated using standard SEM-PLS criteria (factor loadings, AVE, CR, Cronbach’s Alpha, Fornell–Larcker, HTMT). Indicators with loadings between 0.40–0.70 were retained because their removal did not improve AVE or CR and because they represented theoretically important cultural and management dimensions for the Baturaden context. Retaining theoretically essential indicators with moderate loadings is acceptable in exploratory SEM, as supported by Hair et al. (2021).

FINDINGS AND DISCUSSION

Profile of Respondent

Table 3. Descriptive Statistics of Respondent Demographic

Demographic Respondent	Valid	Frequency	Percent	Mean	Std. Deviation
Category	Academics	16	5,3	3,98	1,471
	Business	28	9,3		
	Community	69	23		
	Government	96	32		
	Media	14	4,7		
	Visitor	77	25,7		
	Total	300	100		
Gender	Female	146	48,7	1,51	,501
	Male	154	51,3		
	Total	300	100		
Education Background	Elementary	3	1	2,75	,719
	High School	108	36		
	Degree	159	53		
	Master	22	7,3		
	Doctor	8	2,7		
	Total	300	100		
Age	<30 years old	59	19,7	1,91	,541
	31-55 years old	210	70		
	>55 years old	31	10,3		
	Total	300	100		

Source: SPSS 25 (2025)

The structural model, on the other hand, was employed to test the causal relationships hypothesized among the constructs, i.e:

1. The influence of *Cultural Management* on *Destination Management*;
2. The influence of *Cultural Management* on *Sustainable Tourism*; and
3. The mediating effect of *Destination Management* on the relationship between *Cultural Management* and *Sustainable Tourism*.

The use of SmartPLS is appropriate for this study because it accommodates complex models with multiple constructs and mediating relationships, is suitable for exploratory research, and performs well with moderate sample sizes (Hair, Hult, Ringle, & Sarstedt, 2014). By employing both the measurement and structural sub-models, this research ensures the validity of the constructs and the robustness of the causal relationships among variables in the proposed ABCDE Model for Integrated Sustainable Tourism.

Measurement sub model check (Outer Model)

The results of the outer model evaluation indicate that all indicators demonstrated loading factor values above 0.70 and were statistically significant at the 0.05 level, confirming adequate indicator reliability. Furthermore, all constructs achieved AVE values greater than 0.50, meeting the minimum threshold for convergent validity. Specifically, *Cultural Management* recorded an AVE of 0.729, *Destination Management* an AVE of 0.519, and *Sustainable Tourism* an AVE of 0.530, showing that each construct explains more than half of the variance in its indicators.

In terms of internal consistency, the Composite Reliability (CR) values were also well above the recommended minimum of 0.70, with *Cultural Management* (0.950), *Destination Management* (0.894), and *Sustainable Tourism* (0.898). These results confirm that all three constructs possess high internal reliability and satisfactory convergent validity, indicating that the indicators consistently measure their intended latent variables. Overall, the findings from the measurement model demonstrate that the instrument used in this study is both valid and reliable, providing a sound basis for proceeding to the analysis of the structural (inner) model. In detail, these three criteria are shown in Table 4 below:

Table 4. Construct Reliability and Validity

Latent Variable	AVE Value	CR Value	Measurement Indicator		Factor Loadings
			Code	Brief Description	
Destination Management $\alpha = 0,862$	0,519	0,894	DM1	Image creation	0,740
			DM2	Visitors Fulfilment	0,860
			DM3	Human Resources Management	0,836
			DM5	Integrating promotion	0,762
			DM6	Visitor Management	0,681
			DM7	Registration Fee	0,712
			DM8	Destination Management Organization	0,440
			DM9	Crises Management	0,652
			CM1	Attraction Management	0,864
Cultural Management $\alpha = 0,938$	0,729	0,950	CM2	Calendar Event	0,850
			CM3	Preservation of cultural arts	0,886
			CM4	Engagement toward artists	0,882
			CM5	Sustainability	0,870
			CM6	Marketing	0,859
			CM7	Local Involvement	0,761
			ST1	Local well-being	0,623
ST2	Tourist satisfaction	0,776			
Sustainable Tourism $\alpha = 0,868$	0,530	0,898	ST3	Economic beneficiary	0,842
			ST4	Availability of water resources	0,573
			ST5	Congestion management by merchant	0,780
			ST6	Liquid congestion management by industry	0,801
			ST7	Tourist activity monitoring	0,807
			ST8	Tourism planning	0,559

Sources: SmartPLS (v.3.2.9) (2025)

Table 4 presents the loading factor values for all indicators within the three latent constructs. Consistent with the validity criteria, indicators with loading factors above 0.70 are considered valid, whereas those below this threshold may indicate weak representation



of their latent construct (Hair J. J., Hult, Ringle, & Sarstedt, 2021). The results show that several indicators recorded loading values below 0.70, namely *Visitor Management (DM6)*, *Destination Management Organization (DM8)*, *Crisis Management (DM9)*, *Local Well-being (ST1)*, *Water Resources (ST4)*, and *Tourism Planning (ST8)*.

While these indicators displayed lower individual loadings, the Average Variance Extracted (AVE) for each construct remained above the recommended minimum of 0.50 with *Destination Management (0.519)*, *Cultural Management (0.729)*, and *Sustainable Tourism (0.530)* indicating that more than half of the variance in each construct was still captured by its respective indicators. According to (Hair, Ringle, & Sardstedt, 2019). This suggests that the overall convergent validity of the constructs is acceptable, even though a few indicators contribute less strongly.

Structural Sub Model Check

Using SmartPLS 4.0, the study evaluated path coefficients (β), significance levels (p-values), and the explanatory power (R^2) of the model. The results provide empirical evidence of how collaboration among key actors including academics, businesses, communities, government, and media who enhances the relationship between cultural and destination management in promoting sustainable tourism outcomes. Thus, rather than testing generic correlations, the structural model in this research specifically measures the degree of integration among cultural, managerial, and sustainability factors within a regional tourism context.

The examinations carried out include: (a) examination of the path coefficients formed and their significance; (b) examination of the direct influence and/or indirect influence of the exogenous latent variables to the corresponding endogenous latent variables; (c) examination of the research hypothesis that is built; and (d) evaluation of the model's goodness of fit (GoF) through a number of criteria before the SEM is interpreted.

Feasibility of the SEM research model

Checking up of a number of model feasibility indicators shows that, although the model cannot be said to be very feasible, several feasibility indicators indicate that the analyzed structural equation model provides results that are feasible to interpret as shown in Table 5. Considering the feasibility criteria for the results of the model analysis in Table 5, in addition to the p and CMIN values, other criteria indicate that the SEM of the research developed is quite feasible or feasible to interpret.

Table 5. Goodness of Fit (GoF)

Criteria	Value	Cut-off	Analysis Outcome	Explanaton
Nilai <i>p</i>		> 0,05	0,000	Less feasible
<i>Chi Square Minimum (CMIN)</i>		> 619,519	695,499	Feasible
<i>d_G</i>		< d_G HI 0,95	0,648	Feasible
<i>NFI</i>		0,80	0,793	Quite feasible
<i>SRMR</i>		≤ 0,08	0,06	Quite feasible

Source: SmartPLS (v.3.2.9) (2025)

Model Interpretation

There are 3 direct influences formed between latent variables in the model. Table 6 shows the path coefficient values, the significance of each coefficient, and the rest in the



research hypothesis testing. In this table, a path coefficient is proven to indicate the magnitude of the influence of Destination Management on Sustainable Tourism. With a standardized value of 0.607, it is proven at a test level of 5% (p value = 0.000 < 0.05) which has an impact on H_0 in hypothesis 3 being rejected). In addition to this path coefficient, two other coefficients show real values at a test rate of 5 percent.

Table 6. Direct Influence Between Latent Variables on the Model

Influence Path		Standardized Path Coefficient	Value t critical	Value p	Explanation
Latent Exogen	Latent Endogen				
Cultural Management	Destination Management	0,739	19,146	0,000	H_0 on Hypothesis I is rejected
Cultural Management	Sustainable Tourism	0,266	4,788	0,000	H_0 on Hypothesis II is rejected
Destination Management	Sustainable Tourism	0,607	11,545	0,000	H_0 on Hypothesis III is rejected

Source: SmartPLS (v.3.2.9.) (2025)

The Influence of Local Cultural Management on Destination Management

Based on the results presented in Table 5, *Cultural Management* demonstrates a significant and positive association with *Destination Management* ($\beta = 0.739$, $p < 0.001$). This standardized coefficient indicates that improvements in cultural management practices such as cultural preservation, community engagement, and cultural event organization are strongly related to enhanced destination management performance in the Baturraden Tourism Area. While the relationship is statistically significant, it should be interpreted as an association rather than a direct causal effect, given the cross-sectional nature of the data.

The significant association between *Cultural Management* and *Destination Management* ($\beta = 0.739$, $p < 0.001$) underscores the strategic importance of integrating local cultural dimensions into tourism governance. In the Baturraden Tourism Area, cultural elements such as traditional arts, local ceremonies, culinary heritage, and community values function not merely as attractions but as structuring mechanisms that influence destination image, stakeholder collaboration, and visitor experience. This finding aligns with Kumar, Kumar, and Nicolau (2024), who demonstrated that national tourism competitiveness is strengthened when cultural values are embedded within destination policy and management systems. Similarly, Li et al. (2024) found that regional cultural capital correlates positively with visitor flows, suggesting that destinations with distinct cultural identities attract more sustained tourism engagement.

Wang, Yang, and Li (2021) further highlight that the reputation of cultural heritage can shape tourists' behavioral intentions, reinforcing the symbolic and emotional appeal of destinations. Machzumy, Lusianawati, and Muhtadi (2024) add that local cultural events enhance destination reputation and perceived quality, a mechanism also reflected in the Baturraden model, where indicators such as *Attraction Management (CM1)* and *Calendar Events (CM2)* demonstrated high loadings (>0.8) (Machzumy, Lusianawati, & Muhtadi, The Influence of Local Culture and Cultural Tourism Activities on the Quality and Reputation of Tourism Destinations in Bandung, 2024). This suggests that structured cultural programming and community involvement directly contribute to improved destination management practices.



The Influence of Local Cultural Management on Sustainable Tourism

The analysis of Table 5 indicates that *Local Cultural Management* significantly influences *Sustainable Tourism* ($\beta = 0.266$, $p < 0.05$). This suggests that improved management of local cultural assets such as arts, rituals, and traditional knowledge contributes positively to tourism sustainability in the Baturaden Tourism Area, although the effect size is modest compared to its impact on *Destination Management* ($\beta = 0.739$). The smaller coefficient value may indicate an indirect or mediated influence, where cultural management enhances sustainability primarily through its integration into destination management practices rather than acting as a standalone driver.

These findings align with prior studies emphasizing that the sustainability of tourism depends not only on environmental or economic governance but also on the adaptive preservation of cultural capital. For example, Gao and Zhang (2023) found that the transmission of local culture supports long-term tourist engagement and environmental stewardship. Similarly, Han, Lee, and Kim (2022) reported that embedding cultural preservation within tourism planning improves residents' quality of life and strengthens community attachment, two core pillars of sustainable tourism.

The literature review is again confirmatory and lacks critical evaluation. Discuss whether the findings of Nugraha et al. (2024), Poetra & Nurjaya (2021), and Verances et al. (2024) align or diverge from your context in Baturaden. The references are too recent and mostly regional; add more international or foundational sources to strengthen academic. There is no integration between empirical data and theoretical background. The discussion reads as a list of unrelated studies. The paragraph ends abruptly without synthesizing how these studies collectively validate or challenge the current research findings.

The Influence of Destination Management on Sustainable Tourism

The results of the third hypothesis test indicate that *Destination Management* has a significant and positive relationship with *Sustainable Tourism* ($\beta = 0.607$, $t = 11.24$, $p < 0.001$). This standardized coefficient suggests a moderately strong effect, implying that improvements in destination management practices are associated with enhanced sustainability outcomes in the Baturaden Tourism Area. However, the result should be interpreted as a standardized association rather than a literal "unit increase," as SEM coefficients reflect proportional rather than absolute changes.

The present findings correspond with contemporary research emphasizing the strategic role of destination management in advancing sustainability, yet they also extend existing insights by contextualizing them within a culturally driven, semi-rural tourism system like Baturaden. Heslinga, Yusuf, Damanik, and Stokman (2024) argue that post-pandemic destination recovery depends on community-centered management practices to rebuild trust and social cohesion an approach mirrored in Baturaden's growing reliance on community participation (*DM3* and *DM6* indicators). However, unlike Heslinga et al.'s urban European case, Baturaden demonstrates that such participation is mediated by local cultural values, showing how informal social structures can substitute for formal governance in achieving sustainability.

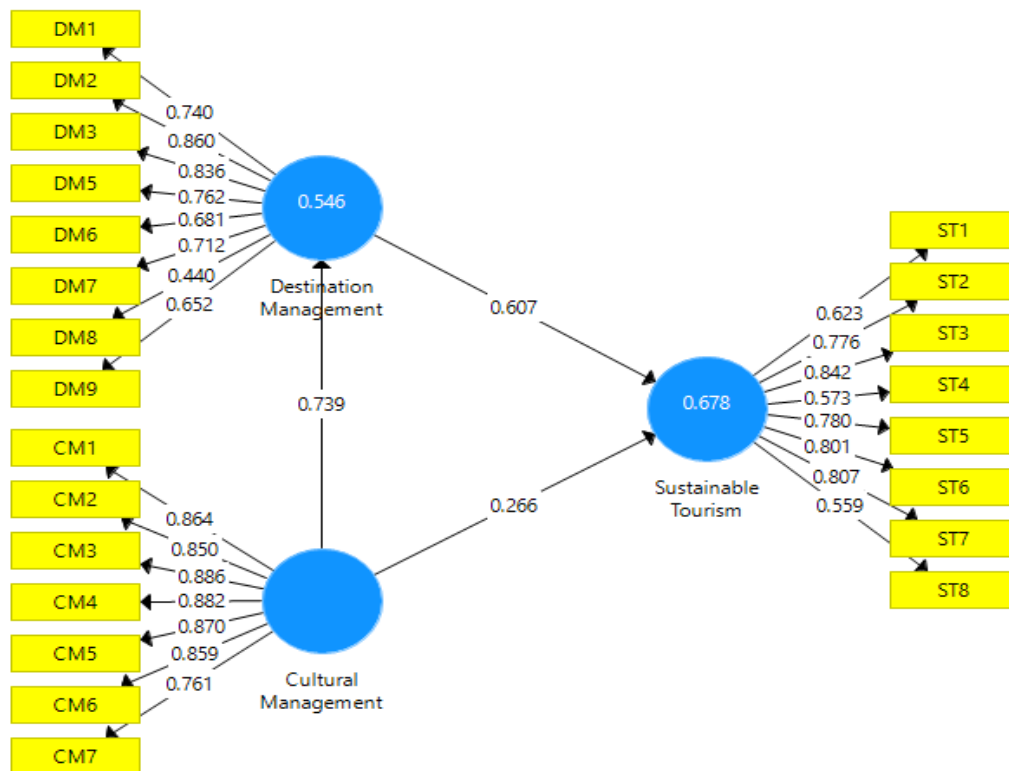


Figure 3. Path Coefficient and Loading Factors
Source: SmartPLS (v.3.2.9.) (2025)

Caption:

DM: Destination Management
CM: Cultural Management
ST: Sustainable Tourism

Proposed Model for Local Government

The empirical results of this study showing significant relationships between Local Cultural Management, Destination Management, and Sustainable Tourism form the theoretical foundation for a new integrative framework: the ABCDE Model for Integrated Sustainable Tourism. This model is not introduced as a separate construct, but as an outcome of the study’s empirical validation using SEM, which demonstrated strong standardized path coefficients linking Cultural Management → Destination Management ($\beta = 0.739$), Cultural Management → Sustainable Tourism ($\beta = 0.266$), and Destination Management → Sustainable Tourism ($\beta = 0.607$). Collectively, these results indicate that sustainable tourism performance in Baturaden emerges from the interconnected management of culture, destinations, and sustainability principles, mediated by collaborative engagement among key stakeholders.

The ABCDE Model for Integrated Sustainable Tourism conceptualizes the interconnection between Cultural Management, Destination Management, and Sustainable Tourism as a mutually reinforcing system driven by five strategic actors—Academician, Business, Community, Destination Governance, and Exposure Media. The model is theoretically inspired by the Pentahelix collaboration framework (Etzkowitz & Leydesdorff, 2000; Sutawa, 2012), but extends it by emphasizing the functional integration



of stakeholders rather than their categorical presence. Empirically, the model is grounded in this study's SEM results, which identified significant standardized path coefficients: Cultural Management → Destination Management ($\beta = 0.739, p < 0.001$), Cultural Management → Sustainable Tourism ($\beta = 0.266, p < 0.01$), and Destination Management → Sustainable Tourism ($\beta = 0.607, p < 0.001$). These relationships demonstrate that effective cultural management not only enhances destination performance but also indirectly supports tourism sustainability.

The results indicate that local cultural management contributes significantly to tourism sustainability, particularly by strengthening social cohesion and preserving local identity, yet its overall effect ($\beta = 0.266, p < 0.01$) is more modest compared to destination management. This finding aligns with previous studies suggesting that cultural dimensions often exert indirect or mediating influences on sustainability outcomes through community engagement and cultural heritage preservation (Kumar et al., 2024; Poetra & Nurjaya, 2021). In contrast, destination management demonstrates a stronger direct relationship with sustainable tourism ($\beta = 0.607, p < 0.001$), underscoring its central role in translating strategic planning into tangible sustainability performance.



Figure 4. ABCDE Model for Integrated Sustainable Tourism
Source: Primary Data (2025)

Strengths of the ABCDE Model:

1. **Holistic Multi-Actor Integration**
The model brings together academics, businesses, communities, governance bodies, and media ensuring that cultural preservation, tourism management, and sustainability are addressed from all key perspectives.
2. **Clear Division of Roles**
Each actor has a defined function, reducing overlaps and enabling more efficient coordination in destination development.
3. **Strong Cultural Orientation**
By placing the community and cultural values at the center, the model promotes authenticity and long-term cultural sustainability.
4. **Evidence-Based and Practice-Oriented**
The inclusion of the academic sector ensures research-driven decision-making, monitoring, and continuous improvement.

Weaknesses of the ABCDE Model:

1. High Coordination Demand
The involvement of five distinct actors requires strong governance capacity; without effective coordination, implementation may become fragmented.
2. Potential Power Imbalance
Businesses or government could dominate decision-making, reducing community influence and threatening cultural authenticity.
3. Resource Dependency
Effective application requires adequate funding, skills, and technological support, which may not be evenly available across all actors.
4. Risk of Conceptual Overlap
Some roles (e.g., exposure media and business marketing) may overlap in practice, requiring careful role clarification.

Table 7. Comparative Matrix

Aspect	Uluwatu Kecak Dance	Saung Angklung Ijo (SAU)	Ramayana Ballet Prambanan	Relevant to Baturaden
Cultural Authenticity	Strong ritual-based performance tied to local spirituality	Community-managed Sundanese cultural preservation	Classical Javanese performing arts	Guides design of culturally grounded attractions
Stakeholder Model	Business–community partnership	Community-owned institution	Government–private collaboration	Provides benchmarks for ABCDE roles
Management System	Structured scheduling, ticketing, digital marketing	Integrated cultural education, training, visitor engagement	Large-scale event management with heritage setting	Inspires improvement in destination governance
Sustainability Practice	Revenue for temple conservation	Cultural education for children	Preservation of Javanese performing arts	Informs cultural sustainability strategy

Source: Research Data

If positioned as comparative benchmarking, these three attractions serve as national best-practice references that help identify gaps and opportunities for Baturaden, thereby strengthening the practical application of the ABCDE model.

CONCLUSION

The ABCDE Model for Integrated Sustainable Tourism illustrates that achieving sustainable tourism in the Baturaden Tourism Area requires a sequential and mutually reinforcing process among three key dimensions: Cultural Management, Destination Management, and Sustainable Tourism. The SEM analysis in this study indicates a significant associative pattern rather than strict causality, suggesting that improvements in cultural management are statistically linked to enhanced destination management, which in turn correlates with greater tourism sustainability. This relationship aligns with the theoretical view that cultural capital functions as a foundational resource in destination competitiveness (Richards, 2018), providing symbolic and experiential value that can be



transformed through effective management and governance structures (Ritchie & Crouch, 2010).

This study introduces several novel contributions. First, the ABCDE Model integrates Cultural Management, Destination Management, and Sustainable Tourism into a single, empirically informed framework, explicitly linking these dimensions through cross-sector actor collaboration. Unlike the conventional Pentahelix model, which primarily emphasizes multi-stakeholder engagement without specifying variable interactions, the ABCDE Model operationalizes causal pathways between culture, destination management, and sustainability using SEM coefficients (β -values), making the relationships measurable and testable. Compared to general sustainable tourism frameworks proposed by UNWTO, which outline principles at a macro level, the ABCDE Model is context-sensitive, reflecting Baturaden's unique cultural assets, visitor patterns, and governance structures.

Second, the model provides practical relevance for local stakeholders: it identifies how each actor such as academics, business, community, government, and media can contribute to measurable outcomes, such as cultural preservation, destination service quality, and sustainability indicators. Although this study is primarily conceptual, the model is designed with empirical data from 300 respondents and local tourism statistics, offering a structured roadmap for field implementation and evaluation in Baturaden. Thus, the study contributes both theoretically, by integrating multi-dimensional sustainability with measurable actor roles, and practically, by providing a context-specific tool for local tourism development planning.

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TOURISM INVESTMENT, LABOR GAINS, AND DELAYED GROWTH: A SYNTHETIC CONTROL EVALUATION OF INDONESIA'S DPSP

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Article Info	Abstract
<p>Keywords: Super Priority Destination, SCM, Tourism, Economic Growth, Indonesia.</p> <p>Received: December 22, 2025</p> <p>Approved: May 29, 2026</p> <p>Published: June 29, 2026</p>	<p>Indonesia's Super Priority Tourism Destinations program identifies five regions outside Bali as strategic hubs for concentrated tourism investment. However, rigorous causal evidence of its economic impact remains largely absent from the literature. This study assesses the program's effect on regional economic growth in North Sumatra and North Sulawesi—the provinces that host Lake Toba and Likupang—using the Synthetic Control Method, complemented by the Mann-Whitney U test to examine changes in tourism-related employment, wages, and output in the accommodation sector. The Synthetic Control results indicate that aggregate regional output in both provinces remained below their respective counterfactual trajectories throughout 2020–2024, with mean treatment effects of -0.0428 log points in North Sumatra and -0.0496 log points in North Sulawesi. In contrast, the Mann-Whitney U test reveals statistically significant increases in tourism-related employment and average wages in both provinces over the same period. This divergence between aggregate and sectoral outcomes constitutes the study's central finding. The results are consistent with a sequential interpretation of the Tourism-Led Growth Hypothesis, in which labor market adjustments emerge earlier than broader output multipliers, particularly under conditions of early-stage destination development and pandemic-related demand disruptions. These findings extend the Tourism-Led Growth Hypothesis literature to settings shaped by a simultaneous global economic shock and make a methodological contribution by introducing a multi-level evaluation framework for tourism policy assessment.</p>

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INTRODUCTION

Background and Objectives

Indonesia’s tourism sector has shown remarkable resilience in the post-pandemic period. By 2023, international tourist arrivals to Indonesia reached 11.68 million, a 98.3 percent increase from 2022, and climbed to 13.9 million in 2024, the highest figure in four years (BPS Bali, 2024). However, as shown in Figure 1, this recovery remains highly concentrated: Bali alone accounts for nearly half of all international arrivals, a structural imbalance that persists rather than narrowing during the post-pandemic recovery. Although tourism is widely recognized as a driver of economic growth through its multiplier effects on hospitality, transport, retail, and local services (Chidakel et al., 2021; Cui, 2024), these benefits remain unevenly distributed across Indonesia, providing the core motivation for a redistributive tourism development policy at the national level.

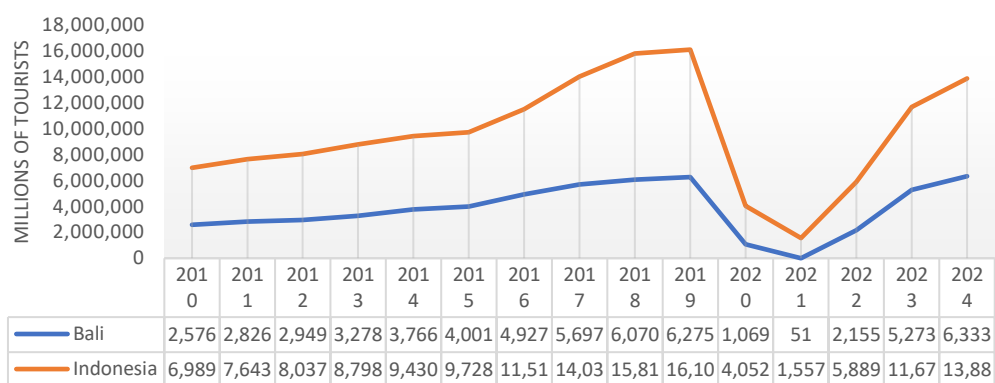


Figure 1. Number of International Tourist Arrivals to Bali and Indonesia, 2010–2024
Source: Bali Province Central Bureau of Statistics (BPS), 2024

To address these challenges, the Indonesian government accelerated national tourism growth by launching the Super Priority Tourism Destinations (Destinasi Pariwisata Super Prioritas/DPSP) under Presidential Regulation No. 18 of 2020, as part of the National Medium-Term Development Plan (RPJMN) 2020–2024. The program designates five destinations outside Bali, namely Lake Toba (North Sumatra), Likupang (North Sulawesi), Borobudur (Central Java), Mandalika (West Nusa Tenggara), and Labuan Bajo (East Nusa Tenggara), as strategic development hubs for targeted infrastructure investment, improved connectivity, and destination promotion. Specifically, the DPSP aims to increase both international and domestic tourist arrivals by developing physical and non-physical supporting infrastructure (Purnomo & Khairunnisa, 2024).

Table 1. Physical and Non-Physical Development Programs of the DPSP in Lake Toba and Likupang

Year	DPSP Development Programs	
	Lake Toba (North Sumatra)	Likupang (North Sulawesi)
2020	Physical programs: Construction of the Balige Bypass Road, access road to Huta Ginjang, Sipinsur Road, and Aek Halian Bridge.	— No program recorded —
2021	Physical programs: Construction of wastewater treatment plant (IPAL) in Parapat.	Physical programs: Construction and upgrading of 45.47 km of roads along the DPSP Manado–Bitung–Likupang corridor; road preservation and construction of one bridge (Bitung–Likupang yratory road);



	<p>Physical programs: Development of venues for the F1H2O in Lake Toba.</p> <p>Events: Gondang Naposo Festival (Samosir); Lake Toba Rally (Parapat); Bunga dan Buah Festival (Berastagi); Sisingamangaraja Festival (Humbang Hasundutan); Samosir Jamming Paradise; Samosir Lake Toba Marathon; Toba Silalahi Arts Festival; Lake Toba Asia Pacific Rally Championship (APRC); and others.</p>	<p>development of the Likupang Special Economic Zone (SEZ); improvement of “rumah swadaya” quality to support tourism.</p> <p>Non-physical programs: Basic training for homestay managers and tourism village managers in Likupang.</p> <p>Event: Likupang Tourism Festival 2021.</p>
2022	<p>Physical programs: Upskilling and reskilling training for human resources in the hotel sector around Lake Toba and capacity building for creative economy business actors in the Lake Toba area.</p> <p>Event: F1H2O held in Lake Toba.</p>	<p>Non-physical programs: Training for creative economy human resources in the musicpreneur subsector in Likupang.</p> <p>Events: Likupang Tourism Festival 2022; Likupang Santa Charity Run; Likupang North Sulawesi International Fishing Competition (LNSIFC).</p>
2023	<p>Non-physical programs: Ministry of Tourism and Creative Economy (Kemenparekraf) forum on improving destination governance in Likupang.</p> <p>Event: Likupang Tourism Festival 2023.</p>	<p>Non-physical programs: Ministry of Tourism and Creative Economy (Kemenparekraf) forum on improving destination governance in Likupang.</p> <p>Event: Likupang Tourism Festival 2023.</p>

Source: Kemenparekraf (2023)

Table 1 outlines the scope of DPSP interventions at the two destinations examined in this study. The breadth of both physical and non-physical programs underscores that the DPSP is not a narrow sectoral subsidy but a comprehensive destination development strategy. Critically, these two components are likely to generate economic effects across different time horizons. Physical infrastructure investment requires years of construction and visitor adoption before generating measurable output effects. Consistent with evidence from China and Singapore, infrastructure's contribution to economic growth is inherently more significant in the long run, as it takes time to enhance accessibility and activate multiplier effects (Karimi et al., 2024; Liu et al., 2022). By contrast, non-physical interventions such as human resource training and destination marketing tend to produce more immediate but narrower sectoral responses. This temporal heterogeneity is broadly consistent with the Tourism-Led Growth Hypothesis, which posits that the transmission from tourism investment to aggregate output is gradual, as sectoral adjustments in employment and service demand typically precede broader regional multiplier effects (Shahzad et al., 2017; Suhel & Bashir, 2018). This consideration motivates the multi-level evaluation framework adopted in this study.

Although the DPSP was designed to stimulate local economic growth beyond Bali, rigorous causal evidence of its impact remains scarce. Most existing assessments rely on descriptive analysis, input-output modeling, or pre-post comparisons without adequate counterfactual controls, approaches that cannot isolate policy effects from concurrent economic trends (Abadie et al., 2010). A critical identification problem further complicates inference: the DPSP launched in early 2020, precisely when COVID-19 imposed an unprecedented shock on global tourism. DiD estimation is difficult to apply here because the parallel-trends assumption is hard to satisfy when a large external shock affects provinces with varying degrees of tourism dependence in heterogeneous ways (Bouttell et al., 2018; Kreif et al., 2016). Panel regression is limited by unobserved heterogeneity and the non-random timing of the pandemic. The Synthetic Control Method addresses these limitations by constructing a province-specific counterfactual from an optimally weighted

combination of untreated units, accounting for time-varying unobserved confounders without requiring parallel trends (Abadie et al., 2010; Abadie & Gardeazabal, 2003; Bouttell et al., 2018).

Two additional gaps motivate the study's design. First, although the identification challenge posed by COVID-19 is addressed methodologically through SCM, the TLGH literature has paid limited attention to whether its predicted transmission mechanisms remain operative or are merely delayed when policy implementation coincides with a major demand shock. Second, existing evaluations typically focus on aggregate output, overlooking early-stage sectoral signals, particularly in labor markets, where tourism development effects often precede macroeconomic multiplier effects by several years.

To address this research gap, this study examines the impact of the DPSP policy on regional economic growth using the Synthetic Control Method (SCM), focusing on North Sumatra Province (Lake Toba DPSP) and North Sulawesi Province (Likupang DPSP). Two research questions guide the analysis: (1) Has the DPSP generated higher regional economic growth in treated provinces relative to a credible counterfactual? (2) Has the DPSP produced statistically significant shifts in tourism-related sectoral indicators, namely employment, wages, and accommodation sector output, that may signal early-stage policy transmission even in the absence of short-term aggregate effects? These sectoral indicators are selected for their direct relevance to the tourism transmission mechanism. Employment captures the labor market response to destination investment, typically the earliest observable signal of policy transmission. Wages reflect improvements in labor productivity and service quality, while accommodation sector output provides a direct measure of tourism service utilization and early-stage demand response. Differences in sectoral indicators before and after the intervention are analyzed using the Mann-Whitney U test, given its robustness under small sample sizes and non-normal distributions.

This study makes three distinct contributions to the literature on tourism economics, regional development policy, and causal inference. First, to the authors' knowledge, it is the first application of the Synthetic Control Method to evaluate the DPSP program in Indonesia, filling a critical methodological gap in the country's tourism policy evaluation literature. Conventional approaches are insufficient given the small number of treated units and the concurrent pandemic shock. Second, by combining SCM with the Mann-Whitney U test, this study introduces a multi-level evaluation framework that separates aggregate macroeconomic effects from sectoral labor market dynamics and can detect policy signals that aggregate indicators may miss. Third, the study extends the empirical TLGH literature by examining the hypothesis's predictions under a simultaneous global economic shock caused by COVID-19, a context that prior TLGH evaluations have rarely examined systematically. It also contributes empirical evidence on the conditionality of the tourism-growth relationship in early-stage destination development contexts.

Literature Review

The Tourism-Led Growth Hypothesis (TLGH) is the theoretical cornerstone of much of the literature on the economic impacts of tourism, suggesting that strategic development in this sector can significantly catalyze sustained regional growth by increasing demand (Shahzad et al., 2017; Suhel & Bashir, 2018). Within this framework, tourism activity, reflected in tourist arrivals and tourism expenditure, supports the expansion of related sectors, increases value added, and strengthens the overall



performance of regional economies. Empirical studies generally support the TLGH, showing that tourism expansion contributes positively to economic growth through employment creation, investment stimulation, and demand spillovers. However, the strength, timing, and magnitude of these effects vary considerably across institutional, structural, and macroeconomic contexts, suggesting that tourism-led growth is not a uniform phenomenon but one shaped by the specific conditions of each destination.

Empirical findings confirm this context dependence. While many studies report a significant positive relationship (Cannonier & Burke, 2019; Garidzirai & Pasara, 2021; Scarlett, 2021; Wijesekara et al., 2022), the magnitude and direction of this impact vary substantially across economic structures. In economies dominated by large manufacturing sectors, tourism's contribution to GDP tends to be modest, whereas in service-based or slower-growing economies, it more often serves as a significant growth catalyst (Shahzad et al., 2017). This divergence reflects differences in absorptive capacity, namely the ability of local economies to convert tourism expenditure into broader domestic production linkages and multiplier effects. In contexts where high-productivity alternative sectors already exist, tourism expenditure tends to generate weaker economy-wide multipliers because tourism constitutes only a relatively small share of total economic activity. By contrast, in less diversified economies, tourism expansion may exert stronger spillover effects across employment, household income, and local demand.

Institutional quality further moderates the relationship. Destinations with stronger governance frameworks retain tourism revenues more effectively, whereas weak institutions may divert economic benefits from local communities (Adedoyin et al., 2022; Tang & Tan, 2018). At the extreme, excessive tourism dominance risks Dutch Disease dynamics, in which foreign exchange inflows appreciate the real exchange rate and draw productive resources away from tradable sectors, thereby weakening manufacturing competitiveness and long-run growth (Ojaghlou, 2019). Taken together, these findings suggest that tourism-led growth is conditioned by structural and institutional factors rather than tourism volume alone, a consideration directly relevant to emerging destinations such as Lake Toba and Likupang, where diversification remains limited and institutional capacity is still developing.

Despite broad empirical support for the TLGH, important questions remain about how tourism-led development performs in emerging destinations facing structural limitations and large external shocks. This issue is particularly relevant to Indonesia's DPSP policy, implemented in emerging tourism regions precisely as the COVID-19 pandemic began disrupting global tourism demand. Yet the TLGH has rarely been tested in contexts where a large external shock coincides with policy implementation, leaving it unclear whether tourism-led growth mechanisms remain operative under crisis conditions or whether their effects are delayed rather than absent. Moreover, prior evaluations of tourism development policies in comparable contexts generally focus on aggregate output indicators while paying limited attention to sectoral transmission mechanisms that may emerge earlier than broader macroeconomic outcomes. This gap motivates a study that applies a credible causal inference framework to evaluate the effectiveness of tourism policy in an emerging destination context shaped by structural constraints and pandemic-induced disruptions.

METHODOLOGY

Data and Variables

This study uses secondary data from official publications of the Central Statistics Agency (Badan Pusat Statistik/BPS). The unit of analysis is the provincial level, focusing on two provinces with DPSP locations: North Sumatra Province (Lake Toba DPSP) and North Sulawesi Province (Likupang DPSP). The observation period spans 2010–2024, with 2010–2019 as the pre-intervention period and 2020–2024 as the post-intervention period, consistent with the formal designation of DPSP locations under the RPJMN 2020–2024.

In the SCM framework, the primary outcome variable is Gross Regional Domestic Product (GRDP) per capita, which serves as an indicator of regional economic performance and welfare. To construct a synthetic control unit that closely resembles the treated provinces before the intervention, three predictor variables are used: the Labor Force Participation Rate (LFPR), Mean Years of Schooling (MYS), and the population growth rate. These variables are selected for their theoretical relevance to regional economic growth. LFPR reflects labor supply conditions that determine a province's responsiveness to investment-driven demand shocks (Bartik, 2015; Beverly et al., 2023), a channel directly relevant to DPSP's employment transmission mechanism. MYS proxies human capital accumulation (Laverde-Rojas et al., 2019), which conditions the capacity of local economies to capture productivity gains from tourism investment. Population growth is included as a demographic scaling variable to ensure that the synthetic control tracks the treated province's demographic trajectory and prevents spurious divergence attributable to differential population dynamics. Together, these predictors ensure that the synthetic control unit provides a credible counterfactual representation of what economic conditions in the treated provinces would have looked like absent the DPSP intervention.

In addition to the main analysis, this study incorporates sectoral variables to examine the mechanisms underlying the DPSP policy, particularly employment and wage dynamics in tourism-related sectors. These indicators are analyzed using the Mann-Whitney U test. Notably, the sectoral classification of employment and wages in BPS labor statistics changed over time. From 2010 to 2014, the publication *Keadaan Angkatan Kerja Indonesia* used a 9-sector classification, in which Wholesale and Retail Trade, Restaurants, and Hotels were reported as a single category. Starting in 2015, the classification expanded to 17 sectors, separating these components. This reclassification introduces a potential measurement risk that could bias trend comparisons across the observation period. This limitation is addressed by aggregating the post-2015 subcategories to reproduce the pre-2015 classification structure, using their combined values as a consistent proxy for tourism-related employment and wage indicators throughout the observation window. While this approach introduces a degree of measurement approximation, it preserves time-series integrity and is considered methodologically defensible given the structural similarity of the aggregated categories. The operational definitions, measurement units, and data sources for all variables are summarized in Table 2.

For the SCM analysis, a donor pool is formed from provinces that were not exposed to the DPSP policy intervention. Provinces hosting other DPSP sites are excluded to prevent potential contamination of the policy impact. Provinces included in the donor pool are selected based on similarities in economic characteristics during the pre-intervention period, particularly GRDP per capita levels and economic growth trends before 2020. This

procedure ensures that the synthetic control unit provides a credible counterfactual representation for the treated provinces in the absence of the DPSP policy.

Table 2. Variables, Measurement and Data Sources

	Variable	Variable Measurement	Source
<i>Synthetic Control Method</i>	Economic Growth	Gross Regional Domestic Product (GRDP) per capita	BPS
	Labor Participation (LFPR)	Force Rate Percentage of population aged 15 years and over who are part of the labor force (%)	BPS
	Mean Years of Schooling (MYS)	Average number of years completed by the population aged 15 years and over in formal education (years)	BPS
	Population Growth	Annual population growth rate (%)	BPS
<i>Mann-Whitney U Test</i>	Number of Workers in the Tourism Sector	Population aged 15 years and over who worked during the last week according to main occupation: a. Accommodation and Food & Beverage Services b. Wholesale and Retail Trade	BPS
	Average Wages in the Tourism Sector	Average monthly wage/salary of workers by main occupation (IDR): a. Accommodation and Food & Beverage Services b. Wholesale and Retail Trade	BPS
	Accommodation and Food & Beverage Sector	Growth rate of GRDP of the accommodation and food & beverage sector at constant prices (%)	BPS

Source: Central Bureau of Statistics (BPS), 2024

Data Analysis

The impact of Indonesia's DPSP policy on regional output is analyzed using the Synthetic Control Method (SCM). This approach builds on the seminal work of Abadie & Gardeazabal (2003) and the methodological extensions by Abadie et al. (2010). SCM is selected for this study because the DPSP policy was implemented in only a limited number of provinces and there is no clearly comparable untreated region. Conventional comparative approaches, such as Difference-in-Differences, may be less appropriate in this context, given the heterogeneity of regional economic structures and the difficulty of satisfying the parallel-trend assumption. SCM addresses this limitation by constructing a synthetic comparison unit from weighted combinations of control provinces so that the resulting synthetic unit closely reproduces the characteristics and pre-intervention trajectory of the treated province. Accordingly, post-intervention differences between the treated province and its synthetic counterpart can be interpreted as the policy's causal impact (Abadie et al., 2010; Abadie & Gardeazabal, 2003; Yan & Chen, 2023). By using the SCM approach, this study generates a credible proxy for the non-intervention scenario, enabling a rigorous comparison between actual economic output and the projected trajectory in the absence of DPSP.

The validity of the SCM estimates depends heavily on the quality and composition of the donor pool. Therefore, the donor pool in this study was restricted to provinces that did not receive the DPSP intervention and had relatively similar economic characteristics before 2020. This restriction aims to improve the credibility of the synthetic counterfactual and reduce potential bias from structural differences across provinces. However, because the number of eligible comparison provinces is limited, the external validity of the findings should be interpreted cautiously, as the estimated effects primarily reflect the institutional and economic contexts of North Sumatra and North Sulawesi rather than those of all tourism destinations in Indonesia.



A potential source of bias also stems from the COVID-19 pandemic, which created a simultaneous global economic shock during the post-intervention period. If the pandemic affected treated and donor pool provinces to different degrees, particularly because tourism-dependent regions were more vulnerable to mobility restrictions and declining travel demand, the estimated post-intervention gaps may partially reflect differences in shock exposure rather than policy effects alone. This study attempts to mitigate this risk by restricting the donor pool to provinces with broadly comparable economic structures, thereby reducing the likelihood of differential shock absorption between treated and control units. In addition, placebo tests provide further inferential support by assessing whether the observed gaps are substantially larger than those in provinces exposed to the same pandemic environment. Nevertheless, the estimated effect sizes should still be interpreted with caution, given the severity of the pandemic shock during the observation period.

To assess the robustness and statistical significance of the findings, a series of placebo tests was conducted. This involved iteratively applying the SCM to each province in the donor pool, reassigning treatment status to each control unit as if it had received the DPSP intervention. However, because the number of available units is limited, the resulting placebo distribution is relatively coarse, yielding low-resolution p-values. For instance, with only ten units, the smallest attainable p-value is 0.1, which constrains inference at the conventional 5% significance level (Chen & Yan, 2023). Following the methodology outlined by Abadie et al. (2010) and Yan & Chen (2023), and adopting the approach of Lahura & Sabrera (2023), statistical significance is assessed by comparing the post-intervention-to-pre-intervention Mean Squared Prediction Error (RMSPE) ratio between the treated provinces and the placebo units. When North Sumatra and North Sulawesi show the highest RMSPE ratios within the donor pool and exhibit distinctively large gap patterns, the effects are deemed statistically significant. This suggests that the observed impacts are not due to chance but can be credibly attributed to the implementation of the DPSP policy.

To provide a more comprehensive perspective, this research integrates the Mann-Whitney U test to assess shifts in sectoral metrics following the DPSP's introduction. This non-parametric technique was selected for its robustness with small sample sizes and non-normal data. The evaluation specifically examines changes in the distribution of the tourism-related workforce, industry wage levels, and the output of the accommodation and food & beverage sectors between the pre- and post-policy eras. All computational procedures, including both the SCM and non-parametric inferences, were performed using Stata.

FINDINGS AND DISCUSSION

Estimation of the DPSP Impact

Table 3 presents the weights assigned to each control province in constructing the synthetic counterparts for North Sumatra and North Sulawesi. The pre-intervention economic trajectory of North Sumatra is most closely reproduced by a weighted combination of Central Kalimantan and South Sulawesi, whereas North Sulawesi's counterfactual is constructed from a mix of Central Sulawesi, West Sumatra, Central Kalimantan, and South Sumatra. The other provinces in the donor pool receive a weight of 0.



Table 3. Unit Donor Pool & Optimal Unit Weights

North Sumatra		North Sulawesi	
Donor Pool	U.weights	Donor Pool	U.weights
West Sumatra	0	South Kalimantan	0
South Sumatra	0	West Sumatra	0.3310
Central Kalimantan	0.5490	Central Kalimantan	0.1740
South Sulawesi	0.4510	South Sulawesi	0
West Java	0	Central Sulawesi	0.4080
		South Sumatra	0.0870

Source: Author Analysis

Figures 2 and 3 present the actual versus synthetic economic trajectories for both provinces over 2010–2024. During the pre-intervention period (2010–2019), the synthetic control closely tracks the actual outcome in both provinces, confirming a strong pre-treatment fit, the foundational requirement for causal identification under SCM. This close correspondence indicates that the synthetic unit captures each treated province's underlying economic structure prior to the DPSP intervention, and that post-intervention divergences can be credibly attributed to the policy rather than to pre-existing differences.

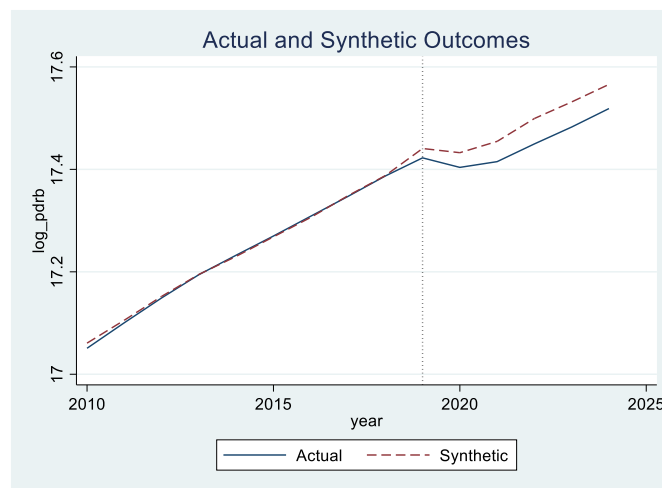


Figure 2. Actual and Predicted paths (North Sumatra)
 Source: Author Analysis

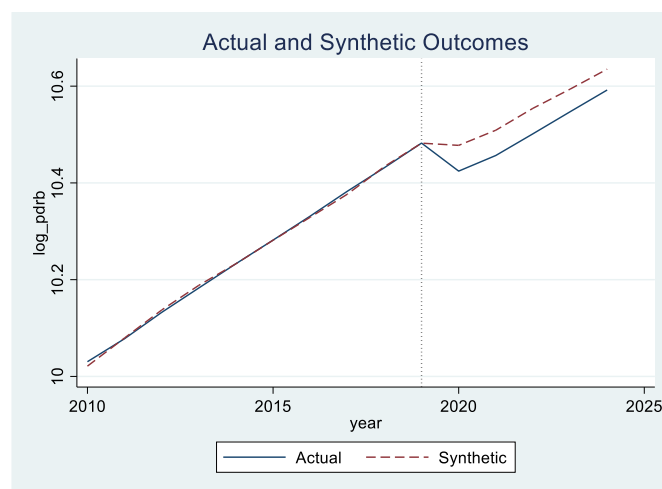


Figure 3. Actual and Predicted paths (North Sulawesi)
 Source: Author Analysis



Following the implementation of the DPSP in 2020, a persistent negative divergence emerges in both provinces: actual GRDP per capita falls and remains below the synthetic counterfactual throughout the post-intervention period. Tables 4 and 5 provide a year-by-year summary of this divergence.

Table 4. Prediction results in the post-treatment periods (North Sumatra)

Time	Actual Outcome	Synthetic Outcome	Treatment Effect
2020	17.4039	17.4326	-0.0287
2021	17.4151	17.4546	-0.0395
2022	17.4497	17.4993	-0.0496
2023	17.4827	17.5317	-0.0490
2024	17.5187	17.5659	-0.0472
Mean	17.4540	17.4968	-0.0428

The average treatment effect over the post-treatment period is -0.0428.

Source: Author Analysis

Table 5. Prediction results in the post-treatment periods (North Sulawesi)

Time	Actual Outcome	Synthetic Outcome	Treatment Effect
2020	10.4244	10.4776	-0.0532
2021	10.4567	10.5089	-0.0522
2022	10.5015	10.5542	-0.0527
2023	10.5470	10.5938	-0.0467
2024	10.5920	10.6352	-0.0431
Mean	10.5043	10.5539	-0.0496

The average treatment effect over the post-treatment period is -0.0496.

Source: Author Analysis

The treatment effect, measured as the gap between actual and synthetic outcomes, was consistently negative across all five post-intervention years, ranging from -0.0287 in 2020 to -0.0496 in 2022, before narrowing slightly to -0.0472 in 2024. The mean treatment effect over the full post-intervention period is -0.0428 log points below the counterfactual trajectory. A similar pattern holds for North Sulawesi, where actual outcomes fell from 10.4244 in 2020 to a mean of 10.5043, against a synthetic mean of 10.5539, yielding a mean treatment effect of -0.0496 log points below the counterfactual. These numbers require careful theoretical interpretation. A negative treatment effect in the SCM framework does not mean the DPSP caused economic contraction. Rather, it indicates that treated provinces grew at a rate lower than the synthetic counterfactual would have projected in the absence of the intervention. This gap is consistent with the early-stage nature of DPSP implementation, where infrastructure investment and destination development typically precede measurable output effects by several years.

To assess the statistical significance of the estimated effects, placebo tests were conducted using a placebo-in-space approach, in which each province in the donor pool was alternatively treated as if it had received the policy intervention. The results are shown in Figures 4 and 5. The gray lines display the placebo estimates for the comparison provinces, whereas the black line indicates the estimated effect for the treated provinces. The findings reveal that the gaps observed for North Sumatra and North Sulawesi are considerably larger than those of the comparison provinces. Furthermore, both provinces have the highest post-intervention-to-pre-intervention ratios of Root Mean Squared Prediction Error (RMSPE) within the donor pool. These results imply that the estimated

effects are unlikely to arise randomly and are strongly linked to the implementation of the DPSP policy.

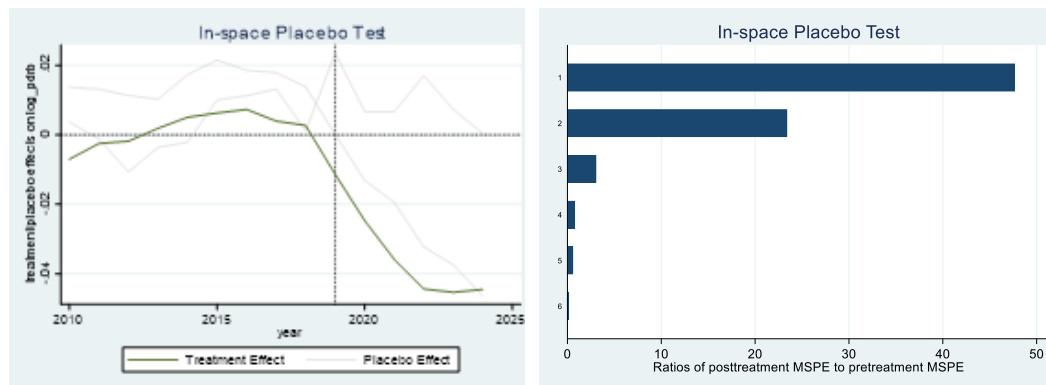


Figure 4. In-space placebo test North Sumatra
 Source: Author Analysis

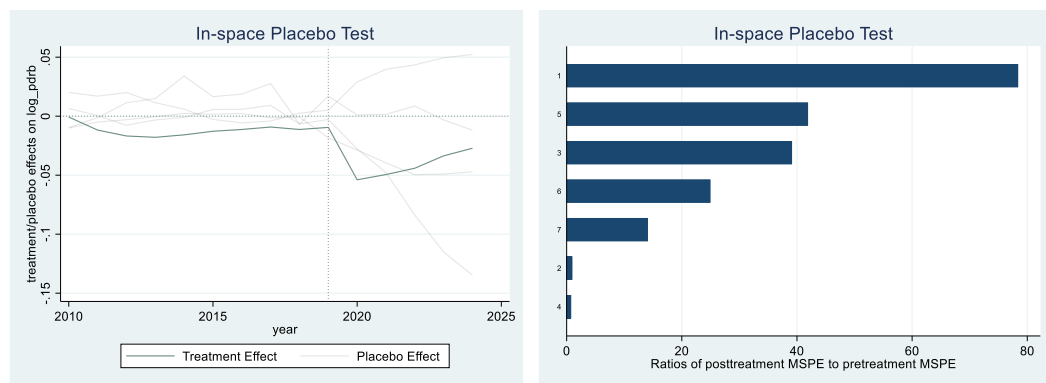


Figure 5. In-space placebo test North Sulawesi
 Source: Author Analysis

In addition to the placebo in-space test, a placebo in-time test was conducted by shifting the treatment year to a period before the DPSP policy was implemented. This test assesses whether similar effects would arise if the DPSP policy were assumed to have taken effect earlier. As shown in Figure 6, no significant differences between actual and synthetic economic growth are observed when the intervention is assumed to occur in 2017, a period before the DPSP policy was implemented. This finding further supports the validity of the estimated impacts and reinforces the interpretation that the divergences observed after 2020 are attributable to the implementation of the DPSP policy.

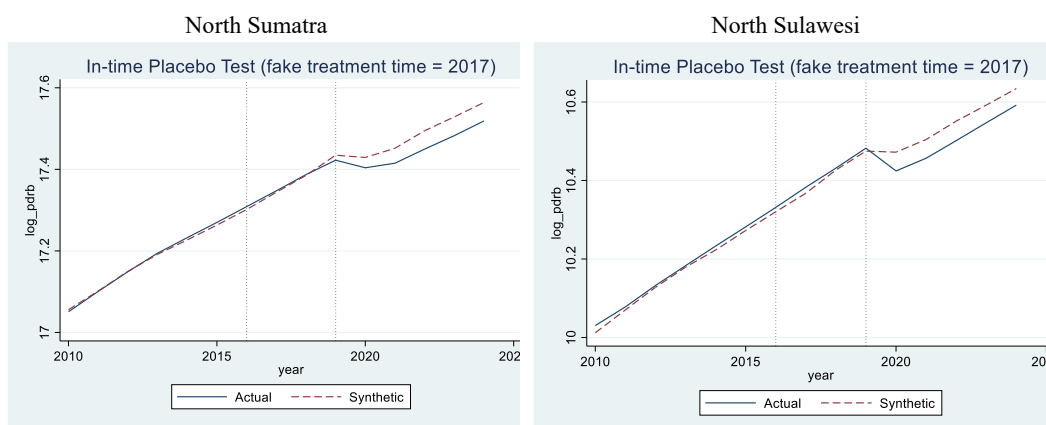


Figure 6. In-time Placebo Test North Sumatra & North Sulawesi

Source: Author Analysis

Sectoral Outcomes

Tables 6 and 7 present the results of the Mann-Whitney U test comparing tourism-related indicators before and after the implementation of the DPSP policy in North Sumatra and North Sulawesi. In North Sumatra, the results indicate statistically significant differences in the number of workers in the tourism sector ($p = 0.0022$) and average wages in the tourism sector ($p = 0.0071$) between the pre- and post-policy periods. However, no significant difference is observed in the performance of the accommodation and food & beverage sector ($p = 1.000$), suggesting that the distributions of values across the two periods remain similar. It should also be noted that the post-intervention period contains only five observations, which may limit the statistical power of the non-parametric test.

In North Sulawesi, significant differences are also observed in the number of tourism sector workers ($p = 0.0033$) and average wages ($p = 0.0101$), whereas the accommodation and food & beverage sector shows no statistically significant change ($p = 0.4634$). Notably, the pre-intervention observations for this sector span nine years rather than ten because data for 2010 were not available in the 2010 base-year series; the sector was still reported using the 2000 base year in the provincial statistics.

Table 6. Mann-Whitney U test North Sumatra

Variable	Period	Obs	Rank sum	Expected	Prob > z
Number of Workers in the Tourism Sector	post	5	65	40	0.0022
	pre	10	55	80	
Average Wages in the Tourism Sector	post	5	62	40	0.0071
	pre	10	58	80	
Accommodation and Food & Beverage Sector	post	5	40	40	1.000
	pre	10	80	80	

Source: Author Analysis

Table 7. Mann-Whitney U test North Sulawesi

Variable	Period	Obs	Rank sum	Expected	Prob > z
Number of Workers in the Tourism Sector	post	5	64	40	0.0033
	pre	10	56	80	
Average Wages in the Tourism Sector	post	5	61	40	0.0101
	pre	10	59	80	
Accommodation and Food & Beverage Sector	post	5	43	37.5	0.4634
	pre	9	62	67.5	

Source: Author Analysis



Discussion

The SCM results indicate that regional economic growth in both North Sumatra and North Sulawesi remained below their respective synthetic counterfactuals throughout the 2020–2024 post-intervention period. Within the SCM framework, however, this result does not imply that the DPSP reduced economic activity. Rather, it suggests that growth in the treated provinces had not yet exceeded the trajectory expected in the absence of the policy intervention. This distinction is important because the evaluation period coincided with a major external shock that affected both the treated and comparison provinces.

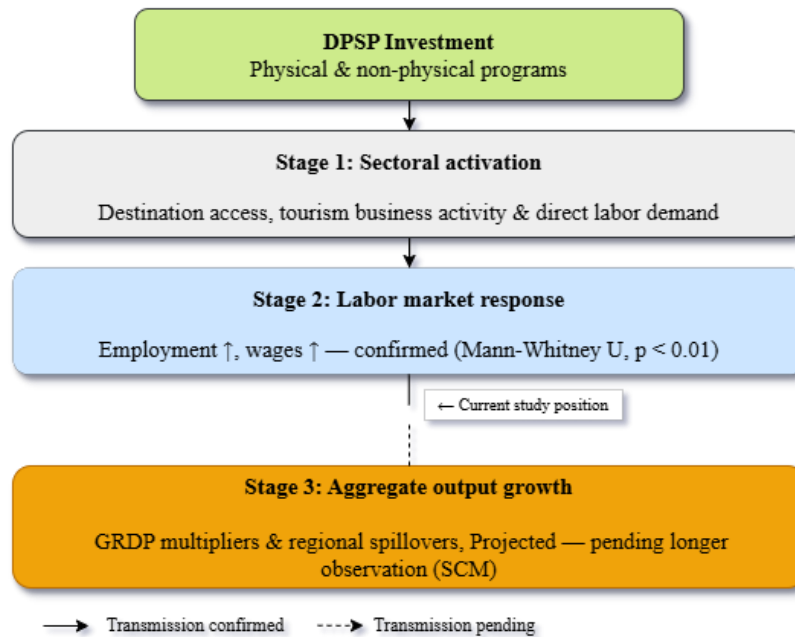


Figure 7. Illustrative Framework of Sequential Tourism-Led Growth Transmission Based on Study Findings
 Source: Author’s Illustration

Drawing on the tourism investment and growth literature, this study proposes a sequential interpretation of the TLGH transmission mechanism that aligns with the observed empirical pattern. In the first stage, tourism investment, including physical infrastructure development, destination promotion, institutional support, and improvements to tourism-related services, enhances destination accessibility, visibility, and carrying capacity, thereby stimulating tourism-related business activity and direct labor demand. In the second stage, rising employment and wages strengthen household income, consumption, and backward linkages to local supplier networks. In the third stage, accumulated sectoral gains gradually generate broader regional output multipliers that become visible at the aggregate provincial level. The current findings suggest that North Sumatra and North Sulawesi remain in an intermediate transition phase, with labor market adjustments already observable, while broader aggregate growth effects have not yet fully materialized.

Although the present analysis does not directly estimate causal effect sizes at the sectoral level, the consistency of significant results across employment and wage indicators in the two provinces suggests that the observed labor market improvements are unlikely to be economically trivial. However, whether these early-stage gains are sufficient to generate

broader regional multiplier effects ultimately depends on the longer-term trajectories of tourist arrivals, tourism expenditure, and local business expansion.

Several structural factors help explain this pattern. In Likupang, marine transportation services, including boat conditions, ticketing systems, and port accessibility, remain relatively underdeveloped, with overall service quality estimated at about 60 percent (Marpaung et al., 2024). Destination visibility also remains lower than in other DPSP locations, as reflected in Google Trends search intensity data (Waruwu et al., 2023). In Lake Toba, environmental management and sanitation quality remain problematic at several tourist sites, and community participation in tourism development remains uneven across surrounding areas (Khair et al., 2022; Widianingsih et al., 2023). These constraints likely limit tourist flows and tourism expenditure, thereby weakening the multiplier effects needed to generate measurable provincial-level output growth.

A second contributing factor was the COVID-19 pandemic, which disrupted the demand-side conditions necessary for tourism expansion during the early phase of DPSP implementation (Gössling et al., 2020; Värzaru et al., 2021). The accommodation and food service sector contracted sharply in 2020, by -9.26 percent in North Sumatra and -25.81 percent in North Sulawesi, reflecting the severe collapse in tourism demand. Under these conditions, tourism investments intended to stimulate visitor arrivals and spending could not operate under normal market conditions. Consequently, the transmission from tourism investment to aggregate regional output was likely delayed.

An important interpretive caveat concerns the attribution of observed labor market improvements. Although the Mann-Whitney U test identifies statistically significant shifts in employment and wages following DPSP implementation, these changes may not be attributable solely to the program. Broader post-pandemic recovery dynamics, including national employment stimulus initiatives, general economic normalization, and the gradual reopening of the hospitality sector across all provinces, likely contributed to labor market improvements in the treated provinces as well (Värzaru et al., 2021). The absence of a credible sector-level counterfactual makes it difficult to fully disentangle DPSP-specific effects from broader recovery trends. These findings should therefore be interpreted as suggestive evidence of early-stage policy transmission rather than definitive causal evidence of DPSP-driven labor market transformation.

The findings also support the argument that the effects of tourism investment are marked by substantial time lags (Fuinhas et al., 2020; Karimi et al., 2024; Muvawala et al., 2021; Nguyen, 2021). Tourism infrastructure projects typically require several years to produce stable increases in visitor flows and local spending. Destination branding cycles, tour operator network development, and traveler awareness accumulate gradually over time (Lahura & Sabrera, 2023; Nguyen, 2021). In Lake Toba and Likupang, where several infrastructure programs were still being completed during 2020–2023, the current evaluation window primarily captures the construction and early activation phase rather than the mature operational phase, when larger multiplier effects would normally emerge. Comparable evidence is provided by Lahura & Sabrera (2023), who applied SCM to evaluate Peru's Kuelap cable car development and found that aggregate economic effects became visible only several years after infrastructure completion. The absence of immediate aggregate growth effects in the present study should therefore not be interpreted as policy failure but as evidence that the current observation period likely precedes the stage at which infrastructure returns become fully observable.

These labor market gains align with previous studies highlighting tourism as a labor-intensive sector capable of generating direct and indirect employment opportunities (Santos, 2023; Spektor & Naira, 2021). Taken together, the coexistence of significant labor market improvements and aggregate output below the counterfactual constitutes the study's primary empirical contribution and is consistent with a sequential interpretation of TLGH, in which sectoral effects emerge before aggregate multipliers, with direct implications for how tourism development policies should be designed and evaluated.

These findings also carry several policy implications. First, evaluating tourism development policies solely on short-term aggregate GRDP indicators may underestimate their early-stage effects, especially during crises. Second, destination-specific constraints require tailored policy responses. In Likupang, improving maritime connectivity and strengthening destination promotion remain key priorities, whereas in Lake Toba, environmental governance and community-based tourism participation require greater attention. Third, tourism policy evaluation frameworks should incorporate sequential indicators that capture different stages of tourism-led development, including labor market outcomes, sectoral performance, and broader regional output indicators over longer time horizons. Such an approach would provide a more comprehensive assessment of how tourism investment translates into regional economic transformation.

CONCLUSION

This study presents one of the first causal evaluations of Indonesia's Super Priority Tourism Destinations (DPSP) policy using the Synthetic Control Method (SCM), focusing on North Sumatra (Lake Toba) and North Sulawesi (Likupang). The SCM results indicate that regional economic growth in both provinces during the 2020–2024 post-intervention period remained below their respective synthetic counterfactual trajectories, suggesting that large-scale tourism investment has not yet yielded measurable aggregate output gains within the current observation window.

The most important finding, however, comes from the contrast between aggregate and sectoral outcomes. The Mann-Whitney U test shows statistically significant increases in tourism-related employment and average wages in both provinces, while aggregate GRDP remains below its counterfactual trajectory. These findings contribute to the TLGH literature by suggesting that tourism-led development may proceed through sequential stages of transmission, with labor market responses emerging before broader aggregate output multipliers, particularly in emerging destinations exposed to major external shocks. The absence of aggregate growth effects is closely tied to two compounding factors. The DPSP was implemented during the COVID-19 pandemic, which sharply reduced tourism demand and delayed the transmission mechanism by which tourism investment generates regional multiplier effects. Destination-specific structural constraints, including limited maritime connectivity and lower destination visibility in Likupang, as well as environmental management deficiencies and uneven community participation in Lake Toba, likely further constrained the scale of tourism spillovers during the observation period.

The findings yield several actionable policy implications. First, maritime transport connectivity in Likupang should remain a development priority, particularly by improving transport reliability, port accessibility, and tourism mobility infrastructure. Second,



environmental governance at Lake Toba requires stronger sanitation management systems and clearer destination quality standards to support sustainable tourism development. Third, digital destination marketing for Likupang requires more targeted investment, given its relatively lower visibility compared with other DPSP destinations. Finally, the DPSP monitoring and evaluation framework should adopt a sequential approach, tracking labor market indicators in the short term, sectoral performance in the medium term, and aggregate GRDP in the longer term. Such an approach would provide a more realistic basis for evaluating how tourism investment translates into sustainable regional economic development.

Limitations of the Study and Future Research

This study is subject to several limitations that also suggest directions for future research. First, the analysis is constrained by a limited donor pool, which limits the granularity of placebo-based inference at conventional significance thresholds. Future studies could strengthen robustness by expanding the donor pool or by combining SCM with complementary causal inference methods.

Second, the post-intervention period spans only five years (2020–2024), which may be insufficient to capture the long-term trajectory of tourism-led development. This limitation is compounded by the COVID-19 pandemic, which disrupted tourism activity and the policy transmission mechanism. Future research should revisit the DPSP evaluation as longer post-pandemic data become available, enabling clearer identification of whether the labor market effects observed in this study ultimately translate into broader regional output growth.

Third, this study focuses on only two of the five DPSP destinations and therefore cannot fully capture variation across the national program. Future comparative studies that cover all DPSP locations within a unified causal inference framework would provide deeper insights into how infrastructure readiness, institutional capacity, geographic accessibility, and destination characteristics shape heterogeneous policy outcomes across regions.

Fourth, the provincial-level aggregation used in this study does not capture the distributional and microeconomic dimensions of tourism development. Future research could incorporate firm- and household-level data to examine how tourism investment affects employment, business performance, income distribution, and welfare across local communities. These micro-level analyses would complement aggregate regional indicators by clarifying who benefits most from tourism-led development and whether economic gains are distributed inclusively.

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TOURISM VILLAGE RESILIENCE AND ADAPTIVE STRATEGIES AMID DUAL POLICY SHOCKS: EMPIRICAL EVIDENCE FROM COMMUNITY-BASED TOURISM IN INDONESIA

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Article Info	Abstract
<p>Keywords: adaptive strategy; budget efficiency, policy impact; study tour restriction; tourism village resilience;</p> <p>Received: November 14, 2025</p> <p>Approved: May 29, 2026</p> <p>Published: June 29, 2026</p>	<p>This research aims to examine the impact of budget efficiency and study tour restrictions on the performance and economic resilience of tourism villages in Indonesia. The research focuses on two major policy interventions: Presidential Instruction No. 1 of 2025 concerning budget efficiency and the West Java Governor's Circular Letter restricting school-organized study tours—both of which have reshaped patterns of public spending and tourism demand. Employing a descriptive survey approach, data were collected from 85 tourism village managers across Indonesia through an online survey conducted in the first quarter of 2025. The findings reveal that 48.2% of respondents experienced booking cancellations and revenue declines, primarily from institutional and educational markets, while 64% identified limited local government program support as the main barrier to economic recovery. Despite these policy pressures, most tourism villages demonstrated adaptive resilience by engaging in digital promotion, product innovation, and market diversification. Moreover, there was a notable spatial shift in visitor origins from West Java and Yogyakarta to Central and East Java, indicating proactive market repositioning to mitigate policy-induced demand shocks. Conceptually, these findings demonstrate that community-based tourism (CBT) resilience is not merely a passive capacity to absorb regulatory shocks, but a dynamic, evolutionary process governed by community agency and digital agility. Theoretically, this study advances tourism governance literature by demonstrating how localized adaptations can decouple rural destinations from institutional market structural dependencies. Ultimately, it underscores the need for an evolutionary framework in tourism policy that balances centralized structural regulations with community-led socio-ecological adaptation. The research concludes that sustaining tourism village resilience requires integrated, participatory, and cross-sectoral policy coordination connecting education, tourism, and local governance.</p>



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INTRODUCTION

Over the past decade, the direction of tourism development has shifted from a mass tourism approach toward a more sustainable, experience-based tourism model that emphasizes local community empowerment (Baiquni & Dzulkifli, 2019; Magnusson et al., 2024; A. M. Purnomo, 2025). In line with these changes, the community-based tourism (CBT) sector—particularly through the development of tourism villages and hamlets—has become a strategic pillar in efforts to strengthen rural community independence and promote inclusive economic growth in Indonesia (Djuwendah et al., 2023; Pramono & Juliana, 2025; Rahman et al., 2025). Several studies have also confirmed that a CBT approach can generate employment opportunities for the community and foster the preservation of culture and the environment (El Yamin et al., 2024; Hariyadi et al., 2024; Nirmala et al., 2024). However, tourism villages and hamlets remain highly vulnerable to external shocks—both in terms of tourist market fluctuations and variations in public and fiscal policy support (Ariyani & Fauzi, 2024; Aryaningtyas et al., 2024; Pramono & Juliana, 2025). The concept of economic resilience in rural tourism destinations has therefore become increasingly important, as the ability to adapt, diversify products, build community networks, and secure institutional support are key determinants of the sustainability and growth of tourism villages and hamlets amid various pressures (Ariyani & Fauzi, 2024).

At the national level, the Indonesian Government established a policy framework through Presidential Instruction No.1 of 2025 concerning the Enhancement of Efficiency in the Implementation of the State Budget (APBN) and Regional Budgets (APBD) for Fiscal Year 2025. This policy emphasizes the need for efficient budget utilization, optimization of public spending, and prioritization of development programs funded by both the APBN and APBD. The implementation of this budget efficiency initiative has the potential to reduce non-priority activities, such as official travel, training, and community capacity-building programs, which have served as key channels of support for tourism villages and hamlets. A decline in the frequency of these programs may limit opportunities to strengthen institutional capacity and foster innovation in tourism village management. In this context, various studies highlight the strategic role of local governments as facilitators of training and mentoring for the communities of both tourism villages and hamlets to improve human resource competence and strengthen the competitiveness of community-based tourism destinations (Ferdian et al., 2024; Purnawan & Rahmanita, 2025; S. Purnomo & Purwandari, 2025). Consistently, Hamdan (2025) demonstrated that government support and stakeholder collaboration are key factors promoting market orientation and the economic sustainability of tourism villages and hamlets (Hamdan et al., 2025).

At the West Java provincial level, education policies have also influenced local tourism dynamics. This has been evident since the issuance of the West Java Governor's Circular Letter No. 45/PK.03.03/KESRA concerning "Nine Steps to Advancing Education in West Java Towards the Realization of the Panca Waluya Gate". The policy includes restrictions on study tours or school field trips as part of an efficiency initiative aimed at strengthening student character and optimizing education budget allocations. These restrictions not only limit opportunities for experiential learning but also indirectly affect the local tourism sector, particularly destinations that rely on educational visits such as

tourism villages (Putra Setya et al., 2025). Various studies have shown that school holidays and group visit activities contribute significantly to local income and tourist accommodation occupancy rates (Chandra et al., 2025; Iriani et al., 2022). In line with this, many tourism villages in Indonesia target groups of school and university students from various educational institutions as their main market for out-of-class learning activities (Andari, 2023; Dianaputri, Al-anshori, & Maulana, 2025; T. Purnomo et al., 2022; Widodo et al., 2024). Conceptually, this orientation reinforces the role of tourism villages as collaborative learning spaces that serve as natural laboratories or observatories for contextual and participatory learning experiences (Buchari et al., 2024; Pearce et al., 2020; Rosalina et al., 2023).

The combined pressures of national budget efficiency policies and market demand constraints resulting from the study tour restrictions pose serious challenges to the economic resilience of tourism villages and hamlets in Indonesia. Although the issue of community-based tourism resilience has been widely discussed, empirical research that specifically examines the impacts of budget efficiency policies and study tour bans on the economic stability of tourism villages and hamlets remain very limited. Most previous studies have focused on developing destination potential, fostering community participation, and applying sustainability principles, without conducting an in-depth examination of how public policies influence tourism demand dynamics and fiscal support. Several studies have been conducted on fiscal policy for the tourism industry, including in Albania. In Indonesia, Lubis and Kustiawati (2022) have reviewed the fiscal impact on tourism post-pandemic, and Wahyu et al. (2025) have reviewed fiscal policy for the hotel business in Semarang. The remaining studies address fiscal policy's impact on the general economy, but none have addressed its impact on villages and tourist villages in Indonesia (Alifiah Dinhaq Lubis, Kustiawati, Fadlia Elvantio, & Sundari, 2022; Gegaj, 2024; Ningsih, Atmanti, & Susilowati, 2025).

While the immediate socioeconomic impacts of regulatory and fiscal shifts on rural destinations are critical to document, focusing purely on empirical field responses risks overlooking a deeper theoretical tension within community-based tourism (CBT) literature. In tourism studies, CBT is paradoxically conceptualized. On one hand, scholars celebrate CBT models for their localized agency, high social capital, and inherent flexibility, which supposedly grant them high adaptive capacity during crises (Cheer, Ting, & Leong, 2021; Ruiz-Ballesteros, 2011). On the other hand, critical governance scholars argue that rural CBT enterprises are plagued by "structural lock-in" and severe asymmetric dependencies on external institutional pipelines, such as public-school networks and government expenditure (Hall, 2010; Saarinen, 2019). When sudden institutional contractions occur—what public policy literature terms "policy shocks"—it remains theoretically ambiguous whether community agency alone is sufficient to decouple these grassroots organizations from macro-structural dependencies, or if they inevitably collapse into systemic vulnerability due to a lack of state-mediated safety nets.

This ambiguity highlights a significant conceptual gap in contemporary resilience studies. Existing frameworks on tourism resilience have extensively examined ecological disasters, economic recessions, and global pandemics (e.g., COVID-19), yet they under-theorize the distinct dynamics of dual, concurrent policy shocks that simultaneously restrict market mobility (the study tour ban) and contract fiscal resource pipelines (budget austerity). This study addresses this theoretical deficit by positioning institutional policy

shocks not merely as operational hurdles, but as catalysts for structural reorganization. By interrogating how Indonesian tourism villages navigate these dual regulatory pressures, this paper moves beyond descriptive policy reporting. Instead, it advances a more rigorous academic debate concerning the limits of evolutionary resilience in CBT, specifically exploring how resource reconfiguration and digital agility can—or cannot—neutralize institutional market dependencies.

Therefore, this research aims to analyze the impacts of efficiency policies and study tour bans on the economic resilience of tourism villages and hamlets in Indonesia and to formulate policy recommendations for the government to balance educational and tourism agendas while strengthening the adaptive economic strategies of communities in tourism villages and hamlets. To achieve these objectives, this research addresses three key questions: first, how does the implementation of budget efficiency policies and study tour restrictions affect income stability and the institutional capacity of tourism villages especially in West Java; second, what adaptation mechanisms and diversification strategies are developed by tourism village managers to mitigate the risks resulting from these policy shocks; and third, what kind of stakeholder collaboration model can synergize public efficiency with the needs of sustainable community-based tourism (CBT) economics in the future?

METHODOLOGY

Population and Sampling Techniques

This research employed a descriptive survey approach using an online survey combined with a purposive sampling technique to assess the impacts of budget efficiency policies and study tour bans on the economic resilience of tourism villages and hamlets in Indonesia, as well as the adaptive strategies of their managers. A descriptive survey is a method with a set of written questions and other prompts used for acquiring information from respondents. Its format includes close-ended, open-ended or both (Chen, Li, Weng, & Wang, 2023). This approach was chosen to produce measurable and comparable data, providing a strong empirical basis for further analysis or cross-destination comparisons (Baggio & Klobas, 2017). Purposive sampling, on the other hand, is a non-probability sampling technique in which researchers intentionally select individuals—managers of tourism villages and hamlets—who are considered most relevant and capable of providing the information required for the research objectives (Creswell & Creswell, 2017).

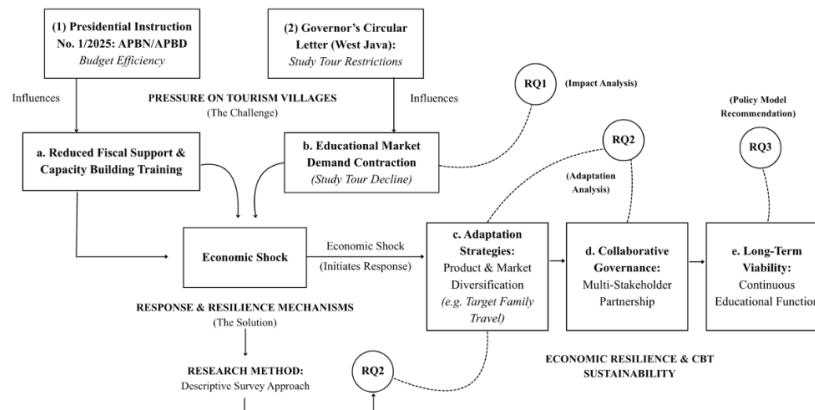


Figure 1. Conceptual Framework of the Research
 Source: Analyzed by Researchers

The research population consists of all managers of tourism villages and hamlets in Indonesia who are actively operating during the 2024–2025 period. The research framework is grounded in the institutionally verified partnership network of the Desa Wisata Institute and Atourin, which actively provides community assistance in tourism villages. The respondent inclusion criteria were as follows: (i) serving as a core manager (chairperson, secretary, or operational manager); (ii) having direct knowledge of the financial performance and visitor numbers of tourist destinations for at least the past twelve months; and (iii) being willing to complete the questionnaire in full and provide informed consent to participate. Of the 98 responses received, 85 questionnaires were deemed valid, while 13 data sets were declared unsuitable for use due to substantial missing data or duplicate entries.

This study acknowledges a significant limitation regarding the geographic concentration of the research sample. With 60% of the data originating from only two provinces—DIY Yogyakarta (39%) and Central Java (21%)—the findings do not possess the breadth required for full national representativeness. Consequently, any national-level generalizations must be moderated with caution; while the results offer deep insights into the community-based tourism (CBT) ecosystems of these specific regions, they may not accurately reflect the socio-economic dynamics, fiscal priorities, or administrative responses of tourism villages in more remote or less tourism-developed provinces across the Indonesian archipelago.

Furthermore, this geographic skew may introduce specific directional biases into the findings. DIY Yogyakarta and Central Java are established tourism hubs with mature institutional support and a high density of educational institutions. Therefore, the reported impact of study tour restrictions (RQ1) might appear more severe in this sample than in regions where educational tourism is not a primary revenue pillar. Conversely, the adaptation mechanisms (RQ2) identified—such as sophisticated market diversification—might reflect the higher social capital and infrastructure accessibility prevalent in Java, potentially overestimating the readiness of tourism villages in less-connected regions to pivot under similar policy shocks. Future studies should aim for a broader stratified sampling approach to validate these findings on a truly national scale.

Data Collection Period and Procedures

The data collection process was carried out over 14 days, from March 27 to April 9, 2025, with the aim of capturing the actual conditions and impacts of budget efficiency policies and study tour restrictions during the first quarter of 2025. The research instrument was an online questionnaire distributed via the Google Forms platform, and the questionnaire link was sent directly to tourism village managers through WhatsApp messages. To ensure data validity, each entry was verified based on the village name and manager contact information to prevent duplicate submissions for a single destination. Strict data quality control procedures were implemented, including recording the time of entry, detecting duplicate IP addresses, and checking consistency across key responses (e.g., between visitation trends and revenue changes). The author also reconfirmed information with several respondents to verify data deemed invalid or requiring additional clarification, thereby ensuring the accuracy and reliability of the data used in the analysis.

Research Instruments and Variables

The main instrument of this research was a structured online questionnaire developed based on theoretical studies and empirical findings related to the economic resilience of tourism villages and hamlets, as well as the impacts of public policy on community-based tourism. The questionnaire was formulated using relevant international and national literature, including the concept of tourism resilience (Ariyani & Fauzi, 2024; Pramono & Juliana, 2025) and models of community adaptation to policy and market pressures (Ivona et al., 2021; Mtapuri & Giampiccoli, 2016). The research variables consist of five main components formulated as follows:

1. The impact of budget efficiency policies, assessed through managers' perceptions of changes in government budget allocations following the implementation of Presidential Instruction No. 1 of 2025.
2. The impact of the study tour restrictions, evaluated based on the extent to which the policy has contributed to declining visitation rates in tourism villages and hamlets.
3. Market segment shifts, which assess changes in the primary target markets of tourism villages and hamlets. These shifts include changes in promotional priorities and the extent of market penetration among visitors from different regions within a single province.
4. Efforts to maintain target markets, which include strategies employed by tourism village and hamlet managers to maintain relationships with previous market segments.
5. The expectations of tourism village and hamlet managers in Indonesia, which reflect their views on future government policy support.

FINDINGS AND DISCUSSION

Profile and Distribution of Respondents' Tourism villages

This survey involved 85 tourism villages and hamlets distributed across various provinces in Indonesia. The largest concentration was in the Special Region of Yogyakarta (38.8%), followed by Central Java (21.2%), East Java (9.4%), West Nusa Tenggara (8.2%), Bali (5.9%), and other regions, such as West Java, East Nusa Tenggara, and South Sulawesi with smaller proportions. In terms of institutional affiliation, 95% of the respondents' tourism villages were registered on the Indonesian Tourism Village Network (JADESTA) platform, indicating a strong level of government recognition. Most tourism villages were managed by Tourism Awareness Groups (Pokdarwis) with a proportion of 71.8%, while the rest operated under collaborative management models involving BUMDes (village-owned enterprises), cooperatives, and local communities in developing and managing the tourism destinations. Regarding the type of attractions offered, 60.5% of the tourism villages were nature-based, 23.3% were mixed-type, and 14% were culture-oriented, reflecting the dominance of ecotourism and experience-based tourism.

Table 1. Provincial Distribution of Tourism Villages and Hamlets

Province (Capital City)	Number of Tourism Village	Percentage	Remarks
Special Region of Yogyakarta (Yogyakarta)	33	39%	Dominated by nature-, culture-, and creative-based tourism; most villages already registered in <i>Jadesta</i>
Central Java (Semarang)	18	21%	Balanced combination of natural and cultural tourism with growing creative elements
East Java (Surabaya)	8	10%	Focused on natural and cultural attractions with emerging creative tourism initiatives
West Nusa Tenggara (Mataram)	7	8%	Nature-based tourism villages emphasizing rural landscapes and local traditions
Bali (Denpasar)	5	6%	Diverse tourism themes integrating nature, culture, and creative economy activities
East Nusa Tenggara (Kupang)	4	5%	Emerging destinations highlighting natural and cultural diversity
West Java (Bandung)	3	4%	Cultural and creative tourism in small-scale rural settings
South Sulawesi (Makassar)	2	2%	Tourism villages emphasizing natural attractions and local livelihoods
Southeast Sulawesi (Kendari)	2	2%	Early-stage tourism development focusing on nature and cultural heritage
Bangka Belitung (Pangkal Pinang)	2	2%	Coastal tourism combining natural and cultural experiences
Riau (Pekanbaru)	1	1%	Single emerging tourism village emphasizing cultural heritage and nature
Total	85	100%	

Source: Data processed by the researchers, 2025

Table 2. Types of Management Institutions in Surveyed Tourism Villages and Hamlets

Type of Management Institution	Number	Percentage	Remarks
Pokdarwis (Tourism Awareness Group)	41	55%	Most common management model; community-based and participatory in nature
BUMDes (Village-Owned Enterprise)	10	13%	Operating with semi-formal business orientation supporting local economy
Community Group	12	16%	Informal or thematic organizations focusing on cultural or environmental preservation
Village Cooperative	2	3%	Limited presence; primarily managing craft or cultural tourism
Others	10	13%	Including hybrid models and ad-hoc tourism committees
Total	85	100%	

Source: Data processed by the researchers, 2025

In table 2, it indicates that while a variety of institutional models exist, the Pokdarwis (55%) is the primary structure. This reflects a development strategy that values community involvement, albeit operating on a scale that is over four times greater than more business-oriented or specialized community structures. The institutional arrangements for managing tourism villages are a critical determinant of their success, sustainability, and equity (Utami, Dhewanto, & Lestari, 2023; Wilson, Fesenmaier, Fesenmaier, & Es, 2001). The dominant role of community-based structures, specifically the Pokdarwis in this study is a common theme in literature on developing economies where tourism is used as a tool for rural revitalization and poverty reduction.



Baseline Conditions and Market Segment Profiles for 2024 (Pre-policy)

Survey results indicate that prior to the implementation of budget efficiency policies and study tour restrictions, tourism villages and hamlets in Indonesia operated in a relatively stable market environment with a strong reliance on the education and institutional segments. Sixty-five tourism villages (20%) reported that educational institutions—primarily schools and universities—were the main contributors to visitor numbers throughout 2024, followed by special-interest communities (17%) and family groups (15%). This pattern aligns with the school holidays in December and July, which consistently serve as peak periods for educational tourism visits.

Table 3. Market Segmentation of Tourism Villages and Hamlets in 2024 by Type of Tourist

Type of Tourist	Quantity	Percentage	Remarks
Schools/Universities (Educational Institutions)	65	20%	Dominant segment; educational tourism activities such as study tours and field-based learning
Communities with Specific Special Interests	55	17%	Including photography clubs, cultural groups, and eco-enthusiasts
Families	48	15%	Family-oriented leisure and weekend tourism
Free Independent Travelers (FIT)	46	14%	Individual travelers seeking authentic and nature-based experiences
Regional Government Agencies (<i>Dinas</i>)	40	12%	Commonly involved in benchmarking and comparative studies
Private Companies	34	11%	Corporate visits for team building and CSR activities
Ministries/State Institutions	18	6%	Visits related to national programs or village development initiatives
State-Owned/Regional-Owned Enterprises (SOEs/ROEs)	17	5%	Institutional visits supporting rural development and tourism partnerships
Total	323	100%	

Source: Data processed by the researchers, 2025

In terms of tourists' geographic origin, Jakarta was recorded as the largest market, contributing 25.9% of total visits, followed by Yogyakarta and West Java (17.6% each), and Central Java (15.3%). These data indicate that the majority of tourists visiting tourism villages and hamlets originate from urban areas and major educational centers, particularly from Greater Jakarta, Yogyakarta (DIY), and West Java. This pattern confirms that tourism villages serve as alternative destinations connecting urban and rural areas, where interactions between city-based tourists and village communities generate both economic benefits and cross-cultural learning experiences. This finding strengthens the position of tourism villages and hamlets as educational and recreational destinations with important social functions, rather than merely commercial tourism products. Many tourism villages and hamlets are now implementing the concept of experiential learning laboratories that integrate tourism activities with contextual learning processes and student character building. Therefore, 2024 can be considered a baseline period reflecting market stability and the performance of tourism villages and hamlets before policy disruptions occur in the first quarter of 2025.

Table 4. Market Segmentation of Tourism Villages and Hamlets in 2024 by Tourist Origin

Province (City)	Total Visitation	Percentage
Special Capital Region of Jakarta (Jakarta)	22	26%
Special Region of Yogyakarta (Yogyakarta)	15	18%
West Java (Bandung)	15	18%
Central Java (Semarang)	13	15%
East Java (Surabaya)	4	5%
Bali (Denpasar)	3	4%
West Nusa Tenggara (Mataram)	3	4%
Riau (Pekanbaru)	2	2%
South Sulawesi (Makassar)	2	2%
Nanggroe Aceh Darussalam (Banda Aceh)	1	1%
West Kalimantan (Pontianak)	1	1%
South Kalimantan (Banjarbaru)	1	1%
East Nusa Tenggara (Kupang)	1	1%
West Papua (Manokwari)	1	1%
North Sumatra (Medan)	1	1%
Total	85	100%

Source: Data processed by the researchers, 2025

A fundamental principle in tourism is the distance decay theory, which suggests that the number of tourists decreases as the distance from the origin increases. The high concentration of visitors from Jakarta, Bandung, and Yogyakarta likely indicates that the surveyed tourism villages are located on Java. The "friction of distance"—involving travel time and transport costs—naturally favors nearby urban populations (Tan, Ismail, & Syed Jaafar, 2023). Literature on rural tourism motivation often highlights the "Push-Pull" factor. Residents of mega-cities like Jakarta (the largest contributor at 26%) are "pushed" by urban stress, pollution, and congestion, and "pulled" by the tranquility, fresh air, and authenticity of village life (Nikjoo & Ketabi, 2015). This explains why highly urbanized provinces show the highest participation rates in village tourism.

Direct Impacts of the Budget Efficiency Policy and the Study Tour Restrictions

In the first quarter of 2025, the implementation of Presidential Instruction No. 1 of 2025 concerning the Enhancement of Efficiency in the Implementation of the State Budget (APBN) and Regional Budgets (APBD) and the West Java Governor’s Circular Letter No. 45/PK.03.03/KESRA concerning study tour restrictions began to have a direct impact on tourism village and hamlet activities. Survey results show that from 85 tourism villages and hamlets, total 67 villages and hamlets (79%) managers were aware of the policy, and about 41 villages and hamlets (48%) reported cancellations of tour transactions since the policy took effect.



Figure 2. Survey results about policy and cancellation
Source: Data processed by the researchers, 2025



Further analysis indicates that the highest number of cancellations originated from educational institutions (54%), followed by Regional Apparatus Organizations (24%), while the family, community, and private company segments remained relatively stable. This pattern confirms that tourism villages and hamlets are heavily dependent on the educational and institutional markets, which have long served as their primary sources of visits and revenue.

Table 5. Market Segments Cancelling Tourism Packages in Tourism Villages and Hamlets

Segment	Unit	Percentage
Educational Institutions (Schools / Universities)	41	54%
Regional Government Agencies (OPD / Dinas)	18	24%
Private Companies	6	8%
Families	5	7%
Communities with Specific Interests	5	7%
Total	75	100%

Source: Data processed by the researchers, 2025

Geographically, the most significant impact of cancellations occurred in tourism villages and hamlets on Java Island, which have the highest market concentration of schools and local government agencies. This finding confirms that national budget efficiency policies and study tour restrictions create a sectoral demand shock, suppressing community-based tourism activities in areas with a high dependence on the educational institution market. This condition aligns with findings in the literature showing that state intervention, as a form of public policy, can act as an external factor triggering disruptions in tourism demand, thus requiring adaptive capacity at both the firm and destination levels (Hall, Prayag, & Amore, 2017). In this context, the impacts of budget efficiency policies and study tour restrictions not only reduce the volume of tourism transactions but also trigger economic uncertainty for local communities dependent on community-based tourism.

Estimated Losses and Impacts on the Local Economy

Survey results indicate that the implementation of budget efficiency policies and study tour restrictions in the first quarter of 2025 not only reduced visitor activity but also caused measurable economic losses at the tourism village and hamlet levels. Twenty-four tourism villages and hamlets (28%) reported losses of less than IDR 25 million, while others recorded revenue losses between IDR 25 million and IDR 100 million, and several destinations even reported losses exceeding IDR 100 million during the January-March 2025 period. These losses were not only felt directly by the tourism village and hamlet managers but also impacted the local economic chain that relies on tourism activities, such as culinary and craft MSMEs, homestay providers, local guides, and community transportation services. Consequently, national budget efficiency policies exert a dual impact: reducing tourism activity while simultaneously suppressing the local economic cycle that supports the livelihoods of communities surrounding the destinations.

Table 6. Estimated Financial Losses of Tourism Villages and Hamlets (Post-Policy)

Estimated Loss Category (IDR)	Number of Village	Percentage (%)
No Cancellation / No Loss	44	52%
Less than 25 million	24	28%
25 – 50 million	9	11%
More than 100 million	6	7%
50 – 100 million	2	2%
Total	85	100%

Source: Data processed by the researchers, 2025

From a spatial perspective, tourism villages on the island of Java recorded the greatest economic impact, consistent with the region’s position as a center of concentration of educational and institutional markets. This pattern suggests that dependence on a segmented domestic market creates heightened vulnerability to policy interventions. This finding aligns with the concept of the tourism multiplier effect (Sastri et al., 2024; Subur Karyatun et al., 2020), which explains that a decline in one component of tourism demand can inhibit the cascading effect on other sectors at the local level, including informal labor and micro-enterprises. Conceptually, these results also illustrate the shock transmission mechanism, where demand disruptions resulting from fiscal policy can rapidly spread throughout the economic ecosystem of tourism villages and hamlets.

Table 7. Distribution of Cancellations of Tourism Products/Packages Based on Islands

Region	<100 Tourist	101-500 Tourist	501-1000 Tourist	>1001 Tourist	Total Volume
Sumatera	1	0	0	0	1
Java	15	13	2	3	33
Bali and Nusa Tenggara	3	3	0	0	6
Sulawesi	1	0	0	0	1
Total	20	16	2	3	41
Percentage (%)	48,8%	39%	4,9%	7,3%	100

Source: Data processed by the researchers, 2025

In addition to declining revenue, the impact of the policy is also evident in the cancellation patterns for certain types of tour packages. Survey data show that tour groups using half-day packages (half-day visits) are the most frequently cancelled, as reported by 19 tourism villages and hamlets. This type of activity is generally chosen by school groups or educational institutions for short study visits. Furthermore, 13 tourism villages and hamlets reported cancellations from groups using live-in packages (staying with local households), while nine others recorded cancellations for full-day packages. These findings indicate that tourism products based on experiential activities and direct community interaction—core characteristics of tourism villages and hamlets—are the segments most vulnerable to changes in public policy, particularly policies that restrict the mobility of educational institutions and field-based activities.

Market Segment Shifts: A Comparison of 2024 and 2025

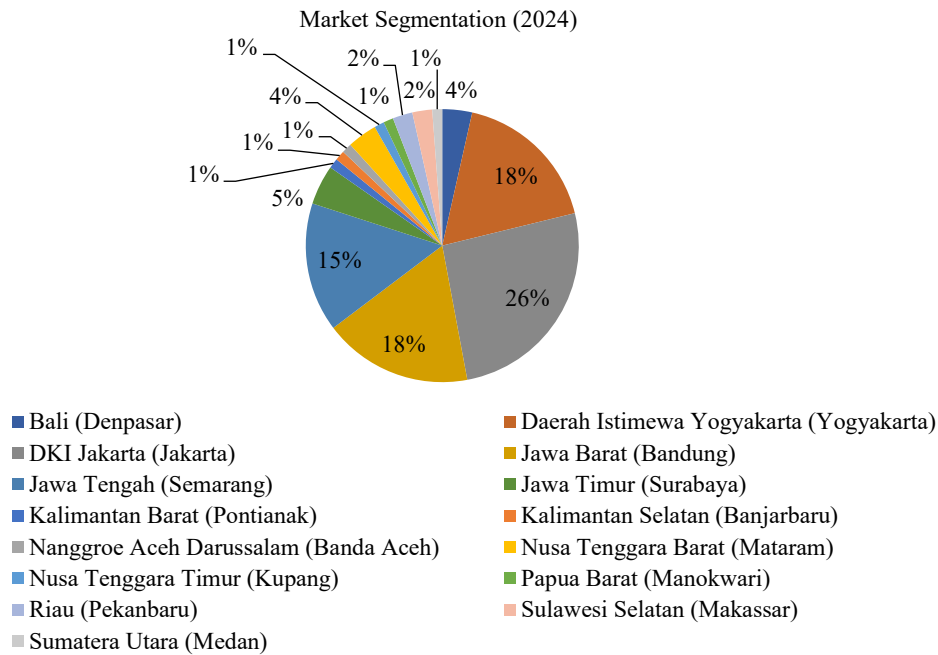


Figure 3. Pie chart market segmentation in 2024
 Source: Data processed by the researchers, 2025

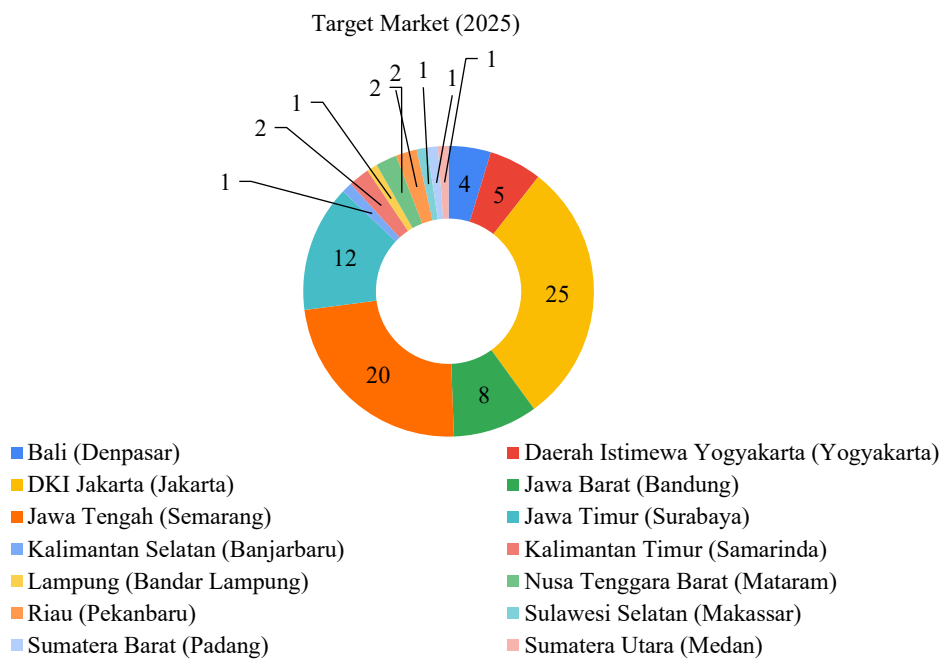


Figure 4. Pie chart target market in 2025
 Source: Data processed by the researchers, 2025

A comparative analysis between 2024 and the first quarter of 2025 shows a shift in the spatial pattern of tourist origins to tourism villages and hamlets in Indonesia. In 2024, the majority of tourists originated from Jakarta (26%), followed by Yogyakarta (18%) and West Java (18%), reflecting market dominance from urban areas and educational centers.



However, data from the first quarter of 2025 indicate a shift in market direction, with contributions from West Java and Yogyakarta declining significantly, while visits from Central Java (24%) and East Java (14%) increased sharply. Jakarta remains the largest market (30%), but with a more dispersed visitor profile, encompassing tourists from metropolitan peripheries.

Table 8. Market Segmentation and Target Market of Tourism Villages and Hamlets (Post-Policy)

Region (City)	Number of Village/Targeted Visitations	Percentage (%)
Special Capital Region of Jakarta (Jakarta)	25	30%
Central Java (Semarang)	20	24%
East Java (Surabaya)	12	14%
West Java (Bandung)	8	10%
Special Region of Yogyakarta (Yogyakarta)	5	6%
Bali (Denpasar)	4	5%
East Kalimantan (Samarinda)	2	2%
West Nusa Tenggara (Mataram)	2	2%
Riau (Pekanbaru)	2	2%
South Kalimantan (Banjarbaru)	1	1%
Lampung (Bandar Lampung)	1	1%
South Sulawesi (Makassar)	1	1%
West Sumatra (Padang)	1	1%
North Sumatra (Medan)	1	1%
Total	85	100%

Source: Data processed by the researchers, 2025

Based on the data compiled in Table 8, the market segmentation for tourism villages and hamlets post-policy shows a clear hierarchical structure dominated by key urban hubs in Indonesia. Out of a total of 85 targeted visitations, more than half are concentrated within the top two regions: the Special Capital Region of Jakarta (30%) and Central Java (24%). This substantial share underscores the strategic focus placed on high-density metropolitan areas and established tourism circuits. Furthermore, East Java and West Java maintain a strong presence, accounting for 14% and 10% of the market segments respectively, which aligns with their robust regional infrastructure and local economic connectivity.

Conversely, the market penetration into outer islands reflects a highly fragmented and emerging pattern. Bali, traditionally a primary tourism gateway, holds a modest 5% share within this specific post-policy framework. Sumatran regions (Riau, Lampung, West Sumatra, and North Sumatra), Kalimantan regions (East and South Kalimantan), Sulawesi (South Sulawesi), and Nusa Tenggara (West Nusa Tenggara) collectively account for only 11% of the total targeted visitations. This indicates that while the policy encompasses a nationwide scope, the actionable implementation and target acquisition are currently optimized around areas with immediate market readiness and higher domestic traveler generation, specifically within the Java Island macro-region.

This shift demonstrates the spatial repositioning of markets by the tourism village and hamlet managers as an adaptive response to budget efficiency policies and study tour restrictions. The reduced mobility of educational institutions from West Java and Yogyakarta encouraged managers to expand their promotional reach to provinces that did not implement similar restrictions. To interpret the spatial dynamics of this policy shock

accurately, it is vital to clarify the institutional boundaries of the regulations. The study tour restriction circular was strictly a sub-national policy enacted exclusively by the West Java Provincial Government, not by the Special Region of Yogyakarta. However, the empirical data indicates that tourism villages in Yogyakarta suffered a significant indirect contraction. This phenomenon represents a classic negative spatial spillover effect within national tourism corridors. This strategy represents a form of regional market diversification that indirectly strengthens destination resilience by geographically distributing risk (OECD, 2025; Weidenfeld, 2018). Thus, this shifting pattern not only reflects the policy-driven changes in demand sources but also illustrates the adaptive capacity of tourism village and hamlet managers to maintain the continuity of visitation and revenue by adjusting market targets and promotional strategies across regions.

In tourism resilience frameworks, adaptive capacity is defined by the ability of local actors to reconfigure strategies in response to institutional shocks (Holling, 2001; Walker, Holling, Carpenter, & Kinzig, 2004). Here, the "budget efficiency" policies and "study tour restrictions" acted as external disturbances that compromised traditional revenue streams. The subsequent pivot by village managers to expand their promotional reach into provinces without such restrictions demonstrates a spatial decoupling from vulnerable, policy-dependent markets. This move mirrors international CBT resilience strategies, such as those observed in post-pandemic rural Vietnam and Thailand, where managers mitigated the loss of international segments by aggressively targeting domestic regional travelers to ensure institutional survival (OECD, 2025).

Furthermore, this repositioning illustrates the concept of spatial resilience through geographic risk diversification (Weidenfeld, 2018). By reducing their dependency on the "educational hubs" of Yogyakarta and Bandung and instead capturing the "metropolitan peripheries" of Jakarta and the burgeoning middle class in Central and East Java, these destinations have enhanced their systemic redundancy. From a theoretical standpoint, this shift aligns with the reorganization phase of the Adaptive Cycle, where a crisis (policy restriction) forces the system to shed rigid dependencies and innovate. This diversification effectively distributes risk across multiple geographic nodes, ensuring that localized regulatory changes in one province do longer pose an existential threat to the destination's economic continuity.

However, the implications of these findings must be interpreted with caution regarding their "national" applicability. The data reveals a significant Java-centricity, with approximately 88% of the targeted market concentrated within the island of Java. This suggests that the high level of adaptive capacity observed may be a function of "corridor-based resilience," facilitated by Java's superior logistical connectivity and high population density. In contrast, the negligible market shares from the outer islands (e.g., East Kalimantan, Riau, and North Sumatra, each at 1–2%) highlight a potential core-periphery gap in adaptive reach. While the findings provide a robust model for resilience in well-connected tourism clusters, further research is required to determine if tourism villages in the Indonesian periphery can exhibit similar agility without the benefit of the Trans-Java infrastructure and proximity to multiple metropolitan hubs.

Adaptive Strategies and Market Sustainability Efforts

The adaptive strategies in table 9 is grounded in the established Tourism Resilience and Destination Marketing theories. According to Buhalis (2020), enhancing online and



offline promotion serves as the primary adaptive response for small-scale destinations to accelerate market recovery and re-establish destination branding post-policy (Bethune, Buhalis, & Miles, 2022). Furthermore, the innovation of tourism packages matches Pine and Gilmore’s (2011) 'Experience Economy' framework, where modern travelers shift from mass tourism to experiential, educational, and cultural-based interactions (Pine & Gilmore, 2011). To mitigate resource constraints, strengthening partnerships reflects the Collaborative Governance theory in tourism by Bramwell & Lane (2012), demonstrating how destination networks generate mutual marketing efforts with stakeholders like travel agents, universities, and local associations (Bramwell & Lane, 2012). Lastly, enhancing service quality operates on the foundations of the SERVQUAL model by Parasuraman (2002), indicating that post-policy adaptation requires structural improvements in tourist safety, comfort, and service delivery to sustain long-term tourist satisfaction and destination loyalty (Parasuraman, Berry, & Zeithaml, 2002).

In response to the decline in tourist visits and revenue during the first quarter of 2025, tourism village and hamlet managers across various regions have begun implementing adaptive strategies to maintain their business sustainability. Survey results show that 54.1% of managers have increased the intensity of promotions—both online and offline—through social media, collaborations with travel platforms, and community-based familiarization trip activities. Additionally, 17.6% of tourism villages and hamlets reported implementing product innovations, such as introducing non-educational thematic activities, while another 14.1% focused on expanding partnerships with the private sector, training institutions, and local communities.

This pattern indicates that most managers depend on promotional strategies and product repositioning as initial adaptive responses that require relatively limited capital yet can rapidly enhance destination visibility. These efforts align with the concept of marketing resilience (Sigala, 2020), which underscores the important role of creativity, network-building, and the ability to manage market uncertainty in sustaining destination performance. Furthermore, several tourism villages and hamlets have begun adopting digital tools to expand their market reach. This approach not only strengthens their marketing strategies but also contributes to the ongoing digital transformation of rural tourism. Research by Maquera et al. (2022) and Mutmainah et al. (2025) suggest that the integration of technology into community-based marketing can accelerate destination recovery in the aftermath of a crisis (Maquera et al., 2022; Mutmainah et al., 2025).

Table 9. Adaptive Strategies and Efforts of Tourism Villages and Hamlets (Post-Policy)

Strategy	Number of Village	Percentage (%)	Key Activities
Enhancing Promotion (Online & Offline)	46	54,1%	Social media promotion, direct marketing to schools, online branding, follow-up with travel agents, regional promotion campaigns
Innovation in Tourism Packages	15	17,6%	Family packages reservable H-1, educational packages, cultural/music events, open trip programs, internships, experiential learning
Expanding & Strengthening Partnerships	12	14,1%	Collaborations with tour/travel agents, HPI, hotels, dive centers, local arts/culture groups, universities, regional stakeholders



Strategy	Number of Village	Percentage (%)	Key Activities
Enhancing Service Quality	6	7,1%	Ensuring safe/comfortable tourism, improving facilities, customer service, educational guidance
Other Strategy	6	7,1%	Special-interest packages, outreach to non-government markets, seminar/online programs, family/community packages, local culinary promotion
Total	85	100%	

Source: Data processed by the researchers, 2025

The table shows that 54.1% of villages prioritize enhancing promotion (online and offline). In contemporary tourism literature, this is recognized as the digital turn. Digital marketing is no longer optional for rural destinations, information and communication technology (ICT) acts as a bridge for small-scale destinations to bypass traditional gatekeepers and reach global markets directly (Pencarelli, 2020). Then, the social media promotion, mentioned in the key activities, aligns with the concept of electronic Word-of-Mouth (eWOM). For tourism villages, visual storytelling on platforms like Instagram and TikTok is crucial for building destination "image" and "trust" among younger demographics (Dwivedi, Tripathi, Kumar, & Vishwakarma, 2023).

Key Challenges for Tourism Villages and Hamlets in 2025

The survey results indicate that although various adaptive strategies have been implemented by the managers of tourism villages and hamlets, structural challenges at the regional policy level remain the most dominant factor hindering community economic recovery. Sixty-four percent of respondents identified limited support from local government programs as a major obstacle to sustaining the economic activities of tourism village and hamlets. Furthermore, 47% of respondents highlighted political decisions, while another 42% pointed to economic instability as further constraints. Extreme weather (29%) and rising transportation and accommodation costs (21%) were also cited as contributing factors to the decline in tourist visits, albeit with relatively smaller impacts. These findings reinforce the indication that tourism villages and hamlets are highly dependent on local government support. The implementation of budget efficiency policies in several regions has reduced the intensity of development programs and technical assistance, causing many tourism villages and hamlets to lose the structural support that previously played a crucial role in maintaining economic stability and institutional sustainability.

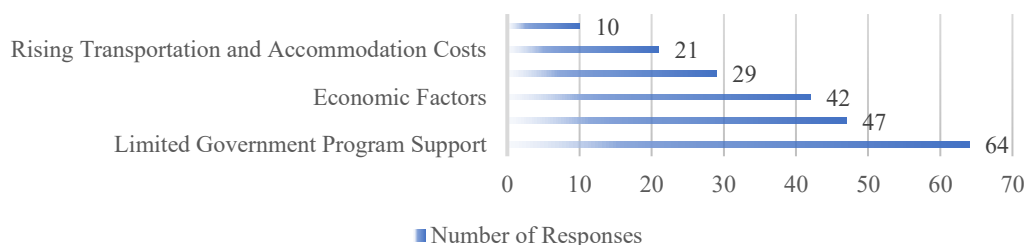


Figure 5. Key Challenges in Developing Tourism Villages and Hamlets in 2025

Source: Data processed by the researchers, 2025

In the context of rural tourism, progressive, participatory, and collaborative regional policies across stakeholders have been shown to strengthen the resilience and innovative capacity of tourism villages and hamlets. A collaborative approach involving local governments, local communities, the private sector, and educational institutions can create synergy in the planning, management, and promotion of community-based tourism destinations. A study in Tihingan Tourism Village, Bali, found that active community involvement and supportive local government policies are key factors in maintaining the sustainability and innovation of rural tourism destinations (Putra Nugraha et al., 2024). Similarly, Mahadiansar et al. (2023) emphasized that cross-actor collaboration at the regional level not only increases the effectiveness of policy implementation but also strengthens the destination's economic and social resilience to environmental changes and market dynamics (Mahadiansar et al., 2023).

CONCLUSION

This research shows that tourism villages and hamlets in Indonesia show significant economic and social potential in 2024 where they have served 587,182 tourists and involved 3,725 workers. However, the enforcement of national budget efficiency policies and study tour restrictions have significantly reduced economic activity in tourism villages and hamlets in Indonesia. This impact was particularly felt by the tourism villages and hamlets dependent on the educational market segment and local government institutions, which experienced massive visit cancellations in the first quarter of 2025.

Furthermore, efficiency policies at the regional level reduced the intensity of program support, promotional assistance, and institutional mentoring, thereby weakening the adaptive capacity of destination managers in responding to market changes. Despite these pressures, this research also identifies the emergence of adaptive responses from the tourism village and hamlet communities through market diversification strategies, product innovation, and expanded digital promotion. These efforts demonstrate the resilience of community-based economies, despite the continued high dependence on public policy. Therefore, a more participatory and collaborative synergy between fiscal, education, and tourism policies is needed to transform tourism villages and hamlets into resilient and competitive destinations over the long term.

Based on these findings, several strategic steps need to be considered by policymakers, including:

1. Evaluating policies that directly affect activities in tourism villages and hamlets, particularly on study tour restrictions, to maintain collaboration between the education and tourism sectors.
2. Strengthening mentoring schemes tailored to local needs through participatory, measurable, and sustainable approaches.
3. Facilitating the expansion of international market access through the participation of tourism villages and hamlets in global exhibitions and foreign language training for tourism actors.
4. Integrating the development of tourism villages and hamlets explicitly into the Regional Medium-Term Development Plan and the National Medium-Term Development Plan to ensure that it becomes part of cross-sectoral policy frameworks rather than remaining solely a tourism sector initiative.

5. Developing integrated promotion and digital accessibility through a national portal and cross-platform campaigns, accompanied by digital branding training.
6. Providing guidance and certification for tour operators and transportation providers to ensure safety, service quality, and the educational value of tourism.
7. Reaffirming the educational function of study tours as part of the out-of-school learning process that fosters character development, social empathy, as well as environmental and cultural awareness.
8. Strengthening collaboration between schools, tourism village and hamlet managers, and local governments through cooperation agreements aligned with character education curricula to ensure that learning values are achieved through tourism activities.

Beyond the immediate policy recommendations and practical frameworks for institutional collaboration, these findings offer critical theoretical implications for the broader discourse on sustainable and independent community-based tourism (CBT) development. The empirical evidence regarding market disruptions and subsequent strategic pivots prompts a fundamental conceptual reflection: do these policy-induced vulnerabilities signify a permanent structural dependency of CBT on state facilitation, or do they represent a transitional vulnerability inherent to systemic adaptation?

This study argues that the observed fragility is predominantly transitional and highly context-specific, rather than a definitive failure of community self-reliance. When analyzed through the lens of evolutionary resilience, the enforcement of dual policy shocks abruptly pushed these tourism villages into the 'release' phase of their adaptive cycle. The sudden contraction of institutional and educational spendings exposed a temporary structural lock-in, where communities had historically optimized their operations for high-volume, state-regulated markets. However, the rapid emergence of adaptive strategies—manifested through localized digital agility, cross-provincial market repositioning, and product diversification toward independent leisure travelers—demonstrates robust community agency in the subsequent 'reorganization' phase.

Therefore, this research challenges the paternalistic assumption that rural destinations cannot operate independently without government-driven markets. Instead, it positions public policy support not as a permanent economic crutch, but as a transitional stabilizer. Long-term sustainable tourism governance must focus on capacity-building that enables grassroots organizations to decouple from macro-structural dependencies. In conclusion, the manuscript shifts the theoretical paradigm from static resilience (passive absorption of shocks) to evolutionary resilience, conceptualizing policy shocks not merely as operational catastrophes, but as necessary evolutionary catalysts that compel community-based tourism models to transition from state-dependent configurations toward decentralized, market-elastic self-sufficiency.

In conclusion, tourism villages and hamlets require specific and integrated policy interventions across various sectors to balance budget efficiency with the protection of local economic growth so that the spirit of development and economic growth in the village can sustain to keep improving the welfare of the community. However, the interpretation of these results must be balanced against several inherent limitations. First, the study's sample is heavily concentrated geographically, with 60% of data originating from DIY Yogyakarta (39%) and Central Java (21%). Consequently, the findings lack the breadth for full national representativeness and should be viewed as reflective of the specific institutional and



tourism maturity of these two provinces. Second, the 14-day data collection window provides a cross-sectional snapshot that may not capture long-term resilience trends. Third, the research relies on managerial self-reports without the benefit of data triangulation, such as objective fiscal records or visitor feedback, which may introduce social desirability bias.

To build upon this contribution, a specific future research agenda is proposed. Subsequent studies should employ longitudinal designs to track the evolution of village resilience over time as these policies become more entrenched. Geographically, future inquiry should utilize a multi-regional comparative approach to include provinces outside of Java, thereby validating these findings on a truly national scale. Furthermore, implementing methodological triangulation by integrating qualitative insights or secondary economic data would provide a more robust validation of managerial perceptions. Finally, exploring the impact of digital transformation as a tool for market diversification remains a fertile ground for understanding how CBT destinations can survive in an increasingly volatile policy landscape.

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CRUISING COMFORTABLY? A QUALITATIVE INSIGHT INTO LIVEBOARD TOURISM IN LABUAN BAJO, INDONESIA

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Article Info	Abstract
<p>Keywords: liveaboard, marine tourism, maritime safety, regulatory compliance, risk management.</p> <p>Received: October 21, 2025</p> <p>Approved: May 13, 2026</p> <p>Published: June 29, 2026</p>	<p>Labuan Bajo, the primary gateway to Indonesian marine tourism, faces significant safety challenges due to the rapid growth of its liveaboard industry. This study examines a two-day, one-night liveaboard experience on open-deck boats, focusing on regulatory compliance and the gap between comfort amenities and safety procedures. Employing a descriptive qualitative methodology, data were collected through interviews with operators, regulators, and tourists, as well as participant observation. The findings reveal a pronounced safety-comfort paradox: operators consistently meet tourist expectations regarding tangible aspects such as deck aesthetics, cleanliness, and food presentation, yet systematically fail to comply with mandatory maritime safety standards. These failures include the absence of fire extinguishers, safety information boards, and consistent pre-departure safety briefings. Cognitive biases in risk appraisal among both operators and tourists, combined with inadequate regulatory enforcement by port authorities, further exacerbate this issue. This study contributes to the maritime risk management literature by demonstrating that perceived comfort can overshadow risk perception in emerging tourism destinations. It is recommended that operators integrate safety protocols into the voyage's experiential narrative and that maritime authorities conduct random onboard inspections to strengthen safety culture in Indonesia's mid-range liveaboard industry.</p>

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INTRODUCTION

Liveaboard tourism has become a prominent sector of marine tourism, generating substantial economic benefits worldwide. The industry is expanding in regions such as Europe, which hosts thousands of marinas in the Mediterranean, and Australia's Cairns region, which produces significant annual revenue (European Commission, 2017; Peden et al., 2021; Stoeckl et al., 2010; Venturini et al., 2016). Indonesia, as an archipelagic nation with extensive marine resources, has identified liveaboard tourism as a key attraction within the emerging Nature, Eco, Wellness, and Adventure (NEWA) tourism paradigm (Kemenparekraf, 2021). This approach aims to shift from conventional tourism models to ones that emphasize unique, high-quality, and sustainable experiences. Labuan Bajo has emerged as a primary destination for liveaboard tourism, with approximately 90% of tourists selecting it as their main gateway to Komodo National Park (BPIW, 2023). Recent data by Sustour (2019) indicate that 32% of visitors travel to Labuan Bajo specifically for the liveaboard experience, while an additional 25% are attracted by snorkeling and island-hopping opportunities. Labuan Bajo, as a top-priority destination in Indonesia and the gateway to Komodo National Park, has experienced a significant surge in liveaboard boat operations. In 2023 alone, 738 tourist boats were recorded operating in the waters of Labuan Bajo (Ardin, 2023). While existing studies on cruise and liveaboard tourism have explored environmental sustainability, market segmentation, service quality benchmarking, and operational efficiency, the specific safety and security vulnerabilities of traditional open-deck boats remain a largely neglected area of scholarly inquiry.

Protection Motivation Theory (PMT) offers a critical framework for analyzing operator behavior and tourist risk perception. According to PMT, an individual's motivation to engage in protective actions is determined by two cognitive evaluation processes: threat appraisal and coping appraisal (Haag et al., 2021). Within the operational context of liveaboards in Labuan Bajo, distortions frequently arise in both processes. Operators often underestimate threat appraisal under economic pressure, while coping appraisal is perceived primarily as an additional cost rather than a strategic investment. This dynamic interacts with the Service Quality (SERVQUAL) Model, which identifies gaps between consumer expectations and management perceptions of service quality (Šebrek & Marković, 2020). In the marine tourism sector, tangible attributes are frequently prioritized to meet tourists' immediate desires, whereas credence attributes are often overlooked because their benefits are not immediately apparent (Bahadur & Ali, 2023; Velastegui-Hernández et al., 2024). While standard frameworks such as Safety Management Systems (SMS) and Risk Management Theory address organizational compliance, they often overlook the psychological aspects of tourists' risk perception and operators' bias. The integration of Protection Motivation Theory (PMT) and SERVQUAL addresses this limitation by modeling protective motivations and service expectations, which are essential in marine tourism, where safety is both a technical and a psychological requirement throughout the journey. Despite the establishment of clear benchmarks by Indonesian regulations (Minister of Tourism No. 4/2021 and Minister of Transportation No. 62/2019), a gap in implementation remains. Small open-deck operators, in particular, with limited resources, face challenges in consistently translating these legal mandates into operational practice.

Although Labuan Bajo holds the prestigious status of a UNESCO World Heritage Site and a Super Priority Destination, recent maritime incidents have raised concerns about its international reputation. In 2024–2025, fifteen tourist boat accidents with four casualties occurred in the waters of Labuan Bajo and Komodo National Park, East Nusa Tenggara, primarily due to extreme weather and technical failures (Krisanti, 2025). These incidents reflect a systematic failure to act on the very threat appraisal and coping appraisal indicators that PMT identifies as preconditions for protective behavior. Similarly, from a SERVQUAL lens, the accidents expose a critical credence-attribute gap, the absence of visible safety infrastructure that tourists neither demand nor evaluate until an emergency occurs. Conversely, destinations and operators that have successfully embedded safety and comfort indicators have leveraged these attributes as competitive differentiators, demonstrating that safety compliance can simultaneously serve as a branding tool that enhances tourist trust and destination reputation.

The existing literature on tourism in Labuan Bajo primarily addresses the ecological impacts of mass tourism (Bahar, 2023; Masjhoer et al., 2025; Muchtar et al., 2023), development policies (Fauzi et al., 2024), and economic growth (Yudhoyono et al., 2021). In contrast, broader cruise research has mainly focused on Phinisi boats, emphasizing design and seaworthiness (Suardi et al., 2023), health protocols (Sari, 2022), and marketing strategies (Nanut et al., 2024; Rizkiyana, 2023; Tapaningtyas, 2021). However, there is a notable gap in the literature regarding qualitative studies of open-deck boats, which are traditional fishing boats converted for tourism at lower price points. These operators are subject to less stringent oversight than luxury Phinisi boats, resulting in their limited representation in safety research. Although most studies attribute safety failures to external hazards or regulatory shortcomings, this study contends that internal risks also arise from routine trade-offs between aesthetic comfort and procedural safety. By examining the underexplored open-deck segment and considering the influence of operator cognition and tourist perceptions, this research makes a unique contribution to the cruise safety literature. It analyzes how resource limitations and the normalization of neglect, intended to maintain the aesthetic experience, introduce subtle vulnerabilities. This perspective ultimately challenges the prevailing assumption that participants in marine tourism consistently evaluate safety through rational decision-making.

This study examines rising safety risks in open-deck boat operations, exacerbated by growing tourist demand, insufficient regulatory oversight, and limited compliance. The research has two primary objectives: to provide a comprehensive account of the 2D1N liveaboard experience in Labuan Bajo and to analyze the gap between comfort-oriented amenities and the enforcement of safety protocols. Using a qualitative, immersive methodology that departs from prevalent survey-based approaches, this research uncovers tacit safety trade-offs and the normalization of procedural neglect often overlooked by quantitative audits. The study reconceptualizes liveaboard safety by examining the cognitive and perceptual factors that enable vulnerabilities to persist beneath appealing surface experiences. The findings seek to establish safety as the essential underpinning of comfort in both policy development and destination branding.

METHODOLOGY

A descriptive qualitative approach was used to examine liveboard safety and service quality on open-deck tourist boats in Labuan Bajo, East Nusa Tenggara. Data collection involved participant observation, in-depth interviews, and documentation in May 2022. During the observation phase, the researcher participated in a two-day, one-night (2D1N) tour package along the Labuan Bajo–Terang Bay–Karang Gusung–Papagarang Island route, adopting a tourist's perspective to document operational realities (see Figure 1). Interviews were conducted with seven purposively selected informants from three groups: two liveboard operators (a boat captain and a crew member), two government regulators (from the West Manggarai Tourism Office and the Labuan Bajo Port Authority), and three tourists (see Table 1 for details). Interview questions were structured using the SERVQUAL and Protection Motivation Theory (PMT) frameworks to investigate service gaps, risk perceptions, and coping behaviors (see details in Table 2).

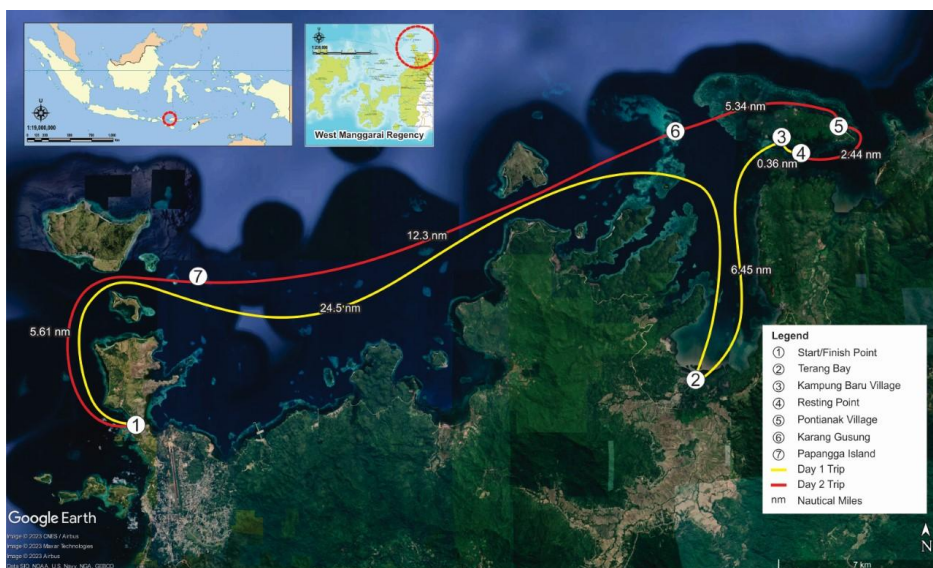


Figure 1. Location and liveboard itinerary.

Data analysis employed source triangulation and cross-checked interviews, observations, and documentary data to enhance validity. Facility conditions were evaluated against the standards outlined in Minister of Tourism Regulation No. 4 of 2021, while safety equipment and procedures were assessed against the standards set out in Minister of Transportation Regulation No. 62 of 2019. A descriptive-comparative approach was employed to identify discrepancies between regulatory standards and actual practices, followed by an explanation-building analysis to interpret patterns in the findings.

Table 1. Research Informant

Group	Quantity	Code
Liveboard Operator	2	BC.1 – boat captain
		BC.2 – crew
Regulator	2	LG.1 – tourism office staff
		LG.2 – Port Authority
Tourist	3	TRT.1 – tourist from the UK
		TRT.2 – tourist from the UK
		TRT.3 – tourist from Jakarta

Source: Prepared by the authors



Table 2. Structured Interview Guide

Component	Dimension	Focus of the question		
		Operator	Tourist	Government officials
Servqual Model	Tangibles Dimension	The questions address the provision and routine maintenance of comfort and safety facilities.	The questions address the alignment between visual expectations and the actual facilities provided.	This theme examines the boat's compliance with relevant regulations regarding its physical condition and equipment.
	Reliability Dimension	This theme evaluates the crew's operational integrity in maintaining continuous boat performance and service.	This theme assesses the consistency between the service promised and the on-site experience.	This theme verifies the operator's compliance with established procedures and protocols.
	Assurance Dimension	This theme addresses the standardization of crew training in both hospitality and safety.	This theme examines the tourist's confidence in the operator's ability to foster psychological safety.	This theme evaluates the validity of crew competency certificates as legal guarantees of professionalism.
Protection Motivation Theory	Threat Appraisal	This theme addresses awareness of operational risks, particularly the potential for fatal accidents on board the boat.	This theme explores the extent of tourists' awareness regarding potential weather hazards and sea conditions while on the boat.	This theme identifies accident-prone areas in the waters and examines the frequency of violations.
	Coping Appraisal	This theme evaluates the effectiveness of mitigation measures, including safety equipment and evacuation procedures.	This theme explores confidence and knowledge related to self-rescue efforts and the use of safety equipment during emergencies.	This theme evaluates the effectiveness of law enforcement efforts.

Source: Prepared by the authors

FINDINGS AND DISCUSSION

Liveaboard 2D1N Description

The tour package offered by the open-deck tour boat operator starts on Friday, 27 May 2022, at 08.30 WITA. The first destination is the mangrove forest in Teluk Terang (8°26'36.07"S, 120° 5'29.22"E), with the trip taking approximately three hours from the departure point, namely the Sylvia Hotel pier (8°27'40.13"S, 119°52'18.39"E). The tour boat enters a river estuary surrounded by very thick mangrove trees. Mangrove forests are habitats and breeding grounds for various invertebrate and vertebrate species with abundant food, shelter, and minimal predator pressure (Blanton et al., 2024). Many birds, fish, and reptiles move in this location during the day. Tourists find observing animal activity in the mangrove forest interesting. The boat could not go any further into the mangrove forest and its small channels.

Our boat is too big to enter the small gaps in the mangrove forest, when it does, many animals can be seen (code BC.2 – crew).

Our boat is open, so sleeping in the mangrove forest is not a good idea, as there are lots of mosquitoes (code BC.2 – crew).



Besides focusing on wildlife observation, other mangrove forest exploration activities include fishing and overnight boating (Avau et al., 2011). According to Blanton et al. (2024), the land/water plants, as well as the wildlife species, within mangroves are significant tourist attractions. Therefore, it is unsurprising that mangrove tourism has become a multi-billion-dollar industry, attracting millions of visitors (Spalding & Parrett, 2019).

The second destination is Kampung Baru Village (8°21'0.51"S, 120° 7'34.79" E) on the south side of Longos Island. Migrants from Bima, West Nusa Tenggara, inhabit this village. At this location, tourists interact with the local community while observing daily activities and local buildings (See Figure 2b & 2c). In this village, people live alongside the Komodo dragons that live wild on Longos Island (see Figure 2a). Although Komodo dragons often prey on livestock, residents do not attempt to hunt or kill them due to their protected status. This relationship between humans and Komodo dragons makes Longos Island unique. The community's uniqueness is the main attraction of rural tourism (Pudianti & Vitasurya, 2019). According to Yanan et al. (2024), in village tourism, residents become the leading actors, serving as service providers, traders, and artisans, contributing to the overall visitor experience. Residents understand local customs, culture, and environment while serving as practitioners and conveyors of traditional culture (Su et al., 2016).



Figure 2. (a) Komodo Dragons information; (b) Kampung Baru atmosphere; (c) Locals daily activities
Source: author's documentation

In the afternoon, the trip continued to the third location, the waters on the south side of Longos Island (8°21'19.41"S, 120° 7'59.88" E), not far from Kampung Baru Village. At this location, the boat is anchored for the night, and tourists enjoy calm waters for snorkeling and other water activities. At dusk, tourists are presented with hordes of bats emerging from Longos Island towards Flores Island. Thousands of large bats create a fascinating spectacle as they enjoy the sunset. Tourists stay on the boat, which provides the necessary facilities. Sha Fang (2020) explains that the uniqueness of a liveaboard lies in the experience of staying on a boat for several nights. Furthermore, live-aboard travelers have different motivations from those of cruise ship passengers. Social media's influence has contributed to the growth of liveaboard travelers (Rizkiyana, 2023). Relaxation, social recognition, learning, bonding, and socialization are the motivations of live-aboard tourists (Sha Fang, 2020).

At the beginning of the last day of the trip, tourists are shown thousands of giant bats returning to Longos Island after their nighttime activities on Flores Island. The crew provides a simple breakfast of fried bananas and bread with fruit jam. The journey

continued to Pontianak Village (8°20'43.79"S, 120° 8'55.44" E), located on the north side of Longos Island. Unlike Kampung Baru, this village is mainly inhabited by the Bajo tribe. The Bajo tribe is often called the Sea Nomads and has lived alongside the sea for thousands of years (Ilardo et al., 2018). The villagers primarily work as fishermen and are skilled at crafting traditional boats. The daily life of the Bajo tribe is a unique attraction to learn (see Figure 3). The houses in Pontianak Village are mostly built on stilts, overlooking the beach. Common Bajo tribe housing conditions are found due to changes in the lives of sea nomads who settle on the beach (Rahim et al., 2018; Suliyati, 2017). Most people in this village are Muslim, and when we visited, it coincided with a Thanksgiving event for a villager preparing to perform the Hajj. They slaughtered a cow and cooked it together for distribution to all the villagers. The hospitality of the villagers provides a sense of security and comfort for tourists. They greet and try to chat as long as tourists walk around. Cultural interaction between tourists and local communities has great potential in developing tourism villages (Pudianti & Vitasurya, 2019; Scheyvens, 2003; Yanan et al., 2024). However, environmental cleanliness in Pontianak Village is poor because the community does not manage waste effectively. Solid waste issues are the primary challenge to ecological sustainability on small islands, particularly in Labuan Bajo (Masjhoer, 2024; Masjhoer et al., 2021, 2025).



Figure 3. (a) Traditional Boat Making; (b) Pontianak Village Atmosphere; (c) Cooking Together Activity
Source: author's documentation

After walking around for about an hour in Pontianak Village, the boat sailed back to a point with a coral reef on the west side of Longos Island, namely Karang Gusung (8°20'36.57"S, 120° 4'52.36"E). Tourists are presented with the beauty of coral reefs and various reef fish through snorkeling activities. Marine tourism activities are featured in this area. Marine tourism is a tourist activity that depends on the health of the coral reef ecosystem (Masjhoer & Mazaya, 2024; Mazaya et al., 2020). In addition to snorkeling, tourists can enjoy coral reefs through SCUBA diving activities, which are an integral part of a liveaboard (Sha Fang, 2020). After the marine tour at Karang Gusung, the boat sailed to the last destination, Papangga Island (8°24'21.59"S, 119°53'17.97"E). On this uninhabited island, tourists can enjoy the white sand beach or swim while waiting for the crew to prepare lunch. The liveaboard trip concludes at the departure point, the Sylvia Labuan Bajo Hotel dock.

Open-Deck Boat Facilities

In Labuan Bajo, 90% of visitors to Komodo National Park make it their primary destination. Besides wanting to see Komodo dragons firsthand, tourists are motivated to live aboard and go island-hopping. Sustour (2019) Studies show that 32% of tourists are encouraged to visit Labuan Bajo for liveaboard experiences, and 25% for snorkeling and island hopping. Using liveaboard boats allows tourists to visit other islands in the destination while observing wildlife on the cruise itinerary (Tapaningtyas, 2021). In addition to phinisi boats, liveaboards in Labuan Bajo can use modified traditional fishing boats, also known as open-deck boats (see Figure 4a). Initially, these modified boats were used for tourist transportation from Labuan Bajo to Komodo National Park, and were later equipped with additional facilities to support liveaboard activities. Phinisi boats are available in various facilities, from luxury to deluxe, with a price range of USD 2,510.98-5,649.71. On the other hand, smaller open-deck boats offer lower prices, ranging from USD 125.55-313.87 (Komodorental, 2024).

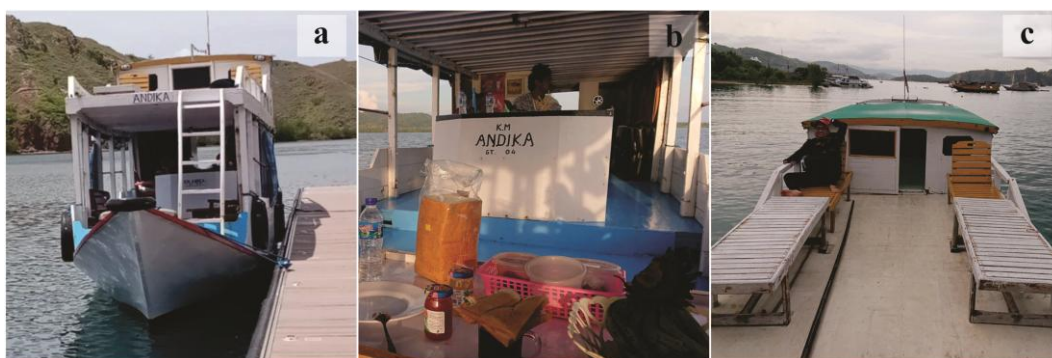


Figure 4. (a) Open-deck Boat; (b) Main Deck; (c) Chairs and Bedroom on the Upper Deck
Source: author's documentation

The Labuan Bajo open-deck boat is a wooden boat with a capacity of six people. A captain and a crew steer the boat. Facilities offered during this liveaboard include a room on the upper deck with mattresses and pillows, toilets, four meals, life jackets, and snorkeling equipment (see Figures 4b and 4c). Facilities similar to liveaboards with phinisi boats provide a 'living' experience on board (Tapaningtyas, 2021). Although not as comprehensive as using a phinisi boat, the liveaboard facilities on the Labuan Bajo open-deck boat are sufficient to meet the needs of tourists for a short two-day, one-night trip. The facilities provided can meet tourists' needs during the trip. There are no shortcomings that cause discomfort during the liveaboard. The manager has complied with the regulation of the minimum facilities for accommodated tourist boats in Indonesia, which has been regulated in the Minister of Tourism Regulation No. 4 of 2021, which includes the provision of eating and drinking, trash bins, toilets, rooms, and public areas, including tables and chairs, lighting, and air circulation. Based on interviews with travelers (Code TRT.1 and TRT.2) on similar boats, the facilities on liveaboard boats are adequate. They are not a significant problem. The facilities on open-deck boats in Labuan Bajo demonstrate that operators prioritize the tangible dimensions of the Servqual model by focusing on visible physical attributes. Field observations reveal that elements such as deck aesthetics, communal area cleanliness, and food presentation have been improved to better align with contemporary tourists' expectations. This emphasis on recreational physical evidence

significantly influences tourists' perceptions of the liveaboard experience, as supported by the informant's statement (code TRT.1).

Our boat is not as luxurious as a Phinisi, but we offer a unique experience with the facilities available on board (code BC.1 – Boat Captain).

Overall, the boat I travelled on was quite comfortable. We were provided with food, mattresses to sleep on, and beautiful nature to enjoy (code TRT.1 – Tourist from UK).

I found the toilets to be very cramped, but I rarely used them during the trip. Most importantly, the destinations we visited were worth the money we paid (code TRT.2 – Tourist from UK).

According to a statement from an informant (code TRT.2), liveaboard tourists do not mind the facilities as long as their primary goal can be fulfilled, namely, snorkeling or diving activities (Stoeckl et al., 2010). This statement suggests that the tangibles dimension related to the condition of the boat's facilities can be overlooked as long as the boat operator ensures a positive passenger experience during the journey. Open-deck liveaboard facilities are undoubtedly different from cruise ships because they adjust the capacity and nature of the activities the manager offers (Sha Fang, 2020). The facilities provided enhance comfort while enjoying the atmosphere during the cruise, as stated by the informant (code TRT.3).

We are excited about the destinations and activities we will be doing during the cruise. The onboard facilities are pretty comfortable and adequate (code TRT.3 – Tourist from Jakarta).

We had a good idea of the boat's facilities as soon as we conducted our research on the website (code TRT.2 – Tourist from UK).

Tourists who prioritise functionality over luxury generally prefer these facilities. Informed tourists who know about the facilities when purchasing a liveaboard tour package often value new experiences during the cruise rather than the amenities themselves. The informant's statement (code TRT.2) shows that they deliberately gather information about available facilities before selecting the open-deck boat service. Prior knowledge and individual characteristics subconsciously shape tourists' experiences (Santos et al., 2012). Consequently, open-deck boats in Labuan Bajo meet the comfort requirements of specific tourist segments. Positive experiences likely encourage tourists to participate in similar activities in the future.

Facilities on open-deck boats in Labuan Bajo demonstrate operators' emphasis on the Tangibles dimension of the SERVQUAL model by prioritizing visible physical attributes. Field observations indicate that features such as deck aesthetics, communal area cleanliness, and food presentation are elevated to satisfy modern tourist expectations. This focus on recreational physical evidence shapes tourists' perceptions of liveaboard trips. However, boats that balance visible comforts with accessible safety equipment and routine emergency drills provide greater service assurance, revealing the risks of prioritizing aesthetic appeal over essential safety infrastructure. The emphasis on aesthetics contrasts with the limited availability and accessibility of safety facilities, which are essential in the SERVQUAL model. Insufficient fire extinguishers and life jackets stored in inaccessible locations indicate a management knowledge gap. A recent incident in which access to life jackets was delayed because they were stored in locked compartments underscores the real-world consequences of neglecting accessible safety provisions. This suggests that operators

misjudge tourists' priorities, allocating resources to aesthetics rather than critical safety needs.

This imbalance between physical comfort and safety extends to the Assurance and Reliability dimensions, where accountability for tourists' sense of security is often placed primarily on crew interpersonal friendliness. While the crew demonstrates high responsiveness to daily needs, the absence of engaging, narrative-driven safety briefings indicate inadequate operational reliability in risk management at the management level. By reframing the safety briefing as an integral part of the adventure, inviting guests to imagine themselves as capable explorers prepared for every challenge, operators can transform what is typically perceived as a routine lecture into a compelling start to the journey. For example, the crew might introduce safety instructions by weaving them into the story of a classic Komodo marine voyage, briefing guests as if they were fellow crew members readying for an expedition, as required by management protocols. This approach not only equips tourists with essential information but also fosters empathy and empowerment, satisfying both the Assurance and Empathy dimensions. Without such narrative integration and clearly assigned responsibility for implementing effective procedures, tourists may experience a false sense of security, feeling protected by friendly service and comfort, despite lacking confidence that emergency procedures will be carried out effectively in the event of a maritime incident.

In summary, the situation on open-deck boats underscores a significant imbalance between tangible recreational features and credence attributes associated with maritime safety. The application of the SERVQUAL model demonstrates that current service quality addresses immediate comfort but does not provide a robust foundation for safety in overall service provision. Without harmonizing comfort facility standards with rigorous safety protocols and without holding both operator management and relevant authorities accountable for addressing these shortcomings, the mid-range liveaboard sector in Labuan Bajo risks perpetuating a paradox that may erode international tourists' confidence in the destination's long-term sustainability.

Open-deck Boat Safety

Safety is a significant factor in nature-related tourism activities. Minister of Transportation Regulation No. 62 of 2019 establishes minimum requirements for tourist boats to provide safety equipment, including life jackets, fire extinguishers, safety information, and first-aid kits. Based on observations and interviews with the crew, the Labuan Bajo open-deck boat has only life jackets and first-aid kits. Still, no safety information or fire extinguishers were found. The incomplete safety facilities on tourist boats in Indonesia are often a finding. Idris (2023) found that the Kapuas River tour boat lacks safety equipment, including life jackets, life buoys, fire extinguishers, and first-aid kits. Every recreational boat should carry at least a first-aid kit that enables immediate treatment of minor cuts and bruises, and the administration of appropriate high-concentration oxygen therapy and resuscitation when necessary (Pye & Greenhalgh, 2010). Low awareness among boat managers of safety issues is the primary cause of most accidents (Faturachman & Mustafa, 2012). This statement is in line with research by Idris (2023), which found that the failure to implement safety standards on boats stems from a lack of awareness among organizers. Boat owners must pay more attention to providing

complete safety equipment because they have not experienced accidents and are familiar with local water conditions (Sadipun & Sudirman, 2021).

We used to provide fire extinguishers because they had expired, and we didn't want to keep getting new ones (code BC.1 – boat captain).

Passenger safety equipment, such as life jackets and life buoys, is outdated and requires replacement (Code LG.2 – Port Authority).

We pay close attention to onboard safety, especially life jackets and first-aid kits (code TRT.1 – Tourist from the UK).

The first thing we look for in an operator is safety assurance, and we're assured that our boats are safe to operate (code TRT.3 – Tourist from Jakarta).

Boat operators and passengers independently assess the safety risks associated with insufficient safety equipment. Captains often express confidence in their ability to transport guests safely, relying on their knowledge and expertise despite minimal safety equipment (code BC.1). This reliance on local knowledge of water and weather conditions is a primary factor influencing captains' willingness to operate under such circumstances. Conversely, tourists select open deck liveaboard services based on their evaluation of the captain's competence and the visible presence of safety equipment (code TRT.3). Most tourists are unconcerned about the absence of safety equipment beyond what they deem essential, such as life jackets and first aid kits (code TRT.1). In terms of threat assessment, both operators and tourists frequently disregard the risk of marine accidents, perceiving such incidents as infrequent or not immediately apparent. This perception fosters cognitive bias, diminishing vigilance regarding safety measures and creating a false sense of security. When accidents are considered rare, individuals may underestimate actual risks (Yao et al., 2026). This cognitive bias reduces vigilance among both operators and tourists concerning safety protocols (Lu et al., 2022). Wilks et al. (2025) further note that the lack of immediate, visible danger in marine environments can lead to negligence. Additionally, threats may arise from unsafe actions by tourists and operators, such as disregarding safety protocols or engaging in risky behaviors that precipitate accidents. Such behaviors are often attributed to insufficient awareness or training, as well as the belief that accidents are unlikely to occur (Yao et al., 2023).

At the beginning of the cruise, the open-deck liveaboard carrying the researchers did not provide safety briefings or information boards. The information presented here differs from that collected from other travelers (codes TRT.1 and TRT.2). These individuals reported that the boat captain provided an introduction to the boat. However, neither noted the presence of any posted safety instructions. The discrepancy is noteworthy because tourists from Jakarta (code TRT.3) are also not provided with briefings. Disparate briefings suggest that uniform service standards are not consistently applied across all boats. This inconsistency not only affects the overall visitor experience but also poses real risks in crisis situations. The absence of standardized safety protocols can have severe consequences. For instance, in 2018, a liveaboard boat operating in the Indonesian archipelago experienced a fire at night. Passengers later reported that unclear briefings contributed to the delayed evacuation, resulting in injuries and underscoring the critical importance of crisis preparedness on board. As documented in risk-management literature, such incidents illustrate how a lack of clear protocols can intensify the impact of

emergencies for both tourists and crew. According to Fang et al. (2021), interpretation communicates information to influence tourists' attitudes and behaviors. Regarding safety, briefings by boat crews to tourists before undertaking shipping activities are crucial. The information provided may include first steps to take in the event of an accident, instructions for using a life jacket, and potential encounters with dangerous animals. The information will enhance tourists' vigilance in the event of unwanted incidents during the trip. Briefings can increase tourists' awareness of the information conveyed by the operator (Meschini et al., 2021). Tourism activities in natural environments with potential hazards benefit from briefings for both tourists and operators (Van der Merwe et al., 2019). For visitors, the information provided will offer a perspective on the most effective way to travel, increase awareness of hazards, and encourage vigilance and careful behavior (Fang et al., 2021; Saunders et al., 2019). For operators, briefings can minimize the potential negative impacts of tourist activities by encouraging tourists to behave in an environmentally responsible or desirable manner (Wolf et al., 2013).

We took a tour of the boat and learned what to do in the event of an incident (code TRT.2 – Tourist from UK)

A brief briefing before departure, then continuing on to the first stop (code TRT.1 – Tourist from the UK)

We only received information on where the life jackets were located, there was no safety briefing, then we prayed that the trip would go smoothly (code TRT.3 – Tourist from Jakarta)

Variations in experiences between researchers and other tourists reveal inconsistencies in the application of operational safety and security standards. These inconsistencies may result from insufficient safety awareness among boat operators. The threat assessment framework adopted by operators, which is based on sailing expertise rather than systematic risk assessment, often leads to the neglect of preventive measures. Inadequate safety management systems and insufficient training programs contribute to a diminished safety culture. When operators do not prioritize safety, the perception that risks are negligible is reinforced. Operators frequently cite the complexity and cost of safety procedures, such as safety briefings and equipment maintenance, as significant barriers. Organizational factors, including inadequate training and low safety awareness, are primary causes of safety incidents in yachting tourism, underscoring the urgent need for enhanced safety management systems to mitigate accident risks (Yao et al., 2026). Addressing these issues requires strict adherence to international safety standards for marina construction, boat equipment, and emergency procedures, with ongoing improvements necessary to ensure passenger safety (Favro et al., 2009). Central to these efforts is the implementation of effective barrier management to prevent adverse (Mentes et al., 2016). This approach must be supported by a comprehensive understanding of human factors, as compliance depends on individual knowledge, trust in safety information, and the perceived costs associated with noncompliance (Hendricks & Peres, 2021; Niu et al., 2025).

In addition to internal boat-related factors, external conditions also contribute to accidents. In particular, inadequate enforcement of boat safety regulations is a concern. The Harbormaster's Office and Port Authority of Labuan Bajo (HOPA) supervise and enforce shipping safety and security in Labuan Bajo (Sadipun & Sudirman, 2021). HOPA can deny sailing permits to boats that do not meet safety requirements (code LG.2). The operation of

boats without sailing permits and seaworthiness certificates indicates negligence on the part of HOPA (Suryani et al., 2018). In practice, the enforcement process typically involves three main steps. First, boat owners submit permit applications, which HOPA reviews for completeness and compliance. Second, on-site inspections are conducted to verify the boat's actual condition. Finally, sanctions may be imposed on operators who fail to meet requirements or operate without permits. HOPA representatives have noted that limited personnel constrain their capacity to monitor permits. Gaps can arise if any of these steps are not strictly followed. According to a source from the tourism office (code LG.1), more than half of the boats operating in Labuan Bajo waters lack official permits. Negligence is not limited to HOPA. Boat operators also frequently disregard regulations concerning seaworthiness. Rahman et al. (2017) identified human negligence as a significant cause of boat accidents. Mapping the responsibilities and actions at each step reveals that accountability often stalls at the inspection and enforcement stages. Insufficient follow-through allows unlicensed or unsafe boats to continue operations. Preventing tourist boat accidents requires strict compliance with regulations. There must also be increased awareness among operators regarding boat safety. Furthermore, HOPA's supervisory role should be strengthened. This can be achieved by introducing new rules for obtaining sailing permits. More importantly, rigorous enforcement of existing regulations is necessary.

The port authority does not allow boats to sail without meeting administrative and equipment requirements. Limited manpower and the vastness of the sea are the main obstacles to monitoring and enforcement (code LG.2 – port authority).

More than half of the tour boats operating in Labuan Bajo lack operating licenses. Additionally, the tour boats lack standardization in boat specifications, machinery, and safety equipment maintenance, and crew services (code LG.1 – Tourism Office Staff).

Tourist boats owned by fishermen do not meet standards, and the quality of the human resources managing them remains lacking. At the same time, the operational standards for tourist boats must meet the government-set reference standards (code LG.2 – port authority).

Frequent accidents involving tourists can damage a destination's reputation, reduce visitation, and decrease revenue. In the current era of widespread information disclosure, negative incidents can rapidly disseminate through social media. Safety and security are critical factors influencing traveler's decisions to visit destinations and participate in activities (Liu & Pratt, 2017; Santana-Gallego et al., 2020). Furthermore, the travel and tourism industry may experience severe consequences if safety and security concerns at destinations are not adequately addressed (P. E. Tarlow, 2014). Destination managers are responsible for establishing environments that ensure tourists' safety and security (Cheng et al., 2022). Governments should promote security and safety awareness through enforceable policies in destination management. Security policies in the tourism sector are not solely domestic concerns but can also influence international market demand (Santana-Gallego et al., 2020).

The application of Protection Motivation Theory in marine tourism management requires an understanding of how tourists assess risk through threat and coping appraisals. Comprehensive knowledge of these cognitive processes informs marketing and management strategies aimed at fostering tourist trust, satisfaction, and loyalty, with particular emphasis on health crisis management, quality assurance, and transparent communication (Castaldo et al., 2024; Lemmetyinen et al., 2016). The success of these

strategies relies on precise customer segmentation, enabling safety and service messages to be tailored to each group's cultural and demographic characteristics. To guide operators in applying segmentation theory practically, three key traveler segments can be prioritized for safety messaging: families with children, adventure-seeking solo travelers, and senior tourists. These groups differ in both their perception of threats and their likely coping responses, as shown in Table 3.

Table 3. Threat and coping appraisal in different segments

Traveler segments	Threat appraisal	Coping appraisal
Families with children	Highly sensitive to perceived safety risks, especially regarding child protection and emergency readiness.	Value clear, visible safety infrastructure and comprehensive pre-trip briefings. Likely to ask about safety protocols in advance
Adventure-seeking solo travelers	May view risks as an accepted part of the experience, but are alert to operational reliability failures.	Respond well to assurances of professional crew training and advanced emergency technologies. Value real-time information and autonomy in managing risk.
Senior tourists	More concerned about health and mobility-related risks, as well as accessibility of safety equipment	Prefer explicit guidance, assistance from staff, and communication channels adapted to their needs

Source: Research data

This segmentation matrix empowers operators to deliver targeted safety messaging and allocate resources based on the distinct threat and coping profiles of each segment. Operators must integrate technology, such as smart sailing platforms and real-time analytics, to deploy adaptive risk-management tools and personalized communication channels. This approach actively increases tourists' perceived capability and confidence in managing potential risks during their travels.

CONCLUSION

The findings identify a pronounced safety-comfort paradox within the liveaboard tourism industry in Labuan Bajo. While boat operators typically meet or surpass basic tourist expectations for comfort amenities, including food, accommodation, and leisure, they consistently fail to comply with essential maritime safety standards. The absence of mandatory safety briefings, inadequate fire suppression systems, and improper storage of life jackets indicate that comfort is prioritized as a marketing strategy, whereas safety is treated as a secondary administrative concern. This disparity is further exacerbated by inconsistent enforcement by maritime authorities, creating a high-risk environment despite the destination's premium status.

This research contributes to maritime risk management literature by demonstrating that perceived comfort can overshadow perceived risk in emerging tourism destinations. The findings challenge traditional service quality models by illustrating that, within high-risk adventure tourism, high satisfaction with comfort does not necessarily align with safety compliance. The study provides a critical perspective on how small-scale operators in developing economies navigate the tension between operational costs and safety investments. For policymakers and maritime authorities, the results underscore the urgent need for a zero-tolerance enforcement policy. Beyond administrative checks at the port, random shipboard inspections are required to verify the functionality of safety equipment and the delivery of safety briefings. For boat operators, mandatory safety certification and



hospitality training for crew members are essential to address communication gaps with international tourists. Integrating safety protocols into the luxury experience may offer a competitive advantage rather than being viewed solely as an operational cost.

This study is subject to several limitations. The small sample of five key informants and the qualitative research design limit the generalizability of the findings to all boat types in Labuan Bajo, including larger Phinisi boats and luxury cruises. Furthermore, the research primarily focused on open-deck boats, which pose different operational risks than enclosed boats. Future research should utilize quantitative methods, such as large-scale surveys, to evaluate the impact of safety non-compliance on long-term tourist loyalty and destination image. Comparative studies between Labuan Bajo and other global marine destinations, such as Raja Ampat in Indonesia or the Whitsundays in Australia, may provide deeper insights into how varying regulatory frameworks influence safety culture in liveaboard tourism.

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URBAN MOBILITY AND TOURISM: ANALYZING MILLENNIAL AND GEN Z TRAVEL BEHAVIOR FOR SUSTAINABLE TOURISM DEVELOPMENT

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Info article	Abstract
<p>Keywords: Mobility of urban tourists, Millennial, Gen Z, Travel Behavior, Sustainable Tourism.</p> <p>Received: October 30, 2025</p> <p>Approved: June 8, 2026</p> <p>Published: June 29, 2026</p>	<p>Tourism development in Malang City is growing rapidly, driven by the preferences of Millennials and Generation Z who prioritize authenticity, digital connectivity, and sustainability. This study aims to analyze the mobility patterns of millennial and generation Z tourists and their implications for the sustainable development of urban tourism in Malang City, as well as the main factors influencing the choice and shift of tourists. These factors are focused on ease of access, availability and attractiveness of facilities, operational hours, and the existence of destinations on social media. This study also provides recommendations for sustainable urban tourism development in Malang City based on tourist mobility patterns. Spatial datasets were systematically compiled from Google Reviews, Google Points of Interest (POI), OpenStreetMap, and Strava to analyze the travel behavior of Millennials and Generation Z. The findings revealed that urban mobility patterns were concentrated in the districts of Klojen, Lowokwaru, and Blimbing, influenced by accessibility, facilities, operating hours, and social media visibility, especially TikTok. Gen Z's mobility is highly correlated with social media exposure and artificial attractions, while Millennials are more influenced by operational hours and tourism infrastructure. The study recommends increasing digital promotion, improving facilities in high-traffic areas, and expanding tourism activities to suburban zones. These strategies aim to create a more inclusive, adaptive, and sustainable urban tourism experience that is aligned with the digital lifestyle and experience-oriented of the younger generation.</p>

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INTRODUCTION

Tourism is a temporary travel activity outside the home environment, while tourism activities are supported by facilities, infrastructure, facilities, and services according to the needs of tourists (Law of the Republic of Indonesia Number 18 of 2025, 2025). The tourism sector has a strategic role in sustainable development because of its contribution to economic growth, job creation, and the preservation of the local environment and culture through policies that consider social, economic, and environmental (Nations, n.d.). Along with regional development and changes in people's lifestyles, tourism activities are experiencing increasingly complex dynamics. One form of tourism that is growing rapidly is urban tourism (Ayu Purnama, 2022). It takes advantage of city facilities, ease of accessibility, and a diversity of cultural and commercial attractions, encouraging high tourist mobility in urban areas (Ayu Purnama, 2022; Lagalo et al., 2024).

Walmsley (2004) (in Lew et al., 2006) considers that tourist behavior is an influencing factor in decision-making. Lew et al. (2006) concluded that, in general, there are three main aspects of every tourist's travel decision, namely (1) the availability of time and the allocation of the tourist's travel budget, (2) internal factors that include personal motivation, interests, and characteristics of the travel group, and (3) the level of knowledge or information that tourists have about the destinations visited.

In the context of modern tourism, Millennials and Generation Z are two demographic groups that dominate the structure of the tourism market (Angelika, 2025). The Millennial generation is a generation group born in the range of 1981-1996, while Generation Z is a generation group born in 1997 and after (Center, 2019). Both generations have the characteristics of high use of digital technology in finding information, determining destinations, and shaping travel experiences, especially through the use of social media and digital platforms (Jenkins, 2018; Yanti et al., 2024). The travel patterns of Millennials and Generation Z are influenced by the need for relaxation, the search for new experiences, and social togetherness, while the choice of destination is influenced by natural attractions, local culinary, and affordability (Angelika, 2025). As productive age groups, both generations show a high level of mobility in regional activities in urban areas (Aini et al., 2023).

Millennials and Gen Z are now a major force in the global tourism industry, carrying different preferences and values compared to previous generations. They tend to seek authentic experiences, make intensive use of digital technologies, and demonstrate a high level of concern for sustainability (Sacchi, 2024; Zouni et al., 2024). Gen Z is more active on visual platforms like TikTok and Instagram, while Millennials rely on Facebook and YouTube for travel planning. Biosphere values and a sense of personal responsibility drive Gen Z's pro-environmental behavior, which is also open to community-based consumption (Ribeiro et al., 2025). Recent studies show that both generations prefer non-mainstream destinations, travel spontaneously, and seek meaningful experiences such as conscious tourism and new social interactions during travel (Travel and Tour World, 2024), with a preference for budget-friendly accommodations and authentic local experiences (Peek Pro, 2025). In this context, understanding the travel behavior of young generations is key to designing relevant and sustainable tourism strategies.

Malang City has a strategic role as a center of urban activities that support movement and tourist activities, and develops into an urban tourist destination with various

attractions (Sukmaratri, 2018). Based on data from the Malang City Government, Malang City has 53 tourist destinations with visits reaching 13,555,201 tourists in 2022. These destinations consist of various types of tourist destinations, including: thematic villages, city parks, museums, shopping centers, and other urban tourist destinations (Malang City Government, 2023). Tourists can enjoy urban tourism in the city through various modes of transportation, ranging from pedicabs, rented motorcycles, walking, to Macyto tour buses (Bhawana et al., 2019).

According to data from Statistics Indonesia (BPS) as of December 2024, the room occupancy rate (TPK) of both star and non-star hotels in Malang City reached 57.02%, with an average length of stay (ALS) of 1.38 days. The majority of tourists visiting Malang City are domestic travelers, accounting for 98.21% of total visitors, while international tourists represent only 1.79%. The Malang City Government has set a target of 3.35 million tourist visits in 2024, which represents a 10% increase from the previous year. This growth was driven by extensive digital promotion and the development of thematic tourism villages such as Kampung Warna-Warni and Heritage Kajoetangan.

The significant increase in the number of tourists presents a major challenge to the city's urban mobility system. The heavy reliance on private vehicles has led to traffic congestion, air pollution, and limited accessibility for tourists without private transportation. Therefore, the implementation of Sustainable Urban Mobility Plans (SUMP) is becoming increasingly relevant as a global strategic framework to address these challenges, focusing on the integration of public transportation, cycling paths, and pedestrian infrastructure (Karyamsetty & Kameswari, 2025).

Digital transformation has changed the way travelers plan, experience, and evaluate their trips. Technologies such as AI, IoT, AR, and big data enable more personalized and efficient travel experiences (Kaur, 2025; Wu et al., 2024). Digitalization also promotes sustainability through paper reduction, energy efficiency, and the promotion of eco-friendly destinations (Zaharia & Georgescu, 2024; Madzik et al., 2023). Recent studies highlight that integrating digital technology into tourism not only increases efficiency but also enhances sustainability and social inclusivity (Smart Guide, 2024; Vujko et al., 2025; Varolgüneş et al., 2025). In cities such as Malang, this approach creates opportunities for developing location-based tourism information systems, real-time transportation applications, and digital promotion of themed tourism villages. By combining digitalization and sustainability, tourism destinations can increase their competitiveness while strengthening their resilience to increasingly complex environmental and social challenges.

Although a number of studies have explored the behavior of Generation Z and cross-generational travelers, several important gaps still remain. Marlina et al. (2026), for example, highlight the need to better understand Generation Z's behavior and motivations in eco-experiential tourism by integrating social dimensions, digital technology, and environmental sustainability in line with destination characteristics and local culture. However, their work has yet to provide a comparative perspective across generations or consider differences in cross-cultural contexts. Similarly, Liu-Lastres et al. (2025) examine the relationship between psychological characteristics and sustainable tourism behavior among Generations Y and Z, but their analysis does not fully account for broader factors, including socioeconomic conditions, policy frameworks, and environmental infrastructure. Other studies, such as those by Horváth et al. (2025) and Pitanatri et al. (2024), tend to



emphasize the role of digital platforms and social media in shaping travel decisions, focusing largely on stated preferences and marketing perspectives rather than actual behavior, long-term sustainability processes, or the connection between environmental motivations and nature-based tourism experiences.

Beyond these limitations, research on mobility patterns has given relatively little attention to how these generations move through space and interact with tourism environments, as well as to the implications of these behaviors for urban tourism management. A clearer understanding of tourists' movement patterns, their spatial interactions, and the factors that shape their travel decisions is essential for developing more effective and sustainable tourism policies and improving destination management practices.

In this regard, Malang City, one of the prominent urban tourism destinations in East Java, provides a relevant context for further investigation. The city has seen a noticeable increase in young visitors, drawn by its cultural attractions, culinary diversity, creative hubs, and strong digital connectivity. This rise in tourist activity brings both opportunities and challenges, particularly regarding visitor concentration, resource use, transportation systems, and the long-term sustainability of urban tourism development. Therefore, gaining a deeper understanding of the mobility patterns of Millennial and Generation Z tourists is crucial for supporting evidence-based planning and ensuring that tourism growth remains aligned with economic and environmental sustainability goals.

Therefore, this study aims to analyze the mobility patterns of millennial and Generation Z tourists and their implications for the sustainable development of urban tourism in Malang City and the main factors that influence the choice and shift of tourists. These factors are focused on ease of access, availability and attractiveness of facilities, operational hours, and the existence of destinations on social media. Additionally, this study seeks to formulate evidence-based recommendations for sustainable urban tourism development in Malang City by examining tourists' mobility patterns and movement behavior.

METHODOLOGY

This research began with the collection of data from various sources related to tourist activities and perceptions. Visitor and tourist sentiment data are obtained from Google Reviews, while information about tourist attractions and facilities is collected through Google Points of Interest (POI), which are increasingly used in tourism research for their real-time and user-generated insights (CLRN, 2025). Road network data is sourced from OpenStreetMap (OSM), a collaborative mapping platform widely used in tourism infrastructure analysis (Bustamante, Sebastia, & Onaindia, 2021). Travelers' movements were analyzed using data from Strava, a crowdsourced fitness platform that provides high-resolution spatio-temporal data for mobility pattern analysis (Roy, 2021). The data collected through web scraping and direct downloads is then processed to ensure data quality and uniformity. This stage includes data cleansing (preprocessing), conversion of location data into spatial coordinates (geocoding), and transformation of data into shapefile and raster formats. This process is carried out using platforms such as Google Colab so that the data is ready for spatial and statistical analysis.



The analysis was conducted using spatial and statistical approaches. Spatial analysis was carried out using a weighted overlay technique to assess the relationships among accessibility variables, facilities, and tourist locations. Meanwhile, statistical analysis uses Pearson correlation to assess relationships among variables affecting tourist mobility, such as social media, type of tourism, operating hours, tourism trends, facilities, and accessibility. In addition, a classification of tourism types and sentiment analysis was carried out to strengthen the interpretation of the data.

Based on the results of the analysis, a mapping of urban tourist mobility patterns was carried out, which is dominated by the millennial generation and Generation Z. This study identified the main factors that influence tourists' choices and movements (Lew et al., 2006). In this paper, these factors are focused on the ease of access, availability and attractiveness of facilities, operational hours, and the existence of destinations on social media. In addition, tourism trends are analyzed by the time of visit and the types of activities tourists engage in. The findings of this study provide strategic recommendations for developing urban tourism that is more adaptive to the behavioral patterns of the younger generation. The recommendations consist of facility management, increased connectivity, and social media-based promotional strategies and digitalization. The travel preferences of the younger generation form the basis for policy formulation aimed at creating a more relevant and sustainable tourism experience.

FINDINGS AND DISCUSSION

Tourism Facilities (Google Points of Interest)

The city center serves as the main hub for tourism services in Malang City. This is evident from the fact that accommodation facilities (represented in purple) and restaurants/cafes (yellow) are the most dominant categories, concentrated mainly in central urban areas such as Klojen, Blimbing, and Lowokwaru Districts.

As for the facilities in the suburbs, such as *money changers* and tourist information centers, there are fewer and unevenly distributed. This condition highlights the need to improve service quality, especially for international tourists. So, tourists, especially international tourists, easily get accurate information. The stubbornness of rest area facilities in the suburbs.

In general, the facilities in the city center are very good. However, for the periphery of the province, there is still a need to add rest areas, *money changers* and information centers with the aim of increasing visitor comfort and making it easier to access tourism information.

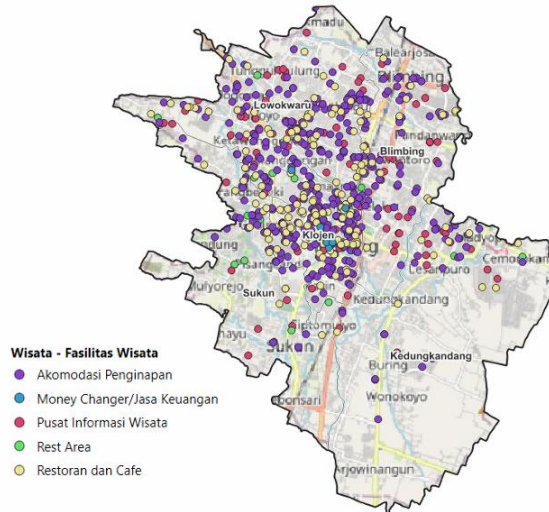


Figure 1. Tourism Facilities (Google Point of Interest)
Source: Author, 2025

Tourist Attractions (Google Points of Interest)

Based on data from Google Points of Interest, tourist attractions (tourist objects and attractions) are concentrated in the city center, especially in Klojen District, with additional clusters in Blimbing, Lowokwaru, and Kedungkandang Districts. On the other hand, suburban areas such as South Sukun have relatively less appeal.

This spatial distribution suggests that the city center remains a major magnet for tourists. Based on the analysis, there are three factors, namely, the existence of cultural landmarks, history, especially regarding Dutch heritage buildings and more comprehensive supporting facilities.

The above conditions indirectly become a trough for development programs or the construction of new attractions in suburban areas. If the program is implemented properly, it will have two impacts: spreading tourism to reduce congestion in the city center and expanding the economic benefits of tourism to other areas, supporting equitable development throughout Malang City.

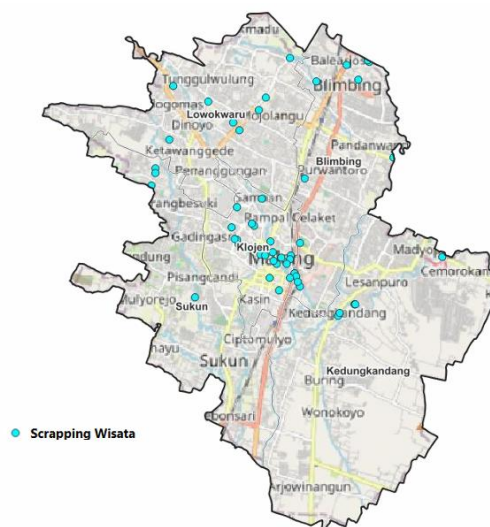


Figure 2. Tourist Attractions (Google Points of Interest)
Source: Author, 2025

Strava

Based on the following map, almost all areas of Malang City have recorded traces of activity on Strava. However, the main corridors in the city center, such as Klojen, Blimbing, Lowokwaru, and Kedungkandang Districts, show the highest activity density. This shows that these areas not only serve as centers of community activities but also as potential active tourist corridors, such as walking and cycling routes.

Based on data from Strava, there are three factors explaining the concentration of activities along the main route: first, the quality of road infrastructure. Second, the existence of tourist destinations. And third, easy access to public spaces such as city parks and commercial areas.

In addition to the above, the corridor's activity pattern, following the transportation network, serves as a recreational tourism route. Therefore, the routes have significant potential for further development to support the concept of sustainable outdoor tourism.

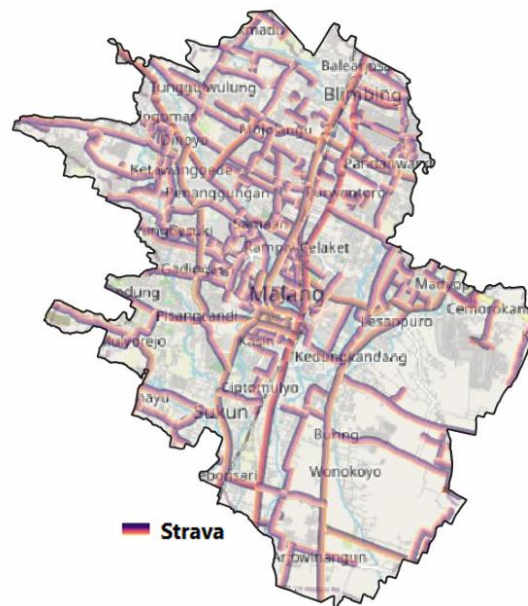


Figure 3. Strava
Source: Author, 2025

Factors Influencing Travel Preferences among Millennials and Generation Z

Social Media

The influence of social media platforms (Instagram, TikTok, and YouTube) on the travel preferences of Millennials and Generation Z is evident across several districts, including Lowokwaru, Blimbing, Klojen, Sukun, and Kedungkandang. According to the map legend, areas shaded in dark red indicate a stronger social media influence on travel preferences, while those shaded green to blue indicate a lower level of influence.

From map no. 4, it can be concluded that TikTok provides the largest overall impact among the social media platforms analyzed. These findings show that TikTok is the dominant factor shaping travel decisions among Millennials and Generation Z in Malang City.

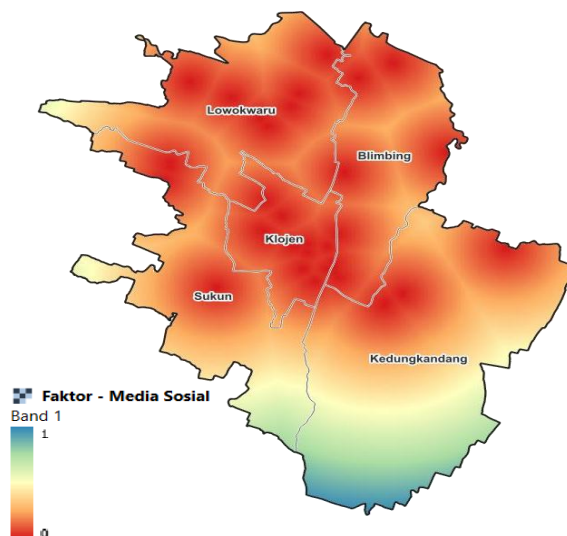


Figure 4. Social Media Factors
Source: Author, 2025

Based on the map above, you can see the distribution of tourists by color. Areas shaded in dark red indicate that social media has a very significant influence on the travel preferences of Millennials and Generation Z, with TikTok serving as a major driving factor in this region. Areas shaded in lighter red or orange indicate a fairly high level of social media influence, with TikTok still contributing significantly. Areas shaded green or blue represent areas with relatively lower influence than social media, although TikTok continues to be a major contributing factor.

Regions dominated by dark red tones indicate where Millennial and Generation Z travel preferences are most influenced by social media. Among these platforms, TikTok plays a dominant role in shaping travel decisions.

Data show that 38% of TikTok has a major influence on Generation Z’s interests and pursuits, reflecting the high intensity of Generation Z’s interaction with visual content that is informative, inspiring, and based on user experience. This is a driving factor in the formation of the desire to visit objects and attractions in Malang City.

In addition, the data on tourist visit trends is based on the momentum of time. During the national holiday period, there was a 33% increase in visits, indicating that digital content exposure is more effective when combined with longer free time. Meanwhile, in the weekend period, the visitation rate was recorded at 35%, which shows that the influence of social media is consistent and even slightly higher in driving short-term tourism activities.

Tourism Facilities

This study also analyzes the influence of various tourism facility factors—such as accommodation services, financial services (money changers), tourist information centers, and rest areas—on the travel preferences of Millennials and Generation Z in several districts, namely Lowokwaru, Blimbing, Klojen, Sukun, and Kedungkandang. According to the map legend, areas marked in red show a strong influence of tourism facilities on travel preferences, while areas shaded green to blue show a relatively lower influence.



Spatial analysis revealed that the impact of tourism facilities varied across regions, with some areas showing greater sensitivity to their availability and quality.

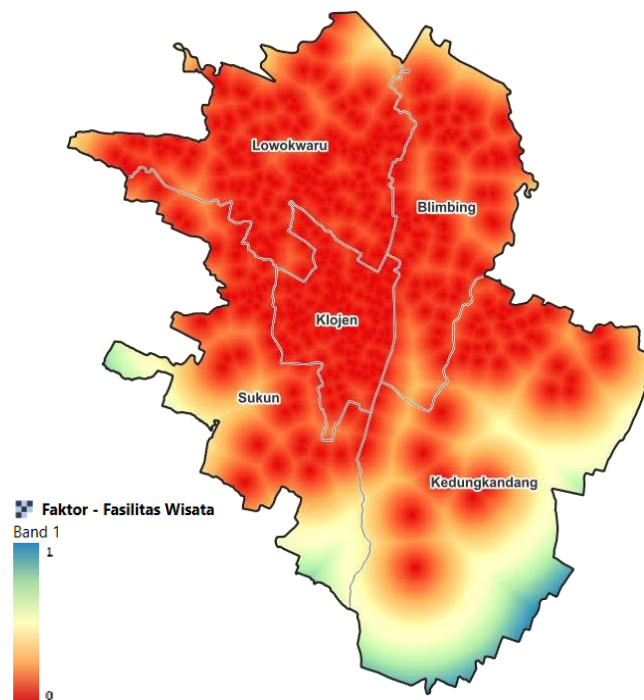


Figure 5. Tourism Facilities Factors
Source: Author, 2025

Dark red areas indicate that the availability and quality of tourism facilities (accommodation, financial services/money changers, tourist information centers, and rest areas) have a very strong influence on the travel preferences of Millennials and Generation Z. In these areas, this generation tends to consider the existence and accessibility of these facilities as the main determinants when choosing destinations.

Lighter red or orange areas represent areas where tourism facilities exert considerable influence. Millennials and Generation Z in this zone still contribute to the facility, although not as strongly as in the deep red area. Meanwhile, green or blue areas indicate where tourism facilities have relatively little influence on travel preferences. Other factors may play a more dominant role in decision-making in these locations.

Overall, the predominantly red regions indicate the areas where Millennial and Generation Z travel preferences are most strongly shaped by the availability and quality of the tourism facilities mentioned above. Here, it appears that the availability of complete facilities is a factor in Millennial and Generation Z tourists' decisions when in choosing tourist attractions. So this needs to be a serious concern for stakeholders in Malang City regarding the availability and completeness of facilities to support tourist activities and provide comfort and satisfaction.

Types of Nature-Based Tourism

The nature tourism factor also affects the travel preferences of Millennials and Generation Z in all districts of Lowokwaru, Blimbing, Klojen, Sukun, and Kedungkandang.

According to legend, dark red areas represent a stronger influence on travel preferences, while greener or bluer areas indicate a weaker influence.

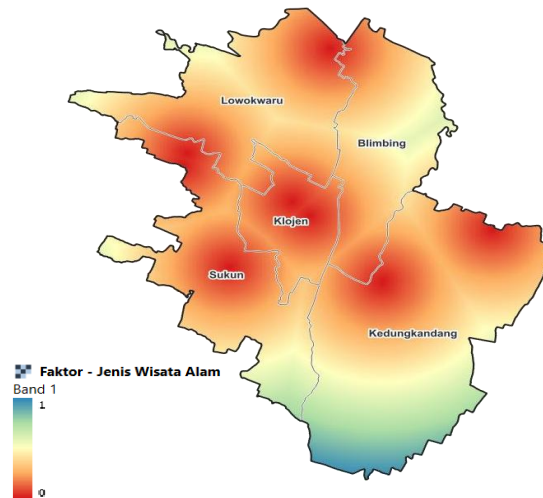


Figure 6. Nature-Based Tourism Factors
 Source: Author, 2025

Areas shaded in dark red indicate regions where the preference for nature-based tourism has a very significant influence on the travel decisions of Millennials and Generation Z. In these areas, this generation tends to be particularly interested and chooses destinations that offer strong natural attractions.

Areas shaded in light red or orange represent zones where the influence of nature-based tourism is quite high. Millennials and Gen Z in the region also consider natural attractions in their travel choices, although not as strong as in the deep red areas. Shaded green or blue, it indicates areas where nature-based tourism exerts a relatively low influence on travel preferences.

Therefore, areas dominated by red indicate the areas where the travel preferences of Millennials and Generation Z are most strongly influenced by the availability and attractiveness of nature-based tourist destinations. Other factors, such as artificial attractions, cultural sites, or shopping destinations, play a more dominant role in their decision-making.

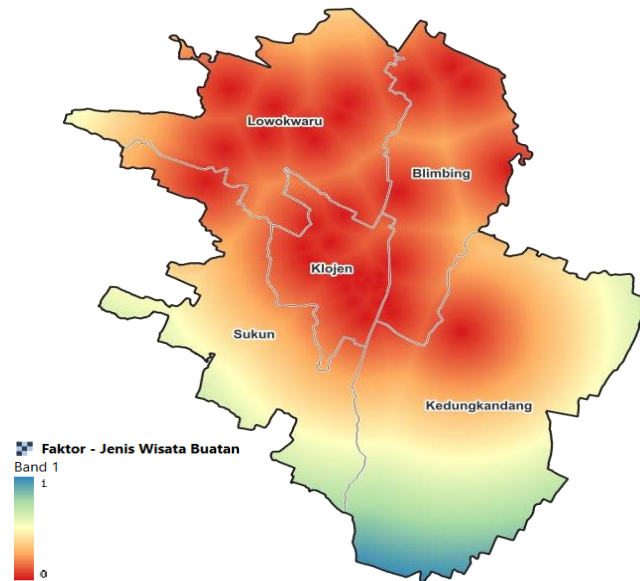


Figure 7. Artificial Tourism Factors
Source: Author, 2025

Types of Artificial Tourism

The influence of different types of artificial tourism on the travel preferences of Millennials and Generation Z varies across Malang City, including Lowokwaru, Blimbing, Klojen, Sukun, and Kedungkandang. According to the legend of the map, areas shaded in dark red represent a stronger influence of artificial tourism factors on travel preferences, while those in green to blue signify a weaker influence.

The preference for artificial tourism significantly influences the travel decisions of Millennials and Generation Z. In these areas, this generation tends to be particularly interested in destinations that offer diverse and interesting artificial attractions.

In this section, there are two important things to see: the decision of Millennials and Generation Z to come to artificial tourism, namely, first, Millennials and Generation Z in this zone (red or orange area) still consider artificial attractions as an important factor, even though they are not so dominant in dark red areas. Second, green or blue areas represent regions where artificial tourism factors have a relatively lower influence on travel preferences.

Other types of tourism, such as nature-based, cultural, or shopping tourism, are considered more important in decision-making in this area. Therefore, red-dominated regions indicate the areas where Millennial and Generation Z travel preferences are most strongly shaped by the availability and attractiveness of artificial tourist attractions.

Tourism Trends

The influence of tourism trend factors, including Adventure Tourism, Healing Tourism, and City Tourism, on the travel preferences of Millennials and Generation Z was analyzed in several districts (Lowokwaru, Blimbing, Klojen, Sukun, and Kedungkandang). According to the map legend, dark red areas indicate regions where tourism trends exert a stronger influence on travel preferences, while greener to bluer areas reflect weaker influences. In Malang City, the most dominant tourism trend among Millennials and Generation Z is City Tours.

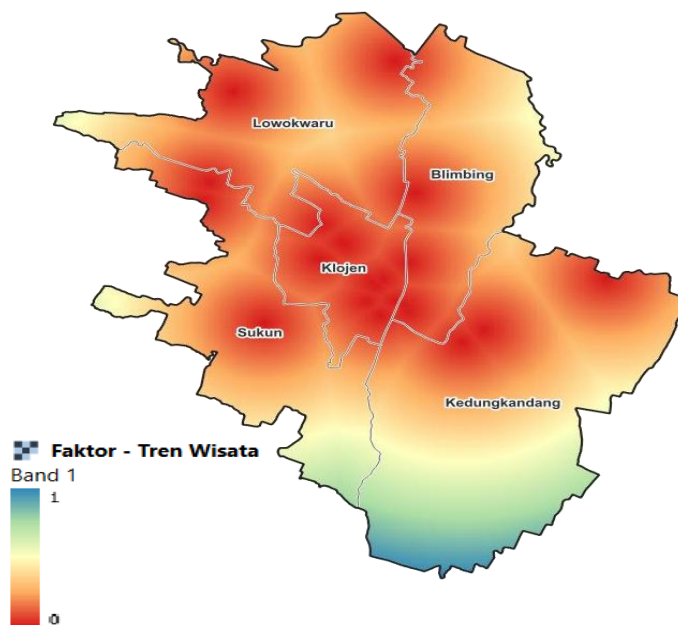


Figure 8. Tourism Trend Factors
 Source: Author, 2025

The dark red area represents a region where overall tourism trends have a very significant influence on the travel preferences of Millennials and Generation Z, with City Tours serving as the main attraction. In these areas, this generation tends to take the availability and attractiveness of urban tourism into great consideration when choosing destinations.

City tours play a very important role in shaping Millennial and Generation Z tourism decisions in Malang City. In fact, the number of followers is very high compared to others. While City Tours may still have appeal, other types of tourism, such as nature-based or man-made attractions, still play a more dominant role in decision-making in these areas. Therefore, the predominantly red areas indicate where Millennial and Generation Z travel preferences are most strongly influenced by tourism trends, with City Tours emerging as a particularly relevant aspect in Malang.

Accessibility

The influence of accessibility factors (road network and Strava data) on the travel preferences of Millennials and Generation Z was analyzed in all districts of Lowokwaru, Blimbing, Klojen, Sukun, and Kedungkandang. According to the map legend, areas shaded with dark red reflect a stronger influence of accessibility on travel preferences, while greener to bluer areas show a weaker influence. The following map can be drawn.



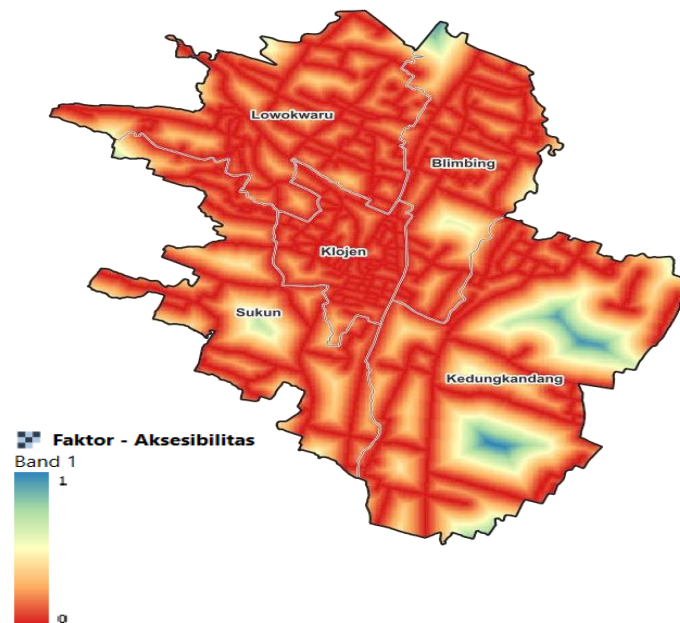


Figure 9. Accessibility Factor
Source: Author, 2025

Regions (dark red areas) with high accessibility within a well-developed road network and a record of active Strava activity have a significant impact on the travel preferences of Millennials and Generation Z. In this zone, ease of access to various locations and opportunities for activities such as cycling or running (captured via Strava) are key considerations in destination selection.

There are two conditions of road network accessibility in Malang City that influence Millennial and Generation Z tourists: first, the existence of a good road network and recorded Strava activities, which also contribute to Millennial and Generation Z decision-making when choosing destinations in the area. Second, limited road connectivity or Strava's low activity can make other factors more dominant in shaping their travel decisions.

Therefore, the areas predominantly shaded in red indicate regions where Millennial and Generation Z travel preferences are most strongly influenced by high levels of accessibility, as reflected in the road network and activity data derived from Strava.

Visiting Time

The influence of visit-time factors (national holidays, weekdays, and weekends) on the travel preferences of Millennials and Generation Z was studied in several districts, namely Lowokwaru, Blimbing, Klojen, Sukun, and Kedungkandang. According to the map, areas shaded in dark red showed a stronger influence of visit time on travel preferences, while greener to bluer areas reflected a weaker influence. The analysis shows that Millennials and Generation Z most often engage in tourism activities during weekends and public holidays.

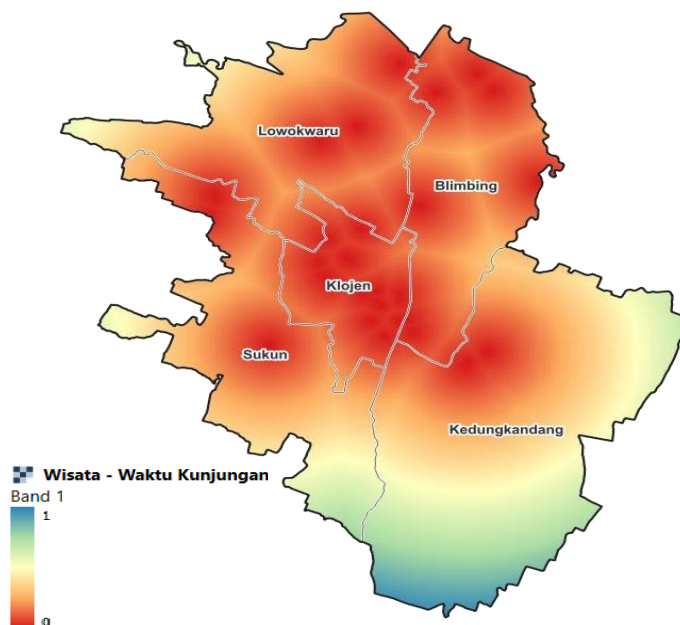


Figure 10. Visiting Time
Source: Author, 2025

Millennial and Generation Z trips are more often carried out on weekends and national holidays. During this period, the attractiveness of these areas as tourist destinations for this generation increased significantly.

Areas depicted in lighter colors or orange indicate areas with a fairly strong influence of visit time. Weekends and public holidays remain important period for Millennials and Generation Z to travel to these areas. However, there is a small part of the Kedungakandang area that still attracts visitors during weekdays or maintains a relatively stable attraction during different times of the week.

Thus, the predominantly red areas indicate regions where Millennial and Generation Z travel preferences are most strongly influenced by weekends and national holidays, which serve as the main periods for tourism activities.

Urban Tourist Mobility Patterns

Generation Z Travelers

The mobility map of Generation Z tourists shows the highest concentration in Klojen District, particularly in the city center. This region, represented in dark blue, shows the highest intensity of tourist mobility. In addition to Klojen, Lowokwaru and parts of the Sukun district also showed prominent activity, albeit at a lower intensity. This suggests that Generation Z tends to prefer areas that are vibrant, well-connected to public facilities, and easily accessible.

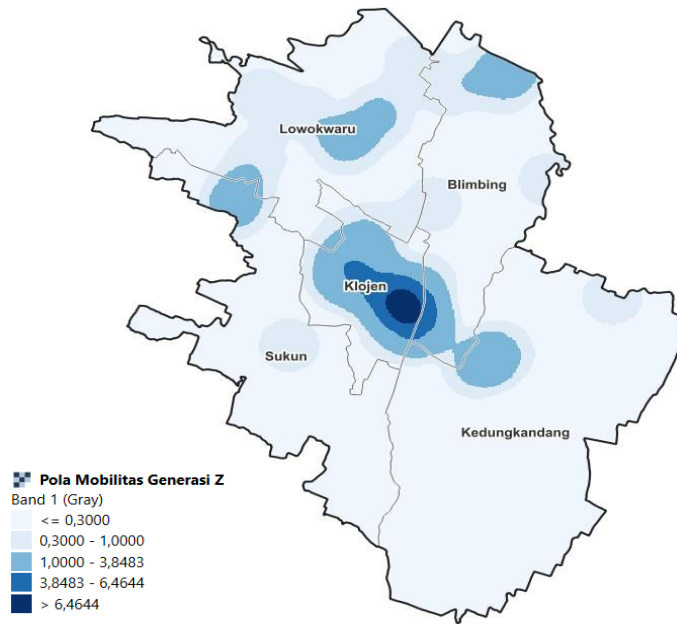


Figure 11. Generation Z Tourist Patterns
 Source: Author, 2025

Millennial Travelers

The mobility pattern of Millennial tourists is also centered around Klojen District, but their movements seem to be more spread out certain destinations compared to the broader pattern of Generation Z. The dark blue concentration remains in the city center, accompanied by smaller clusters of activity in suburban areas such as Lowokwaru and Kedungkandang. This suggests that Millennials may be more focused on visiting specific destinations that are popular or have distinctive tourist appeal, rather than just exploring crowded areas.

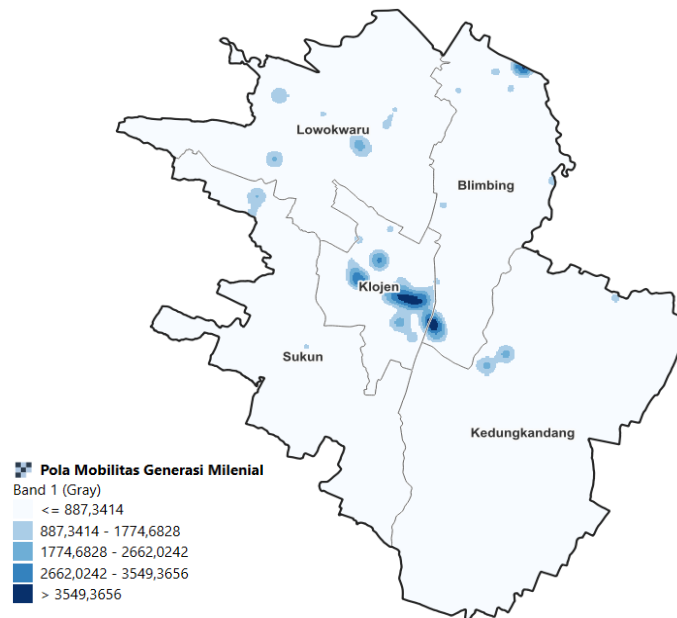


Figure 12. Travel Patterns of Millennial Generation Travelers
 Source: Author, 2025



Pearson Correlation Factors Affecting Mobility

Gen Z Travelers

Based on the presentation of data on the correlation values of various factors and tourism facilities, a positive correlation indicates a unidirectional relationship, where an increase in one factor tends to be followed by an increase in other factors. The closer the value is to 1, the stronger the positive linear relationship.

Table 1. Pearson Correlation Based on Color Scale

	Tourist Facilities	Nature Tourism	Artificial Tourism	Social Media	Travel Trends	Operating Hours	Accessibility
Tourist Facilities	1						
Nature Tourism	0,702575328	1					
Artificial Tourism	0,788014837	0,713776389	1				
Social Media	0,816597007	0,861378962	0,917852562	1			
Travel Trends	0,781429706	0,920664708	0,839801099	0,947077472	1		
Operating Hours	0,78277096	0,806896661	0,931606508	0,930118607	0,861964752	1	
Accessibility	0,317210592	0,13870016	0,253165547	0,234950983	0,199484448	0,2437049	1

Source: analysis results, 2025

Table 2. Pearson Correlation Based on Icon Sets

	Tourist Facilities	Nature Tourism	Artificial Tourism	Social Media	Travel Trends	Operating Hours	Accessibility
Tourist Facilities	1						
Nature Tourism	↑ 0,702575328	1					
Artificial Tourism	↑ 0,788014837	↑ 0,713776389	1				
Social Media	↑ 0,816597007	↑ 0,861378962	↑ 0,917852562	1			
Travel Trends	↑ 0,781429706	↑ 0,920664708	↑ 0,839801099	↑ 0,947077472	1		
Operating Hours	↑ 0,78277096	↑ 0,806896661	↑ 0,931606508	↑ 0,930118607	↑ 0,861964752	1	
Accessibility	↓ 0,317210592	↓ 0,13870016	↓ 0,253165547	↓ 0,234950983	↓ 0,199484448	0,2437049	1

Source: analysis results, 2025

Based on the table above, social media shows the highest positive correlation with tourist facilities, with a value of 0.816597007. This indicates that popularity and activity on social media have the strongest positive linear relationship with the condition or development of tourist facilities among the factors in this table.

Other factors such as Artificial Tourism (0.788014837), Tourism Trends (0.781429706), and Operating Hours (0.78277096) also showed a very strong positive correlation with tourism facilities. Nature tourism (0.702575328) was also positively correlated, although slightly lower than the previous factors.

Interestingly, Accessibility showed a much lower positive correlation (0.317210592) than other factors. While still positive, it indicates that the linear relationship between accessibility and tourist amenities is not as strong as the factors such as social media, artificial tourism, tourism trends, and operational time in this data.

Popularity on social media, the existence of artificial tourism, tourism trends, and flexibility of operational hours have a very significant positive linear relationship with tourist facilities. Meanwhile, nature tourism was also positively correlated but not as



strongly as these factors, and accessibility had the weakest positive correlation among the factors measured. It is important to remember again that correlation does not imply cause and effect.

Millennial Travelers

The table below presents the Pearson correlation between various factors and tourist facilities. A positive value indicates a one-way relationship; a negative value indicates the opposite, and the closer to 1, the stronger the correlation.

Table 3. Pearson Correlation Based on Color Scale

Tourist Facilities	Nature Tourism	Artificial Tourism	Social Media	Travel Trends	Operating Hours	Accessibility
Tourist Facilities	1					
Nature Tourism	0,722980108	1				
Artificial Tourism	0,763179077	0,735849128	1			
Social Media	0,545143945	0,496005213	0,404342337	1		
Travel Trends	0,10234294	0,096489385	0,077637053	0,052917067	1	
Operating Hours	0,781446363	0,814675462	0,934428986	0,451123596	0,007652471	1
Accessibility	0,242674025	0,136623938	0,225154808	0,036615321	0,004160546	0,226279953

Source: analysis results, 20255

Table 4. Pearson Correlation Based on Icon Sets

Tourist Facilities	Nature Tourism	Artificial Tourism	Social Media	Travel Trends	Operating Hours	Accessibility
Tourist Facilities	1					
Nature Tourism	0,722980108	1				
Artificial Tourism	0,763179077	0,7358491	1			
Social Media	0,545143945	0,4960052	0,404342337	1		
Travel Trends	0,10234294	0,0964894	0,077637053	0,0529171	1	
Operating Hours	0,781446363	0,8146755	0,934428986	0,4511236	0,0076525	1
Accessibility	0,242674025	0,1366239	0,225154808	0,0366153	0,0041605	0,226279953

Source: analysis results, 2025

Uptime (0.78) had the strongest positive correlation, followed by Artificial Tourism (0.76) and Nature Tourism (0.72), which indicated a fairly strong positive relationship with tourist facilities. Social Media (0.55) showed a moderate positive correlation. In contrast, Travel Trends (0.10) and Accessibility (0.24) had a weak positive correlation with tourist facilities, suggesting an insignificant linear relationship.

Overall, this table illustrates the strength and direction of the linear relationships among factors but does not establish cause and effect. Further analysis is needed to understand the more complex relationships.

Recommendations for Urban Tourism Development Based on Generation Z Mobility Patterns

Social Media

Districts such as Klojen, Lowokwaru, and Blimbing are dominated by red and orange hues, indicating that they serve as centers of Gen Z mobility and have high potential for urban tourism development. Map 13 shows that Klojen, Blimbing, and Lowokwaru



have a high level of social media influence, while southern regions such as Kedungkandang and Sukun tend to show a lower level of influence.

Tlogomas Recreational Park, Pandanwangi Park, and Madyopuro Water Tourism are located in areas with a high Gen Z mobility weight but relatively low social media influence. This shows that while the destination attracts many Gen Z visitors, their presence on social media remains suboptimal. Therefore, tourism development strategies in this field must focus on increasing social media visibility through digital campaigns or creative content-driven promotions, in line with the digitally active nature of Generation Z.

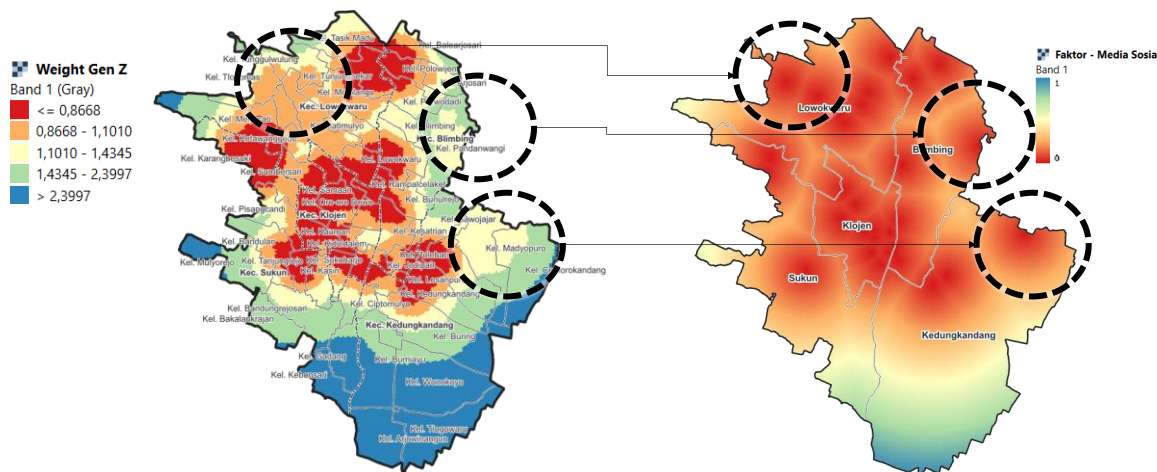


Figure 13. Urban Tourism Development Recommendations Social Media Factors
Source: author, 2025

Artificial Tourism

The map on the left presents “Gen Z Mobility Weight”, which shows the intensity of Generation Z’s movement in various areas of Malang City. The red area represents the zone with a high mobility intensity, while the blue area indicates low mobility. From the map, it can be observed that the southern part of Malang City, such as Kedungkandang, Tlogowaru, and Arjowinangun, shows a high mobility weight of Gen Z, while the central areas, such as Klojen and its surroundings, show a relatively lower mobility intensity.

The map on the right illustrates the extent of the influence of artificial tourism on the mobility distribution of Gen Z. On this map, the red area shows a strong influence, while the blue area shows a weaker influence. Areas such as Lowokwaru, Blimbing, and parts of Klojen are dominated by shades of red, indicating a high concentration of artificial tourist attractions that appeal to Generation Z—including entertainment centers, amusement parks, and modern recreational venues.

Based on the results of the analysis, there is a spatial gap between artificial tourism sites and the mobility intensity of Gen Z. Some attractions, such as Tlogomas Recreational Park and Pandanwangi Park, are located in areas with low artificial tourism influence but high mobility of Gen Z. This shows the potential that has not been utilized, because the areas that are often visited by Generation Z have not been supported by adequate or appropriate artificial tourism development.

Based on the above conditions, the urban tourism development strategy in the future must focus on the introduction of more artificial tourist destinations in high-mobility areas, such as Tlogomas Recreational Park and Pandanwangi Park, which have not yet fully



attracted the interest of Gen Z. This approach will be more aligned with the preferences and lifestyle of Generation Z, who value new, dynamic experiences (content), and can be shared digitally.

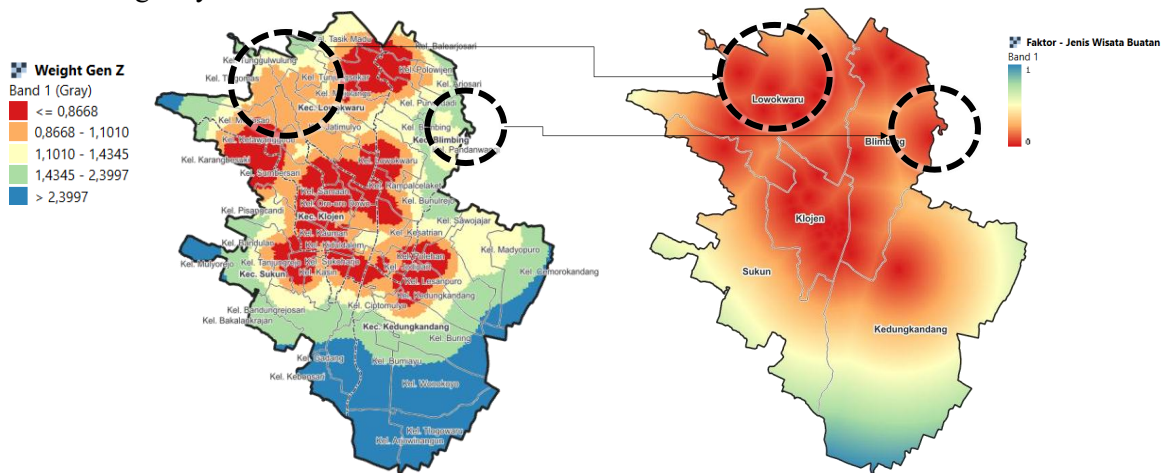


Figure 14. Urban Tourism Development Recommendations: Artificial Tourism
 Source: Author, 2025

Tourism Trends

The map on the left shows "Gen Z Mobility Weight", which illustrates the extent of Generation Z's movement in various areas in Malang City. The red area indicates a high-mobility zone, while the blue area indicates a low-mobility. From the map, it can be seen that the southern parts of the city—such as Kedungkandang, Tlogowaru, and Arjowinangun—show high Gen Z mobility, while central areas such as Klojen and its surroundings show a lower rate. The map on the right illustrates how tourism trends influence the Generation Z movement. Areas such as Lowokwaru, Blimbing, and parts of Klojen are dominated by red, signifying a high concentration of trendy destinations among Gen Z, including entertainment centers, theme parks, and modern recreational venues.

However, there is a difference between the location of trending tourist destinations and the intensity of Gen Z mobility. This points to a gap in optimization, where frequently visited areas are not yet equipped with destinations that align with current Gen Z trends. Therefore, future urban tourism development strategies can focus on expanding the number of destinations that reflect contemporary tourism trends. This approach will be more compatible with the preferences and lifestyles of Generation Z, who are looking for new, dynamic and easy-to-share experiences through social media.

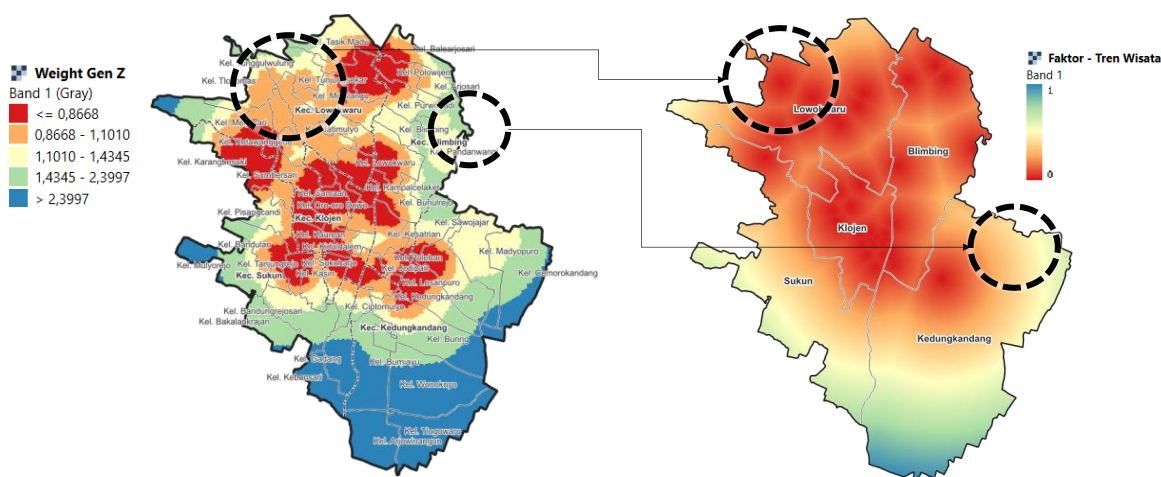


Figure 15. Urban Tourism Development Recommendations: Tourism Trends
Source: Author, 2025

Visiting Time

The map on the left depicts the Millennial Mobility Weight. The red area indicates a higher level of mobility, suggesting that this location is frequented or traveled by this generation. Several focal points can be identified around East Java Cultural Krida Park and Pandanwangi Park, which are marked by dotted circles. This shows that these areas have a strong attraction or accessibility for the Millennial generation. The map on the right visualizes the potential duration of a tourist’s visit, where the red area indicates a potentially higher visit time. Interestingly, there is an overlap between areas with high Millennial mobility (left map) and areas with high potential visit times (right map), especially around Ijen Boulevard and the Blimbing district. This shows that these locations are not only frequented by Millennials but also have the potential to be destinations where visitors tend to spend more time.

Based on the analysis of the two maps, it can be recommended that urban tourism development should focus on areas that show intersections between high Millennial mobility and high potential visit times. The area around Ijen Boulevard and Blimbing has strong potential for further development, given the preferences and behavior patterns of Millennials, which can attract more visitors and improve the overall tourism experience. The development of facilities, attractions, and infrastructure that is in line with the interests of Millennials in the area will be a strategic step. However, it should be noted that Millennials rarely visit East Java Cultural Park and Pandanwangi Park, although when they do, they tend to spend a lot of time at those sites.

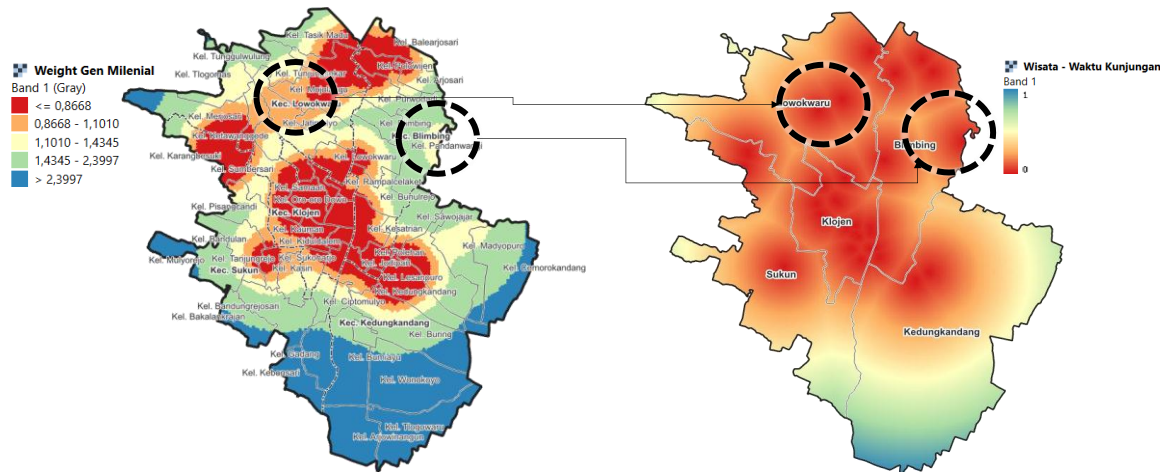


Figure 16. Urban Tourism Development Recommendations: Time to Visit Factor
 Source: Author, 2025

Artificial Tourism

The map on the left presents the Millennial Mobility Weight. The red area indicates the zone with higher mobility among this age group, indicating routes or areas that Millennials often travel. Attention is focused on the area around East Java Cultural Krida Park and Pandanwangi Park, which are highlighted by dotted circles—indicating a strong attraction or accessibility for Millennials in these locations. Meanwhile, the map on the right depicts artificial tourism factors. The red area represents the area with a higher concentration or potential for artificial tourist attractions. In particular, the areas around Lowokwaru and Blimbing—also marked by dotted circles—show high potential for artificial tourism. However, Millennials seem to be less interested in visiting these destinations.

A comparison between the two maps reveals an imbalanced correlation. Areas with high Millennial mobility (particularly around East Java Cultural Park and Pandanwangi Park) overlap with areas featuring artificial tourist attractions, suggesting that urban tourism development focused on artificial attractions in locations frequented by Millennials has strong potential for success. Nevertheless, investments in developing or improving the quality of artificial tourism around Lowokwaru and Blimbing must consider the preferences and interests of Millennials to make these areas more attractive as urban tourism destinations.

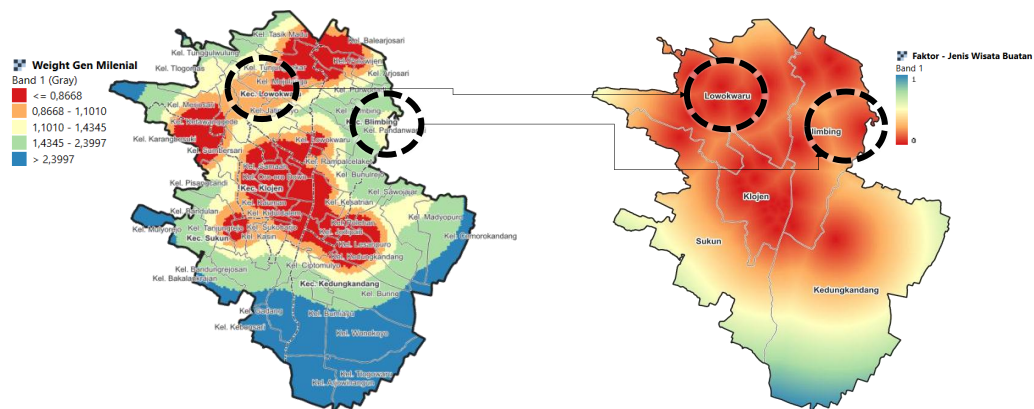


Figure 17. Urban Tourism Development Recommendations: Natural Tourism Factors
 Source: Author, 2025



Nature Tourism

The map on the left depicts the Millennial Mobility Weight. The red area represents the zone with higher mobility among this generation, indicating the routes or regions that Millennials often travel. Attention is drawn to the area around Blimbing, marked by a dotted circle, which signifies potential accessibility and unique appeal for Millennials. Meanwhile, the map on the right visualizes the natural tourism factor, with red areas indicating a higher concentration or potential for natural tourist attractions.

When comparing the two maps, intersections can be observed around the Blimbing area, where the Madyopuro Water Tourism location is located. This indicates that areas often accessed by Millennials overlap with zones with natural tourism potential. However, both Madyopuro Water Tourism and East Java Cultural Park are still relatively undervisited by Millennials. Therefore, the development of urban tourism that utilizes the potential of natural tourism around Madyopuro Water Tourism must consider the preferences and interests of Millennials. Improving the amenities and accessibility of routes commonly used by Millennials can significantly increase the overall appeal of urban tourism.

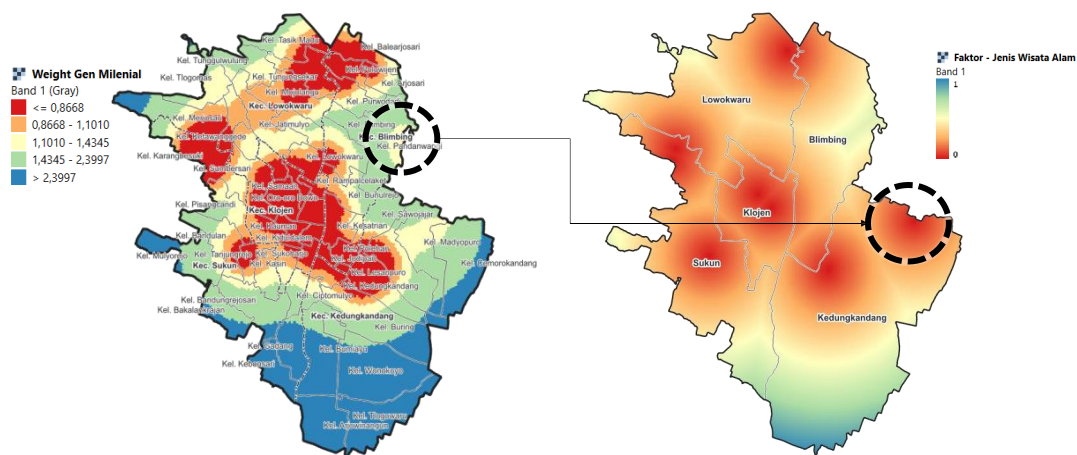


Figure 18. Urban Tourism Development Recommendations: Natural Tourism Factors
Source: Author, 2025

CONCLUSION

The mobility of urban tourists in Malang City exhibits a distinctive trend largely shaped by the preferences and behavioral tendencies of Millennial and Generation Z travelers. Districts such as Klojen, Lowokwaru, and Blimbing have emerged as centers of tourism activities due to their concentration of attractions, well-developed road networks, and adequate supporting infrastructure. Correlation analysis shows that social media, artificial tourism, and operating hours have the strongest influence on Gen Z’s mobility, while Millennials are more affected by operating hours and tourism facilities. Tourism trends such as city tours and "healing" experiences also serve as major attractions for both generations.

The travel preferences of Millennials and Generation Z are influenced by several key factors, namely social media, tourist facilities, types of tourism, tourism trends, accessibility, and travel timing. Social media, especially TikTok, is the main driver in destination selection, while tourist facilities and accessibility are supporting factors that also influence the level of visits. Types of artificial tourism and *city tour* activities tend to



be more dominant, especially in urban areas. In addition, timing of visits on weekends and national holidays increases the intensity of tourist mobility.

Mobility patterns show that Generation Z tends to be concentrated in crowded, connected, and easily accessible downtown areas, while Millennials tend to be more selective in their visits to specific destinations. On the other hand, spatial inequality was found: where some regions have high mobility but lack optimal digital facilities and exposure, while other regions have adequate facilities but relatively low mobility.

These findings underscore the importance of a data-driven approach and generational understanding in urban tourism development. Recommended strategies include increasing digital promotion, developing tourism facilities in high-mobility areas, and ensuring a more equitable distribution of destinations to suburban areas. By recognizing the travel patterns and preferences of the younger generation, tourism policies can become more adaptive, relevant, and sustainable, which ultimately strengthens the competitiveness of Malang City as an inclusive urban tourism destination that is responsive to contemporary changes.

This study has two shortcomings or limitations, namely, first, in the coverage of areas that only focus on Malang City and the use of cross-sectional data, so that it has not been able to capture the dynamics of changes in tourism mobility of the Millennial and Gen Z Generation from time to time. Second, the analysis is still a correlation and has not integrated socioeconomic factors, actual behavior of tourists, and the impact of mobility on sustainability and urban tourism governance. Therefore, further research is recommended to develop cross-urban comparative studies, using longitudinal approaches and spatial data based on actual behavior, and to link tourism mobility with policies, regional capacity, and urban tourism sustainability.

Confession

The author expresses his deepest gratitude to Almighty God for His blessings and grace, which made the successful completion of this research possible. The author also expressed his sincere appreciation to the Institute for Research and Community Service of the Open University (LPPM UT) for providing research grants that made this research possible.

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IDENTIFYING THE DETERMINANTS OF TOURISTS' ENVIRONMENTALLY RESPONSIBLE BEHAVIOR: EXTENDING THE CAB MODEL WITH GENERATIVITY IN BROMO TENGGER SEMERU NATIONAL PARK

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Article Info	Abstract
<p>Keywords: ecotourism perceptions; environmentally responsible behavior; generativity; mountain conservation area; satisfaction</p> <p>Received: November 10, 2025</p> <p>Approved: June 8, 2026</p> <p>Published: June 29, 2026</p>	<p>Tourism development in rural mountain protected areas can bring economic benefits to local communities while increasing environmental pressure on fragile ecosystems. In Bromo Tengger Semeru National Park (BTSNP), rising visitor numbers have caused environmental problems such as littering, wildfires, and vegetation disturbance. This study aims to examine how ecotourism perception, satisfaction, and generativity influence environmentally responsible behavior (ERB) among visitors in mountain conservation areas facing increasing ecological pressure. Grounded in an extended Cognitive-Affective-Behavior (CAB) framework, this study integrates generativity as a psychosocial driver of ERB. Data were collected from 287 tourists through structured questionnaires and analyzed using SEM and multi-group analysis (MGA) to examine structural relationships and intergenerational differences. The results show that generativity significantly influences ERB, emerging as the strongest predictor in the model. Ecotourism perception (EP) significantly increases tourist satisfaction but does not directly influence ERB. Satisfaction neither directly affects ERB nor mediates the relationship between EP and ERB. MGA further indicates that the relationship between generativity and ERB was significant only among Gen Y tourists, although this difference should be interpreted cautiously. These findings challenge the linear assumption of the CAB framework by showing that generativity, as a future-oriented factor, plays a more important role than cognitive and affective evaluation in shaping ERB. They also offer practical implications for promoting long-term socio-ecological management through targeted visitor engagement and strengthened governance strategies in protected mountain areas.</p>

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INTRODUCTION

Background and Objectives

Tourism development in rural mountain protected areas has long been recognized as a double-edged sector, providing economic benefits for host communities while imposing significant environmental pressures on fragile ecosystems. Bromo Tengger Semeru National Park (BTSNP) is one of Indonesia's five super-priority destinations and a protected area. The park is closely associated with the Tengger indigenous community, whose local wisdom and community initiatives shape everyday conservation practices and interactions with park authorities (Grandis et al., 2023; Purnomo et al., 2018).

Tourist arrivals increased by more than 15 percent between 2022 and 2023 (Antara News, 2024). Meanwhile, environmental incidents such as wildfires, littering, and vegetation destruction remain a concern, including a major wildfire in 2023, reportedly caused by tourist negligence, that burned more than 500 hectares of savanna (ANTARA, 2023). These incidents underscore the need to investigate the factors that promote responsible tourist behavior and to develop appropriate strategies to support sustainable tourism development within the socio-ecological system. As tourists' environmentally responsible behavior (ERB) becomes essential for achieving sustainable ecotourism in national parks, ecotourism has emerged as a viable approach to mitigate negative impacts while fostering conservation and community well-being (Ren et al., 2021; G. Wang et al., 2023). Through interactions with nature, ecotourism may encourage tourists to adopt environmentally responsible behavior (ERB), such as reducing waste, following conservation rules, and supporting local initiatives (Chiu et al., 2014a; J. (Snow) Wu et al., 2021). Previous studies further suggest that ecotourism can encourage ERB through tourists' perceptions, values, and emotions experiences (Chiu et al., 2014a; Jiang et al., 2022; Zhao & Weng, 2024).

From a psychological perspective, environmentally responsible behavior (ERB) can be influenced by tourists' perceptions, which are shaped by evaluations of environmental quality, management, service quality, and the implementation of value (Zhao & Weng, 2024). The Cognitive-Affective-Behavior (CAB) Theory explains how cognitive appraisals trigger affective responses that, in turn, shape behavior (Tseng et al., 2024). Perceived ecotourism value and destination image may enhance ERB directly or indirectly via emotional responses such as awe and attachment (Chiu et al., 2014a; Jiang et al., 2022). These affective responses are often reflected in tourist satisfaction, which stems from cognitive evaluations and experiences. However, empirical findings remain inconsistent. Some studies suggest that satisfaction serves merely as a contextual mediator in the CAB framework rather than as a direct predictor of ERB (Bhatti & Alnasser, 2023).

Another construct is generativity, which has recently gained academic interest. This term was defined as individuals' concern and commitment to future generations (G. Wang et al., 2023). Generativity has emerged as a key psychological driver of environmentally responsible behavior (ERB). Individuals with higher levels of generativity are more likely to engage in responsible consumption, adopt eco-friendly lifestyles, and engage in environmental behavior (Afridi et al., 2021; Shiel et al., 2020), through eco-friendly lifestyles such as organic dining (Pan et al., 2022), and participate in environmental or activist behavior (Carvalho Veras et al., 2023). Previous tourism management studies

have provided evidence linking generativity to sustainable consumption and energy-saving behavior; however, fewer studies have linked it to tourists' ERB within ecotourism frameworks.

Although environmentally responsible behavior has been examined in tourism studies, three important gaps remain. First, empirical evidence shows that most studies predominantly focus on coastal or geological tourism destinations, while ERB in fragile mountain ecosystems in Southeast Asia is rarely observed (Liu et al., 2021, 2022; Yan et al., 2024). Second, from a theoretical perspective, previous studies on the cognitive and affective determinants of ERB have focused mainly on destination identity, environmental awareness, altruism, emotions, and message interpretation, while generativity as a psychological construct and satisfaction are rarely integrated into ecotourism research (Chiu et al., 2014a; Guiao & Lacap, 2022; Ren et al., 2021; Tseng et al., 2024). Third, from a methodological perspective, few studies have applied robust approaches such as PLS-SEM with multi-group analysis to assess generational variations. The current research further overlooks how generational differences may influence responsible behavior, as it focuses on younger cohorts, particularly Generation Z (G. Wang et al., 2023).

Based on these gaps, this study extends the CAB framework by integrating generativity and analyzing its role in shaping tourists' environmentally responsible behavior in a protected mountain destination. Methodologically, this study contributes by applying PLS-SEM and MGA to determine whether the drivers of ERB differ across generations of mountain tourists.

Literature Review and Hypotheses Development

Cognitive-Affective-Behavior Theory

The cognitive-affective-behavior (CAB) model proposed by Lavidge and Steiner explains the process of developing cognitive evaluations, including beliefs, environmental knowledge, and particularly destination perception, which can enhance environmental sensitivity (Simanjuntak & Fitri, 2024; H. Wang et al., 2025). In this regard, cognition represents an individual's knowledge-based perception, while affective recognition is the emotional response to that information, and behavior reflects the actions resulting from these cognitive-emotional processes (Simanjuntak & Fitri, 2024). However, studies examining the relationships among perception, satisfaction, generativity, and ERB remain limited. Therefore, this study applies the C-A-B model to investigate these relationships. This study adopts the C-A-B theoretical framework, which integrates generativity, to analyze tourists' environmentally responsible behavior (ERB). In this study, generativity reflects tourists' concern for future generations and their commitment to environmental sustainability, serving as a motivational orientation rooted in Erikson's psychosocial development theory. Rather than functioning as a moderator, generativity is positioned as a direct antecedent of ERB.

Ecotourism in Bromo Tengger Semeru

Bromo Tengger Semeru National Park (BTSNP) is a rural mountain conservation landscape where ecotourism development integrates environmental conservation, community participation, and visitor management, reflecting national ecotourism principles that promote environmental awareness and education, conservation efforts, and



economic benefits for local communities (Soeroso, 2022). Ecotourism in this park offers meaningful experiences through direct interaction with natural and protected areas (Sethy & Senapati, 2023).

Previous studies indicate that post-pandemic tourism recovery in BTSNP is centered on sustainability principles, particularly controlled visitor flows, improvements to environmental infrastructure, and the reinforcement of health and safety protocols (Wiratno et al., 2024). Ecotourism activities within the park are primarily concentrated in the intensive-use zone, which showcases the park's most iconic natural attractions, including the Bromo Sand Sea, Mount Bromo Crater, and Mount Semeru Summit.

Policy strategies, such as zoning, health protocols, visitor quotas informed by technological innovation, and the development of village tourism led by the Tengger indigenous, have been applied to reduce ecological pressure on fragile volcanic and highland habitats, further supporting sustainable action (Mitra & Tripathy, 2025; Rahmi et al., 2024; Wiratno et al., 2024).

Ecotourism perception

Tourists' perceptions of ecotourism are a significant driver of environmentally responsible behavior (ERB). When visitors perceive an ecotourism destination as beneficial, authentic, and environmentally oriented, they are more likely to engage in responsible and reciprocal behavior (Borthakur & Kondasani, 2026; Chiu et al., 2014a, 2014b; Zhao & Weng, 2024). Within the CAB Framework, ecotourism perception reflects perceived value, encompassing cognitive appraisals of environmental quality, experiential value, and destination management, which can encourage ERB. Empirical findings also show that when tourists perceive ecotourism destinations as authentic and well managed, they are inclined to support conservation practices (Xiaoqin & Zhanhong, 2025; L. Yang et al., 2023). Therefore, the following hypotheses can be established:

H1: Ecotourism perception positively influences ERB

Satisfaction

Tourists' satisfaction is the affective response to visitors' evaluation of ecotourism experiences. Positive perceptions of ecotourism services, environmental awareness, and clear destination information influence tourists' satisfaction during tourism activities (Askar, 2023; Y. Wang et al., 2023). Satisfaction serves as an emotional mechanism linking cognitive evaluation and behavioral outcomes. Previous studies suggest that seamless, enjoyable ecotourism experiences enhance satisfaction, which can foster environmental awareness and behavioral transformation (Borthakur & Kondasani, 2026). However, few studies have examined how tourists' perceptions of ecotourism influence satisfaction or how satisfaction mediates the relationship between ecotourism perception and ERB. Thus, the following hypothesis is proposed:

H2 : Ecotourism perception exerts a positive influence on satisfaction

H3 : Satisfaction positively influences ERB

H4 : Satisfaction mediates the relationship between ecotourism perception and ERB

Generativity

Generativity is conceptualized as an individual's lifelong concern for and commitment to the welfare of future generations (G. Wang et al., 2023). This concept reflects individuals' intention to create a meaningful legacy that benefits future generations and is regarded as an aspirational drive to promote a healthy lifestyle and build sustainable communities (Timilsina et al., 2019; Wells et al., 2016). Developmental studies suggest that generativity becomes more dominant in midlife, when individuals assume broader family, occupational, and community responsibilities (Zacher et al., 2012). Longitudinal evidence further shows that generative concern increases from early adulthood, peaks during midlife (approximately ages 40-60), and remains relatively stable before gradually declining later in life (Einolf, 2014; Nelson & Bergeman, 2021; Reinilä et al., 2023). Generativity also evolves throughout the lifespan, with age-related changes driven by shifting social roles, accumulated skills, and social participation. These contextual factors contribute to variation in generativity across generations (Kruse & Schmitt, 2012; Villar et al., 2024). Mentoring, volunteering, and other legacy-oriented activities that support sustainable communities can enhance generativity (Hung et al., 2024; Nonaka et al., 2023).

McAdams and de St Aubin (1992) identified several aspects of generativity, including knowledge, contribution, and responsibility, which have been widely accepted in academic discourse. In rural conservation discussions, generativity extends personal values and aligns with intergenerational stewardship through knowledge exchange and local conservation practices (Villodre et al., 2023; X. Wu & Yuan, 2023). Unlike the perception of ecotourism, which operates as situational cognitive input shaped by destination and environmental appraisals, generativity reflects an internalized human motivation that evolves across the adult lifespan (Alisat et al., 2014). This distinction justifies its role as a direct antecedent of ERB, in line with the findings of Y. Wang et al., (2023), who reported that generative concern directly predicts tourists' ERB. Reinforced by Korlat et al., (2024), the environmentally specific dimension of generativity directly motivates responsible behavior across all adult age groups without requiring the mediation of cognitive evaluation, because an internalized concern for future generations serves as a sufficient motivational driver.

Therefore, this study integrates generativity as a parallel and direct predictor within the extended CAB framework, complementing rather than replacing the cognitive-affective mechanism, particularly regarding the relationship between tourists' generativity concern and environmentally responsible behavior (ERB) at tourist destinations, with a focus on National Parks. Given the above, the following hypothesis can be proposed:

H5 : Generativity has a significant effect on ERB

Environmentally Responsible Behavior (ERB)

Environmentally responsible behavior (ERB) refers to the practices of individuals or groups that support environmental quality (Y. Wang et al., 2023). ERB can prevent or mitigate negative environmental impacts and also benefit ecosystems at tourism destinations (Cheng & Wu, 2015; J. Wu et al., 2022). ERB can be practiced by multiple stakeholders, including tourists, residents, and business operators (Qin & Hsu, 2022; J. Wang et al., 2021; J. Wu et al., 2022). In protected mountain destinations, environmentally responsible actions include proper waste management, compliance with conservation regulations, eco-friendly consumption, and encouraging other visitors to behave



responsibly (Hu et al., 2019; C. Wang et al., 2018; Y. Wang et al., 2023; Ye et al., 2022). M. Wiernik et al., (2013) explain that age differences influence ERB in professional or community life. Furthermore, age is a significant factor in understanding environmental motivations and behaviors, as individuals across age groups often exhibit varying ecological attitudes and engage in distinct sustainable practices (J. Wu et al., 2022).

Tourists can generally be categorized into older and younger age groups. Generation X and Y tend to be concerned about nature conservation (Satrya et al., 2023). Older or senior tourists are often more committed to intergenerational stewardship values and long-term environmental responsibility, reflecting increased generativity during midlife and later adulthood (Korlat et al., 2024). By contrast, younger travelers, such as Generation Z, tend to express concern for the future through social participation, self-discovery, and experiential learning, making their environmentally responsible behavior more socially and situationally influenced (G.-M. Wu et al., 2023). Furthermore, environmental studies demonstrate that older adults tend to engage in responsible behavior driven by internalized moral values, life experience, and concern for future generations (Ding & Schuett, 2020). These distinctions suggest that the influence of ecotourism perception, satisfaction, and generativity on environmentally responsible behavior may vary across generations. Thus, based on these gaps, the following hypotheses are established.

- H6** : The relationship between perceived ecotourism and ERB differs across generations.
- H7** : The relationship between ecotourism perception and satisfaction differs across generations.
- H8** : The relationship between satisfaction and environmentally responsible behavior differs across generations.
- H9** : The relationship between generativity and environmentally responsible behavior (ERB) differs across generations.
- H10** : The mediating effect of satisfaction between ecotourism perception and ERB differs across generations.

In addition, generational groups are included in the analysis to capture potential intergenerational differences in the relationships among ecotourism perception, satisfaction, generativity, and ERB.

This research integrates the C-A-B theoretical framework with generativity to analyze environmentally responsible tourist behavior (ERB).

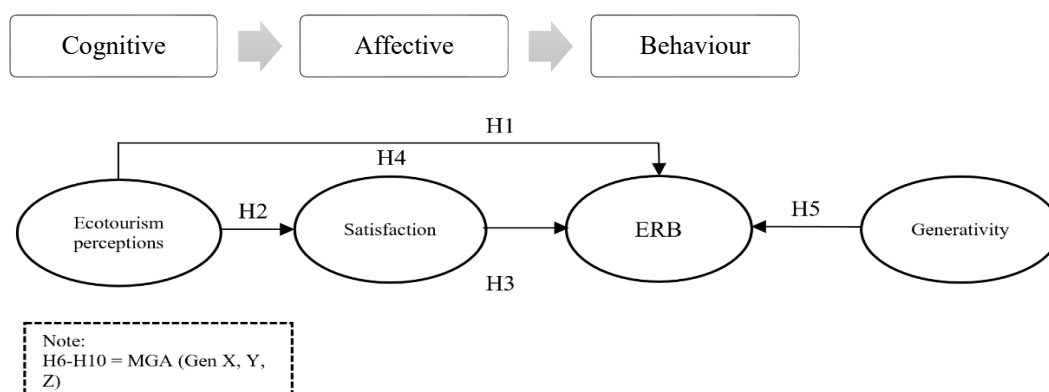


Figure 1. Proposed Research Model

METHODOLOGY

Research Site

This study was conducted in Bromo Tengger Semeru National Park, designated by the government as one of five super-priority tourism destinations. It is a conservation area functioning as a protected area and biosphere reserve, located across four regencies, namely Probolinggo, Malang, Pasuruan, and Lumajang (Hadiwijoyo, 2023; Haliim, 2018; Wibowo, 2021). This destination has implemented a land conservation policy that supports ecotourism practices (Haliim, 2018).



Figure 2. Environmental Setting of Study Area in BTSNP
Source: Authors' field documentation, 2025

Data Collection

Data were collected via an online survey distributed to domestic and international visitors of BTSNP. The survey was conducted over a five-week period using a snowball sampling technique, starting with a single respondent and gradually expanding, as direct on-site access to respondents was limited (Nurdiani, 2014). Following Hair Jr et al. (2019), VIFs for full collinearity were assessed to detect potential common method bias. All VIF values were below the recommended threshold of 3.3, indicating that common method bias was not a serious concern in this study.

The target population consisted of tourists visiting the park, which recorded 368,507 visitors in 2024 (Balai Besar Taman Nasional Bromo Tengger Semeru, 2024). The minimum sample size was determined using Daniel Soper's *A-priori Sample Size Calculator*, assuming a medium effect size (0.15), 80% statistical power, and a 0.05 significance level, yielding a requirement of at least 100 respondents (Munabi & Buwembo, 2020). In total, 287 valid responses were collected, exceeding the minimum requirement and thus suitable for analysis using SEM-PLS (Hair et al., 2019).

Data Analysis

This study employed partial least squares structural equation modeling (PLS-SEM) combined with multi-group analysis (MGA). PLS-SEM was considered appropriate because the study involved a prediction-oriented model, a relatively moderate sample size, and data that may deviate from a normal distribution (Memon et al., 2017). According to Hair Jr et al. (2019), PLS-SEM is flexible in accommodating distributional assumptions



and is suitable for assessing both measurement and structural models. In this study, PLS-SEM was used to examine construct reliability and validity, direct effects, and the mediating role of satisfaction. MGA was subsequently performed to test whether the structural relationships differed across generational cohorts, particularly between Generation Y and other groups (G. Wang et al., 2023).

FINDINGS AND DISCUSSION

Descriptive Statistics

The findings indicate that among the 287 respondents who visited Bromo Tengger Semeru National Park, a significant majority were domestic tourists (99%), while only 1% were international visitors. The gender distribution was relatively balanced, with male tourists accounting for 55% and female tourists for 45%. Most respondents were aged 29–44 years, representing Generation Y (74%), followed by respondents aged 11–28 years, representing Generation Z (19%). A smaller proportion were aged 45–60 years, representing Generation X (6%), while respondents above 60 years old accounted for only 1%. Previous studies suggest that younger tourist cohorts, particularly Generation Y, are often associated with stronger interest in nature-based and ecotourism experiences (Satria et al., 2023). Most respondents held bachelor’s degrees (75%, n = 216), followed by postgraduate degree holders (14%, n = 39). Respondents categorized as high school level participants accounted for 11% (n = 31), while other educational backgrounds represented less than 1% (n = 1). This indicates that most participants have a higher education background.

Table 1. Characteristics of Respondents

Characteristic	Criteria	Number of Respondents	(%)
Gender	Male	157	55%
	Female	130	45%
Age	11 – 28 years old	54	19%
	29 – 44 years old	214	74%
	45 – 60 years old	17	6%
	above 60 years old	2	1%
	Education	Postgraduate	39
	Bachelor’s	216	75%
	High School	31	11%
	Others	1	1%

Source: Data Processed, 2026

Measurement Model

This study used the Smart PLS-SEM software (version 3.0) to assess the reliability and validity of the measurement model using the entire sample. The findings are presented in Table 2. All item factor loadings exceed 0.7, and both Cronbach’s alpha and rho_A values for the constructs are above the 0.7 threshold, consistent with the standards recommended by Hair Jr et al. (2019). Composite reliability and AVE values are above 0.7 and 0.5, respectively, indicating internal consistency (Hair Jr et al., 2019). As shown in Table 3, all constructs demonstrated good discriminant validity, as the square roots of AVE



were higher than their correlations with other constructs. This confirms that each construct is distinct (G. Wang et al., 2023).

Table 2. Assessment of the measurement model

Variable	Items	Factor Loading	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
Ecotourism's Perception	Ecotourism can promote natural resources and environmental conservation	0.828	0.863	0.915	0.782
	Ecotourism can increase the awareness toward how important environmental conservation between tourist and government is.	0.824			
	Ecotourism policy in BTSNP is well implemented.	0.842			
Generativity (GEN)	I like to share my knowledge and my experience about environmental conservation to others.	0.911	0.969	0.975	0.866
	I think it is important to give positive impact for the community.	0.906			
	I believe all steps have positive impacts for the environment and the community.	0.891			
	I have the responsibility for the preservation of natural conservation around me.	0.814			
	I contribute to environmental conservation to whom the future generation will remember.	0.849			
	It is important to give positive contribution to natural conservation.	0.753			
Satisfaction (S)	I am satisfied with the implementation of ecotourism in BTSNP.	0.832	0.864	0.910	0.721
	I feel pleased with the governmental roles towards the surveillance of ecological conservation in BTSNP.	0.775			



	I feel satisfied with the implementation of regulation and law supporting the conservation area in BTSNP.	0.793			
	eco-friendly tourist facilities can boost my satisfaction	0.739			
Environmentally Responsible Behaviour (ERB)	I prevent other tourists to do environmentally destructive acts.	0.816	0.883	0.945	0.895
	I choose to use eco-friendly accommodation.	0.861			

Source: Data Processed, 2026

Table 3. Results of the discriminant validity test based on Fornell-Larcker Criterion

Construct	Environmentally Responsible Behaviour	Generativity	Satisfaction	Ecotourism Perception
Environmentally Responsible Behaviour	0.813			
Generativity	0.612	0.843		
Satisfaction	0.662	0.433	0.770	
Ecotourism Perception	0.564	0.326	0.767	0.831

Source: Data Processed, 2026

Table 4. Discriminant validity evaluation based on Heterotrait-Monotrait Ratio (HTMT)

	ERB	Generativity	Ecotourism Perception	Satisfaction
ERB				
Generativity	0.838			
Ecotourism Perception	0.891	0.773		
Satisfaction	0.813	0.654	0.964	

Source: Data Processed, 2026

ERB was evaluated as tourists' observable environmental behavior in tourism activities (Chiu et al., 2014b; He et al., 2018; Stern, 2000). The construct was operationalized with nine items adapted from the literature on environmental tourist behavior. Following PLS-SEM assessment, items with cross-loadings and discriminant validity issues were removed to ensure construct distinctiveness and address HTMT concerns (Hair et al., 2022; Henseler et al., 2015). The final model retained two indicators representing the core behavioral expression of ERB in TNBTS, ensuring measurement validity and clarity within the structural model.

Furthermore, discriminant validity was assessed using the Heterotrait-Monotrait Ratio (HTMT) as a more rigorous alternative to the Fornell-Larcker criterion. As shown in Table 4, most construct pairs had HTMT values below the conservative threshold of 0.90 (Henseler et al., 2015; Roemer et al., 2021). However, the HTMT value between ecotourism perception and satisfaction slightly exceeded the threshold (0.964), indicating conceptual relatedness. Despite this high value, the bootstrap confidence intervals for the HTMT did not include 1, suggesting acceptable discriminant validity (Benitez et al., 2020; Hair Jr et al., 2017).



Structural Model

The structural model was evaluated to assess the hypothesized relationships among the constructs (Hair Jr et al., 2019). The results are shown in Figure 3.

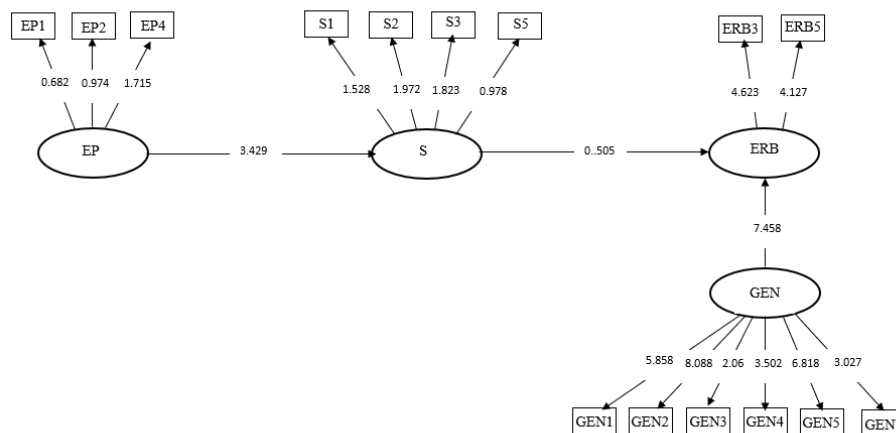


Figure 3. Final Model
 Source: Data Processed, 2026

The structural model fit was evaluated using the Standardized Root Mean Square Residual (SRMR) and additional fit indicators. The SRMR of 0.104 slightly exceeded the strict threshold of 0.08. However, it remained close to the more flexible threshold of 0.10 commonly accepted in PLS-SEM studies, indicating marginal model fit (Hair Jr et al., 2017; Tedjakusuma & Kulachai, 2026). In addition, the d_{ULS} (1.294) and d_G (1.600) values suggested a robust model. Although the NFI was below the rigorous threshold, PLS-SEM particularly emphasizes explanatory power rather than model fit indices (Tedjakusuma & Kulachai, 2026). The R^2 for ERB was 0.330. This indicates that endogenous variables explain 33% of the variance in ERB; the remaining 67% was accounted for by other variables not included in the model or by error. In behavioral studies, an R^2 of 0.2 is considered acceptable, as human behavior is complex and influenced by numerous unmeasurable factors (Jieyao et al., 2025). Effect size (f^2) was used to assess each predictor's substantive contribution, as shown in Table 5. Ecotourism perception had a moderate effect on satisfaction ($f^2 = 0.263$), while generativity meaningfully contributed to ERB ($f^2 = 0.226$), confirming its role as an important predictor of responsible behavior. However, satisfaction had a negligible effect on ERB ($f^2 = 0.002$), suggesting its practical contribution to ERB is minimal (Cohen, 2013).

Table 5. Results of the Effect Size (f^2)

Construct Relationship	f^2	Effect Size
Ecotourism Perception -> Satisfaction	0.263	Moderate
Generativity -> ERB	0.226	Moderate
Satisfaction -> ERB	0.002	Negligible

Source: Data Processed, 2026

Table 6. Predictive of Relevance (Q^2)

Construct	Q^2
ERB	0.072
Satisfaction	0.05

Source: Data Processed, 2026

Predictive relevance was assessed via blindfolding, with Q^2 values of 0.072 for ERB and 0.050 for satisfaction. Ecotourism perception and generativity exceeded zero, indicating the model has adequate predictive relevance for all endogenous constructs (Hair Jr et al., 2017). The findings are shown in Table 6. Thus, the model was empirically adequate for further hypothesis testing. To test the path coefficients and hypothesized relationships, and to compare Gen Z with other generational groups in the structural model, 5000 bootstrap subsamples were used to obtain significance levels (Hair Jr et al., 2019). The findings are shown in Tables 7 and 8.

Table 7. The results of hypothesis tests

Hypothesis	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values	Sig.
H1: Ecotourism Perception → ERB	-0.019	-0.008	0.038	0.492	0.622	Not Supported
H2: Ecotourism Perception → Satisfaction	0.457	0.457	0.140	3.265	0.001	Supported
H3: Satisfaction → Environmentally Responsible Behaviour (ERB)	-0.041	-0.014	0.082	0.495	0.621	Not Supported
H4: Ecotourism Perception → Satisfaction → Environmentally Responsible Behaviour (ERB)	-0.019	-0.008	0.038	0.492	0.622	Not Supported
H5: Generativity → Environmentally Responsible Behaviour (ERB)	0.432	0.446	0.062	6.963	0.000	Supported

Source: Data Processed, 2026

According to Table 7, ecotourism perception positively affected satisfaction ($\beta = 0.457$, $p < 0.01$), and generativity positively influenced ERB ($\beta = 0.432$, $p < 0.01$), supporting **H2** and **H5**. However, ecotourism perception did not directly influence ERB ($\beta = -0.019$, $p > 0.05$), and satisfaction also had no significant effect on ERB ($\beta = -0.041$, $p > 0.05$). Therefore, **H1** and **H3** were not supported. The mediation analysis indicates that satisfaction did not mediate the relationship between perception and environmentally responsible behavior ($\beta = -0.019$, $p > 0.05$), so **H4** was rejected.

The Comparison of Inter-Generation Analysis

Multi-Group analysis (MGA) was conducted to examine differences across generations. Generation Y represented the majority of the samples, whereas Generation X and Generation Z were represented by smaller subgroups. The findings are presented in



Table 8 and should be interpreted cautiously. The analysis was evaluated using PLS-SEM with bootstrapping to compare path coefficients across groups. Due to a highly unbalanced sample distribution (Gen Y 74%, Gen Z 19%, and Gen X 6%), MGA results are treated as exploratory evidence rather than definitive evidence of generational differences, given unequal statistical power across groups.

First, ecotourism perception has no direct effect on ERB for Gen X ($\beta = 0.143, p > 0.05$), Gen Y ($\beta = -0.019, p > 0.05$), and Gen Z ($\beta = 0.185, p > 0.05$). Thus, **H6** was rejected. Second, the relationship between ecotourism perception and satisfaction revealed mixed results regarding H7. Ecotourism perception significantly predicts satisfaction for Gen X ($\beta = 0.657, p < 0.01$) and Gen Z ($\beta = 0.584, p < 0.01$) but not for Gen Y ($\beta = 0.503, p > 0.05$). Therefore, **H7** was supported only in certain generational cohorts. Third, H8 was not supported across all three generations, indicating satisfaction has no influence on ERB for Gen X ($\beta = 0.218, p > 0.05$), Gen Y ($\beta = -0.038, p > 0.05$), and Gen Z ($\beta = 0.318, p > 0.05$). Thus, **H8** was rejected. Fourth, generativity had a significant direct effect on ERB, particularly among Gen Y tourists ($\beta = 0.455, p < 0.01$), representing the only significant relationship among the generational groups. In contrast, the relationship was positive but non-significant for Gen X ($\beta = 0.616, p > 0.05$) and Gen Z ($\beta = 0.130, p > 0.05$). Hence, **H9** was supported only in certain generational cohorts. Finally, the mediating effect of satisfaction between ecotourism perception and ERB was not significant across all generations: Gen X ($\beta = 0.143, p > 0.05$), Gen Y ($\beta = -0.019, p > 0.05$), and Gen Z ($\beta = 0.185, p > 0.05$). Consequently, **H10** was rejected.

Table 8. The results of the multi-group analysis across generational cohorts

Age	Hypothesis	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics	P Values	Sig.
Gen X	H6: Ecotourism Perception → ERB	0.143	0.115	0.205	0.700	0.484	Not Supported
	H7: Ecotourism Perception → Satisfaction	0.657	0.683	0.250	2.630	0.009	Supported
	H8: Satisfaction → ERB	0.218	0.164	0.284	0.768	0.442	Not Supported
	H9: Generativity → ERB	0.616	0.565	0.413	1.493	0.136	Not Supported
	H10: Ecotourism Perception → Satisfaction → ERB	0.143	0.115	0.205	0.700	0.484	Not Supported
Gen Y	H6: Ecotourism Perception → ERB	-0.019	-0.007	0.045	0.432	0.665	Not Supported
	H7: Ecotourism Perception → Satisfaction	0.503	0.230	0.465	1.081	0.280	Not Supported
	H8: Satisfaction → ERB	-0.038	-0.008	0.089	0.428	0.668	Not Supported
	H9: Generativity → ERB	0.455	0.472	0.076	5.778	0.000	Supported
	H10: Ecotourism Perception → Satisfaction → ERB	-0.019	-0.007	0.045	0.432	0.665	Not Supported
Gen Z	H6: Ecotourism Perception → ERB	0.185	0.151	0.134	1.381	0.167	Not Supported
	H7: Ecotourism Perception → Satisfaction	0.584	0.598	0.089	6.549	0.000	Supported



H8: Satisfaction → ERB	0.318	0.245	0.214	1.481	0.139	Not Supported
H9: Generativity → ERB	0.130	0.303	0.153	0.852	0.394	Not Supported
H10: Ecotourism Perception → Satisfaction → ERB	0.185	0.151	0.134	1.381	0.167	Not Supported

Source: Data Processed, 2026

Discussion

The findings provide partial support for the cognitive-affective-behavior (CAB) framework in explaining tourists’ environmentally responsible behavior in protected mountain areas. This result challenges the linear CAB mechanism, suggesting that cognitive-affective dimensions alone are insufficient to activate environmental behavior without internalized psychosocial motivation. Before interpreting the structural relationship, discriminant validity was assessed using HTMT. The close conceptual relationship between cognitive appraisals of ecological quality and affective responses may explain the relatively high HTMT value observed between these constructs (0.964) (Borthakur & Kondasani, 2026; Tseng et al., 2024). The moderate effect ($f^2 = 0.263$) and the high HTMT value between these constructs further confirm the substantive contribution and conceptual proximity, indicating that they remain conceptually related within nature-based tourism contexts within the CAB framework.

The result of H2, the significant positive relationship between ecotourism perception and satisfaction, supports the cognitive-affective mechanism proposed by the CAB framework. Tourists who positively appraise ecological attributes at BTSNP, including visitor management systems, zoning regulations, eco-friendly facilities, and Tengger indigenous-based tourism, tend to report higher satisfaction. This finding is consistent with previous studies showing that a positive cognitive evaluation of destination attributes enhances affect and overall tourist satisfaction (Borthakur & Kondasani, 2026; Simanjuntak & Fitri, 2024; H. Wang et al., 2025). In this national park, tourists who perceive the destination as well-managed and capable of delivering the benefits of a product or service, and whose overall value experienced (pre-, during, and post-consumption) meets or surpasses initial expectations (Borthakur & Kondasani, 2026).

Nevertheless, the non-significant direct effect of ecotourism perception on ERB (H1) and the non-significant effect of satisfaction on ERB (H3), with satisfaction showing a negligible effect size ($f^2 = 0.002$), reveal that the cognitive and affective aspects of destination experience, even when positively evaluated, are not independently sufficient to activate environmentally responsible behavior (ERB). This pattern suggests that translating environmental appraisals into behavioral responses requires activating psychological drivers such as moral obligation, personal norms, motivation, or place attachment (Cheng & Wu, 2015; Jayasekara et al., 2024; Juvan & Dolnicar, 2014) or a punishment approach (Raza et al., 2024). Such compliance with regulations and awareness of punishments embedded in pre-visit destination agreements encourage rule-following behavior but do not directly translate satisfaction into voluntary ERB. The mediating role of satisfaction (H4) aligns with findings from Kaziranga National Park in India, where satisfaction did not serve as a bridge between environmental inputs and tourists’ responsibility for the environment (Borthakur & Kondasani, 2026). According to their findings, satisfaction does not encourage tourists’ environmentally responsible behavior, as content tourists may view



destinations as already fulfilling their expectations regarding the actual performance of the product or service (Bhatti & Alnasser, 2023; Borthakur & Kondasani, 2026). Furthermore, ancillary factors such as lack of service quality, leisure facilities, and the quality of the ecotourism program can trigger ERB by adding emotional value (Zhao & Weng, 2024). This indicates that a punishment approach is insufficient to encourage ERB without internal motivation (Chiu et al., 2014a).

The main empirical and theoretical contribution of this study is that generativity serves as a direct and parallel predictor of environmentally responsible behavior (ERB) within the CAB model (H5). Generative concern reflects a deeper psychosocial motivation that evolves throughout the adult lifespan (Alisat et al., 2014). H5 suggests that responsible behavior can be driven directly by internalized motivation without depending on cognitive stimuli or affective satisfaction. These findings reinforce previous studies in Xixi Wetland National Park in China, which show that generative concern encourages ERB among tourists (G. Wang et al., 2023). Tourists with stronger generative motivation may show greater concern for future generations as part of their legacy (G.-M. Wu et al., 2023). Generativity, as an internal factor, encourages voluntary environmental responsibility through interpersonal environmental intervention and environmentally conscious consumption. In the context of Bromo Tengger Semeru National Park, encouraging other tourists to engage with environmental regulations (e.g., selecting certified eco-lodges, minimizing single-use plastic during trekking, discouraging other visitors from littering, damaging protected vegetation, using jeeps, and igniting campfires outside the use zone) reflects collective orientation and helps build a positive environmental self-image. Furthermore, peer correction becomes a socially acceptable and low-cost stewardship practice, especially when tourists encounter situational constraints due to the lack of environmental infrastructure in BTSNP (Hutami et al., 2026). Nevertheless, these behavioral expressions can be strengthened by the participation of local communities that combine indigenous stewardship traditions and long-term conservation practices to support tourists' responsible behavior.

The intergenerational differences in the relationship between ecotourism perception and ERB were not significant. These intergenerational findings across H6, H8, and H10 suggest that these correlations are generated through psychological mechanisms that are relatively constant, aligning with previous studies establishing that the influence of ecotourism perception, satisfaction, and pro-environmental behavior may not consistently vary across age groups without motivational activation (Cheng & Wu, 2015; Ding & Schuett, 2020; J. Wu et al., 2022). The observed generational differences should be interpreted cautiously due to unbalanced subgroup sizes that may influence statistical power. H7; the relationship between ecotourism perception and satisfaction was significantly positive for Gen X and Gen Z, but not for Gen Y. The significant relationship pattern found in Gen Z aligns with their characterization, as their environmentally responsible behavior is socially and situationally influenced, driven by authentic experiences and environmental engagement (G.-M. Wu et al., 2023). Their satisfaction appears particularly when the ecological integrity and management quality of the destination, such as accommodation and attractions, meet their expectations (Ivasciuc et al., 2025; Liberato et al., 2019). Likewise, in Gen X, tourists represent an evaluative orientation of mature travelers, who tend to engage in responsible behavior driven by innate human values during travel experiences (F. X. Yang & Lau, 2015). While the non-

significant results for Gen Y may reflect greater heterogeneity (74%) and the use of snowball sampling, which tends to yield respondents with similar attitudes and perceptions, potentially reducing the variability of the relationship observed in the analysis.

For H9, the relationship between generativity and ERB was significant only for Gen Y, whereas it was not significant for Gen X and Gen Z. This result aligns with generative developmental studies, which explain that generativity arises during midlife, a period broadly associated with the majority of Gen Y respondents in this study (Einolf, 2014; Nelson & Bergeman, 2021). However, this finding should be interpreted cautiously, as the significance of the generativity-ERB relationship in Gen Y may be influenced by the much larger Gen Y subsample (74%) compared with Gen X (6%) and Gen Z (19%), thereby increasing statistical power (Hair Jr et al., 2017). At this stage, Gen Y reflects responsible action in community or organizational engagement, corresponding with their generative goals (Walia & Jasrotia, 2021).

The non-significant relationship between generativity and ERB among Gen Z travelers is also consistent with the developmental trajectory of generativity, which is generally lower in young adulthood (Einolf, 2014; Zacher et al., 2012). Among Gen Z travelers, generative concern is more often expressed through social participation, self-discovery, and experiential learning rather than through principled commitments (G.-M. Wu et al., 2023). However, this finding does not indicate the absence of environmental potential among Gen Z, as generativity can still be enhanced through mentoring and volunteer programs that encourage meaningful, future-oriented behavior (Hung et al., 2024; Nonaka et al., 2023; G. Wang et al., 2023).

Although Gen X showed a relatively large path coefficient, the result remained non-significant due to the small subgroup size rather than a lack of a meaningful relationship (Hair Jr et al., 2017). On the other hand, the non-significant results for H10 across generations suggest that the limitation of the CAB model is consistent across all cohorts. Overall, the intergenerational findings indicate that generational differences mainly influence the extent to which generativity activates ERB, rather than altering the CAB framework itself.

CONCLUSION

This study investigates environmentally responsible behavior among tourists at Bromo Tengger Semeru National Park using the cognitive-affective-behavior (CAB) framework. In this model, ecotourism perception and satisfaction reflect the cognitive and affective dimensions, whereas generativity serves as a parallel and direct predictor of environmentally responsible behavior (ERB), reflecting motivation for psychosocial development. This study also explores intergenerational differences. Three main conclusions are drawn from the findings: First, ecotourism perception significantly enhances tourist satisfaction, confirming the cognitive-affective mechanism of the CAB framework in rural mountain protected areas. However, neither ecotourism perception nor satisfaction directly influences ERB, and satisfaction does not mediate the relationship, indicating that positive experiences alone are insufficient to encourage responsible behavior. Second, generativity appears to be the most influential predictor of ERB in the model. Tourists with stronger generative concern tend to engage in ERB regardless of their cognitive or affective responses to the destination. This finding emphasizes the need to

extend the CAB framework by integrating generativity as a psychosocial driver of ERB, with the relationship significant only among generation Y tourists. Third, generational cohorts show different relational patterns. The generativity-ERB relationship is significant only in generation Y, whereas the ecotourism perception-satisfaction relationship is significant among generation X and generation Z, reflecting distinct evaluative responses to destination quality. On the other hand, the overall CAB relationship pathway appears consistent across all cohorts, suggesting that the limited role of satisfaction in influencing ERB occurs across all cohorts rather than in specific generations. In conclusion, these findings offer important insights into the psychological and generational factors of environmentally responsible behavior in protected mountain areas.

Suggestion and Implications

Theoretical Contribution

This study contributes to tourism theory by extending the Cognitive-Affective-Behavior (CAB) Model to integrate generativity as a psychosocial predictor of ERB in rural mountain protected areas. It specifically examines how cognitive appraisals related to ecotourism and affective responses, such as satisfaction, do not necessarily lead to responsible practices, even when ecotourism is positively perceived and satisfaction is high. These findings confirm that the process linking cognition and affective response to behavior requires a psychological factor known as generativity. Generativity posits an external, intergenerational mechanism that influences behavior beyond the CAB Model. The role of generativity can foster environmental actions without passing through cognition or affect. Moreover, by integrating psychological and intergenerational perspectives, this study contributes to rural studies by explaining how sustainable conservation management depends on the intergenerational transmission of stewardship values.

Policy Recommendations

The findings indicate that ecotourism policies should integrate age-sensitive strategies to strengthen generativity across tourist segments and support rural communities' initiatives. In this context, policymakers should incorporate intergenerational stewardship principles into conservation and visitor management policies. For example, BTSNP Management could develop communication programs within a "Bromo for Future Generations" framework that emphasizes mountain ecosystems, biodiversity preservation, and natural landscapes.

Practical Implications

Responsible behavior can be encouraged through pro-environmental actions. Positive attitudes and subjective norms are shaped by individual perceptions (Raman et al., 2024). In rural protected areas, to translate ecotourism perceptions into tourist satisfaction, destination managers and policymakers should ensure that ecotourism services and infrastructure are committed to sustainability by encouraging eco-certification of local tourism businesses, providing transparent information on conservation practices, improving green services, and demonstrating long-term ecological and community well-being.



Thus, destination managers, in collaboration with local stakeholders, should prioritize implementing eco-friendly services and infrastructure, such as accessible waste disposal bins, designated recycling points, and an eco-lodge with an ambiance rooted in local wisdom. Enhancing experiential learning through age-sensitive design is also essential, and this can be achieved by training tour guides and park rangers to educate visitors through interactive conservation workshops and to monitor tourist behavior during visits. Regular monitoring of vegetation and waste is important to ensure that tourist behavior does not damage the landscape. Involving rural communities, particularly the Tengger tribes, is valuable for preserving cultural traditions and local wisdom that align with conservation objectives.

Beyond infrastructure, increasing generativity among tourists is crucial in rural protected areas, where sustainability depends on intergenerational continuity. Destination Management Organizations (DMOs) can foster tourists' future concern and environmental responsibility by using online media that visualize the long-term impacts of unsustainable behavior on future generations and by developing programs such as intergenerational learning through Tengger indigenous knowledge experiences, tree planting, eco-volunteering camps, citizen science activities, and incentives for sustainable choices.

Rather than focusing solely on marketing, DMOs should also serve as a coordinating governance platform. DMOs should manage visitor flows, allocate conservation funding transparently, and support equitable benefit-sharing mechanisms with rural communities. The existing online ticketing platform (bromotenggersemeru.com) could be expanded into a digital Destination Management System (DMS) to coordinate stakeholder activities under DMOs, promote environmental literacy, manage visitor analytics, and channel tourism revenue into ecological restoration and rural community development. Moreover, integrating a carbon footprint calculator into the existing online booking system can help raise tourists' awareness of the environmental impact of their travel choices, encouraging more responsible behavior by converting carbon emissions into tree-planting donations.

Sustainable visitor experiences should connect future-oriented environmental concerns with cultural traditions and smart technologies. For example, virtual tours and 360° videos can present interpretive information about BTSNP's natural environment and ecological resources. Digital platforms and social media can also share success stories and local initiatives (e.g., viral campaigns for cleanup or tree planting), especially to engage younger generations, including Gen Z.

Limitations of the Study and Future Research

This study has limitations that should be noted. First, the imbalance in generational distribution, with most respondents being Gen Y, combined with the use of online snowball sampling, may have introduced both statistical and representational limitations. The smaller groups, particularly Gen X, had reduced statistical power, while the sampling approach may have introduced bias due to similarities in respondents' social networks, limiting the statistical comparability, generalizability, and external validity of the findings. Future studies should apply stratified or quota sampling with a priori power analysis to ensure balanced subgroup representation and improve representativeness.

Second, the cross-sectional model limits the ability to capture behavioral changes over time. Longitudinal studies are encouraged to investigate how generativity and ERB



develop across life stages and tourism experiences. Third, the relatively high HTMT value between ecotourism perception and satisfaction indicates potential construct overlap, suggesting the need for indicator refinement and confirmatory factor analysis in future research to improve discriminant validity. Fourth, the SRMR value of 0.104 slightly exceeded the recommended strict threshold, indicating marginal model fit. Future research should improve model specification and validate the framework using alternative samples and tourism settings.

Beyond methodological refinements, future studies should also develop theoretically grounded hypotheses about intergenerational differences in generativity across cohorts. Moreover, alternative mediators, such as emotional value, destination attachment, and environmental concern, should be explored to better explain the influence of ecotourism perception on ERB when satisfaction is insufficient as a mediator. Finally, investigating generativity as a mediating or moderating variable within the extended CAB Model across broader ecotourism contexts, including coastal, marine, and community-based tourism or halal tourism, is also encouraged.

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