

# An integrated AHP–composite priority index model for determining tourism village development priorities: evidence from Jember Regency, Indonesia

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**Abstract:** The development of tourism villages has become an important strategy to stimulate rural economic growth through community-based tourism. However, the determination of priority tourism villages is frequently conducted without a systematic and transparent decision-making framework, which may result in inefficient allocation of development resources. This study aims to develop a priority model for tourism village development by integrating internal and external factors using the Analytic Hierarchy Process (AHP) and a Composite Priority Index (CPI). A quantitative multi-criteria decision-making approach was applied, involving seven experts representing government institutions, academic researchers, and tourism village practitioners. Pairwise comparisons were conducted using Saaty's scale to determine the relative weights of development criteria, while the CPI was used to calculate the final priority ranking of tourism villages. The results reveal that within the internal dimension, institutional capacity and governance (0.28) represent the most influential factor, followed by human resources and tourism awareness groups (0.23), attractions (0.19), amenities (0.17), and environmental sustainability (0.13). Within the external dimension, strategic partnerships (0.27) emerge as the dominant factor, followed by budget support (0.23), government policy support (0.21), accessibility (0.17), and promotion (0.12). Based on the composite index calculation, tourism villages are categorized into high, medium, and low priority clusters, providing a structured framework for phased development interventions. These findings highlight that tourism village sustainability depends not only on tourism potential but also on strong institutional governance and collaborative networks. The proposed model offers an evidence-based decision support system to assist local governments in determining tourism village development priorities more objectively and strategically.

**Keywords:** AHP, Composite Priority Index, Priority Model, Tourism Policy, Tourism Village

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## Introduction

In the contemporary tourism landscape, the development of tourism villages is increasingly viewed as a community-driven economic transformation strategy that offers an alternative to centralized and extractive mass tourism models (Ahur et al., 2024; Giampiccoli, 2020). Within the framework of community-based tourism (CBT), local communities are not merely supplementary actors but are positioned at the core of planning, management, and benefit distribution processes (Jackson, 2025). Recent studies suggest that when CBT is supported by inclusive governance and strong participatory mechanisms, it contributes meaningfully to sustainable development and local economic resilience (Abreu et al., 2024). Hence, tourism villages should not be seen solely as destinations, but as institutional arenas reflecting the quality of local governance.

Empirical developments, however, indicate that not all tourism villages achieve sustainable growth. Bibliometric and evaluative studies highlight that institutional weaknesses, poor inter-actor coordination, and reliance on short-term external interventions frequently undermine long-term viability (Krittayarangroj et al., 2023). From a destination governance perspective,

sustainability largely depends on the strength of local institutions and structured collaboration mechanisms (Torres-Delgado & Saarinen, 2014). Thus, the success of tourism villages is not merely a function of attraction quality but rather the outcome of interaction between internal community capacity and broader policy ecosystem support.

Given this complexity, multi-criteria decision making (MCDM) approaches have gained traction in destination planning due to their ability to address interacting variables (Saaty, 2008). The Analytic Hierarchy Process (AHP) is particularly effective in integrating qualitative and quantitative indicators into a systematic decision structure (Putra et al., 2019; Ulkhaq et al., 2019). Recent research demonstrates AHP's utility in prioritizing village development based on sustainability indicators (Gačnik et al., 2025; Sarja et al., 2021). Nevertheless, many studies remain partial focusing on single dimensions or isolated cases without offering a comprehensive regency-level integrative framework.

Two conceptual gaps are evident. First, while CBT literature emphasizes participation and empowerment, it rarely operationalizes these principles into measurable policy priority indices (Giampiccoli, 2020). Second, MCDM applications in tourism often assess sustainability or site selection but seldom integrate internal factors (institutional capacity, human resources, attractions) and external factors (partnerships, policy, budgeting) simultaneously at the regency level (Gačnik et al., 2025; Ulkhaq et al., 2019). As a result, priority designation processes frequently rely on administrative discretion rather than structured evidence-based analysis.

Building on this debate, the present study argues that the prioritization of tourism village development should be understood as the outcome of an interaction between internal institutional capacity and external structural support. By integrating the Analytic Hierarchy Process (AHP) with a Composite Priority Index into a unified decision model, this research seeks to translate the principles of community-based tourism (CBT) into a measurable policy instrument rather than leaving them at a purely normative level.

The novelty of this study lies in three main aspects. First, it simultaneously incorporates internal and external dimensions within a single regency-level priority framework. Second, it combines AHP with a composite index approach to function as a practical decision support system for local policy-making. Third, it highlights strategic partnership as a key external variable in sustaining tourism villages an element that has received limited explicit attention in previous MCDM-based priority models.

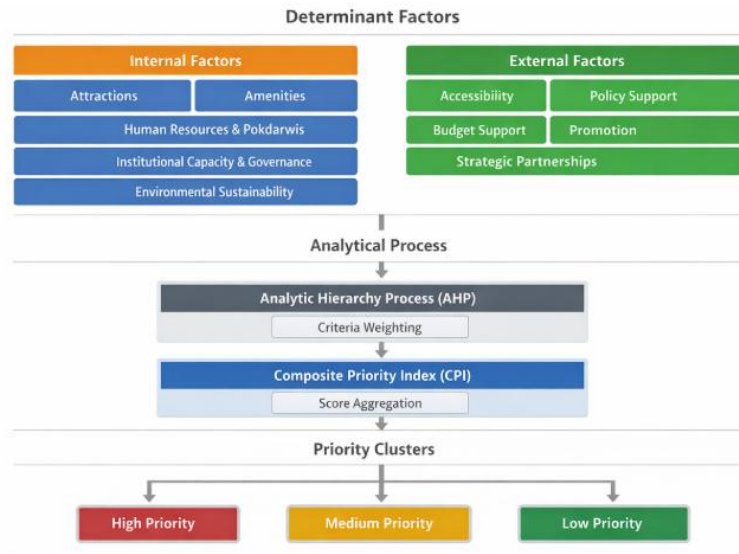
Based on the theoretical perspectives of community-based tourism, destination governance, and multi-criteria decision making, this study proposes a conceptual framework for determining tourism village development priorities. The framework assumes that tourism village prioritization is influenced by two main dimensions: internal factors and external factors.

Internal factors represent the inherent capacity of tourism villages, including attractions, amenities, human resources, institutional capacity, and environmental sustainability. These factors reflect the readiness of local communities to manage tourism resources and develop sustainable tourism products.

External factors represent the broader structural environment that supports tourism development, including accessibility, policy support, budget allocation, promotion, and strategic partnerships. These variables illustrate the extent to which external stakeholders and policy environments facilitate the development of tourism villages.

Within this framework, the Analytic Hierarchy Process (AHP) is used to determine the relative importance of each criterion through expert judgment. The resulting weights are then integrated with village performance scores using the Composite Priority Index (CPI) to produce a final priority ranking (Suasapha, 2022). Through this process, tourism villages can be categorized into high-, medium-, and low-priority development clusters.

The conceptual framework of this study is illustrated in Figure 1.



(Source: Authors' elaboration based on Saaty, 1980; Giampiccoli, 2020; Torres-Delgado & Saarinen, 2014; Ulkhaq et al., 2019)

**Figure 1.** Conceptual framework of tourism village priority model using AHP and composite priority index

More specifically, this study aims to identify the hierarchical structure of tourism village priority criteria, determine the relative weight of each criterion using AHP, and construct a Composite Priority Index to map policy priority clusters. Theoretically, the research contributes to the expansion of CBT literature by embedding multi-criteria decision-making approaches within a destination governance framework. Practically, it offers an evidence-based policy model designed to assist local governments in designating priority tourism villages in a manner that is more objective, transparent, and accountable.

## Methodology

This study employs a quantitative approach using a multi-criteria decision-making design to formulate priorities for tourism village development. The approach was selected because tourism policy prioritization inherently involves multiple, interrelated, and multidimensional criteria that cannot be reduced to a single indicator (Saaty, 2008; Wardhani et al., 2021). In destination planning contexts, multi-criteria decision making (MCDM) is particularly relevant for systematically integrating both quantitative and qualitative variables, especially when decisions involve the allocation of limited public resources (Arbainah et al., 2020; Ulkhaq et al., 2019). Accordingly, this research adopts the Analytic Hierarchy Process (AHP) as the primary analytical framework and combines it with a Composite Priority Index (CPI) to produce the final ranking of tourism villages.

The study is conducted in Jember Regency, which has formally designated 52 tourism villages through an official Regent's Decree (Saputra, 2024). These villages constitute the broader analytical scope, particularly in determining development priorities using an MCDM framework.

Conceptually, the model is structured into three hierarchical levels as recommended in the AHP methodology: goal, criteria, and alternatives (Saaty, 2008). The overarching goal of this study is to determine tourism village priorities at the regency level. At the second level, the criteria are grouped into two principal dimensions: internal and external factors. This classification draws on community-based tourism literature, which emphasizes community capacity as the foundation of sustainability (Giampiccoli, 2020), as well as destination governance studies highlighting the importance of policy support and external collaborative networks in shaping destination performance (Jackson, 2025; Torres-Delgado & Saarinen, 2014). Internal factors include attractions, amenities, human resources, institutional capacity, and environmental aspects, while

external factors encompass accessibility, government policy support, budget allocation, promotion, and strategic partnerships.

The weighting of criteria was conducted through pairwise comparisons using Saaty's fundamental 1–9 scale (Saaty, 2008). his method facilitates the structured elicitation of expert judgments while allowing for the assessment of logical consistency through the Consistency Ratio (CR). In this study, the calculated Consistency Ratio (CR) is 0.040, which is below the acceptable threshold of 0.10, indicating that the comparison matrix is consistent and the resulting weights are reliable for further analysis (Saaty, 2008; Ulkhaq et al., 2019). Explicitly reporting this value strengthens the methodological rigor by demonstrating that expert judgments meet the required consistency standards.

The respondents were selected purposively based on their expertise, experience, and direct involvement in tourism village development. The panel consists of representatives from local government, academia, and tourism village practitioners, ensuring a balanced integration of policy, theoretical, and operational perspectives. This expert judgment approach is widely used in MCDM studies, where the emphasis lies on the quality and consistency of judgments rather than on large sample sizes (Gačnik et al., 2025).

Following the AHP weighting process, the Composite Priority Index (CPI) was calculated for each tourism village. The CPI was obtained by multiplying the global weight of each criterion by the corresponding performance score and aggregating the results into a single composite value. Composite index approaches are commonly applied in public policy analysis to synthesize multiple indicators into a comparable metric (Torres-Delgado & Saarinen, 2014). Based on the CPI results, tourism villages are categorized into high-, medium-, and low-priority groups, providing a structured and objective basis for policy decision-making.

Overall, the integration of AHP and CPI in this study bridges the theoretical framework of community-based tourism with practical policy needs. By explicitly incorporating consistency validation (CR = 0.040), the methodology ensures that the decision-making model is not only systematic and transparent but also methodologically robust and reliable as an evidence-based tool for tourism village development planning.

## Results and Discussions

### Results

#### *Respondent Characteristics*

This study applied an expert judgment approach within the Analytic Hierarchy Process (AHP) framework to determine the weights of internal and external factors influencing tourism village development in Jember Regency. Respondents were selected through purposive sampling, taking into account their professional competence, experience, and direct involvement in tourism village planning and management.

A total of seven experts participated in this study, representing local government, academia, and tourism village practitioners. Within the AHP methodology, this number is considered sufficient, as the emphasis lies on the quality, expertise, and consistency of judgments rather than on large sample sizes. The validity of the assessments was evaluated using the Consistency Ratio (CR), with an acceptable threshold of less than 0.1, as recommended by Thomas L. Saaty (2008).

#### a. Respondent Composition

##### 1) Local Government Representatives (Tourism Office)

Two experts were drawn from the local government, specifically the Tourism Office. These individuals hold responsibilities related to program planning and tourism village development. Their involvement ensured that regional policy directions, budgeting mechanisms, and priority tourism programs in Jember Regency were adequately reflected in the assessment process.

##### 2) Academics

Two academics participated in the study, with scholarly backgrounds in tourism management, public administration, and development economics. Their role was to ensure

that the hierarchical structure and criteria weighting were grounded in solid conceptual and methodological foundations..

3) Practitioners / Tourism Village Managers (Pokdarwis)

Three active tourism village managers (Pokdarwis) were included to represent on-the-ground realities. They possess operational experience in managing attractions, amenities, community empowerment initiatives, and the development of village-based tourism products. Their insights provided practical depth to the evaluation process.

b. Qualifications and Experience

All participating experts had between three and ten years of professional experience in tourism or tourism village development. This requirement was established to ensure that the judgments provided were not speculative but rooted in practical engagement and policy understanding.

With a panel of seven experts representing policy, academic, and operational perspectives, the weighting process for internal and external factors reflects a balanced integration of theoretical insight and empirical knowledge. This composition strengthens the reliability of the resulting priority model and enhances its legitimacy as a policy recommendation tool for the Government of Jember Regency

### Struktur Hierarki AHP

The hierarchical structure in this study was developed using the Analytic Hierarchy Process (AHP) to determine development priorities among tourism villages in Jember Regency. The hierarchy was formulated through a synthesis of relevant literature, preliminary discussions, and analysis of data obtained from seven expert respondents representing the Department of Tourism, academia, and tourism village management groups (Pokdarwis).

In the context of expert judgment, a panel of seven participants is considered sufficient, as AHP places greater emphasis on the expertise and consistency of judgments rather than on large sample sizes. Individual assessments were aggregated using the geometric mean method before calculating eigenvectors and conducting consistency tests to ensure the reliability of the comparisons.



Source: Processed data (2025)

**Figure 2.** Visualization of the hierarchical structure

The hierarchy consists of three principal levels. The first level represents the overall goal, namely establishing development priorities for tourism villages in Jember Regency. The second level is divided into two main categories of criteria: internal and external factors.

Internal factors reflect the inherent capacity and readiness of each tourism village. These include tourism attractions, amenities, human resources, institutional capacity, and internal village infrastructure. In contrast, external factors represent the broader strategic environment influencing village development, such as accessibility, government policy support, funding or investment support, partnership networks, promotion and digitalization, and the carrying capacity of the external environment.

At the third level, each criterion is further specified into operational sub-criteria that were evaluated through pairwise comparisons by the expert respondents. For instance, attraction was assessed in terms of uniqueness and diversity of tourism products; human resources were evaluated based on competence, experience, and training; and accessibility was examined through road conditions, travel distance, and transportation availability. The final level of the hierarchy consists of the candidate tourism villages in Jember Regency, which were assessed using the combined weights of internal and external factors.

This hierarchical design ensures that priority setting is conducted in a structured, transparent, and logically consistent manner, in line with the principles of AHP introduced by Saaty

(2008). Consequently, the resulting decisions are grounded in a clear methodological foundation rather than subjective preference alone.

### Results of Weighting Criteria

The weighting process was conducted with seven expert respondents using the Analytic Hierarchy Process (AHP), with judgments aggregated through the geometric mean method. The consistency test produced a Consistency Ratio (CR) of less than 0.1, indicating that the comparison matrix is logically consistent and suitable for further analysis.

#### a. Internal Factor Weighting Results

**Table 1.** Pairwise comparison matrix (Geometric mean)

Criteria	I1	I2	I3	I4	I5
I1 Attraction	1.00	1.25	0.80	0.67	1.50
I2 Amenities	0.80	1.00	0.75	0.60	1.30
I3 Human Resources	1.25	1.33	1.00	0.85	1.80
I4 Institutional Capacity	1.50	1.67	1.18	1.00	2.00
I5 Environment	0.67	0.77	0.56	0.50	1.00

Source: Processed data (2025)

Note: The values reflect the relative importance between criteria based on Saaty's 1–9 scale. For example, the value 1.50 in cell (I4, I1) indicates that institutional capacity is considered more important than attraction.

**Table 2.** Eigenvector values (Normalized results)

Criteria	Eigenvector
Attraction	0.19
Amenities	0.17
Human Resources & Tourism Awareness Group	0.23
Institutional Capacity & Governance	0.28
Environmental Sustainability	0.13
Total	1.00

Source: Processed data (2025)

Note: The eigenvector values are derived from the average of each row in the normalized matrix. These figures represent the relative priority of each criterion within the decision-making system.

**Table 3.** Final weights of internal criteria

No	Criteria	Weight	Percentage	Rank
1	Institutional Capacity & Governance	0.28	28%	1
2	Human Resources & Tourism Awareness Group	0.23	23%	2
3	Attraction	0.19	19%	3
4	Amenities	0.17	17%	4
5	Environmental Sustainability	0.13	13%	5

Source: Processed data (2025)

The results indicate that institutional capacity and governance (28%) represent the most influential internal factor. This suggests that organizational readiness, legal legitimacy, managerial competence, and coordination mechanisms form the core foundation in determining tourism village priorities.

The second position is occupied by human resources and the tourism awareness group (23%), highlighting the strategic role of managerial professionalism and community competence in ensuring the success of community-based destinations.

Meanwhile, physical components such as attractions (19%) and amenities (17%) fall within the mid-level category. This finding implies that tourism potential alone is insufficient without strong institutional and human resource support.

Environmental sustainability (13%) remains important, but within the context of early-stage development prioritization, it is viewed as a reinforcing element once managerial readiness has been secured. This finding is consistent with the capacity-first perspective in community-based tourism, which emphasizes that sustainability outcomes are unlikely to be achieved without adequate institutional and managerial foundations (Giampiccoli, 2020). Furthermore, it aligns with the tourism area life cycle theory proposed (Butler, 1990), which suggests that environmental considerations tend to become more prominent as destinations evolve toward more advanced stages of development. Therefore, the relatively lower weight of environmental sustainability in this study reflects a sequential prioritization logic, where strengthening governance and managerial capacity serves as a prerequisite for the effective implementation of long-term sustainability principles.

b. External Factor Weighting Results

**Table 4.** Pairwise comparison matrix (Geometric mean)

Criteria	E1	E2	E3	E4	E5
E1 Accessibility	1.00	0.80	0.75	1.25	0.67
E2 Policy Support	1.25	1.00	0.90	1.40	0.80
E3 Budget Support	1.33	1.11	1.00	1.50	0.85
E4 Promotion	0.80	0.71	0.67	1.00	0.60
E5 Partnership	1.50	1.25	1.18	1.67	1.00

Source: Processed data (2025)

Note: The matrix shows that partnerships tend to be rated as more important than other external factors, as indicated by values greater than 1 in multiple comparisons.

**Table 5.** Eigenvector values

Criteria	Eigenvector
Accessibility	0.17
Policy Support	0.21
Budget Support	0.23
Market & Promotion Support	0.12
Partnership (Private/Investor)	0.27
Total	1.00

Source: Processed data (2025)

Note: The eigenvector values represent the relative priority of each external criterion within the decision framework.

**Table 6.** Final weights of external criteria

No	Criteria	Weight	Percentage	Rank
1	Partnership (Private/Investor)	0.27	27%	1
2	Budget Support	0.23	23%	2
3	Government Policy Support	0.21	21%	3
4	Accessibility	0.17	17%	4
5	Market & Promotion Support	0.12	12%	5

Source: Processed data (2025)

The most dominant external factor is Partnerships (27%), indicating that collaboration with private actors or investors serves as the primary driver in accelerating tourism village development. Budget Support (23%) and Government Policy (21%) follow in importance, confirming that fiscal allocation and regulatory intervention continue to play a substantial role in strengthening destination development. Meanwhile, Accessibility (17%) and Promotion (12%),

although relevant, are considered less effective when not accompanied by strong internal readiness and well-established partnership networks.

Based on the AHP weighting results involving seven expert respondents, it can be concluded that the priority structure for tourism village development in Jember Regency is shaped by the interplay between internal preparedness and external support. Within the internal dimension, Institutional Capacity and Governance receive the highest weight (28%), followed by Human Resources and Tourism Awareness Groups (Pokdarwis) at 23%. This pattern suggests that organizational capability, institutional legitimacy, managerial quality, and the competence of local human resources form the essential foundation for determining which villages deserve prioritization. While attractions and amenities remain important components, their effectiveness largely depends on the strength of governance structures and local management capacity.

From the external perspective, Partnerships with private entities or investors occupy the leading position (27%), followed by budgetary support (23%) and government policy support (21%). These findings highlight that accelerating tourism village development requires more than regulatory frameworks and financial assistance alone; it also depends on collaborative networks capable of expanding market access, mobilizing investment, and fostering managerial innovation. Overall, the synthesis of results demonstrates that the tourism village priority model in Jember Regency rests on two principal pillars: robust internal institutional capacity and the ability to build strategic external partnerships. Consequently, policy decisions must carefully balance these two dimensions in a complementary and integrated manner.

**Table 7.** Consistency test results

Parameter	Value
$\lambda$ max	5.18
CI	0.045
RI (n=5)	1.12
CR	0.040

Source: Processed data (2025)

Since  $CR = 0.040 < 0.10$ , the matrix is considered consistent, and the resulting weights are valid for use in calculating the Composite Priority Index (CPI).

### Results of the Tourism Village Priority Index Calculation

After determining the weights of internal and external criteria using the Analytic Hierarchy Process (AHP), the next step was to calculate the Composite Priority Index (CPI) for each candidate tourism village in Jember Regency. The CPI was obtained by multiplying the standardized score of each village indicator by its corresponding AHP weight and then summing the results to produce a final composite value.

Composite Priority Index (CPI) Formula

$$CPI_i = \sum (\text{Internal Weight} \times \text{Internal Score}_i) + \sum (\text{External Weight} \times \text{External Score}_i) \quad (1)$$

Where:

$CPI_i$  = Priority Index value of village

Weight = AHP-derived weight

Score = Field observation and assessment score (scale 1–5, normalized))

**Table 8.** Composite Priority Index (CPI) results

No	Tourism Village	Internal Score	External Score	Final CPI	Priority Category
1	Sidomulyo	3.85	3.60	3.73	High
2	Kemuning Lor	3.60	3.45	3.52	High
3	Sukorambi	3.20	3.10	3.15	Medium
4	Tamansari	2.95	2.85	2.90	Medium
5	Arjasa	2.60	2.70	2.65	Low

Source: Processed data (2025)

Based on the Composite Priority Index (CPI) results, tourism villages in Jember Regency are classified into three priority categories: high, medium, and low. It is important to clarify that the five villages presented in Table 8 (Sidomulyo, Kemuning Lor, Sukorambi, Tamansari, and Arjasa) do not represent the entire population of tourism villages in Jember Regency. Instead, they were purposively selected as representative cases based on specific considerations, including their level of development, data availability, and active involvement in local tourism programs. Therefore, these villages serve as empirical illustrations to demonstrate the application of the AHP–CPI model, rather than as a comprehensive listing of all tourism villages in the region.

The index results show that villages in the high-priority category ( $CPI \geq 3.50$ ) tend to exhibit stronger internal readiness, supported by relatively favorable external conditions. In contrast, villages in the lower-priority group still face fundamental constraints, particularly in governance and capacity-related aspects. These findings highlight that institutional strength and human resource quality are the key determinants of a village's priority ranking, which is consistent with the AHP weighting results where both factors received the highest importance within the internal dimension.

This pattern can be explained by the fact that institutional capacity and human resources reflect the actual ability of a village to manage and sustain tourism development, rather than merely its potential. Villages with active organizational structures, clear legal status, and strong leadership within their tourism awareness groups (Pokdarwis) are generally more capable of coordinating stakeholders, implementing structured programs, and maintaining continuity in development efforts. At the same time, competent human resources play a critical role in delivering quality services, developing tourism products, and adapting to changing market demands.

From an external perspective, partnerships with private actors or investors emerge as a key differentiating factor, as they provide access to markets, funding, and managerial innovation. However, such opportunities can only be effectively utilized when supported by strong internal governance and capable human resources. For this reason, tourism village development in Jember Regency should not rely solely on physical infrastructure or promotional activities. Greater emphasis needs to be placed on strengthening institutional capacity and enhancing human resource quality as the core foundation for sustainable, community-based tourism development.

### *Stakeholder Validation (FGD)*

The validation of the AHP weighting results and the Composite Priority Index (CPI) was conducted through a Focus Group Discussion (FGD) involving key stakeholders in tourism village development in Jember Regency. The purpose of the FGD was to assess the extent to which the quantitative findings reflect empirical conditions, gather strategic insights, and ensure that the resulting priority model possesses both practical relevance and policy legitimacy.

The discussion involved representatives from the Jember Regency Tourism Office, academics specializing in tourism management and public administration, and tourism village managers (Pokdarwis). This composition primarily reflects a triple helix configuration (government–academia–community/practitioners), which provides a strong foundation for participatory and evidence-based validation. These actors represent the core institutional, analytical, and operational perspectives necessary to evaluate the robustness of the model.

However, in line with the broader pentahelix framework, it is acknowledged that the current FGD has not yet fully incorporated two additional strategic actors, namely media and tourism industry stakeholders (such as private investors, travel agents, and digital promotion platforms). Their involvement is essential in capturing market dynamics, strengthening dissemination strategies, and enhancing external collaboration networks, particularly in the context of tourism destination development.

Despite this limitation, the validation process remains substantively robust, as the participating stakeholders possess direct experience and contextual knowledge relevant to tourism village governance and development. The discussion revealed a high level of agreement regarding the priority structure, especially the dominance of institutional capacity and strategic partnerships as key determinants.

Nevertheless, to strengthen the comprehensiveness and external validity of the model, future validation processes should adopt a fully integrated pentahelix approach by systematically involving media and tourism industry actors. Such inclusion is expected to enhance the model's applicability, particularly in relation to promotion, market access, and investment facilitation.

Overall, the FGD confirms that the developed priority model is methodologically sound and empirically relevant, while also highlighting the importance of expanding stakeholder engagement toward a more inclusive pentahelix-based validation framework.

## Discussions

### *Analysis of Dominant Factors*

The findings reveal that within the internal dimension, institutional capacity and governance receive the highest priority compared to attractions, amenities, and environmental aspects. This indicates that the organizational readiness of tourism village management plays a critical role in determining development priorities. From a theoretical perspective, this result is consistent with the community-based tourism (CBT) framework, which emphasizes that destination sustainability is highly dependent on the collective capacity of local communities to manage resources in an organized and participatory manner (Giampiccoli, 2020; Mtapuri et al., 2022; Ngo & Creutz, 2022; Thananusak & Suriyankietkaew, 2023; Zielinski et al., 2021).

Recent studies further highlight that effective governance characterized by transparency, accountability, and institutional clarity can significantly strengthen community participation and long-term planning capacity (Cid & Lerner, 2023; Haou et al., 2025; Hove et al., 2022; Khatri et al., 2025; Mamokhere & Meyer, 2023; Rasoolimanesh et al., 2021; Reindrawati, 2023; Yayla et al., 2023). In contrast, weak institutional arrangements often lead to fragmented participation and hinder the alignment of stakeholder interests within a coherent development strategy (Akhtar-Schuster et al., 2024; Ji et al., 2024; Rahman, 2021; Reindrawati, 2023; Shunglu et al., 2022). In this context, governance functions not only as an administrative structure but also as an integrative mechanism that enables the transformation of local resources into competitive and sustainable tourism products (Errichiello & Micera, 2021; Farsari, 2023; Valderrama & Polanco, 2024). Therefore, the findings reinforce the argument that natural and cultural attractions alone are insufficient without a strong governance system capable of coordinating and optimizing these assets (Errichiello & Micera, 2021; Mandić & Kennell, 2021; Wang et al., 2022).

Within the external dimension, strategic partnerships emerge as the most influential factor, surpassing policy support, budgeting, accessibility, and promotion. This suggests that tourism village development is inherently relational and highly dependent on the quality of interactions among actors within the tourism ecosystem. However, the collaborative structure identified in this study remains limited to a triple helix model involving government, academia, and industry practitioners. From a broader governance perspective, a pentahelix model incorporating media and the wider community offers a more comprehensive framework for addressing the complexity of tourism systems (Carayannis et al., 2012, 2022; Taratori et al., 2021).

In this expanded model, media plays a crucial role in shaping destination image and enhancing visibility, while the community contributes through social legitimacy, co-creation, and experiential feedback (Sigala, 2020). Strengthening collaboration toward a pentahelix framework can therefore improve the inclusiveness, adaptability, and responsiveness of tourism development strategies (Azwar et al., 2023; Boes et al., 2016; Budhi et al., 2022; Yasir et al., 2021). Furthermore, multi-stakeholder collaboration facilitates knowledge exchange, expands market access, and diversifies funding sources, thereby supporting long-term sustainability (Cehan et al., 2021; Dredge et al., 2019; Salman et al., 2024; Wondirad et al., 2020).

From a multi-criteria decision-making perspective, the prominence of partnerships also indicates that external factors act as catalysts in strengthening internal capacity. This aligns with recent studies emphasizing the integration of sustainability indicators and stakeholder collaboration in development prioritization models (Ayyildiz, 2022; Gunnarsdóttir et al., 2021; Huan et al., 2022; Saaty, 2008; Tremblay et al., 2021). Overall, these findings confirm that tourism village development should be understood as a dynamic and interconnected system shaped by continuous interactions among diverse actors, rather than as an isolated entity operating independently (Bramwell & Lane, 2011; Higgins-Desbiolles, 2020).

### *Comparison with Previous Studies*

When positioned within the existing body of literature, the findings of this study demonstrate both convergence and divergence with prior research. For instance, Ulkhaq et al. (2019) found that infrastructure and accessibility tend to receive relatively high weights in AHP-based destination evaluations. However, the present study does not identify accessibility as a dominant factor. This divergence suggests that, in the context of community-based tourism (CBT) villages, institutional capacity and governance structures play a more decisive role than purely physical attributes. This reinforces the notion that tourism development priorities are highly context-dependent and shaped by local governance arrangements, social organization, and institutional readiness (Nunkoo et al., 2022; Wondirad et al., 2020).

Similarly, (Giampiccoli, 2020) emphasizes the importance of community participation as a foundational principle in CBT development. However, such discussions are often conceptual and normative in nature, with limited translation into operational decision-making tools. The present study addresses this limitation by incorporating participatory principles into a structured and quantifiable AHP-based prioritization framework. This approach aligns with recent efforts to integrate sustainability and stakeholder engagement into decision-making models, particularly in achieving Sustainable Development Goals (SDGs) (Abreu et al., 2024; Ayyildiz, 2022; Huan et al., 2022). By doing so, the study advances beyond theoretical discourse toward a more applied and policy-oriented contribution.

Furthermore, (Krittayaruangroj et al., 2023) highlight that many tourism villages face stagnation due to weak internal coordination and limited institutional coherence. This observation is strongly supported by the present findings, which identify institutional governance as the most influential internal factor. Weak governance structures often result in fragmented stakeholder engagement and inefficiencies in resource management, ultimately hindering sustainable development (Akhtar-Schuster et al., 2024; Cid & Lerner, 2023). Conversely, strengthening institutional arrangements can significantly enhance coordination, strategic alignment, and long-term resilience (Farsari, 2023; Mandić & Kennell, 2021).

In addition, the importance of multi-stakeholder collaboration is increasingly recognized as a key driver of sustainable tourism development. The transition from a triple helix to a pentahelix framework incorporating government, academia, industry, community, and media has been shown to improve inclusiveness and innovation capacity in tourism systems (Azwar et al., 2023; Carayannis et al., 2022; Valderrama & Polanco, 2024). Such collaborative governance models facilitate knowledge exchange, strengthen institutional capacity, and enhance adaptive responses to complex development challenges (Cehan et al., 2021; Salman et al., 2024).

Overall, these comparisons indicate that the findings of this study do not contradict previous research but rather refine and extend it. Specifically, this study provides empirical evidence that institutional strength and strategic partnerships function as central pillars in determining tourism village development priorities. In this regard, tourism villages should be understood as dynamic governance systems, where sustainability outcomes are shaped by the interaction between internal institutional capacity and external collaborative networks (Mtapuri et al., 2022; Zielinski et al., 2021).

### *Theoretical Implications*

This study makes a substantive theoretical contribution by repositioning community-based tourism (CBT) from a predominantly normative framework toward a measurable analytical framework. Much of the existing CBT literature treats community participation as an inherently desirable principle, implicitly assuming that it will naturally lead to destination sustainability (Giampiccoli, 2020). However, this assumption is rarely tested through decision models capable of systematically quantifying institutional capacity. The findings of this research indicate that participation, when not supported by institutionalization, has limited predictive power in determining development priorities. In this respect, the study shifts the focus of the discourse from "participation as a value" to "institutional capacity as a structural determinant."

Furthermore, the integration of the Analytic Hierarchy Process (AHP) and the Composite Priority Index within the tourism village context broadens the application of multi-criteria decision making (MCDM), which has traditionally been used for destination evaluation or investment site

selection (Saaty, 2008; Ulkhaq et al., 2019). This research demonstrates that MCDM should not be viewed merely as a technical instrument, but also as a conceptual bridge connecting destination governance theory with local policy practice. By operationalizing internal and external dimensions simultaneously, the study illustrates that tourism village sustainability is relational in nature and cannot be adequately explained through a single-dimensional approach. This perspective extends the argument of Torres-Delgado and Saarinen (2014) on governance in sustainable tourism by providing a more precise quantitative framework.

Another theoretical contribution lies in identifying strategic partnership as the dominant external variable within the priority structure. While CBT and collaborative governance literature acknowledge the importance of multi-stakeholder networks (Jackson, 2025), relatively few studies position partnership as a decisive factor within an index-based decision model. The findings suggest that tourism village sustainability is not solely a matter of internal community capacity, but rather the outcome of asymmetric interactions between local actors and broader external structures. Accordingly, this study expands the conceptual boundaries of CBT by incorporating network governance as a measurable structural component, rather than treating it merely as contextual support.

Conceptually, the research also challenges the prevailing tendency in tourism studies to emphasize physical attractions and infrastructure as primary determinants of destination success. The analysis reveals that these factors carry relatively lower weights compared to institutional capacity and partnership strength. This opens space for reconstructing theoretical models of tourism village development from a resource-based perspective toward an institution- and network-based perspective. Within this framework, sustainability is no longer understood as the accumulation of physical assets, but as a function of governance quality and the intensity of inter-actor collaboration.

Overall, this study does more than introduce additional variables into the tourism village discourse. It offers a conceptual synthesis between CBT, destination governance, and MCDM within a single integrative analytical framework. This contribution creates opportunities for developing more comprehensive theoretical models of community-based tourism prioritization, while encouraging a shift from descriptive approaches toward evidence-based, prescriptive frameworks.

### *Practical and Policy Implications*

The findings of this study carry important policy implications, particularly for strategic decision-making at the local government level. The prominence of institutional capacity and partnerships indicates that tourism village development can no longer rely primarily on physical infrastructure projects or short-term promotional campaigns. Strategic decision-making literature emphasizes that public resource allocation should be guided by measurable and consistent priorities in order to reduce policy distortion and inefficiency (Saaty, 2008). In this regard, the AHP- and Composite Priority Index-based model developed in this study provides an evaluative framework that helps limit administrative subjectivity when determining priority villages.

More fundamentally, the identification of institutional capacity as the most influential internal factor suggests a necessary shift in development orientation from an attraction-centered approach to one grounded in institutional strength. Sustainable destination governance perspectives underline that the quality of local institutions is a prerequisite for long-term sustainability (Torres-Delgado & Saarinen, 2014). Consequently, policy interventions should first focus on strengthening organizational structures, clarifying roles and responsibilities, establishing internal accountability systems, and enhancing managerial competencies among tourism village administrators before allocating substantial budgets to infrastructure expansion or promotional activities.

Furthermore, the dominance of partnerships as the primary external factor confirms that tourism villages cannot thrive in structural isolation. While community-based tourism (CBT) places local communities at the center, empirical evidence demonstrates that sustainability depends heavily on the ability to build effective vertical and horizontal networks (Jackson, 2025). Within a regional policy framework, this implies that government should act as a facilitator and coordinator of collaborative ecosystems rather than merely a funding provider. Practical strategies may include

establishing multi-stakeholder partnership platforms, integrating tourism villages into regional value chains, and facilitating access to markets and financing mechanisms. Such measures align with the argument that cross-sector collaboration enhances a destination's adaptive capacity in responding to market shifts and external pressures (Torres-Delgado & Saarinen, 2014).

Another significant implication relates to public budget governance. The priority index model enables local governments to adopt a cluster-based resource allocation strategy. Villages demonstrating high readiness levels can be directed toward acceleration programs, while those with lower scores can be supported through foundational capacity-building initiatives. This differentiated approach is more rational than equal budget distribution, which often results in limited impact. Public policy literature suggests that institutional readiness-based differentiation is more likely to generate sustainable development outcome (Saaty, 2008).

Overall, the policy implications of this research call for a paradigm shift from "potential-based development" toward "capacity- and network-based development." Tourism villages should not be prioritized solely because of scenic landscapes or temporary popularity, but because they possess institutional foundations and partnership networks capable of sustaining long-term growth. Accordingly, the priority model proposed in this study should be understood not merely as a technical tool, but as a strategic instrument for strengthening regional tourism governance in a systematic and evidence-based manner.

## Conclusions

This study seeks to develop a priority model for tourism villages by integrating internal and external factors through the Analytic Hierarchy Process (AHP) combined with a Composite Priority Index. The findings indicate that within the internal dimension, institutional capacity and governance play the most decisive role in shaping development priorities. In contrast, within the external dimension, strategic partnerships emerge as the key variable. These results highlight that the sustainability of tourism villages is not driven solely by the attractiveness of their natural or cultural assets, but rather by the strength of community institutions and the collaborative networks that support them. In this regard, the study offers a more structured and measurable framework to guide policy decision-making at the regency level.

From a theoretical perspective, this research contributes to the community-based tourism (CBT) literature by translating the concepts of participation and community capacity into a measurable multi-criteria decision-making model. The integration of AHP and a composite index provides a methodological bridge between the normative ideals of CBT and evidence-based policy instruments. By identifying partnerships as the most influential external factor, the study also enriches the discourse on destination governance, demonstrating that tourism village sustainability results from the dynamic interaction between internal institutional strength and external structural support.

Managerially, the proposed priority model can function as a practical decision support system for local governments in determining tourism village priorities in a more objective, transparent, and accountable manner. The findings suggest the need for a policy shift from an attraction-centered development approach toward one focused on institutional strengthening and the cultivation of partnership ecosystems. Given limited fiscal resources, a differentiated strategy based on each village's level of readiness is more rational and potentially more impactful than an equal distribution of funding.

Despite its contributions, this study has several limitations that should be acknowledged. First, the number of expert respondents involved in the Analytic Hierarchy Process (AHP) is relatively limited, meaning that the weighting results are still highly dependent on the perspectives and experiences of the selected panel. In addition, the composition of the panel reflects a triple helix approach comprising government, academia, and practitioners and therefore does not fully capture the perspectives of other actors within the broader tourism ecosystem.

Second, this study adopts a cross-sectional design, which limits its ability to capture changes in the capacity of tourism villages over time. As a result, the dynamic nature of development processes cannot be fully observed. Third, the proposed model has not yet been tested in other regional contexts, and therefore its generalizability should be interpreted with caution.

In light of these limitations, future research is encouraged to expand both the number and diversity of respondents in order to improve the robustness of the weighting results. Moving toward a pentahelix approach would be particularly valuable, by incorporating the roles of media and the wider community. Media involvement is important for capturing dimensions related to promotion, communication, and destination image-building, while the participation of communities both as local stakeholders and as users (tourists) is essential for strengthening social validity and reinforcing the participatory principles of community-based tourism.

Furthermore, future studies may consider integrating AHP with other quantitative approaches, such as Structural Equation Modeling (SEM) or longitudinal analysis, to examine causal relationships among variables in a more rigorous way. Comparative studies across regencies or provinces are also recommended to enhance the external validity of the proposed priority model. Such integrative approaches are expected to produce a more comprehensive, inclusive, and context-sensitive framework for understanding how institutional capacity and partnership networks interact in shaping the sustainability of tourism villages.

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