

Stakeholder engagement and organisational interest in ecotourism development at brumas forest plantation

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Abstract

Purpose: This study examined stakeholder engagement and organisational interest in ecotourism development at Brumas Forest Plantation, Sabah. It explored local communities' perceptions, participation barriers, and the role of Sabah Softwoods Berhad (SSB) in promoting sustainable tourism initiatives.

Research Methodology: A mixed-methods approach was employed, integrating survey, interview, and focus group discussion (FGD). Data were collected from 250 local residents and nine SSB personnel. Quantitative data were analysed using SPSS, while qualitative data underwent thematic analysis using ATLAS.ti.

Results: 88.4% of the respondents recognised the ecotourism potential but only 19.2% actively participated. Main barriers included poor infrastructure (74.0%), limited promotion (69.6%), and insufficient government support (66.8%). Despite this, communities expressed interest if structured programmes, training, and economic incentives were provided. SSB supported ecotourism but emphasised the need for clear policies and collaborative frameworks.

Conclusion: Effective development requires coordinated stakeholder engagement, strategic planning, and community empowerment. Corporate efforts alone are insufficient without addressing local barriers and governance support.

Limitations: The study was limited to Brumas, reducing generalisability to other contexts.

Contributions: This research integrates community and corporate views to offer practical strategies for bridging the gap between ecotourism potential and participation. It contributes to literature on sustainable tourism, rural development, and CSR.

Keywords: *Brumas Forest Plantation, Community Participation, Ecotourism Development, Organisational Interest, Stakeholder Engagement*

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1. Introduction

The term “ecotourism” may be unfamiliar and often introduced and facilitated within local communities by international agencies, non-governmental organisations (NGOs), and governmental bodies in many developing nations with abundant ecotourism resources (Juric, Cornwell, & Mather, 2002; Luu, 2011). As a sustainable approach to tourism development, ecotourism primarily aims to preserve the

environment and cultural heritage while actively involving key stakeholders in its management, thereby providing benefits to local communities (Scott, Hall, & Stefan, 2012). Apart from environmental conservation, the ecotourism sector is intended to attract tourists to natural environments, thereby influencing both local communities and individuals in redefining the boundaries of tourism (Franco, Franco, & Maganhotto, 2021), prompting a re-evaluation of tourism boundaries among both local communities and individuals (Franco et al., 2021). Over the years, this concept has evolved to encompass various dimensions, including environmental conservation, economic growth, social cohesion, cultural preservation, human rights, and ethical considerations (Cobbinah 2015).

Although ecotourism development has positive contributions, it has long-term environmental impacts, such as biodiversity loss, habitat degradation, and pollution (Buckley, 2009; Habib et al., 2024). Therefore, recent studies have highlighted the importance of assessing the extent to which ecotourism has shaped local communities' perceptions of the concept and understanding of its impact. This understanding is crucial to ensure practical and sustainable implementation within local communities. The fundamental concept behind the development of ecotourism is to achieve an appropriate balance between economic and environmental factors, with the aim of preserving the environment and its ecological resources in a sustainable manner while simultaneously promoting social and economic development. Malaysia has prioritized the development of its tourism business to maximize financial gains, with a particular focus on ecotourism as the most crucial form of tourist attraction. Habib et al. (2024) emphasized the significant impact of the expansion of ecotourism in Malaysia on economic, social, and environmental sustainability through both direct and indirect means. However, the degree to which stakeholder engagement and organizational commitment contribute to this expansion remains unexplored. To promote ecotourism growth, it is crucial to possess efficient management skills, a comprehensive understanding of the natural environment and ecosystems, and the ability to promptly handle any imminent challenges (Habib et al., 2024).

In the field of sustainable tourism development, stakeholder engagement and organisational interest are key factors in determining the direction of ecotourism initiatives. Effective stakeholder engagement is associated with community empowerment, allowing local communities to participate actively in decision-making and benefit from ecotourism development (Aas, Ladkin, & Fletcher, 2005). Several studies have highlighted the importance of stakeholder collaboration in ensuring sustainable tourism practices that align with conservation goals and socioeconomic benefits (Bramwell & Lane, 2011; Dodds & Butler, 2019). However, challenges such as conflicting interests, power imbalances, and a lack of institutional frameworks often hinder effective stakeholder participation (Hardy & Beeton, 2001; Tosun, 2000). In the context of forest-based ecotourism, stakeholder engagement is critical because it involves balancing economic viability with conservation priorities. Studies have shown that successful ecotourism projects require clear governance structures, equitable benefit distribution, and ongoing stakeholder consultations (Timothy & Boyd, 2015). The lack of engagement from local communities often results in resistance to tourism initiatives, limiting the long-term sustainability of such projects (Blackstock 2005). Despite the broad scope of ecotourism, the role of stakeholder engagement and organizational interest in ensuring the sustainable development of ecotourism destinations has remained insufficiently addressed in existing studies. In summary, there is a critical need to further explore the delicate balance between conservation efforts, community participation, and economic benefits within ecotourism settings.

Hence, the importance of stakeholder involvement and organizational commitment to sustainable tourism cannot be emphasized enough, with growing global discussion on this topic. Stakeholders in ecotourism endeavours consist of a wide range of individuals, such as local communities, government agencies, NGOs, and private organisations. Each stakeholder has distinct viewpoints and interests in developing these ventures. Organizational interest in ecotourism reflects the commitment and ability of different entities, such as tourism agencies, conservation groups and hospitality facilities, to actively engage in ecotourism efforts. Stakeholder engagement fosters collaboration, inclusivity, and shared decision-making among various stakeholders (Waligo, Clarke, & Hawkins, 2013). The role of stakeholders in ecotourism spans different levels, including local communities, government agencies,

NGOs, and private sector entities, each contributing to planning, policymaking, and implementation (Sulistiowati, Adisa, & Caturiani, 2021).

One area of interest is the Brumas Forest Plantation, located on the southeastern coast of Sabah, Malaysia. The Brumas Forest Plantation is a 60,618-hectare site managed by Sabah Softwoods Berhad (SSB) and is known for its rich biodiversity and suitability for ecotourism. The Brumas Forest Plantation integrates economic activities with conservation efforts, including designated wildlife and riparian reserves, making it a potential site for sustainable tourism. In addition, SSB has allocated approximately 7,078 hectares (12.0% of the plantation area) as conservation zones to enhance biodiversity and ecosystem services. Given its unique positioning within a plantation forest setting, the Brumas Forest Plantation presents an opportunity to explore ecotourism in a non-traditional environment where economic and conservation priorities intersect.

Achieving sustainable ecotourism at the Brumas Forest Plantation requires active participation from various stakeholders, including local communities, government agencies, conservation groups, and private organizations. The success of ecotourism at Brumas Forest Plantation also depends on the ability to implement policies that ensure environmental protection while maximizing economic opportunities for local communities. Proper infrastructure development, such as eco-lodges, tourist facilities, and guided tours, must align with sustainable tourism practices to prevent the environmental degradation. Additionally, community-based ecotourism initiatives that empower local communities can enhance long-term sustainability by providing employment opportunities and fostering a sense of ownership over conservation efforts. Given its potential as an ecotourism hub, the Brumas Forest Plantation could serve as a model for other forest plantations seeking to transition to sustainable tourism while maintaining ecological integrity. Exploring the governance structures, investment strategies, and stakeholder dynamics at Brumas Forest Plantation can provide valuable insights into the feasibility and effectiveness of ecotourism development in similar contexts.

To address this, this study aimed to explore stakeholder engagement and organizational interest in the development of ecotourism at Brumas Forest Plantation. This study set the stage for an assessment of stakeholder engagement and SSB's organizational interest in Brumas Forest Plantation, Sabah, as an ecotourism destination. Located in the central region of Sabah, the Brumas Forest Plantation offers an ideal setting for ecotourism ventures, exhibiting abundant biodiversity and a cultural legacy within its pristine natural surroundings. Stakeholder engagement and organizational interest in ecotourism have been explored in numerous studies (Hunt and Stronza, 2014; Juric et al., 2002; Luu, 2011). However, only a few studies have explored how these dynamics function within forest plantations repurposed for ecotourism, particularly in Malaysia. Additionally, there is a lack of empirical studies on how organizations like SSB balance corporate social responsibility (CSR) with ecotourism development to benefit both the environment and local communities.

In this context, this study analyzed stakeholder dynamics and organizational priorities within the context of ecotourism development using a combination of qualitative and quantitative methods, namely surveys, interviews, and focus group discussions (FGD). By examining local communities' perceptions, corporate strategies, and governance frameworks, this study contributes to the broader discourse on sustainable tourism models that align economic, social, and environmental priorities. Moreover, this study explored the distinctive benefits and barriers within the ecotourism environment of Brumas Forest Plantation, offering practical and valuable knowledge to policymakers, business leaders, community stakeholders, and business leaders in fostering inclusive and responsible ecotourism initiatives. Furthermore, by analyzing how ecotourism can be integrated within a forest plantation setting, this study offers insights into balancing conservation, community development, and economic viability in ecotourism planning. Additionally, this study identified the challenges or barriers associated with policy implementation, land-use conflicts, and economic incentives that influence the trajectory of ecotourism in forest plantations in the region. This study offers a comprehensive framework for sustainable ecotourism practices that can be adapted to other forest-based tourism initiatives in Malaysia and beyond. Ultimately, this study provides pertinent insights to facilitate strategic decision-making,

promote cooperation among stakeholders, and support the long-term growth of ecotourism at the Brumas Forest Plantation, Sabah, and beyond.

2. Literature review

2.1 Stakeholder Engagement in Ecotourism

Stakeholder engagement plays a crucial role in ensuring the sustainability of ecotourism initiatives, as it facilitates collaboration among key actors, including local communities, government agencies, NGOs, and private enterprises (Waligo et al., 2013). Stakeholder engagement in decision-making fosters inclusive governance, enhancing local ownership and long-term sustainability (Jamal & Stronza, 2009). Studies have shown that ecotourism projects that incorporate community participation tend to be more successful in achieving both conservation and socioeconomic goals (Aas et al., 2005). Despite its benefits, stakeholder engagement is often hindered by power imbalances, conflicting priorities and inadequate policy frameworks (Hardy & Beeton, 2001; Tosun, 2000). In many cases, communities possess low levels of knowledge, skills, or financial resources to participate meaningfully in ecotourism planning (Bramwell and Lane, 2011). This calls for capacity-building programs and policy interventions that empower local communities and create equitable benefit-sharing mechanisms (Dodds & Butler, 2019). Recent studies have emphasized the need for collaborative governance structures that incorporate local knowledge and cultural heritage into ecotourism planning (Timothy & Boyd, 2015).

2.2 Organisational Interest and Corporate Social Responsibility in Ecotourism

Corporate involvement in ecotourism has gained momentum in recent years as organizations have integrated sustainability initiatives into their CSR strategies (Sowards & Banerjee, 2021). Many organisations view ecotourism as an opportunity to diversify revenue streams while contributing to biodiversity conservation and local economic development (Apriani, Kamsariaty, Sarinastiti, Yuliasuti, & Sukmayadi, 2023). In particular, when it comes to plantation-based ecotourism settings, organizations play a key role in land management, resource allocation, and infrastructure development (Brudvig, Damschen, Tewksbury, Haddad, & Levey, 2009). However, studies have indicated that many organizations struggle to balance profitability with sustainability, often prioritizing short-term economic returns over long-term conservation goals (Waligo et al., 2013). To ensure that corporate involvement aligns with ecotourism sustainability principles, robust regulatory frameworks, incentives for sustainable business practices, and stronger public-private partnerships are needed (Sulistiowati et al., 2021). Case studies in Malaysia suggest the need to integrate ecotourism into CSR models, which not only enhances corporate reputation but also contributes to community resilience and ecosystem protection (Habib et al., 2024).

2.3 Ecotourism in Forest Plantation Settings

The concept of ecotourism within forest plantations is relatively new, but it presents a promising area of research. Unlike traditional ecotourism destinations, forest plantations are primarily managed for timber production, raising questions regarding their suitability for tourism development (Franco et al., 2021). Studies suggest that integrating ecotourism into plantation landscapes can offer benefits such as economic diversification, conservation funding, and environmental education. A study conducted in Malaysia highlighted the potential of forest plantations with designated conservation zones to attract eco-conscious tourists, provided that tourism activities are carefully managed (Musa & Nadarajah, 2023). Key challenges include mitigating ecological impacts, securing government support, and ensuring local community buy-in (Timothy & Boyd, 2015). The Brumas Forest Plantation case provides an opportunity to examine how commercial forestry operations can coexist with ecotourism, offering insights into land-use management, stakeholder collaboration, and sustainable tourism governance.

Additionally, previous studies have indicated that forest plantations engaged in ecotourism can serve as important biodiversity corridors, enhancing habitat connectivity and species conservation (Brudvig et al., 2009; Navarro-Cerrillo et al., 2023). Ecotourism initiatives in such settings require strong policy frameworks to regulate tourism activities and minimise negative ecological footprints (Tehseen, Hossain, Ong, & Andrews, 2024). Sustainable ecotourism in forest plantations also demands investment in eco-friendly infrastructure, such as boardwalks, designated camping sites, and responsible waste

management systems to reduce environmental degradation (Lukoseviciute et al., 2024). Furthermore, successful ecotourism models emphasize the need for education and interpretation programs that raise awareness among tourists regarding conservation efforts and responsible tourism practices (Skanavis & Giannoulis, 2010). Finally, integrating community-based tourism models within forest plantations can ensure that local populations receive direct economic benefits, fostering long-term support for conservation and ecotourism initiatives (Giampiccoli & Glassom, 2020).

2.4 Development of Hypotheses

Based on a literature review, hypotheses on the relationships between stakeholder engagement, organizational interest, and ecotourism development within forest plantation settings were developed for testing. Prior studies have suggested that effective stakeholder engagement can enhance ecotourism success by fostering collaboration, improving governance structures, and ensuring community involvement (Sulistiowati et al., 2021). Therefore, the following hypothesis is proposed:

H1: Higher stakeholder engagement levels positively influence ecotourism development success.

Similarly, corporate involvement in ecotourism, particularly through CSR initiatives, is linked to increased conservation efforts and local economic benefits (Hunt & Stronza, 2014; Luu, 2011). This leads to the second hypothesis:

H2: Greater corporate commitment to ecotourism positively influences environmental conservation and socioeconomic development.

Additionally, ecotourism projects in forest plantations require policy alignment, resource management, and stakeholder collaboration to balance economic and ecological priorities (Franco et al., 2021; Habib et al., 2024). Given this, the study proposes the following:

H3: Effective governance and policy implementation mediate the relationship between stakeholder engagement and ecotourism success in forest plantations.

These hypotheses guided the study's empirical investigation, providing a framework to assess the interplay between stakeholder engagement, corporate participation, and ecotourism development at Brumas Forest Plantation.

3. Research methodology

3.1 Site and Participant Recruitment

This study focused on the Brumas Forest Plantation in Tawau, Sabah. SSB officers were approached to gather relevant data on the readiness and identification of organizational interest in forest plantation-based ecotourism based on managerial settings and available resources. Local communities were included in this study to explore their perceptions of ecotourism, awareness of its positive and negative impacts, willingness to work on ecotourism projects, preferred job roles, and openness to skill training related to ecotourism.

3.1.1 Sampling Method and Criteria

A stratified random sampling method was employed to select 250 respondents for the survey, ensuring representation from different demographic groups within the local communities of the Brumas Forest Plantation. Criteria such as age, gender, employment status, and level of involvement in ecotourism activities were considered to achieve a balanced sample. Meanwhile, a simple random sampling method was employed to select 30 individuals from those who participated in the survey for the interview session. Diversity in socioeconomic backgrounds and experiences related to ecotourism was considered. Each interview participant was required to be a resident of the sampling location, aged 18 years or above, and aware of ecotourism activities within the area. In addition, a purposive sampling method was employed to recruit nine key management personnel from SSB for the FGD session. The recruited participants held decision-making positions and were directly involved in ecotourism-related policies and operations.

3.2 Procedure

A mixed-methods approach, which integrated quantitative (survey method) and qualitative (interview and FGD methods) data, was employed. Overall, this study was conducted in three phases:

Phase 1: Survey of the local community

A face-to-face survey was conducted between 31 July 2023 and August 5, 2023. The instrument, which was adapted from Anggraini and Gunawan (2021); Asmamaw and Verma (2013); Clifton and Benson (2006), was validated through expert review and pilot test (which involved 30 respondents). The results of the pre-testing phase confirmed the internal consistency and reliability of the instrument, as measured using Cronbach's alpha (0.86). Accordingly, the survey covered several key areas, including demographic information such as gender, age, ethnicity, education level, employment status, and household income. The survey also examined the perceptions of the ecotourism potential of the Brumas Forest Plantation, community involvement and readiness for ecotourism, and awareness of the positive and negative impacts of ecotourism. The collected data were analyzed using IBM SPSS. A descriptive analysis, including frequency distribution, percentages, and measures of central tendency, was conducted to summarize and interpret the findings.

Phase2: Interview with local communities

Five interview sessions with the local communities of Brumas Forest Plantation, Umas-Umas Plantation, Sungai Udin, Kampung Iban, and Dumpas were conducted from 31 July 2023 to August 5, 2023. The semi-structured interview sessions were conducted according to an interview protocol, which incorporated open-ended questions on the local perceptions of ecotourism development, barriers and challenges to participation, perceived socio-economic and environmental benefits and drawbacks, and recommendations for sustainable ecotourism at Brumas Forest Plantation. All the interviews were recorded and transcribed. Thematic analysis was conducted using ATLAS.ti software, which facilitated the systematic identification of key themes and patterns in the data.

Phase 3: Focus group discussion (FGD) with SSB

Three FGD sessions were conducted in August 2023 with nine SSB management representatives. A structured FGD protocol was used to guide the sessions, focusing on the role and organizational interest of the SSB in ecotourism development, challenges in implementing ecotourism initiatives, CSR strategies linked to ecotourism, and proposed solutions for sustainable ecotourism management. Responses were subjected to thematic analysis using ATLAS.ti to ensure a comprehensive understanding of managerial perspectives and organizational interest in ecotourism.

3.3 Ethical Considerations

All respondents and participants provided informed consent before participating in the study. Confidentiality and anonymity were ensured as all data were coded and securely stored.

3.4 Data Analysis

The collected survey data were analyzed using IBM SPSS, focusing on descriptive statistics, such as frequency distribution and percentages, to summarize the perceptions of the local communities. The gathered interview and FGD data were processed using ATLAS.ti, and thematic analysis was employed. This process involved coding responses, identifying recurring themes, and categorizing findings to establish patterns related to stakeholder engagement and organizational interest. The integration of IBM SPSS for quantitative analysis and ATLAS.ti for qualitative analysis ensured a comprehensive and systematic approach to interpreting the findings of this study. This methodological framework incorporated triangulation, which involved collecting and cross-verifying data from multiple sources, namely surveys, interviews, and FGD methods. This further strengthens the reliability and validity of the study. The use of a clearly defined sampling procedure, validated instrument, and structured data analysis methods ensured a robust and credible research approach for this study.

4. Results and Discussion

4.1 Sociodemographic Characteristics of Respondents

Table 1 displays respondents' sociodemographic characteristics. As a reflection of the overall ethnic composition of the Brumas area, the majority of respondents came from the Bajau people, who accounted for 32.0% of the total population, followed by Sungai (18.0%), Tidung (8.0%), Bugis (18.0%), Dusun (10.0%), and other ethnic groups (14.0%). The diversity of ethnic representation underscores the multiethnic nature of local communities, which may influence cultural perspectives on ecotourism development and community participation. In terms of education level, most respondents reported having completed secondary school, indicating a moderate level of formal education that potentially facilitates awareness and involvement in ecotourism initiatives. However, the limited representation of higher education qualifications in this study suggests the need for additional training and skill development to maximize community participation in tourism-related activities. Regarding the respondents' economic profile, most households reported earning between RM 1,501 and RM 2,000 per month, placing them within the lower-middle-income bracket. This income level suggests that economic incentives linked to ecotourism, such as employment opportunities or small-scale entrepreneurial ventures, may serve as significant motivators for community engagement.

Table 1. Sociodemographic Characteristics of Respondents (N = 250)

Characteristics		Frequency (n)	Percentage (%)
Gender	Male	146	58.4
	Female	104	41.6
Age group (years)	18–25	58	23.2
	26–40	105	42.0
	41–60	87	34.8
	Above 60	30	12.0
Ethnic group	Sungai	45	18.0
	Tidung	20	8.0
	Bugis	45	18.0
	Dusun	25	10.0
	Bajau	80	32.0
	Others	35	14.0
Education level	No formal education	30	12.0
	Primary school	40	16.0
	Secondary school	168	67.2
	Diploma/Bachelor's degree	10	4.0
	Master's degree/PhD	2	0.8
Marital status	Single	60	25.0
	Married	168	67.2
	Single parent	42	16.8
Household income	Below RM 500	–	0
	RM 501–RM 1,000	–	0
	RM 1,001–RM 1,500	98	39.2
	RM 1,501–RM 2,000	111	44.4
	RM 2,001–RM 3,000	21	8.4
	Above RM 3,000	20	8.0
Household size	Fewer than five people	124	49.6
	5–10 people	120	48.0
	More than 10 people	6	2.4

The demographic composition of the respondents in this study has important implications for ecotourism planning and policymaking. Understanding ethnic distribution, education levels, and income structures can help tailor strategies to promote inclusivity and equitable benefits from ecotourism development. The findings emphasize the need for culturally sensitive community outreach

programs and capacity-building initiatives to enhance local communities' readiness to participate in sustainable tourism projects.

4.2 Local Communities' Perceived Potential of Ecotourism

The survey results (Table 2) revealed that 88.4% of the respondents agreed that the Brumas Forest Plantation had the potential to attract tourists. However, only 19.2% of the respondents had engaged in ecotourism activities. These results indicate a disconnect between recognition and participation, which aligns with a prior study that highlighted community engagement barriers in ecotourism (Clifton & Benson, 2006). The lack of active involvement suggests that while local communities recognized Brumas' tourism potential, structural and socioeconomic constraints may have limited their ability to participate effectively.

Table 2. Involvement of Local Communities in Activities Related to Ecotourism and Attractiveness of Brumas Forest Plantation (N = 250)

	Yes	No
Involvement of local communities in activities related to ecotourism	48 (19.2%)	202 (80.8%)
Attractiveness of Brumas Forest Plantation that draws tourists	221 (88.4%)	29 (11.6%)

The results in Table 3 show the frequency of local communities visiting the Brumas Forest Plantation throughout the year. Most respondents reported visiting the area six to 12 times a year (70.0%), followed by those who visited more than 12 times a year (20.0%) and one to five times a year (10.0%). These results suggest the frequent use of the forest plantation area by a sizable population, indicating a strong affinity or dependence on this natural space. In addition, these results underscore the importance of the Brumas Forest Plantation as a valued resource for local communities, with the majority of residents engaging with the area regularly and a notable portion doing so very frequently.

Table 3. Frequency of Visiting Brumas Forest Plantation (N = 250)

Visiting frequency	Frequency	Percentage (%)
Rarely (1–5 time per year)	25	10.0
Sometimes (6–12 times per year)	175	70.0
Often (more than 12 times per year)	50	20.0

The frequent engagement by the local communities (70.0% of them reporting visiting the area six to 12 times a year) suggests their strong attachment to the natural environment, reinforcing the role of Brumas Forest Plantation as an important community resource for recreation and livelihood activities. The high level of visitation also indicates the latent potential for ecotourism engagement, as local communities are already interacting with the landscape, albeit informally. Converting this engagement into structured ecotourism participation requires targeted interventions, such as skill development programs, employment opportunities, and awareness campaigns, to enhance community-driven tourism initiatives.

Table 4 presents the results of the local communities' perceptions and ratings of the existing ecotourism attractions at Brumas Forest Plantation. The survey listed 12 natural attractions in the area for the rating. Virgin forests, forest plantations, wild animals, and birds were unanimously rated as the most attractive (100%). Table 5 presents the ratings for cultural and historical attractions. Among the six potential attractions listed (i.e., dressing style, local handicrafts, religious sites, museum collections, folklore, and lifestyle), almost all respondents rated these attractions as less attractive. In other words, within the context of the assessed demographics, these aspects were deemed not important variables influencing tourists' interests. It is possible that the respondents did not find these attractions to be in line with their interests or preferences or that they believed other features of the Brumas Forest Plantation would be more desirable for ecotourism activities. Additionally, while evaluating possible ecotourism

destinations, respondents may attribute more weight to outdoor activities or environmental attractions than to cultural or historical aspects.

Table 4. Natural Attraction Potentials at Brumas Forest Plantation

Natural Attractions	Most Attractive	Moderately Attractive	Less Attractive
Virgin forest	250 (100%)	0	0
Forest plantation	250 (100%)	0	0
Rivers	32 (12.8%)	120 (48%)	148 (59.2%)
Swamp area	0	0	250 (100%)
Wild animals	250 (100%)	0	0
Birds	250 (100%)	0	0
Endemic species	62 (24.8%)	120 (48.0%)	70 (28.0%)
Unique landscape	162 (64.8%)	80 (32.0%)	8 (3.2%)
Weather condition	175 (70.0%)	60 (24.0%)	15 (6.0%)
Mountain	0	0	250 (100%)
Hot spring	0	0	250 (100%)
Geological	0	0	250 (100%)

Table 5. Cultural and Historical Attraction Potentials

Cultural and Historical Attractions	Most Attractive	Moderately Attractive	Less Attractive
Dressing style	0	0	250 (100%)
Local handicrafts	0	50 (20.0%)	200 (100%)
Religious sites	0	0	250 (100%)
Museum's collections	0	0	250 (100%)
Folklore	0	60 (24.0%)	190 (76.0%)
Lifestyle	0	0	250 (100%)

The survey results (Table 6) also revealed the major barriers to ecotourism development at Brumas Forest Plantation. About 74.0% of the respondents cited a lack of infrastructure, followed by a lack of promotion (69.6%) and insufficient government attention (66.8%). These results indicate the inadequacy of organizational and physical support systems to promote ecotourism development at Brumas Forest Plantation. Furthermore, the lack of structured tourism management, cultural integration, and ethnic representation were highlighted as barriers. Respondents noted that insufficient marketing of Brumas's cultural and natural assets has contributed to low awareness among potential tourists,

thereby reducing the visitation rate and investment interest in the area. Despite these challenges, 96.0% of the respondents disagreed that a lack of awareness within the local communities was a barrier. This suggests that local communities perceive themselves as fairly knowledgeable about ecotourism opportunities at the Brumas Forest Plantation. However, this study observed uncertainties regarding whether the lack of cooperation between service providers and the regional tourism office constitutes a further limitation to ecotourism development.

Table 6. Barriers to Ecotourism Development at Brumas Forest Plantation

Factors	Disagree	Not Sure	Agree
Lack of infrastructure	15 (6.0%)	50 (20.0%)	185 (74.0%)
Lack of promotion sites and cultural and ethnic mix	16 (6.4%)	60 (24.0%)	174 (69.6%)
Lack of promotion	23 (9.2%)	60 (24.0%)	167 (66.8%)
Lack of attention from the local government	9 (3.6%)	30 (12.0%)	211 (84.4%)
Lack of awareness from the local communities	240 (96.0%)	10 (4.0%)	0 (0%)
Lack of cooperation between the service provider and the regional tourism office	7 (2.8%)	150 (60.0%)	93 (37.2%)

4.3 Local Communities' Attitudes and Support towards Ecotourism Development

The thematic analysis of the interview data (Table 7) revealed five themes: (1) positive perceptions of ecotourism; (2) anticipated economic benefits of ecotourism; (3) efforts to promote tourism; (4) challenges in tourism operations; and (5) existing tourism attractions. Participants acknowledged that the Brumas Forest Plantation is well-known among local communities and expressed a willingness to cooperate with tourists. However, challenges such as limited tourism activities, lack of tour licensing, and poor infrastructure remain unaddressed. Abuamoud, Libbin, Green, and ALRousan (2014) reported similar findings, which emphasised that regulatory hurdles often hinder community-driven ecotourism initiatives. A significant insight from the qualitative data was the desire for environmental education and sustainable tourism training programmes. Several participants advocated for structured learning experiences for youth, aligning with studies that have highlighted environmental education as a key driver of ecotourism success (Habib et al., 2024).

Table 7: Local Communities' Attitudes and Support

No.	Key Themes	Subthemes
1	Positive perceptions of ecotourism	<ul style="list-style-type: none"> Brumas Forest Plantation is widely known among the local communities. Support the development of ecotourism Provide full cooperation to tourists Exhibit a peaceful community atmosphere
2	Anticipated economic benefits of ecotourism	<ul style="list-style-type: none"> Infrastructure development through the cooperation of various institutions Improve the local economy Planned mangrove swamp conservation
3	Efforts to promote tourism	<ul style="list-style-type: none"> Active use of social media Cooperation of various parties in developing tourism activities Routes for logging activities and tourism should be different for tourists. Education about natural treasures to the younger generation Public tours of flora and fauna treasures

No.	Key Themes	Subthemes
4	Challenges in tourism operations	<ul style="list-style-type: none"> ▪ Lack of tourism activities ▪ No integrated tourism management system ▪ No license to operate a boat ▪ Inadequate airports ▪ No systematic supervision of elephants ▪ Application for a permit to manage a tourist attraction ▪ No signs to inform tourist activities ▪ No safety management for water-related activities ▪ Public safety against roaming elephants ▪ Lack of infrastructure and major transportation
5	Existing tourism activities	<ul style="list-style-type: none"> ▪ Unique marine life ▪ Area for mountain climbing ▪ The beauty of the island ▪ Elephant population ▪ Beautiful farm area and waterfall ▪ Golf course ▪ Unique wood products ▪ A variety of unique flora ▪ Kayaking and rickshaw activities ▪ Night activity involving watching fireflies ▪ Fishing and kayaking competitions

4.4 Perspectives of SSB on Ecotourism Development

The FGD sessions with SSB revealed four critical themes (Table 8): (1) perspectives on ecotourism in Malaysia, (2) challenges in ecotourism management, (3) strategies for ecotourism development, and (4) recommendations to improve ecotourism operations. FGD participants acknowledged SSB's commitment to using ecotourism to promote conservation and generate revenue. However, participants highlighted the lack of specific ecotourism guidelines, insufficient funding, and the need for stronger partnerships with government and private stakeholders. This aligns with previous studies that emphasized the importance of corporate involvement in sustainable tourism frameworks (Hunt & Stronza, 2014). Participants proposed several key recommendations, including the need for a comprehensive ecotourism management plan, incorporation of structured tourist experiences, conservation education, and sustainable infrastructure investment. These recommendations reinforce prior findings on the significance of public-private collaborations in achieving long-term ecotourism sustainability (Anggraini & Gunawan, 2021).

Table 8. Perspectives of SSB on Issues and Challenges of Developing Brumas as an Ecotourism Destination

No.	Themes	Subthemes
1	Perspectives on ecotourism in Malaysia	<ul style="list-style-type: none"> ▪ Utilising nature as capital to generate revenues ▪ Tourism is related to conserving the environmental ecosystem. ▪ Ecotourism as public relations to introduce SSB and Brumas Forest Plantation
2	Challenges in ecotourism management	<ul style="list-style-type: none"> ▪ Preparation of guidelines and practices in limited ecotourism management (readiness) ▪ Lack of understanding of the concept of ecotourism compared to environmental tourism
3	Strategies for ecotourism development	<ul style="list-style-type: none"> ▪ Physical and psychological availability ▪ Availability in terms of infrastructure ▪ Availability in terms of management staff

4	Recommendations to improve ecotourism operations	<ul style="list-style-type: none"> ▪ The need for a guide and practice in effective ecotourism management ▪ Interpretation of comprehensive ecotourism education by tourism staff ▪ Conduct extensive ecotourism promotion ▪ Provision of ecotourism allocations by the government or related authorities ▪ Acquire support from the government for ecotourism operations ▪ Collaboration with various related parties for the development of ecotourism
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5. Conclusion

5.1 Conclusion

This study examined stakeholder engagement and organizational interest in ecotourism development at Brumas Forest Plantation, with an emphasis on local communities' perceptions, participation barriers, and SSB's role in ecotourism initiatives. The results revealed low actual participation among the local communities despite their acknowledgement of the potential of ecotourism, which was attributed to existing infrastructural limitations, inadequate promotion, and insufficient governmental support. However, the participating residents demonstrated a strong willingness to engage in structured ecotourism initiatives that could generate employment and strengthen conservation efforts. From an organizational perspective, SSB recognized the potential of ecotourism but encountered barriers related to regulatory guidelines, resource allocation, and interagency collaboration. To successfully integrate ecotourism into SSB's sustainability agenda, a well-defined policy framework and enhanced coordination among stakeholders are essential.

5.2 Limitations

Despite the contributions of this study, there are several limitations to be acknowledged. First, this study exclusively focused on the Brumas Forest Plantation, limiting the generalizability of the findings to other ecotourism destinations with different ecological, economic, and sociocultural conditions. Second, while the study employed a mixed-methods approach, the qualitative data were derived from a relatively small sample size, which may not fully capture the diversity of stakeholder perspectives. Third, this study primarily assessed stakeholder engagement and organizational interest but did not extensively analyze the economic feasibility or long-term environmental impact of ecotourism initiatives at Brumas Forest Plantation. Future studies should expand on these aspects to provide a more comprehensive evaluation.

5.3 Recommendations

Based on the findings and limitations of this study, several recommendations are proposed. First, investment in infrastructure, such as access roads, eco-lodges, and tourist centers, is essential to improve tourism accessibility and enhance tourist experiences. Second, a well-structured promotional strategy should be developed to raise awareness of the Brumas Forest Plantation as an ecotourism destination, including targeted marketing efforts and collaborations with tourism agencies. Third, policy interventions should focus on improving governance mechanisms and fostering multistakeholder partnerships to ensure a more inclusive and sustainable ecotourism framework. Additionally, community-based ecotourism initiatives should be encouraged to empower local communities, such as providing training programs and financial support to increase their participation in tourism-related activities. Future research should explore long-term sustainability models and assess the economic viability of ecotourism in plantation settings.

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