

Developing an Ethno-Ecotourism Model for Tanjung Piai National Park: Enhancing Community Economy and Biodiversity Conservation

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Abstract

This study proposes a sustainable ethno-ecotourism model designed specifically for Tanjung Piai National Park, Johor, Malaysia, aiming to simultaneously enhance local community economies and conserve biodiversity. Employing a quantitative research approach, structured questionnaires were administered to local community members and tourists to systematically gather insights into perceptions regarding cultural involvement, economic benefits, and biodiversity conservation practices. Results demonstrate that integrating cultural heritage activities, such as traditional Bugis experiences, culinary demonstrations, and local games, with ecologically responsible tourism significantly increases community income opportunities and contributes positively to biodiversity conservation. Thus, the findings indicate strong community support and visitor satisfaction, highlighting the potential of Tanjung Piai to serve as a benchmark for implementing sustainable ethno-ecotourism strategies.

Keywords: Ethno-Ecotourism, Tanjung Piai, Economy, Biodiversity

Introduction

Tanjung Piai National Park, strategically located at the southernmost tip of Peninsular Malaysia, is renowned for its diverse ecosystems and vibrant cultural heritage, predominantly characterized by the Bugis community traditions (Ahmad et al., 2020). As a unique ecological and cultural destination, Tanjung Piai offers significant potential for tourism development, particularly through sustainable approaches like ethno-ecotourism (Honey, 1999; Iban et al., 2019). However, despite its rich biodiversity, including critical mangrove ecosystems, and distinct cultural heritage, the park faces ongoing challenges, primarily stemming from

unmanaged tourism activities and insufficient direct economic benefits to the local communities.

Uncontrolled tourism activities have led to considerable environmental impacts, such as mangrove deforestation (over 30% loss in some areas, DOE, 2018), soil erosion, and coastal pollution, thereby threatening the ecological stability and sustainability of the region (Goeldner and Ritchie, 2011). The number of tourists to Tanjung Piai increased by over 40% between 2010 and 2019 (Tourism Malaysia, 2020), putting additional strain on fragile ecosystems. Additionally, local communities, including the indigenous Bugis population, have seen limited economic gains from tourism development, with profits often accruing to external operators rather than local residents. A study by Goh (2008) found that less than 20% of tourism-related jobs in the area were held by locals, highlighting economic leakage and the marginalization of community members. This imbalance poses risks to the preservation of cultural heritage and can potentially lead to the erosion of local customs, traditions, and identity.

To address these challenges, this research aims to develop and implement an ethno-ecotourism model specifically tailored to Tanjung Piai National Park. The proposed model integrates ecological conservation efforts with the promotion of local cultural heritage, ensuring that both biodiversity preservation and community economic empowerment are achieved simultaneously (Iban et al., 2019; Goh, 2008). By actively involving local residents in tourism activities and ensuring responsible management of natural resources, this model aims to create sustainable economic opportunities, strengthen cultural identity, and enhance visitor experiences through authentic cultural interactions and biodiversity appreciation. Thus, this study addresses the existing gap in ethno-ecotourism research, particularly regarding how effectively cultural elements can be integrated with ecological preservation to maximize sustainability and economic benefits for local communities (Honey, 1999). Furthermore, the research outcomes have practical implications, providing a viable reference framework for policymakers, park managers, and tourism stakeholders aiming to replicate similar sustainable tourism strategies in other regions facing analogous challenges (Wan et al., 2015).

Literature Review

Ecotourism is broadly recognized as responsible tourism to natural areas, which conserves the environment, sustains the well-being of local people, and involves interpretation and education (Honey, 1999). It has evolved globally as an essential strategy for managing protected areas, contributing to environmental preservation, and supporting community economies (Goeldner and Ritchie, 2011). Since its formal recognition during the 1980s, ecotourism has become a significant alternative to traditional mass tourism by offering sustainable economic opportunities and promoting environmental consciousness (Honey, 1999; Iban et al., 2019).

Ethno-ecotourism further enriches this concept by embedding local cultural heritage within the ecotourism framework. Iban et al. (2019) defines ethno-ecotourism as tourism practices that connect natural environments with the cultural aspects of local communities, promoting an integrated tourism experience that benefits both conservation and cultural preservation. Similarly, Vidal (2012) describes ethno-ecotourism as an inclusive approach that integrates

physical, biological, and cultural diversity, providing tourists with an enriched cultural experience while safeguarding local traditions and ecosystems.

Several studies highlight the mutual benefits derived from ethno-ecotourism, particularly its role in enhancing local community empowerment through economic opportunities, cultural pride, and social cohesion (Goh, 2008). Community involvement is emphasized as a fundamental aspect that facilitates the sustainability of tourism practices, ensuring that local communities have a vested interest in the conservation of their natural and cultural heritage (Honey, 1999; Goh, 2008).

Malaysia, known for its abundant natural resources and rich cultural heritage, has embraced ecotourism since the introduction of the National Ecotourism Plan in 1996. This plan underscores the importance of balancing tourism development with environmental and cultural conservation. Nevertheless, despite its recognition, practical implementation of culturally integrated ecotourism practices, particularly in protected areas such as national parks, remains relatively limited. There is a critical need for effective tourism management frameworks that equally prioritize ecological integrity, cultural preservation, and local community welfare (Wan et al., 2015).

Research Gap

Despite the growing global recognition of ecotourism and ethno-ecotourism's potential benefits, there remains a significant research gap regarding their practical implementation, especially within the specific context of Tanjung Piai National Park. Previous studies have often focused broadly on either ecological or economic impacts of tourism, neglecting an integrated approach that simultaneously addresses both biodiversity conservation and cultural heritage preservation through tourism. Moreover, the role of community engagement and participation within the specific setting of Tanjung Piai has not been comprehensively studied. This research aims to address these gaps by developing a detailed ethno-ecotourism model that explicitly integrates cultural elements with ecological sustainability, promoting direct economic benefits and conservation awareness within local communities. The study seeks to provide insights into the successful integration of cultural heritage and biodiversity conservation, potentially serving as a reference for similar tourism strategies regionally and internationally.

The rest of the article is organized as follows: section 2 reviews past studies, section 3 provides the research methodology. The empirical results are reported in section 4 and finally, section 5 concludes the article.

Methodology

This study employs a comprehensive quantitative research approach focused on developing an ethno-ecotourism model specifically tailored for Tanjung Piai National Park. The research methodology is structured into clearly defined phases to systematically guide the model's creation based on theoretical and empirical insights.

Phase 1: Literature Review and Conceptual Foundation

An extensive literature review was conducted to establish a theoretical foundation for developing the ethno-ecotourism model. Key elements reviewed included global and regional

practices in ecotourism, cultural integration methods within ecotourism, strategies for biodiversity conservation, and approaches for enhancing community participation and economic sustainability. The review provided insights into effective strategies, ensuring the developed model aligns with internationally recognized sustainable tourism principles.

Phase 2: Primary Data Collection

Primary quantitative data collection was conducted through a validated structured questionnaire (Validated Questionnaire, 2024). This questionnaire was designed to comprehensively capture:

- (a) Demographic Profiles: Age, gender, occupation, education, and income level of respondents.
- (b) Cultural Involvement: Perceptions regarding community engagement in cultural activities such as traditional Bugis house visits, culinary workshops, and traditional games.
- (c) Economic Impact: Perceptions related to potential economic opportunities and benefits derived from engaging in culturally based tourism activities.
- (d) Biodiversity Conservation Perceptions: Attitudes and opinions about ecological sustainability and conservation practices.

The targeted respondents included local residents from strategically selected villages—Kampung Tanjung Piai, Kampung Serkat, Kampung Perpat Timbul, Kampung Sungai Kual, and Kampung Chokoh—chosen based on their proximity and direct involvement in tourism. Tourists visiting the park were also surveyed to gain insights into visitor expectations and perceptions.

Phase 3: Model Development and Framework Formulation

Based on insights gathered from the literature review and the data collected from local communities and tourists, a comprehensive ethno-ecotourism model was developed. The proposed framework integrates two core interconnected elements of cultural heritage and biodiversity conservation and emphasizes the crucial roles played by local communities, tourists, and park management:

- (a) Cultural Heritage: Promoting and preserving local traditions, particularly Bugis culture, through structured tourism activities. Proposed standalone activities include guided visits to traditional Bugis houses, interactive culinary workshops, cultural demonstrations, and traditional games such as Jong and Gasing Pangkah.
- (b) Biodiversity Conservation: Implementing eco-friendly tourism practices to safeguard the park's ecological integrity, especially its vital mangrove ecosystems. Activities proposed under this component are explicitly designed to minimize environmental impacts while enhancing visitor education and awareness.

Stakeholder roles within this model were explicitly outlined to ensure sustainable tourism management:

- (a) Local communities actively engage in managing standalone cultural activities, generating direct economic benefits and community empowerment via cooperative business models, thus ensuring the long-term viability and local ownership of tourism activities.
- (b) Tourists are provided enriched cultural and ecological experiences, significantly enhancing their satisfaction levels and promoting longer visitation periods and increased likelihood of repeat visits, contributing directly to the local economy.

- (c) Park management functions primarily as facilitators, supplying essential infrastructure, promotional support, and oversight to maintain sustainable tourism practices. Their role ensures activities align with the core goals of ecological preservation while supporting cultural promotion and economic empowerment of the community.

Overall, the structured, stakeholder-inclusive approach of the proposed model supports balanced, sustainable ethno-ecotourism development, offering tangible benefits to local communities, enriching tourist experiences, and safeguarding biodiversity in Tanjung Piai National Park.

Phase 4: Strategic Implementation Planning

The model included a detailed strategic plan outlining how standalone cultural and ecological activities could be operationalized effectively. Implementation strategies comprised setting up dedicated activity booths within the park, managed by local communities with logistical support from park management. The booths would offer various interactive activities, enhancing visitor experience and providing direct economic opportunities for communities. Promotional strategies were also proposed, emphasizing digital marketing, collaboration with tourism agencies, and the strategic use of in-park information centers to maximize visitor participation without disrupting the core ecological functions of the park.

This comprehensive methodological approach ensures the development of a robust, actionable ethno-ecotourism model for Tanjung Piai National Park, significantly benefiting local communities economically while safeguarding cultural heritage and biodiversity.

Results and Discussions

The ethno-ecotourism model developed for Tanjung Piai National Park integrates two core interconnected components: cultural heritage preservation and biodiversity conservation, supported through strategic roles played by local communities, tourists, and park management.

The model in Figure 1 emphasizes the importance of balancing cultural heritage promotion with ecological sustainability. Central to this framework is active community participation, creating economically sustainable opportunities while maintaining biodiversity integrity. The framework explicitly highlights:

- (i) **Cultural Heritage Component:** Preservation and active promotion of local Bugis heritage through structured tourism activities, including visits to traditional Bugis houses, culinary demonstrations, and traditional games such as Jong Tanjung Piai and Gasing Pangkah. These activities provide enriched cultural experiences to tourists, promoting greater cultural awareness and appreciation.
- (ii) **Biodiversity Conservation Component:** This component involves implementing tourism practices that prioritize ecological sustainability, particularly focusing on protecting the mangrove ecosystems crucial for biodiversity in Tanjung Piai. Activities under this component are designed to minimize environmental impact, enhance visitor education on ecological conservation, and foster responsible tourism behaviors.

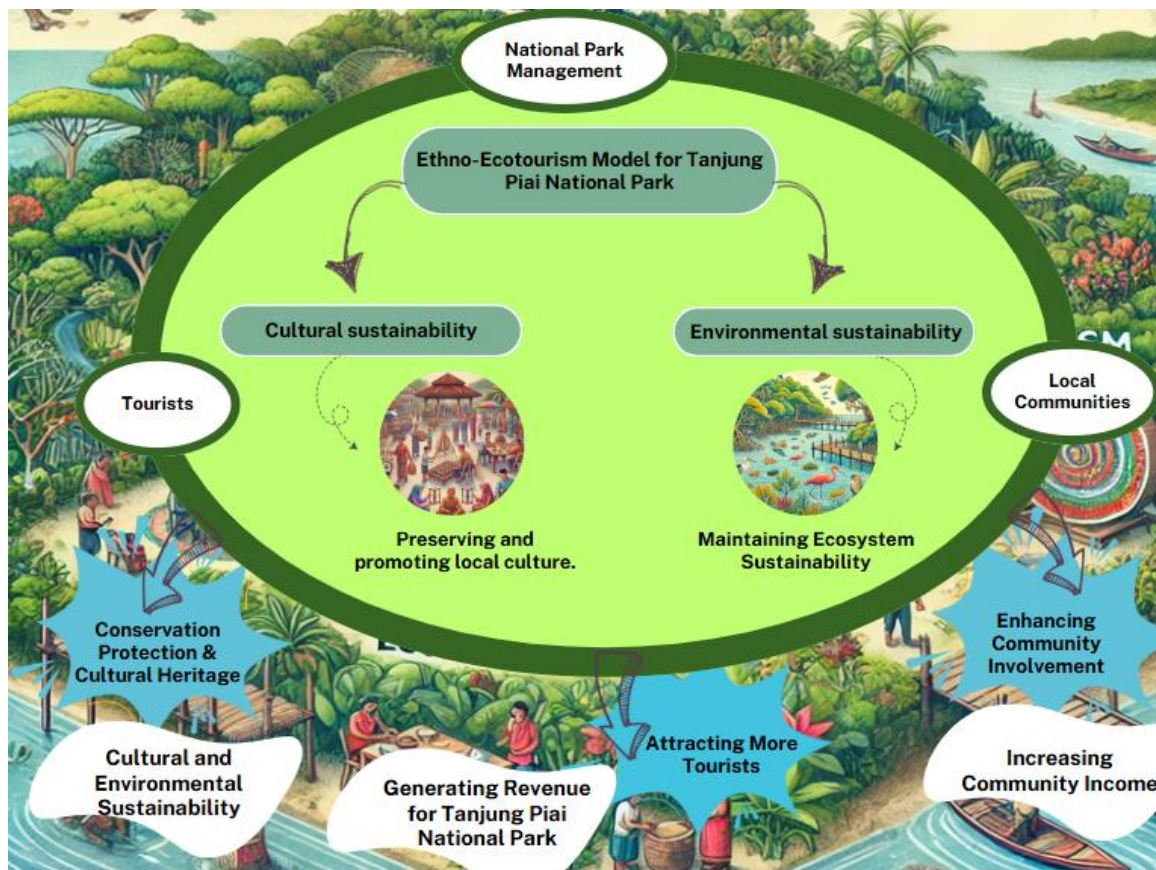


Figure 1: Ethno-Ecotourism model for Tanjung Piai National Park

Source: Author's own illustration

The effectiveness of the ethno-ecotourism model relies significantly on clear role definitions and coordinated efforts from all involved stakeholders:

- (i) **Local Communities:** Local residents play an active role in managing standalone cultural activities, which provide direct economic benefits and opportunities for community empowerment through cooperative models. These activities include cultural showcases, traditional crafts, cooking demonstrations, and cultural game workshops, all organized by local community cooperatives.
- (ii) **Tourists:** Visitors are crucial contributors to the economic vitality of the ethno-ecotourism model. By participating in standalone cultural and ecological activities, tourists gain enriched experiences that foster deeper connections with the local environment and culture, increasing their satisfaction, duration of visits, and likelihood of repeat visitation.
- (iii) **Park Management:** Park management serves as facilitators, providing necessary infrastructure, promotional support, and oversight to ensure activities adhere to sustainable practices. Their role includes managing visitor flow, ensuring minimal environmental impact, and facilitating partnerships between community groups and tourism stakeholders.

Suggested Standalone Activities and Implementation Strategies

To operationalize the model, the study recommends several standalone activities designed to enhance cultural interactions while maintaining ecological integrity:

- (a) **Cultural Heritage Activities:** These activities include guided visits to traditional Bugis houses to educate tourists on local architecture and history, workshops demonstrating

traditional Bugis clothing and culinary experiences, and interactive traditional game sessions such as Jong Tanjung Piai and Gasing Pangkah.

- (b) Local Product and Crafts Promotion: The establishment of community-managed booths within the park allows tourists to engage directly with local products, including pineapple jams, mushroom products, traditional crafts, and culinary items. These booths serve both educational and economic functions.
- (c) Eco-Agricultural Tours: Visits to local agriculture sites, such as pineapple and mushroom farms, are integrated into the model to educate tourists about local agricultural practices and product processing methods. This approach diversifies tourist experiences, creating additional economic opportunities for community members.
- (d) Interactive Workshops: Tourists are offered hands-on experiences through culinary workshops focused on traditional Bugis dishes and craft-making workshops. These interactive activities significantly enhance tourist engagement, extending visitor stays, and encouraging repeat visits.

Strategically managed promotional efforts are crucial for the model's success. Promotion strategies include on-site informational booths, digital marketing, cooperation with tourism agencies, and social media outreach. Additionally, park management facilitates promotional efforts by providing space for community activities within designated zones, ensuring minimal disruption to core park operations. The structured implementation of the model through clear delineation of roles, responsibilities, and strategic marketing ensures optimal economic benefits for local communities, enhanced tourist experiences, and sustained ecological and cultural preservation. In conclusion, the proposed ethno-ecotourism model provides an effective, sustainable solution for integrating local culture with biodiversity conservation, offering a replicable framework for similar tourism development initiatives regionally and internationally.

Conclusion

This study proposes a sustainable ethno-ecotourism model for Tanjung Piai National Park, emphasizing the balanced integration of cultural heritage and biodiversity conservation. By strategically involving local communities in the tourism management processes and highlighting unique cultural elements, the model fosters economic empowerment and promotes ecological sustainability. Effective implementation can substantially enhance economic opportunities for local communities, increase tourist satisfaction, and preserve biodiversity.

From a policy perspective, this model provides valuable implications for local and regional tourism policymakers. Specifically, policies should encourage structured community participation in managing standalone cultural and ecological tourism activities, supported by robust infrastructural and promotional frameworks from park management. This approach could become a blueprint for sustainable tourism initiatives across similar culturally and ecologically significant areas in Malaysia.

However, the implementation of this model faces limitations, particularly concerning funding, infrastructure readiness, and the capacity-building of local communities. Future studies should explore long-term monitoring of economic, ecological, and socio-cultural impacts, assessing effectiveness and sustainability over extended periods. Further research could also

examine the replicability and adaptability of this model to other national parks with different ecological and cultural contexts, ensuring broader applicability and continued improvement in sustainable tourism management.

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