

# Enhancing Tourism and Infrastructure Sustainability through SWOT Analysis: A Strategic Case Study of Taman Negara Tanjung Piai, Johor

<sup>1</sup>Teh Zaharah Yaacob, <sup>2</sup>Yogeeswari Subramaniam, <sup>3</sup>Hanini  
Ilyana Che Hashim and <sup>4</sup>Mohamad Zulfabli Hasan

<sup>1,2,4</sup>Department of Management and Technology, Faculty of Management, Universiti  
Teknologi Malaysia, 81310 Skudai, Johor Bahru, Malaysia, <sup>3</sup>Department of Accounting and  
Finance, Faculty of Management, Universiti Teknologi Malaysia, 81310 Skudai, Johor Bahru,  
Malaysia

Email: tehzaharah@utm.my

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## Abstract

Taman Negara Tanjung Piai, situated at the southernmost tip of mainland Asia, is a unique ecological destination recognized as a Ramsar site due to its rich mangrove biodiversity. As tourism in the park grows, there is an urgent need to ensure sustainability through balanced development. This paper examines the tourism potential of Tanjung Piai through a SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis, assessing its ecological value, infrastructure capacity, and socio-economic impact on the surrounding communities. The study employs a mixed-methods approach, incorporating field observations, interviews, and a survey to assess both internal and external factors influencing the park. Key strengths include its ecological significance and existing facilities, while weaknesses highlight issues such as limited accessibility and community disengagement. Opportunities lie in eco-education, digital marketing, and sustainable funding, whereas threats include environmental degradation and climate change. The paper proposes strategic recommendations for infrastructure upgrades, community empowerment, environmental protection, and policy alignment. Findings suggest that a comprehensive, inclusive strategy rooted in data and stakeholder collaboration can transform Tanjung Piai into a model for sustainable tourism. The analysis also provides insights for planners and policymakers seeking to develop protected areas that strike a balance between ecological conservation, economic growth, and social equity.

**Keywords:** Ecotourism, Infrastructure, SWOT Analysis, Community Empowerment

## Introduction

Sustainable tourism has emerged as a critical global agenda in response to the escalating challenges posed by mass tourism, particularly in ecologically fragile regions. Destinations

such as Taman Negara Tanjung Piai in Johor, Malaysia, exemplify this concern. This protected area, located at the southernmost tip of mainland Asia, is renowned for its extensive mangrove forests, diverse tidal ecosystems, and rich biodiversity. As a Ramsar-designated wetland, Tanjung Piai plays an essential role in conservation efforts and serves as a living laboratory for environmental education, biodiversity research, and nature-based tourism. However, the park's growing popularity also brings about pressing dilemmas. While tourism stimulates local livelihoods and contributes to national economic development, it often results in negative externalities such as habitat disturbance, pollution, and increased demand for infrastructure and resources. These pressures can strain the ecological balance and marginalize local communities if not managed effectively. Therefore, promoting sustainable tourism in Tanjung Piai is not merely an option but a necessity. It requires a careful balancing act between protecting natural habitats, enhancing visitor experiences, and ensuring inclusive economic benefits for surrounding communities. This study employs a SWOT (Strengths, Weaknesses, Opportunities, Threats) analytical framework to assess Tanjung Piai's tourism landscape. The analysis provides practical insights and strategic direction for policymakers, planners, and stakeholders to develop a sustainable tourism model that aligns environmental stewardship with socio-economic resilience.

### **Literature Review**

The concept of sustainable tourism has gained significant traction as a strategic response to the negative externalities of mass tourism, particularly in ecologically sensitive areas. As emphasized by Sharpley (2009), sustainable tourism involves the management of all resources in a way that fulfills economic, social, and aesthetic needs while maintaining cultural integrity, essential ecological processes, and biodiversity. This aligns with the positioning of Taman Negara Tanjung Piai as a Ramsar site, where biodiversity conservation must be balanced with tourism development. Ecotourism, a subset of sustainable tourism, has been widely recognized for its potential to promote conservation and community development simultaneously (Honey, 2008). Weaver (2011) argues that protected areas like wetlands and mangrove ecosystems can serve as both ecological reserves and educational sites, providing platforms for biodiversity research, environmental education, and nature-based tourism. This view supports the case of Tanjung Piai, which functions as a "living laboratory" for both environmental learning and tourism engagement.

SWOT analysis has been identified as a valuable tool in tourism planning and destination management due to its simplicity, flexibility, and capacity to integrate multiple perspectives (Ghazinoory, Abdi, & Azadegan-Mehr, 2011). According to Panagiotou (2003), SWOT enables organizations and policymakers to structure internal and external factors into strategic insights. In tourism studies, it enables stakeholders to assess strengths, such as ecological uniqueness and existing infrastructure, alongside weaknesses, including poor accessibility or low community participation. This has been demonstrated in other ecotourism settings such as the Kinabalu Park in Sabah (Latip et.al 2015), where SWOT analysis helped in identifying sustainable tourism pathways. Furthermore, studies by Hall (2008) emphasize the importance of integrating local communities into tourism development strategies to ensure socio-economic inclusion and long-term sustainability. In this context, the lack of capacity-building programs and weak institutional linkages between Taman Negara Tanjung Piai and the surrounding communities reflects a broader challenge seen in protected areas globally (Hong, 2008). Digital innovation and green infrastructure have also been highlighted in the literature

as catalysts for sustainable tourism. As noted by Buhalis and Law (2008), ICT tools such as mobile apps and GIS-based monitoring systems can enhance visitor experiences and improve management efficiency. Meanwhile, initiatives such as solar-powered facilities and eco-sanitation, as discussed by Gössling et al. (2012), reduce environmental footprints and contribute to low-carbon tourism models. In summary, the literature emphasises the importance of adopting a holistic approach that integrates ecological integrity, community empowerment, policy alignment, and technology. The SWOT-based analysis of Tanjung Piai reflects this interdisciplinary framework, aiming to position the site as a model for sustainable tourism in Malaysia and beyond.

#### *Relevance of SWOT Analysis in Sustainable Tourism*

The SWOT analysis framework—standing for Strengths, Weaknesses, Opportunities, and Threats—is a widely recognized and practical strategic planning tool that is particularly relevant in assessing sustainable tourism development. Its relevance stems from its ability to systematically evaluate both internal and external factors that influence a destination’s sustainability performance. Internally, strengths and weaknesses highlight the unique characteristics and limitations of Taman Negara Tanjung Piai, such as its ecological significance, available infrastructure, and community involvement. Externally, opportunities and threats shed light on the broader environmental, economic, and policy factors, including ecotourism trends, climate change risks, and regulatory dynamics. For ecologically sensitive areas like Tanjung Piai, where tourism development must strike a delicate balance among conservation, economic growth, and social inclusion, a SWOT analysis provides a clear and accessible method for engaging multiple stakeholders. Its simplicity makes it suitable for participatory decision-making involving government bodies, NGOs, local communities, and private operators, fostering collective responsibility and ownership in sustainable tourism planning (Ghazinoory et al., 2011).

Furthermore, the SWOT analysis aligns well with strategic frameworks such as the Sustainable Development Goals (SDGs) and Malaysia’s national ecotourism policies, providing a foundation for integrated action. By helping to identify key assets (e.g., Ramsar recognition, mangrove biodiversity), challenges (e.g., infrastructure gaps, seasonal demand), emerging prospects (e.g., community-based ecotourism, digital marketing), and risks (e.g., over-tourism, erosion), the analysis informs strategic priorities and resource allocation. It also enables monitoring and evaluation over time, thus supporting adaptive management approaches. In sum, the application of SWOT in this study ensures that Taman Negara Tanjung Piai’s tourism development is data-informed, inclusive, and future-ready—positioning it as a model of sustainability for protected areas nationwide (UNWTO, 2015; Panagiotou, 2003).

#### **Research Methodology**

This study employs a comprehensive mixed-methods research design to evaluate the sustainability of tourism development in Taman Negara Tanjung Piai. Recognizing the complexity of ecotourism systems, which intertwine environmental integrity, community dynamics, and economic viability this methodological approach allows for both empirical depth and contextual understanding. The combination of qualitative and quantitative methods enhances the reliability of findings and supports the formulation of robust, multi-dimensional strategies. Primary data collection involved several complementary techniques. Field observations were conducted over multiple visits across different seasons to examine

the physical state of tourism infrastructure, patterns of visitor movement, and visible environmental impacts, including litter, erosion, and habitat disturbance. These observations were systematically recorded using field notes, photographs, and spatial mapping to establish a baseline understanding of site conditions. To capture local insights and stakeholder perspectives, semi-structured interviews were conducted with a purposively selected sample that included community members from Kampung Tanjung Piai, park management staff, tourism service providers, and environmental officers. The interviews explored themes such as the benefits and burdens of tourism, levels of community involvement, environmental awareness, and infrastructure needs. Interviews were audio-recorded (with consent), transcribed, and thematically analyzed to extract recurring concerns and aspirations. In parallel, quantitative data were gathered using structured survey questionnaires administered to 150 domestic and international visitors. The survey included items on visitor satisfaction, perceived quality of amenities, willingness to pay for conservation, and opinions on crowding, waste management, and educational content. Likert-scale responses were statistically analyzed to identify trends, while open-ended questions provided qualitative depth.

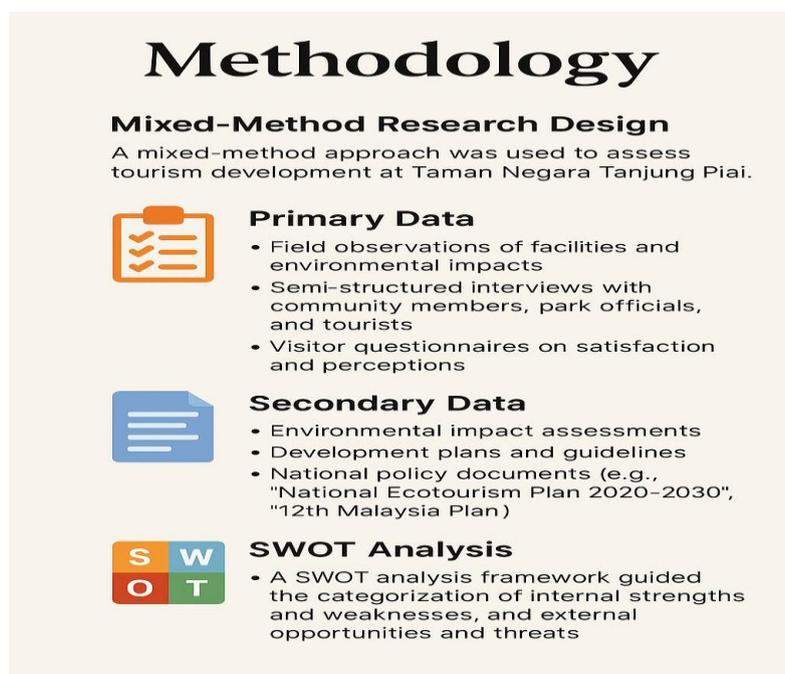


Figure 1. Research Design of the Study

Secondary data sources were equally important for triangulation. Relevant documents were reviewed, including environmental impact assessments (EIAs), tourism development reports, community engagement records, and national planning frameworks such as the National Ecotourism Plan 2020–2030, Johor State Tourism Blueprint, and the 12th Malaysia Plan. These sources provided strategic context and policy alignment for the study's findings. All data were integrated and examined using the SWOT (Strengths, Weaknesses, Opportunities, Threats) analytical framework. This tool facilitated a structured evaluation of internal attributes (strengths and weaknesses) and external forces (opportunities and threats) that influence sustainable tourism development in the park. Themes emerging from qualitative data were mapped against the SWOT categories, while quantitative survey results were used to validate and complement qualitative insights. Findings from the SWOT analysis were further

synthesized into a strategic action matrix, highlighting critical intervention areas and potential pathways for improving tourism sustainability. This methodological approach ensured that recommendations were not only grounded in real-world observations but also informed by stakeholder voices and aligned with national policy directions. One hundred sixty-seven (167) questionnaires were completed out of 200 distributed among student cohorts in Malaysia, yielding an impressive response rate of 85.7%. Predominantly, the participants were male (67.4%) with an average age of 30.2 years. The data collection took place between February and March 2024. The survey responses were analyzed using primary descriptive methods, with the outcomes detailed in the subsequent section. The quantitative dataset was analyzed using Microsoft Excel and Google Forms as the primary analytical tools.

## **Results and Discussions**

### ***SWOT Analysis of Taman Negara Tanjung Piai, Johor Malaysia***

#### ***Strengths***

Taman Negara Tanjung Piai boasts remarkable ecological significance that underpins its status as one of Malaysia's most treasured natural assets. As a Ramsar-designated wetland, it harbors unique mangrove ecosystems and a variety of rare and endangered species. These ecological features not only contribute to global biodiversity conservation efforts but also attract nature enthusiasts, researchers, and conservationists from around the world. The park's biodiversity serves as a key magnet for ecotourism, education, and scientific exploration. In terms of infrastructure, Tanjung Piai offers a range of visitor-friendly facilities that blend seamlessly with its natural surroundings. Wooden boardwalks enable safe and low-impact exploration of mangrove areas, while observation towers and educational signage enhance the visitor experience through environmental interpretation. The presence of visitor centres and rest areas reflects a well-thought-out approach to facilitating tourism without compromising ecological integrity.

Strategically positioned as the southernmost tip of mainland Asia, Tanjung Piai holds geographical appeal as a symbolic travel destination. This distinction adds value to its branding, making it a notable landmark in tourism promotions both regionally and internationally. It also serves as a strategic node in Malaysia's tourism circuit, particularly in cross-border travel with its neighbouring countries, Singapore and Indonesia. Importantly, the park is closely surrounded by traditional Malay communities, such as Kampung Tanjung Piai. This proximity offers immense potential for cultural exchange and community-driven tourism. With proper support and engagement, these communities can play a vital role in providing authentic local experiences through food, crafts, heritage activities, and eco-friendly homestays, ultimately enhancing the social value of the park.

#### ***Weaknesses***

Despite its ecological and symbolic strengths, Tanjung Piai faces several internal challenges that hinder its tourism potential. Chief among them is limited accessibility. The condition of access roads remains poor, particularly in the rainy season, and public transportation options are scarce. For many visitors, especially international tourists and elderly travellers, navigating to the park can be cumbersome and discouraging. A lack of proper signage along key travel routes further complicates the visitor journey. Another primary concern is the inadequacy of basic utilities. Electricity supply is often unstable, internet connectivity remains weak in many areas, and access to clean water is inconsistent. These shortcomings affect visitor comfort and

limit the park's ability to operate efficiently and implement digital tourism initiatives. Moreover, community engagement in tourism remains minimal. Although local villages are located near the park, many residents lack the skills, capital, or institutional support to participate meaningfully in tourism enterprises. This disconnect results in an unequal distribution of tourism benefits and missed opportunities for inclusive economic development. Without capacity-building programs and participatory planning, the surrounding community risks becoming passive observers rather than active stakeholders.

### *Opportunities*

Tanjung Piai presents numerous opportunities that, if harnessed strategically, can elevate its status as a model for sustainable tourism. One such opportunity lies in its potential as a center for eco-education and academic research. The park's biodiversity and unique ecosystems provide a living classroom for schools, universities, and environmental organizations. Partnerships with educational institutions can facilitate long-term monitoring, training, and collaborative conservation projects. Another promising area is the availability of sustainable funding sources. Government initiatives under the 12th Malaysia Plan, the Johor State budget, and specialized grants such as PTNJ offer avenues for infrastructural improvements and capacity-building. Corporate social responsibility (CSR) contributions and international green funds expand the financial toolkit for sustainable development and community programs focused on conservation. Digital innovation also opens up possibilities for modernizing tourism services. The development of innovative tourism platforms, including mobile apps, online ticketing, and virtual guides, can significantly enhance visitor management and marketing outreach. Such tools also support data-driven decision-making, enabling better planning for crowd control, analysis of feedback, and effective promotional campaigns. Finally, advancing community-based tourism (CBT) can transform local livelihoods and enrich the visitor experience. Empowering residents to run homestays, act as cultural guides, and produce local crafts can help generate income while preserving cultural heritage. This form of inclusive tourism supports Malaysia's broader goals of rural development and equitable wealth distribution.

### *Threats*

Environmental degradation remains one of the most pressing threats facing Tanjung Piai. The increasing volume of tourists, combined with inadequate waste management infrastructure, poses a significant risk to the delicate mangrove ecosystem. Littering, trampling of vegetation, and noise pollution can cause irreversible damage if not addressed through stringent regulation and visitor education. Climate change represents another looming challenge. Tanjung Piai is highly vulnerable to sea level rise, coastal erosion, and storm surges due to its coastal wetland status. These phenomena not only threaten the park's infrastructure but also jeopardize its habitats and species diversity. Long-term resilience planning is essential to safeguard the park's future. Economic inequality also poses a threat to the sustainability of tourism in the area. Dominance by large, external tourism operators may marginalize local entrepreneurs and weaken community ownership of tourism ventures. Without equitable revenue distribution and regulatory safeguards, tourism could exacerbate social disparities and undermine community trust in conservation efforts. Figure 2.0 below represents the findings of the SWOT Analysis for Taman Negara Tanjung Piai, Johor, Malaysia, in terms of tourism opportunities and infrastructure sustainability.

<b>STRENGTHS</b>	<b>WEAKNESSES</b>
<ul style="list-style-type: none"> <li>• <b>Ecological Significance</b> As a Ramsar site, Tanjung Piai hosts unique mangrove ecosystems and endangered species</li> <li>• <b>Established Infrastructure</b> Wooden boardwalks, educational signage, observation towers and information centers</li> <li>• <b>Proximity to Local Communities</b> Nearby villages like Kampung Tanjung Piai provide opportunities for cultural exchange and local economic benefit</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Limited Accessibility</b> Poor road conditions, minimal public transport options, and inadequate directional signage</li> <li>• <b>Utility Limitations</b> Fluctuating electricity, weak internet connectivity, and inconsistent clean water supply</li> <li>• <b>Smart Tourism and Digital Marketing</b> Development of mobile apps, virtual tours, and integrated visitor management systems</li> <li>• <b>Community-Based Tourism (CBT)</b> Expansion of homestay networks, local guides, and cultural programs</li> </ul>
<b>OPPORTUNITIES</b>	<b>THREATS</b>
<ul style="list-style-type: none"> <li>• <b>Eco-Education and Academic Research</b> The park can serve as a living classroom</li> <li>• <b>Sustainable Funding Channels</b> Government grants, corporate CSR initiatives, and international green funds</li> <li>• <b>Smart Tourism and Digital Marketing</b> Development of mobile apps to foster participation</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Environmental Degradation</b> Over-tourism, inadequate waste management, and pollution</li> <li>• <b>Climate Change</b> Sea level rise, storm surges and coastal erosion</li> <li>• <b>Economic inequality</b> Possible participatory plan</li> </ul>
<b>STRATEGIC RECOMMENDATIONS</b>	
<ul style="list-style-type: none"> <li>• <b>Infrastructure Upgrades</b> Improve road networks, signage access points; invest in green utilities; introduce mobile visitor apps</li> <li>• <b>Community Empowerment</b> Conduct training in eco-guido</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Policy Integration and Partnership</b> Align development strategies with National Ecotourism Plan 2020-2030 and Johor Tourism Master Plan</li> <li>• <b>Create joint Initiatives</b> universities virtual biodiversity assessments</li> </ul>

Figure 2 SWOT Analysis for Taman Negara Tanjung Piai, Johor Malaysia

**Strategic Recommendations**

*Infrastructure Upgrades*

Enhancing physical infrastructure is a top priority to improve visitor access, comfort, and safety. Upgrading road networks and directional signage will make the park more accessible, especially for tour groups and international travellers. Green technologies such as solar-powered lighting, rainwater harvesting systems, and eco-friendly sanitation facilities can help reduce the park’s ecological footprint. Digital innovations, such as mobile apps, can provide real-time information, facilitate bookings, and gather user feedback to enhance visitor experience and improve management efficiency.

*Community Empowerment*

Sustainable tourism must include the active participation of local communities. Offering structured training programs in hospitality, environmental guiding, and digital entrepreneurship can equip residents with the skills needed to enter the tourism economy. Forming community cooperatives to manage tourism products, such as local food services, craft centres, and eco-tourism packages, ensures collective ownership and shared benefits.

Regular dialogues and participatory planning with youth and women's associations will enhance inclusiveness and build local leadership in conservation tourism.

#### *Environmental Management*

Environmental protection must remain a central component of tourism strategy. Establishing a tourist carrying capacity policy will help regulate the number of visitors allowed at any given time, preventing overcrowding and resource overuse. Community-involved waste separation initiatives, composting stations, and public education campaigns can help foster a culture of environmental responsibility. Annual biodiversity monitoring, conducted in partnership with NGOs, schools, and researchers, will enable the continuous assessment of ecosystem health and inform conservation decisions.

#### *Policy Integration and Partnership*

Sustainable tourism success depends on alignment with national and state-level planning. Integrating park development goals with the National Ecotourism Plan 2020–2030 and Johor Tourism Master Plan ensures coherence with broader policy frameworks. Establishing partnerships with international conservation agencies can provide access to technical expertise, environmental technologies, and funding streams. Collaborations with academic institutions should also be deepened to support ecological research, student training, and innovation in ecotourism management.

#### **Discussion**

The findings from the SWOT analysis affirm that Taman Negara Tanjung Piai holds considerable promise as a flagship site for sustainable ecotourism in Malaysia. Its ecological distinctiveness, strategic geographic location, and established visitor infrastructure provide a strong foundation for long-term tourism development. Additionally, the proximity of local communities presents an invaluable opportunity for inclusive growth, cultural enrichment, and the development of community-based tourism models. These strengths position the park as a potential regional benchmark for integrating biodiversity conservation with responsible tourism practices. Nonetheless, several internal weaknesses and external threats remain pressing and, if not strategically managed, could compromise the park's ecological resilience and tourism viability. Issues such as limited accessibility, outdated utilities, and weak local participation continue to hinder the realization of its full potential. Externally, challenges related to environmental degradation, climate change, and economic inequities further complicate the development trajectory. These multidimensional risks underscore the need for a proactive and systemic approach to sustainable tourism planning.

A holistic development strategy is imperative, one that transcends traditional tourism development models and incorporates green infrastructure investment, stakeholder capacity-building, and rigorous environmental stewardship. For instance, upgrading transportation networks must go hand in hand with eco-friendly technologies and digital innovation. Similarly, community empowerment should include training and ensure active involvement in tourism governance and benefit-sharing mechanisms. Achieving these goals will require synergistic collaboration across multiple sectors. Effective coordination among government agencies, local authorities, private operators, NGOs, academic institutions, and civil society is vital. Each stakeholder has a unique role in shaping and supporting a cohesive sustainability vision. Government bodies can provide policy alignment and funding; private

sectors can offer innovation and investment; civil society can act as watchdogs and facilitators of social equity; while academic institutions can drive research, capacity-building, and monitoring. The park's ability to shift from reactive to proactive planning is central to its future. This includes anticipating environmental threats, forecasting tourism trends, and leveraging emerging technologies for visitor management and conservation monitoring. In an era defined by climate uncertainty, public health concerns, and shifting traveller expectations, adaptive management will be crucial. In summary, Taman Negara Tanjung Piai stands at a pivotal moment. With bold, inclusive, and forward-thinking strategies, it can evolve into a living model of ecotourism excellence that preserves nature, uplifts communities, and inspires other protected areas across Southeast Asia.

### **Conclusion**

Taman Negara Tanjung Piai stands at a pivotal intersection of ecological conservation and tourism development, presenting both a challenge and an opportunity for Malaysia's sustainable future. Endowed with Ramsar recognition, unique mangrove biodiversity, and the symbolic status of being the southernmost tip of mainland Asia, the park offers immense potential as a flagship model for sustainable ecotourism. Moreover, its proximity to culturally rich local communities adds a human dimension that can elevate tourism beyond recreation into a transformative experience rooted in environmental awareness and social connection. Yet, this potential cannot be realized through ad hoc initiatives or fragmented planning. It demands a deliberate, data-driven, and inclusive strategy that integrates ecological integrity, economic viability, and social equity. The application of a SWOT-informed planning model provides a structured pathway to identify core priorities, allocate resources strategically, and anticipate future risks. It enables decision-makers to transition from reactive problem-solving to proactive governance, where tourism growth is carefully calibrated in relation to environmental thresholds and community capacities.

Crucially, the empowerment of local communities must serve as a cornerstone of this transformation. Tourism models that are co-created with local stakeholders, rather than imposed upon them, can generate more equitable benefits, foster stewardship of natural assets, and reinforce local identity. Capacity-building in eco-guiding, entrepreneurship, and conservation literacy can help communities transition from passive beneficiaries to active custodians of their heritage. The broader alignment with national and global sustainability frameworks, including the Malaysia MADANI vision, the 12th Malaysia Plan, and the UN Sustainable Development Goals (SDGs), reinforces the relevance of this approach. As Malaysia seeks to position itself as a leader in the green economy and low-carbon tourism, Tanjung Piai has the potential to become a microcosm of best practices in balancing nature and development. The park can embody the synergy of "people, planet, and prosperity" by demonstrating how inclusive, adaptive, and ecologically responsible tourism planning can deliver local well-being and global environmental value. In sum, the success of Tanjung Piai will depend not only on conserving what already exists but also on innovating and investing in a future where tourism acts as a lever for resilience, regeneration, and regional inspiration. With the proper policy support, community engagement, and institutional commitment, Tanjung Piai can shine as a beacon of sustainable tourism, where conservation and development coexist in harmony.

This study contributes to the theoretical discourse on sustainable tourism by applying SWOT analysis as an integrative framework that links ecological integrity, community engagement, and infrastructure development. It adds value to the existing literature by demonstrating how destination-level assessments can support strategic planning in Ramsar-designated areas, thereby bridging the gaps between policy, practice, and academic theory. Contextually, the study offers a grounded case of Taman Negara Tanjung Piai, a site often underrepresented in ecotourism research, thus enriching knowledge on wetland management and community-linked conservation within the Southeast Asian context. The findings provide actionable insights for managing protected areas in tropical coastal ecosystems that are vulnerable to climate change. Moreover, the study emphasizes the importance of aligning national ecotourism policies with localised strategies, providing a replicable model for other developing regions seeking to pursue inclusive, environmentally responsible tourism development.

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### **References**

- Buhalis, D., & Law, R. (2008). Progress in information technology and tourism management: 20 years on and 10 years after the Internet—The state of eTourism research. *Tourism Management*, 29(4), 609–623. <https://doi.org/10.1016/j.tourman.2008.01.005>
- Ghazinoory, S., Abdi, M., & Azadegan-Mehr, M. (2011). SWOT methodology: A state-of-the-art review for the past, a framework for the future. *Journal of Business Economics and Management*, 12(1), 24–48. <https://doi.org/10.3846/16111699.2011.555358>
- Gössling, S., Hall, C. M., & Weaver, D. (2012). *Sustainable tourism: A global perspective*. Routledge.
- Hall, C. M. (2008). *Tourism planning: Policies, processes and relationships*. Pearson Education.
- Honey, M. (2008). *Ecotourism and sustainable development: Who owns paradise?* Island Press.
- Hong, C. W., & Chan, N. W. (2010). Strength-weakness-opportunities-threats analysis of Penang National Park for strategic ecotourism management. *World Applied Sciences Journal*, 10(1), 136–145.
- Latip, N. A., Marzuki, A., Marcela, P., & Umar, M. U. (2015). Indigenous people, conservation and sustainable tourism at Lower Kinabatangan, Sabah: SWOT analysis. *Australian Journal of Basic and Applied Sciences*, 9(7), 331–334.
- Panagiotou, G. (2003). Bringing SWOT into focus. *Business Strategy Review*, 14(2), 8–10. <https://doi.org/10.1111/1467-8616.00253>
- Sharpley, R. (2009). *Tourism development and the environment: Beyond sustainability?* Earthscan.
- UNWTO. (2015). *Indicators of sustainable development for tourism destinations: A guidebook*. World Tourism Organization. <https://www.e-unwto.org/>