

Developing Tourism Index Destination Management (TIDM): A Framework for Regenerative Tourism in the Kuching and Sematan-Lundu Corridor

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ABSTRACT

The discourse on regenerative tourism demands a framework that simultaneously advances ecological restoration and cultural continuity, especially in understudied yet resource-rich regions such as Kuching and Sematan-Lundu in Sarawak, Malaysia. However, existing tourism indices often fail to capture the synergies among environmental stewardship, heritage preservation, and visitor perceptions in these contexts. Hence, this conceptual paper is designed to develop a Tourism Index Destination Management (TIDM) as a strategic model to guide regenerative tourism development along the Kuching and Sematan-Lundu corridor. In particular, the TIDM framework integrates five key dimensions, namely uniqueness of attractions, range of activities, quality of infrastructure and tourist facilities, affordability and value for money, and safety elements. These dimensions are grounded in visitor perceptions and focus on critical aspects needed to improve tourist experiences. Furthermore, this paper contributes theoretically by aligning visitor experience measurement with regenerative tourism principles and offers practical insights for destination stakeholders seeking to balance tourism growth with cultural preservation and environmental stewardship. Therefore, the TIDM framework serves as a foundational tool for assessing, managing, and enhancing tourism experiences in support of long-term regional resilience and value-based tourism planning.

Keywords: Tourism Index, Regenerative Tourism, Tourist Survey

INTRODUCTION

Tourism has become a significant driver of socio-economic development, particularly in regions rich in natural and cultural assets. However, the distribution of tourism benefits often skews towards urban centers, leaving peripheral or rural areas under-represented in tourism planning, infrastructure development, and visibility. This development pattern is particularly evident in Sarawak, Malaysia, where the capital city of Kuching has emerged as a mature tourism hub. In comparison, the Sematan-Lundu corridor remains underexplored and underdeveloped due to a lack of adequate road access as well as basic amenities. Consequently, this resulted in a small number of arrivals from both national and international tourists (Tuah et al., 2022). Despite their potential, these less-central areas often lack comprehensive tools to assess performance and guide strategic development.

Notably, addressing this regional imbalance requires a more localized and regenerative approach to tourism development. The concept of regenerative tourism is applicable to actively revitalizing, restoring, and regenerating the social-ecological systems of tourism destinations (Bellato, 2024). It is beyond the concept of

sustainable tourism, which focuses on “meeting the needs of the present without compromising the well-being of future generations” (United Nations World Commission on Environment and Development, 1987). Thus, in the context of Kuching and Sematan-Lundu, tourism development should not merely minimize the negative impact but align with nature and achieve harmony in economic, social, cultural, and environmental.

This research is supported by a call for future studies to address the lack of studies that address the relationship between destination image, tourism experience, and loyalty (Mior Shariffuddin et al., 2023). To address this imbalance, destination management requires a localized, data-driven approach that reflects the real experiences and perceptions of tourists visiting urban and rural sites. Note that focusing on a data-driven approach is insufficient as this method requires big data; however, the area of Sematan-Lundu is underexplored compared with Kuching. Therefore, combining traditional survey data with insights gained from the sentiment analysis of User-Generated Content (UGC) can offer a more nuanced understanding of competitive dynamics and allow for monitoring changes over time in tourist perceptions and experiences (Chen et al., 2025).

Accordingly, this paper responds to these issues by proposing a contextualized conceptual framework, namely Tourism Index Destination Management (TIDM), specifically designed for the Kuching and Sematan-Lundu corridor. This framework aims to assess Tourism Performance (TP) across a range of interrelated dimensions, including uniqueness of attractions, range of activities, quality of infrastructure and tourist facilities, affordability and value for money, and safety elements. In essence, these elements are core components of TIDM, which is applied to sentiment analysis as a data-driven approach. Concurrently, these dimensions are designed to measure tourism quality and inform governance, planning, and policy decisions at the local and regional levels.

Theoretical Foundation

A robust conceptual framework is essential to establish theoretical foundations relevant to tourism governance. In this study, the TIDM framework is proposed to evaluate and guide tourism development in underrepresented destinations such as the Kuching and Sematan-Lundu corridors. While previous models like the Travel and Tourism Development Index (TTDI) and the Tourism Attractions-Basics-Context (TABC) framework provide valuable benchmarks, they often lack sensitivity to the specific needs, contexts, and socio-cultural dynamics of rural and peripheral destinations. Moreover, these frameworks primarily focus on static competitiveness metrics, offering limited insights into the evolving relationships between visitors, host communities, and the natural environment.

Correspondingly, the TIDM framework offers a fresh approach by embedding regenerative tourism concepts beyond simply minimizing harm instead of restoring and revitalizing destinations for the long-term benefit of visitors and local communities. It emphasizes attractions and infrastructure as well as the significance of place identity, inclusivity, and emotional connections. In particular, a key innovation is the use of a hybrid data approach, combining surveys with sentiment analysis from UGC to provide a more dynamic and visitor-centered assessment, which is especially valuable in data-scarce areas like Sematan-Lundu. Hence, blending global models like TTDI and TABC with local insight from Sarawak, TIDM provides a practical, adaptable tool for managing tourism in a competitive, culturally, socially, and environmentally sustainable way. The following section discusses key theories adopted in this study.

Regenerative Tourism as Core Theory

This study draws primarily on regenerative tourism theory, which extends beyond the sustainable tourism paradigm. While sustainable tourism focuses on minimizing harm and preserving resources for future generations (United Nations World Commission on Environment and Development, 1987), regenerative tourism emphasizes the active restoration of social, cultural, and ecological systems (Bellato, 2024). Key elements include deep relationships between visitors and host communities, emotional and transformational experiences, and the long-term well-being of the destination. In other words, this theoretical lens justifies the need for place-based, adaptive frameworks that capture performance metrics and socio-cultural regeneration, particularly for destinations like Sematan-Lundu that require tailored intervention.

Travel and Tourism Development Index

Popular benchmarking frameworks such as the TTDI by the World Economic Forum have been discussed by many scholars. It offers a broad framework for evaluating countries' tourism competitiveness through five subindexes, 17 pillars, and 112 individual indicators. As one of the models adapted in this study's framework, TTDI provides a macro-level view of tourism development. However, its methodology has been critiqued, particularly the weighting system (González-Rodríguez et al., 2023), which may not accurately reflect the significance of various criteria (Štilić et al., 2024). In addition, the changes in TTDI scores often do not correlate with changes in TP indicators, questioning its validity as a measure of destination competitiveness (Kunst & Ivandić, 2021). This can result in rankings not aligning with actual TP (Maulana et al., 2022).

The transition from the earlier Travel and Tourism Competitiveness Index (TTCI) to TTDI has policy implications. For example, Indonesia had to adjust its performance indicators and legal frameworks to align with TTDI (Maulana et al., 2022). The index also emphasizes the significance of key dimensions, such as infrastructure, services, and ICT readiness, which are vital for boosting tourism competitiveness (Qazi, 2024). Despite its usefulness, the TTDI's limitations highlight the need for alternative or complementary models incorporating sustainability and social outcomes, such as poverty alleviation (Phi, 2021).

Tourism Attractions-Basics-Context (TABC)

In addition, this study also examined TABC, which was developed by Manrai et al. (2020). The TABC model offers a simplified approach to measuring destination competitiveness by focusing on the benefits tourists seek. In the TABC model, A stands for Tourism Attractions (TA), B stands for Tourism Basics (TB), and C stands for Tourism Context (TC). These TABC components will have an impact on TP. This model conceptualized destination competitiveness as a function of basic attraction, contextual and environmental enablers, and tourist-centered experiences. Nevertheless, this model is generic and lacks destination-specific sensitivity.

This model builds upon earlier work on destination attractiveness, such as Hu and Ritchie's (1993) contextual approach, which examined the significance of touristic attributes and their ability to satisfy tourists' needs. Concurrently, the TABC model aligns with Butler's (2011) Tourism Area Life Cycle concept, which explores destination development processes. In addition, Akbar (2020) empirically assessed the TABC model using data from Uzbekistan's regions, demonstrating its applicability in analyzing TP across multiple dimensions. However, its generic and universalist design makes it unsuitable for fine-grained application in culturally rich and unevenly developed regions like Sarawak.

Anchoring in Local Evidence: Sarawak Case Studies

This study reviewed a Sarawak-based case study by Thong et al. (2023), who conducted a comprehensive study of national parks in Sarawak. Their finding highlights the significance of endowed resources (natural and cultural attractions), created resources (activities), and supporting resources (accessibility and service quality) to significantly enhance destination competitiveness. However, the model was evaluated only on ecotourism destinations. Meanwhile, the current research focuses on both cultural and natural attractions. Further validation from Chan et al. (2023) stressed the role of soft infrastructure and technology in improving safety and accessibility, reinforcing the need to capture visitor-centered perceptions.

Role of Sentiment Analysis in Enhancing Measurement

To go beyond static benchmarking, this framework innovatively incorporates sentiment analysis of UGC alongside traditional surveys. This approach captures real-time tourist perceptions and emotional responses, aligning with the regenerative tourism focus on visitor experience and host-guest relationships (Chen et al., 2025). By leveraging digital data, the TIDM framework enables adaptive management and enhances sensitivity to tourist satisfaction and emerging trends, even in data-scarce regions like Sematan-Lundu. The following Figure 1 illustrates the hybrid data approach, combining surveys with sentiment analysis from UGC for the case of Kuching and Sematan-Lundu.

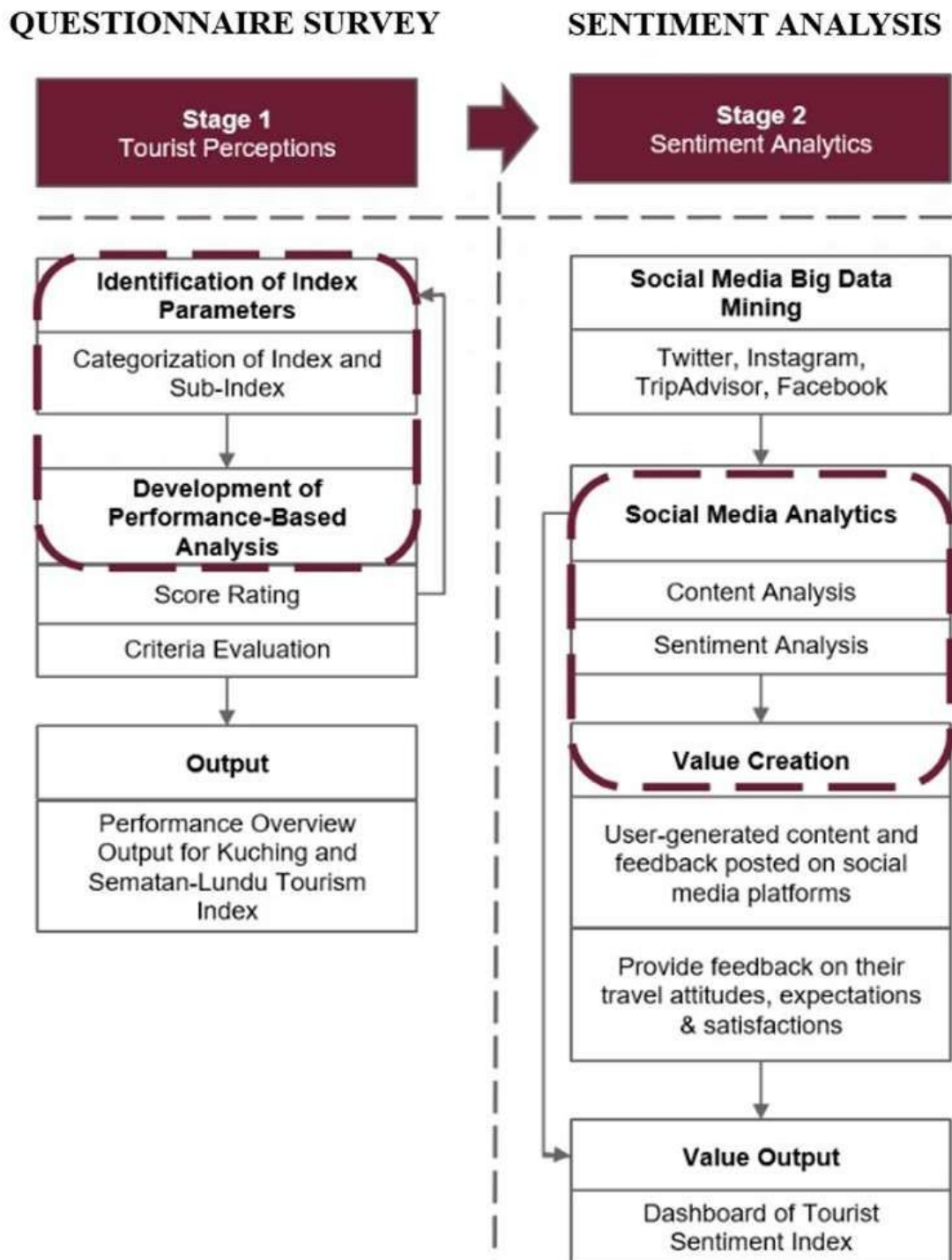


Figure 1: The hybrid data approach applied in this research

To operationalize the hybrid data approach, sentiment analysis will focus on User-Generated Content (UGC) sourced from major platforms such as Google Reviews, TripAdvisor, and Facebook., given their wide usage by both domestic and international tourists. They analysis will provide feedback on their travel attitudes, expectations and satisfaction. To ensure robustness, triangulation will be employed to compare sentiment analysis and derived finding with traditional surveys. This integration allows for real-time responsiveness to tourist experiences and enhances contextual sensitivity, particularly for data-scarce destinations like Sematan-Lundu.

Framework: Tourism Index Destination Management (Tidm)

The TIDM integrates components selectively from TTDI and TABC models to ensure international alignment

while grounding its indicator in Sarawak’s empirical context through the validated work of Thong et al. (2023). This approach ensures that the TIDM is globally informed and locally relevant, capturing the realities of tourism experiences in Kuching and Sematan-Lundu. Table 1 below summarizes how TIDM frameworks are supported by elements from TTDI, TABC, and Thong et al. (2023). The TIDM is synthesized into five core components: uniqueness of attractions, range of activities, quality of infrastructure and tourist facilities, affordability and value for money, and safety elements. Each component reflects conventional competitiveness and regenerative values, such as cultural continuity, accessibility for marginalized users like the Persons With Disabilities (PWD) group, and emotional engagement.

Table 1: TIDM Framework Development Aligned with TTDI, TABC, and Sarawak Case Study

TIDM (Current Study)	TTDI (World Economic Forum)	TABC (Manrai et al., 2020)	Sarawak case study (Thong et al., 2023)	Justification
Uniqueness of Attractions	Pillar: Natural and Cultural Resources	Tourism Attractions	Natural resources and cultural heritage attractions	Key to destination identity and regenerative experiences.
Range of Activities	Pillar: Tourist Service Infrastructure	Tourism Basics	Range of activities	Enhances emotional engagement; aligns with regenerative value creation.
Infrastructure & Tourist Facilities	Pillars: Infrastructure, ICT Readiness	Tourism Basics	Tourism infrastructure	Critical for accessibility and inclusive experiences in rural areas.
Affordability & Value for Money	Price Competitiveness	Tourism Performance	Quality of tourism services	Essential for domestic and budget-conscious segments; supports repeat visits.
Safety & Accessibility	Safety & Security, Ground Transport Efficiency	Tourism Context	Destination accessibility	Foundational to tourist comfort, trust, and overall satisfaction.

Uniqueness of Attraction

This section assesses how tourists perceive the distinctiveness and richness of the attraction’s cultural and natural features. The questionnaire includes items such as the richness and variety of cultural and natural elements that are visually impressive and culturally significant. Specifically, it combines natural and cultural attractions since the Kuching and Sematan-Lundu corridor consists of them. In addition, cultural and natural elements contribute to a destination’s competitiveness, with uniqueness and learning being key determinants of overall experience quality (Suhartanto et al., 2018). Conversely, the other question addresses the uniqueness of experience in comparison to other locations, including the diversity of cultures, flora, and fauna, the serene and soothing atmosphere, and the preservation of natural and cultural heritage. Together, these items reflect the attraction’s ability to offer an authentic, immersive, and unforgettable experience. As such, high scores in this dimension

suggest strong destination identity and attractiveness. The following figure 2 indicates the attractions within the Kuching and Sematan-Lundu tourism corridor identified in this study.

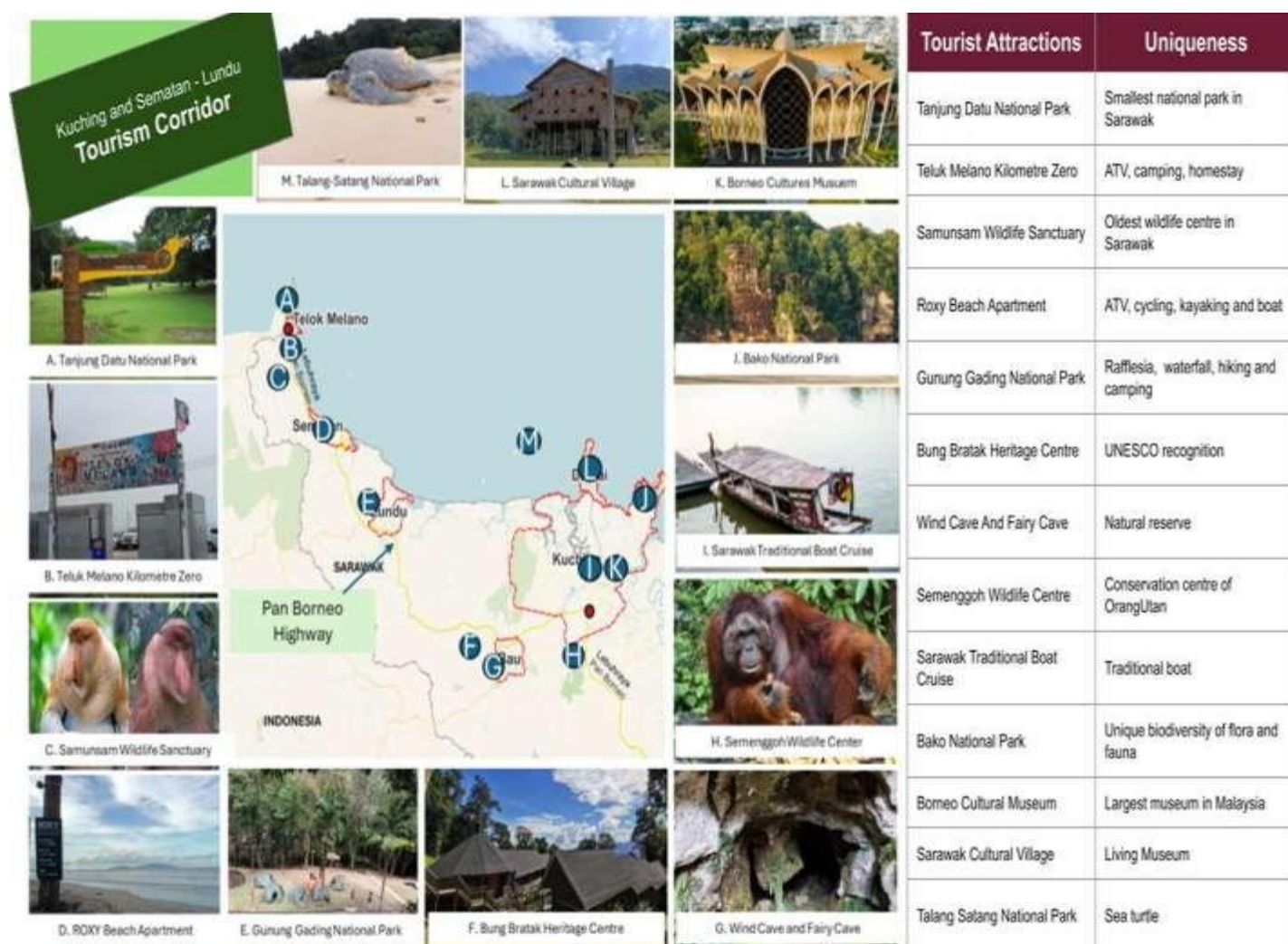


Figure 2: Attractions within Kuching and Sematan-Lundu Tourism Corridor

Range of Activities

Research indicates that the range and quality of activities offered at a destination significantly influence tourist perceptions and loyalty. Although the variety and intensity of activities can enhance perceived experience value, excessive time investment may lead to satiety, affecting future visitor behavior (Antón et al., 2018). For this study, the range of activities section evaluates the quality, diversity, and management of tourism activities offered. It includes tourist feedback on the variety of outdoor and cultural experiences, the organization and efficiency of events and activities, enjoyment and satisfaction derived from those activities, the ease of obtaining information and making arrangements, the usefulness of maps, signage, and guides, and whether the activity offerings meet diverse tourist preferences. These elements collectively influence the level of tourist engagement and their overall satisfaction, especially for travelers seeking active or experiential tourism.

Quality of Infrastructure and Tourist Facilities

Tourist perceptions of infrastructure and services play a crucial role in shaping their experiences and perceptions. For example, road and transport infrastructure development positively impacts community support for tourism, mediated by perceived benefits and community satisfaction (Kanwal et al., 2020). In this study, the quality of infrastructure and tourist facilities reflects the accessibility, cleanliness, and inclusivity of infrastructure that supports the tourist experience. Correspondingly, the questionnaire includes evaluations of road conditions and connectivity, healthcare services, public transportation, banking and Automated Teller Machines (ATM) accessibility, restroom cleanliness, and accessibility for all user types. This includes OKU availability, quality

of internet connectivity, and facilities for people with disabilities and children. It also assesses the maintenance and cleanliness of all facilities. Notably, well-developed and inclusive infrastructure enables smooth, comfortable, and stress-free travel experiences.

Affordability and Value for Money

Destination competitiveness is influenced by tourists' perceptions of affordability and value for money. Studies indicate that unique tourism characteristics, such as battlefields and historical relics, can be crucial for destination competitiveness, even overcoming high prices (Chen et al., 2011). However, price competitiveness remains a significant factor, with demographic aspects like age, gender, and origin influencing tourists' perceptions of destination affordability (Fourie et al., 2022). Therefore, this dimension captures whether tourists perceive their expenses as reasonable and justified. The questionnaire items include assessing the reasonableness of entrance fees, fairness of prices for tourism-related services like accommodation and food, availability of budget and luxury options, transparency of extra costs, and whether the overall experience is worth the money spent. This component is critical in influencing satisfaction among price-sensitive travelers and can directly impact the likelihood of return visits or recommendations.

Safety Elements

Research indicates that tourists' perceptions of safety significantly influence destination competitiveness and image. Safety is a crucial factor in tourist satisfaction and destination choice, especially in the post-COVID-19 era (Xu et al., 2024). Meanwhile, destinations perceived as appealing and safe are highly competitive, while those lacking safety are less attractive to tourists (Hallmann et al., 2014; Xu et al., 2024). At the same time, tourist perceptions of safety greatly affect their comfort and confidence when visiting a destination. For this study, the safety section of the questionnaire covers the sense of security, presence of security personnel, accessibility and responsiveness of emergency services, comfort in exploring the area even at night, and the availability of clear safety guidelines and emergency contact information. These factors are essential for building a trustworthy destination image and are often deal-breakers for many tourists when deciding whether to revisit or recommend a location.

CONCLUSION

The growing disparity between urban and rural tourism development in Sarawak, particularly between Kuching and the Sematan-Lundu corridor, highlights an urgent need for a localized and regenerative approach to destination management. This paper has addressed that gap by proposing the TIDM framework model that measures TP and supports inclusive, place-based regeneration. Therefore, by integrating globally recognized dimensions from TTDI, foundational structure from TABC, and locally validated insights from Sarawak-specific studies (Thong et al., 2023), the TIDM offers a hybrid yet grounded framework that aligns with global standards and local realities.

Unlike conventional frameworks, TIDM strongly emphasizes core regenerative tourism values such as restoring ecological balance, enriching visitor-local interactions, and enhancing the socio-cultural fabric of the destination. Its five core dimensions are uniqueness of attractions, range of activities, quality of infrastructure and tourist facilities, affordability and value for money, and safety elements. These components serve as diagnostic tools and strategic levers for sustainable destination governance. Notably, this framework also innovatively incorporates sentiment analysis of UGC alongside traditional survey data, offering a more dynamic, real-time, and visitor-centered evaluation of tourism experiences.

The conceptualization of TIDM thus moves beyond static benchmarking, proposing instead a regenerative, adaptive model that reflects both the evolving needs of tourists and the contextual challenges of underdeveloped destinations. It offers policymakers, planners, and tourism stakeholders a practical tool to assess and monitor TP and actively guide transformational change. Therefore, future empirical studies applying the TIDM framework will be critical in validating its relevance and effectiveness. This is particularly true in shaping tourism strategies that are inclusive, resilient, and regenerative for the Sematan-Lundu corridor and other peripheral areas facing similar challenges.

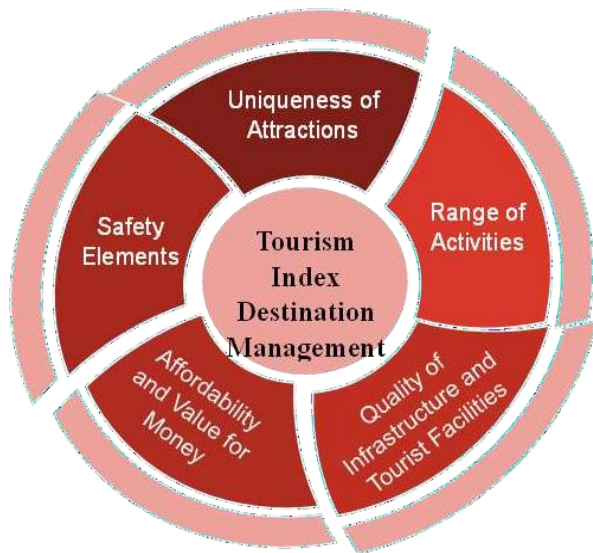


Figure 2: The Tourism Index Destination Management

Future Research and Limitations

Although TIDM model is conceptual in nature, a preliminary empirical application is strongly recommended to evaluate its practical relevance and operational validity. As a starting point, an exploratory pilot study involving real tourists in the Sematan-Lundu region would be instrumental. This would allow for empirical testing of the five core indicators namely uniqueness of attractions, range of activities, infrastructure and facilities, affordability, and safety. Moreover, the model currently assumes a neutral institutional context. Therefore, future studies should critically reflect on possible institutional and policy-related biases, especially since tourism performance data and index interpretation may be influenced by governmental or promotional agendas. Addressing these concerns would enhance the objectivity and scientific integrity of TIDM, especially if it is adopted by public tourism agencies or destination management organizations.

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