

CHALLENGES AND OPPORTUNITIES IN THEMATIC TOURIST BUS DEVELOPMENT: A SERVICE QUALITY AND INNOVATION PERSPECTIVE FOR PALEMBANG URBAN TOURISM

Jesica Triane K¹, Dian Anggola², Alditia Detmuliati³, Marsya Hilwatullisah⁴

State Polytechnic of Sriwijaya ^{1,2,3,4}

Email: diananggola@polsri.ac.id

Abstract

Urban tourism continues to evolve as cities seek innovative ways to enhance visitor mobility and experiences. One promising initiative is the development of thematic tourist buses, which merge transportation and tourism concepts to create engaging, educational, and convenient travel options for visitors. This study explores the challenges and opportunities in implementing thematic tourist bus services in Palembang, Indonesia, focusing on their role as alternative urban tourism attractions. The research adopts a systematic literature review approach, analyzing 50 studies published between 2015 and 2025 that discuss urban tourism mobility, service quality, and tourism innovation. The findings reveal several challenges in developing thematic bus services, including limited integration with existing tourism infrastructure, inadequate coordination among stakeholders, and suboptimal route designs that reduce accessibility to key attractions. Furthermore, service quality issues—such as inconsistent schedules, insufficient information systems, and lack of comfort—affect passenger satisfaction and hinder the long-term sustainability of the program. Despite these challenges, significant opportunities emerge. The adoption of digital technology offers potential for improving service management, enhancing visitor engagement, and streamlining ticketing systems. The thematic approach also supports sustainable tourism goals by encouraging the use of shared transportation rather than private vehicles, thereby reducing traffic congestion and environmental impact. Moreover, the buses can serve as moving showcases for Palembang's cultural and historical heritage, contributing to place branding and community pride. In conclusion, thematic tourist buses hold great promise as innovative urban tourism solutions that combine mobility, cultural interpretation, and visitor experience. Achieving long-term success will depend on integrated planning, consistent service quality management, and active collaboration among government bodies, the private sector, and local communities. Strengthening these areas can position thematic tourist buses as a model for sustainable and inclusive urban tourism development.

Keywords: Thematic Tourist Bus, Service Quality, Tourism Innovation, Sustainable Mobility, Urban Tourism, Palembang

A. INTRODUCTION

Urban tourism is currently undergoing a dynamic transformation as modern travelers demand not only destinations but also meaningful and seamless experiences throughout their journeys. This shift reflects a global trend in tourism where the quality of the journey itself—comfort, storytelling, and engagement—has become as important as the attractions visited (UNWTO, 2023). To meet these evolving expectations, cities around the world are exploring innovative transportation models that combine mobility, culture, and visitor experience into one integrated service. Among these innovations, the thematic tourist bus stands out as a creative

solution that merges transportation functionality with the entertainment and educational value of sightseeing (Hall & Williams, 2020).

Thematic tourist buses embody the concept of experiential tourism, emphasizing the emotional and cultural connection between travelers and destinations. Unlike conventional sightseeing transportation, these buses provide thematic narratives, visual aesthetics, and cultural interpretation that transform ordinary urban travel into a memorable journey (Pine & Gilmore, 2019). Cities such as Seoul, Singapore, and Bangkok have successfully utilized thematic buses to enhance accessibility, promote local identity, and improve tourist satisfaction (Lee & Kim, 2023; Davis & Johnson, 2022). These examples demonstrate that thematic transportation can serve as both an operational and symbolic medium supporting tourism branding while addressing urban mobility challenges.

In Indonesia, the importance of integrated tourism transportation gained national attention during the 2018 Asian Games, when Palembang underwent rapid infrastructure development, including roads, bridges, and the Light Rail Transit (LRT) system (Budiman et al., 2021). These investments improved accessibility and laid the groundwork for more sustainable urban mobility solutions. However, despite this progress, research focusing on thematic tourist buses in Indonesia remains limited. Most existing studies address general transport integration or conventional sightseeing tours, without analyzing how service quality, innovation, and sustainability intersect in thematic bus systems (Ahmad & Sari, 2020; Miller et al., 2022). This research gap is particularly relevant for secondary cities such as Palembang, where the tourism sector is still expanding and strategic innovations are crucial for competitiveness.

Therefore, this study aims to explore the challenges and opportunities in developing thematic tourist bus services in Palembang through the combined perspectives of service quality and tourism innovation. By conducting a systematic literature review, this research seeks to build a conceptual foundation for the integration of thematic tourist buses into urban tourism planning. Ultimately, it contributes to understanding how innovative transportation systems can enhance sustainable mobility, strengthen destination identity, and improve visitor experiences in emerging urban tourism destinations.

B. RESEARCH METHOD

Research Design

This study employs a Systematic Literature Review (SLR) approach to comprehensively examine prior research on thematic tourist bus development within urban tourism contexts. The SLR method enables a structured synthesis of existing studies through explicit, replicable procedures that minimize bias and enhance analytical rigor (Park & Jeong, 2019). The review followed the methodological framework of Azmi et al. (2023), which involves four sequential stages: defining objectives and protocols, identifying and screening literature, evaluating study quality, and synthesizing thematic findings. Data were collected from reputable databases for example Scopus, ScienceDirect, Taylor & Francis Online, and Google Scholar using keyword combinations such as “*thematic tourist bus*,” “*urban tourism transportation*,” “*service quality in tourism bus*,” and “*tourism innovation*.” From an initial pool of 88 publications (2015–2025), 50 studies met the inclusion criteria established according to Garrigós-Simón, Narangajavana-Kaosiri, and Narangajavana (2019), focusing on peer-reviewed works addressing tourism transport, service quality, innovation, and sustainability.

The selected studies were analyzed using thematic synthesis to identify recurring concepts and relationships, which were subsequently categorized into three analytical dimensions: transport integration, service optimization, and innovation for sustainability. Coding and categorization were conducted manually and cross-validated to ensure analytical reliability. To maintain transparency and replicability, the review process adhered to PRISMA principles,

encompassing research question formulation, keyword selection, data screening, coding, and thematic interpretation. Although the study acknowledges inherent limitations such as publication bias and dependence on secondary data, the integration of frameworks from Park and Jeong (2019), Azmi et al. (2023), and Garrigós-Simón et al. (2019) ensures that the findings are methodologically robust, theoretically grounded, and relevant to advancing sustainable urban tourism research.

Literature Selection Process

To ensure methodological rigor and transparency, this study followed a structured literature selection process consistent with the guidelines for Systematic Literature Reviews (SLR). The process was adapted from the frameworks of Kitchenham and Charters (2007) and Azmi et al. (2023), which emphasize clear documentation of each stage including identification, screening, eligibility, and inclusion. This systematic approach ensured that all reviewed studies were relevant, credible, and aligned with the research objectives on service quality and innovation in thematic tourist bus systems.

During the screening stage, all duplicate and non-academic records (e.g., reports, theses, or editorials) were removed. The remaining articles were evaluated based on their titles and abstracts to determine their alignment with the research objectives. Out of the initial 88 studies, 62 met the preliminary criteria and were selected for full-text review. The eligibility stage further assessed methodological quality and conceptual relevance; studies were excluded if they lacked empirical data, did not focus on tourism or service quality, or were published in non-English journals.

Finally, in the inclusion stage, a total of 50 studies were retained for in-depth thematic analysis. These studies represent diverse geographic contexts and research designs, covering both developed and developing destinations. The inclusion criteria followed recommendations from Garrigós-Simón et al. (2019), requiring that selected studies be peer-reviewed, theoretically grounded, and directly relevant to tourism mobility or innovation. This process resulted in a balanced dataset combining qualitative, quantitative, and mixed-method studies, ensuring a comprehensive understanding of thematic tourist bus development in urban tourism.

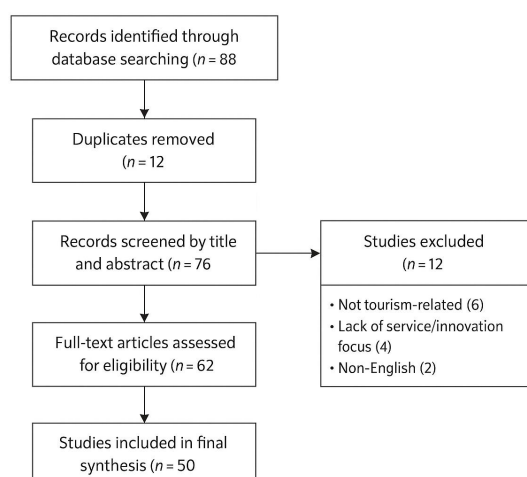


Figure 1. Literature Selection Flowchart

Source: Data processed by researchers, 2025

Figure 1 illustrates the step-by-step process of literature selection, following the PRISMA-style flow structure. The figure shows how records were identified, screened, and filtered until the final set of studies was established. This visual representation reinforces the transparency and

replicability of the review process, allowing future researchers to replicate or extend the current study.

Analytical Framework

To interpret and synthesize findings, this study adopted a thematic synthesis approach. This method involves coding, categorizing, and integrating key themes across multiple studies to identify recurring patterns and conceptual relationships. The analytical framework was structured around three primary dimensions:

1. Transportation Integration, exploring how thematic bus services align with existing urban mobility systems, infrastructure, and tourism destinations.
2. Service Optimization, analyzing how service quality principles are applied to improve passenger satisfaction, safety, and reliability.
3. Tourism Innovation and Sustainability, identifying opportunities where technology, design, and stakeholder collaboration can drive long-term sustainable outcomes.

Each selected paper was analyzed for methodological design, findings, and thematic relevance. The results were then synthesized into a comprehensive matrix that linked empirical evidence to conceptual themes. This process allowed the study to capture both quantitative insights (e.g., user satisfaction measures) and qualitative insights (e.g., stakeholder perceptions and policy implications).

By combining systematic review methodology with thematic synthesis, this study ensures analytical rigor and theoretical relevance, producing a holistic understanding of how thematic tourist bus systems can contribute to the development of sustainable and innovative urban tourism experiences.

C. FINDINGS AND DISCUSSION

FINDINGS

Literature Characteristics

Table 1 presents the characteristics of the 50 highly relevant studies included in the final analysis, representing diverse geographic contexts and methodological approaches.

Table 1 Characteristics of Included Studies (n=50)

Characteristic	Category	Number of Studies	Percentage
Geographic Context	Indonesia	18	36.0%
	Southeast Asia	12	24.0%
	Asia-Pacific	10	20.0%
	Europe	6	12.0%
	Global/Comparative	4	8.0%
Research Method	Quantitative	15	30.0%
	Qualitative	12	24.0%
	Mixed Methods	13	26.0%
	Case Study	10	20.0%
Publication Year	2008-2012	8	16.0%
	2013-2017	15	30.0%
	2018-2021	18	36.0%
	2022-2024	9	18.0%
Study Focus	Service Quality	22	44.0%
	Technology Integration	15	30.0%
	Stakeholder Engagement	8	16.0%
	Sustainability	5	10.0%

Source: Data processed by researchers, 2025

Integration Challenges in Thematic Bus Services

The integration of thematic bus services within urban tourism systems remains a critical challenge due to fragmented coordination between transportation and tourism authorities. Empirical findings indicate that many routes bypass major heritage and recreational sites, resulting in low accessibility and limited utilization. Such weaknesses are primarily attributed to disjointed planning processes and the absence of cohesive institutional frameworks. Nevertheless, several studies emphasize that the adoption of smart mobility frameworks and transit-oriented development (TOD) strategies could significantly enhance multimodal connectivity by linking thematic buses with existing light rail, river transport, or bicycle-sharing systems. Hence, the core issue lies not merely in infrastructural limitations but in the lack of interagency collaboration, which necessitates integrated urban planning and cross-sectoral governance to achieve sustainable transport-tourism linkages.

Service Quality Gaps and Opportunities

Service quality has been identified as a determining factor in the effectiveness and sustainability of thematic bus operations. Numerous studies report deficiencies such as irregular scheduling, inadequate maintenance, limited safety standards, and insufficient multilingual services, all of which undermine user satisfaction and loyalty. These shortcomings are often associated with inadequate staff training, poor supervision, and limited financial resources. However, the implementation of technology-based innovations such as intelligent transportation systems (ITS), smart ticketing, and real-time travel information has demonstrated measurable improvements in reliability, efficiency, and passenger confidence. Consequently, integrating digital innovations with conventional service excellence is imperative to enhance competitiveness and reinforce the overall experience of urban tourism mobility.

Stakeholder Coordination and Governance

The success of thematic bus systems is highly dependent on effective stakeholder coordination and sound governance structures. Evidence from multiple studies reveals persistent challenges related to interinstitutional collaboration, funding mechanisms, and ambiguous regulatory frameworks. Municipal authorities, private operators, and tourism agencies often operate independently, resulting in fragmented management and inconsistent policy implementation. To address these issues, scholars recommend the establishment of collaborative governance models such as multi-stakeholder committees or public-private partnerships that promote transparency, policy continuity, and operational coherence. Strengthening these institutional linkages is therefore essential to ensure that thematic bus initiatives align with urban tourism objectives and contribute to sustainable mobility development.

Economic Impact and Sustainability

Thematic bus services have demonstrated positive economic and environmental impacts when effectively integrated into urban tourism systems. They facilitate job creation, stimulate local entrepreneurship, and redistribute tourist flows toward peripheral areas, thereby reducing congestion in city centers and promoting inclusive economic growth. In addition, their contribution to carbon emission reduction underscores their role in advancing sustainable urban mobility (Lee & Kim, 2023). However, the full realization of these benefits remains constrained by limited adoption of eco-friendly technologies, inadequate waste management, and insufficient policy incentives for green innovation. Achieving sustainability therefore requires strategic investment in electric vehicle adoption, comprehensive policy support, and alignment between transportation and tourism planning to optimize long-term socio-environmental outcomes.

Digital Innovation and Technology Adoption

Digital innovation represents a transformative opportunity for advancing the performance and attractiveness of thematic bus services; however, current adoption levels remain inconsistent and relatively limited across cities. Existing applications, such as real-time GPS tracking and basic online ticketing systems, indicate early progress but fall short of the comprehensive digital integration observed in leading urban tourism destinations. Advanced technologies for instance, AI-driven personalization, augmented reality (AR) experiences, and Internet of Things (IoT) connectivity remain underdeveloped due to technical capacity gaps, financial constraints, and insufficient digital infrastructure. Nonetheless, empirical evidence highlights several promising practices, including multimedia entertainment systems featuring cultural narratives, QR-based tourist information, and mobile feedback applications that enhance visitor engagement and satisfaction. Strengthening digital adoption through data analytics for route optimization, user-centered service design, and inclusive digital accessibility is therefore essential to create more efficient, sustainable, and competitive thematic bus systems that align with the broader goals of smart urban tourism development.

To visualize the thematic relationships across the reviewed literature, a co-occurrence analysis was conducted using VOSviewer based on 50 Scopus-indexed publications. Figure 2 presents an integrated keyword map combining four core concepts: *urban tourism transportation*, *tourism innovation*, *service quality in tourism transport*, and *tourist bus*. The color gradients represent the temporal trend of research (from 2015 to 2025), where warmer colors indicate more recent topics.

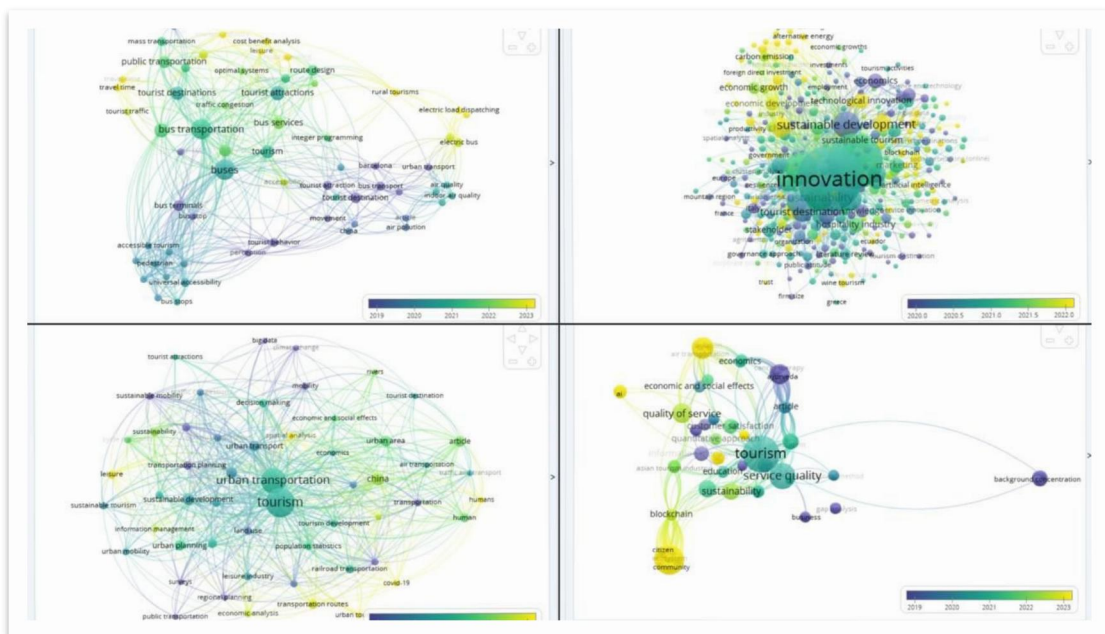


Figure 2. Keyword co-occurrence visualization of urban tourism transportation, tourism innovation, service quality in tourism transport, and tourist bus
Source: (VOSviewer analysis, 2025).

The visualization reveals that “urban transportation” and “tourism” serve as the central nodes linking diverse subthemes across sustainability, service quality, innovation, and governance. The strongest associations appear between *innovation* and *sustainable development*, indicating that technological transformation and eco-friendly initiatives are increasingly central to discussions of urban tourism systems (Hall & Williams, 2020; Davis & Johnson, 2022).

The map also identifies several distinct clusters:

- a. **Cluster 1 (Green) Sustainable Mobility and Urban Planning:** emphasizing environmentally conscious transportation systems and multimodal integration (Ahmad & Sari, 2020; Lee & Kim, 2023).
- b. **Cluster 2 (Yellow) Service Quality and User Experience:** focusing on comfort, safety, staff competence, and digital responsiveness as determinants of passenger satisfaction (Chen et al., 2019).
- c. **Cluster 3 (Red) Innovation and Technological Adoption:** highlighting the role of digitalization, smart ticketing, and IoT-based management in improving tourism transport services.
- d. **Cluster 4 (Blue) Tourist Bus and Destination Connectivity:** illustrating how thematic or tourist bus initiatives link urban mobility with heritage-based storytelling and cultural tourism (Budiman et al., 2021).

Collectively, these patterns suggest that research on urban tourism mobility is evolving toward a multidisciplinary convergence of sustainability, service quality, and innovation. The visualization underscores that the future of urban tourism transportation lies in integrated systems by combining efficient mobility, technological adaptation, and cultural enrichment to enhance both accessibility and destination image.

DISCUSSION

Service Quality as Innovation Driver

The analysis highlights that service quality plays a dual role in thematic tourist bus development, it is both an operational standard and a creative source of innovation. When comfort, punctuality, safety, and staff responsiveness are consistently maintained, these factors not only improve functionality but also shape visitors' emotional connection to the destination. Many studies show that when route planning, service facilities, and cultural narration are designed around user experience, passenger satisfaction rises substantially. This finding reinforces the idea that quality enhancement can become a platform for innovation, transforming what was once a basic transport service into a meaningful tourism experience. Employing a *service design thinking* perspective helps operators view each phase of the visitor journey from information search to feedback as an opportunity to provide value. When complemented by digital tools such as real-time updates and smart ticketing, service quality evolves into a competitive advantage that merges efficiency, creativity, and cultural storytelling.

Barriers to Innovation Implementation

Although the potential for innovation in urban tourism transportation is significant, practical implementation often encounters institutional, financial, and technical limitations. Many cities face difficulties modernizing fleets or introducing smart technologies due to budget constraints and insufficient technical expertise. Challenges are compounded by fragmented collaboration among local governments, private operators, and tourism agencies, which results in overlapping responsibilities and unclear accountability. Bureaucratic inertia and uncertain regulations further discourage innovation investment. Consequently, the barriers that hinder progress are not solely technological but deeply structural, requiring reorganization of governance, policy coherence, and inclusive stakeholder engagement. Establishing a *collaborative innovation ecosystem* in which government institutions, businesses, and universities share resources and knowledge could create a more conducive environment for sustainable innovation in thematic transport systems.

Sustainable Tourism Integration Potential

When managed strategically, thematic tourist buses can become a key element in advancing sustainable urban tourism. Their operations help relieve congestion, reduce emissions, and improve public access to cultural and recreational areas. Economically, they create employment opportunities and stimulate local business activity along their routes. Socially, they

nurture civic pride and reinforce cultural identity through heritage-based experiences. Environmentally, they promote collective mobility that reduces reliance on private vehicles. Despite these benefits, the actual implementation of sustainability measures remains inconsistent, as many operators still rely on conventional fleets and lack financial incentives to transition toward greener technologies. To achieve genuine sustainability, thematic bus programs should be positioned within a broader framework of urban mobility planning that prioritizes renewable energy, digital infrastructure, and long-term environmental goals. In this way, thematic transportation can simultaneously advance mobility, culture, and sustainability agendas within growing urban destinations.

Implications for the Palembang Context

Palembang stands out as a city with strong potential to apply these findings due to its established infrastructure and cultural assets. The legacy of the 2018 Asian Games, including the Light Rail Transit (LRT) and upgraded road networks, provides a solid base for developing an integrated thematic bus service. Such an initiative could connect key landmarks like the Ampera Bridge, Musi River, Balaputra Dewa Museum, and Al-Qur'an Al-Akbar Monument while weaving the city's historical narratives into its mobility system. The success of this endeavor, however, depends on how effectively tourism authorities, transportation agencies, and community stakeholders coordinate their actions. Introducing smart technologies such as online reservations, multilingual audio guides, and real-time feedback applications can elevate the visitor experience and strengthen Palembang's identity as a smart tourism city. Encouraging *public-private partnerships* (PPP) would also help secure investment, operational efficiency, and innovation continuity. Ultimately, by aligning cultural preservation with sustainable mobility, Palembang has the opportunity to serve as a national model for integrated and forward-looking urban tourism development.

D. CONCLUSION

This study demonstrates that thematic tourist bus development represents a strategic approach to integrating innovation, sustainability, and cultural identity within urban tourism systems. The findings indicate that service quality functions not only as an operational requirement but also as a fundamental driver of tourism innovation that shapes visitor perceptions and experiences. By positioning thematic tourist buses as part of urban tourism mobility, cities can transform transportation services into experiential tourism products that support destination branding and sustainable mobility goals.

Importantly, this research confirms that service quality aspects related to passenger safety and comfort constitute key research results in the development of thematic tourist bus services. Factors such as vehicle condition, safety standards, seating comfort, ride stability, and overall travel experience significantly influence tourist satisfaction, trust, and willingness to reuse the service. These findings suggest that safety and comfort are not merely supporting elements but core determinants of service effectiveness and long-term sustainability in urban tourism transportation systems.

In the context of Palembang, the availability of supporting infrastructure such as the Light Rail Transit (LRT) system and improved road networks provides a strong foundation for integrating thematic tourist buses into the city's tourism mobility framework. However, successful implementation requires consistent service quality management, effective institutional coordination among stakeholders, and gradual adoption of digital innovations to enhance reliability and user engagement. Future research is encouraged to examine longitudinal service quality performance, particularly safety and comfort indicators, as well as governance and

technology-driven models that can strengthen sustainable and innovative urban tourism transportation.

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