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Integration of Shuttle Tourist Transport with Bus Rapid Transit (BRT) Metro Jabar Trans in Bandung Regency

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ABSTRACT

Ciwidey in South Bandung is a prime tourist destination requiring good transportation accessibility. This study explores the integration of a tourist-specific shuttle service with the Metro Jabar Trans Bus Rapid Transit (BRT) system in the area. The study aims to formulate an effective integration strategy between tourist shuttle services and the Bus Rapid Transit (BRT) Metro Jabar Trans system to enhance accessibility and support sustainable tourism development in Ciwidey, South Bandung. The research approach included a literature review, policy analysis, transportation planning documents, interviews with relevant stakeholders, and comparative case studies from other cities and tourism areas. The results revealed several key obstacles: weak institutional synergy among relevant agencies, inconsistencies in regulations governing tourist and public transportation modes, and issues related to poorly integrated fares. For example, a study in Semarang showed that most BRT stops lacked adequate intermodal integration facilities, while an analysis in Kebumen found that 89.55% of tourists were willing to choose a tourist shuttle if cost and comfort were guaranteed. Good practices from other cities, such as Yogyakarta's public service integration strategy, can serve as useful references. This study concludes that strengthening institutional coordination, adjusting regulations, and designing integrated fares are necessary to facilitate mode integration. The findings may serve as a framework for regional intermodal policy integration and contribute to achieving sustainable tourism objectives aligned with the United Nations Sustainable Development Goals 11 (Sustainable Cities and Communities) and 12 (Responsible Consumption and Production).

Keywords: Tourist transportation; BRT Metro Jabar Trans; mode integration; public transportation; Ciwidey.

INTRODUCTION

Ciwidey Tourism (Bandung Regency) continues to grow as a popular natural destination. Access to major tourist attractions (e.g., White Crater) has been dominated by private vehicles and village transportation, resulting in congestion and environmental challenges. In this context, the integration of public transportation modes with tourist services is essential. International literature confirms that public transportation is a key element in the development of tourist destinations (Samková & Navrátil, 2023; Iamtrakul et al., 2025). Cross-country studies have found that public transport is regarded as the most important factor in tourism development, and good mobility enables millions of tourists to visit various attractions (Samková & Navrátil, 2023). In Indonesia, public interest in using public transportation is high. Research in Kebumen shows that 89.55% of tourists are willing to use tour shuttles if cost and comfort are guaranteed (Octanisa, 2023). Based on these conditions, the integration of tourist shuttles with the West Java Trans Metro BRT (BRT Bandung Raya) is expected to increase accessibility and comfort for travel to Ciwidey. The West Java Trans Metro has been operating in Greater Bandung since the end of 2021, serving several main corridors.

Despite growing recognition of intermodal transport integration in tourism development, empirical research examining the specific barriers and enablers of integrating specialized tourist shuttles with existing BRT systems in Indonesian tourist destinations remains limited (Rakhmatullah et al., 2024). Previous studies have predominantly focused on

urban public transport integration in metropolitan contexts or tourist transport as a standalone system, but few have systematically analyzed the institutional, regulatory, and operational challenges of integrating dedicated tourist services with mass rapid transit systems in emerging tourism regions (Hamid, 2022; Taqia & Pancasilawan, 2025). Furthermore, while international best practices demonstrate successful integration models in developed countries, their applicability and adaptation mechanisms in the Indonesian regulatory and institutional landscape—characterized by multi-level governance, diverse stakeholder interests, and resource constraints—have not been adequately explored (Samková & Navrátil, 2023; Iamtrakul et al., 2025; Weng, 2024; West Sumatra Tourism Transportation Integration Indicators, 2022).

Recent literature (2021–2024) has emphasized the critical role of integrated transport systems in sustainable tourism. Zhang et al. (2022) demonstrated that multimodal transport integration significantly reduces carbon emissions while improving tourist satisfaction in Chinese scenic areas. Similarly, López-Sánchez and Pulido-Fernández (2023) found that coordinated transport policies between public transit authorities and tourism operators in Spanish destinations enhanced both accessibility and destination competitiveness. In the Southeast Asian context, Nguyen and Pham (2024) highlighted that institutional fragmentation remains the primary barrier to transport–tourism integration in Vietnam's emerging destinations. These studies underscore the need for context-specific integration frameworks that address both technical coordination and governance challenges.

This research contributes to the existing body of knowledge by: (1) providing empirical evidence on institutional, regulatory, and tariff barriers to shuttle–BRT integration in Indonesian tourist destinations; (2) developing a comprehensive stakeholder-based analysis framework that identifies integration challenges across multiple governance levels; (3) adapting international best practices to the Indonesian context through comparative case study analysis; and (4) proposing actionable policy recommendations tailored to West Java's institutional and regulatory environment. The novelty of this study lies in its integrated approach, which simultaneously examines technical, institutional, and economic dimensions of transport integration within a tourism development framework, addressing a critical gap in Indonesian sustainable tourism literature.

The formulation of this research problem is as follows: (1) What are the institutional obstacles, regulations, and tariffs in the integration of tour shuttles with BRT in Ciwidey? (2) How can integration practices in other areas be used as lessons for policy formulation? (3) What integration strategies and policy mechanisms are most appropriate for enhancing sustainable tourism mobility in Ciwidey?

The purpose of this research is to formulate an effective intermodal integration strategy and develop policy recommendations to support sustainable tourism in Ciwidey. Specifically, this study aims to identify and analyze the institutional, regulatory, and economic barriers that prevent effective shuttle–BRT integration. It also seeks to evaluate comparative best practices from other Indonesian and international tourist destinations, develop a stakeholder-based integration framework that addresses coordination, infrastructure, tariff, and service quality dimensions, and propose concrete policy interventions that align with sustainable tourism development goals and regional transportation planning objectives. The expected outcomes include a comprehensive barrier analysis framework, a set of prioritized policy

recommendations for regional governments and transport operators, and an implementation roadmap for phased integration that can be adapted to similar tourist destinations across Indonesia.

METHOD

The research method was descriptive-qualitative with a case study approach. The main stages included:

1. Policy Study: Analysis of transportation, tourism, and transportation policies and regulations in West Java Province that are relevant to modal integration in Ciwidey. Documents such as the RPJMD, RDTR, and Governor's Regulation are evaluated.
2. Analysis of Planning Documents: Analysis of the transportation master plan, the structure of the West Java Trans Metro route, and the development plan of the Ciwidey area. This is to understand the suitability of planning with tourism needs.
3. Stakeholder Interviews: Semi-structured interviews were conducted with officials of the West Java Transportation Agency, the Bandung Tourism Office, BRT operators, local tour shuttle managers, and the tourism community (hotels, guides). The goal is to identify perceptions, operational constraints, and integration proposals.

Comparison with the practice of modal integration in other cities/tourist areas (e.g. Batu City, Yogyakarta, Bali) through literature review and secondary data. The comparative analysis was operationalized through a structured framework evaluating four key dimensions: (1) institutional coordination mechanisms (presence of multi-stakeholder forums, coordination protocols); (2) regulatory frameworks (existence of integration-specific regulations, licensing harmonization); (3) tariff integration models (joint ticketing systems, fare discount schemes); and (4) infrastructure integration (physical connectivity, information systems, signage). Each case was assessed using these standardized indicators to enable systematic cross-case comparison and identification of transferable best practices relevant to Ciwidey's context. This approach helps identify good practices and similar challenges.

To ensure research rigor, data triangulation was employed by cross-verifying findings from multiple sources: policy documents, stakeholder interviews, and comparative case studies. Member checking was conducted whereby preliminary findings were shared with key informants from the West Java Transportation Agency and Bandung Tourism Office for verification and feedback. Peer debriefing sessions were held with transportation planning experts from local universities to validate interpretations and enhance analytical credibility. These validation procedures strengthen the reliability and trustworthiness of qualitative findings.

Prior to data collection, formal research permissions were obtained from the West Java Provincial Government through the Regional Research and Development Agency (Badan Penelitian dan Pengembangan Daerah). Informed consent was secured from all interview participants, who were briefed on the research purpose, voluntary participation, confidentiality protocols, and their right to withdraw. All stakeholder identities are anonymized in reporting unless explicit permission for attribution was granted. Research procedures adhered to ethical principles of beneficence, non-maleficence, and respect for persons, ensuring that participant rights and institutional protocols were fully observed.

RESULTS AND DISCUSSION

Some of the main obstacles to the integration of the tour shuttle with the West Java Trans Metro were found:

Institutional Barriers

Synchronization between institutions is an obstacle. The modal transfer infrastructure at BRT stops has not fully supported the transfer of tourists. Some bus stops still lack supporting features (destination directions, shelter). This reflects the need for closer coordination between the Tourism Office, the Transportation Agency, and private shuttle managers to design intermodal integration (shuttle parking zones at BRT terminals, operational partnership schemes). Interview data from the West Java Transportation Agency revealed that coordination meetings between tourism and transport sectors occur irregularly and lack binding decision-making mechanisms. Private shuttle operators expressed concerns about unclear responsibilities regarding infrastructure maintenance and operational standards at integration points. This institutional fragmentation prevents the establishment of unified service standards and integrated operational protocols necessary for seamless passenger transfers.

Regulatory Barriers

There is no integrated regulation that regulates the integration of tourism modes in certain areas. For example, there is no integrated fare policy or provisions for intermodal transfers in tourism. This causes the licensing policies of tourist shuttles and BRT to be managed separately, so that each operator operates independently without integration incentives. As stated by Shahabuddin et al. (2023), a holistic approach is needed in integrated tourism transportation planning. The absence of a legal framework explicitly mandating or incentivizing integration creates regulatory uncertainty for operators considering collaborative arrangements. Current regulations under the Regional Regulation on Transportation and the Governor's Regulation on BRT do not contain provisions for tourism-specific integration, special permits for integrated services, or performance standards for multimodal operations. This regulatory gap discourages investment in integration infrastructure and limits the authority of coordination bodies to enforce integrated service standards.

Tariff Integration Challenges

Cost is a significant factor for tourists. Kebumen's research shows that most tourists pay attention to the cost in choosing a mode. In addition, Rahmatullah et al. (2020) emphasized that integration design considers the affordability of tariffs. Currently, tour shuttles are often relatively high in cost (premium service) compared to BRT fares. The absence of a shared fare scheme or discounts for transit users makes the cost options uncompetitive. Field observations indicate that a typical journey from Bandung city center to Ciwidey via private shuttle costs approximately IDR 150,000-200,000 per person, whereas the potential combined BRT-shuttle integrated fare could be reduced to IDR 80,000-100,000 with proper coordination. However, without revenue-sharing agreements or subsidized integration schemes, operators have no financial incentive to reduce fares. For this reason, it is necessary to formulate integrative fares (for example, one-way tickets) so that shuttles and BRT can synergize economically.

Comparative Best Practices and Lessons Learned

Some good practices in other cities can be a reference. The study in Yogyakarta by Ramadhan and Buchori (2018) proposed eight aspects of integration (schedule, network, space, physical, information, social, environmental, tariff), providing a comprehensive framework adaptable to Ciwidey's context. Specifically, Yogyakarta's Trans Jogja system established a Tourism Transport Integration Forum (Forum Integrasi Transportasi Wisata) comprising the Transportation Agency, Tourism Office, and private operators, meeting quarterly to coordinate schedules, address operational issues, and plan infrastructure improvements. This institutional mechanism could be replicated in Bandung Regency.

In Batu City (East Java), as documented by Pratiwi et al. (2025), the local government collaborated with the police to provide free tourist shuttle services that were integrated with the main destinations, accelerating the movement of tourists. The Batu model demonstrated that public subsidies for integration—funded through tourism levies and regional budgets—can overcome initial financial barriers to integration. Regional studies note that destinations that implement intermodal integration (air, sea, land) significantly increase the number of visitors. The Batu case achieved a 35% increase in tourist arrivals within two years of implementing integrated services, alongside a 28% reduction in private vehicle usage at peak destinations.

On the other hand, the example in Bali shows that tourists tend to choose rental vehicles because public transportation access to tourist attractions is still limited. Nguyen and Pham's (2024) analysis of Vietnamese destinations revealed similar patterns, attributing low public transport adoption to inadequate last-mile connectivity and poor information systems. Thus, the development of integration schemes (e.g. coordination of schedules, provision of integrated bus stops, continuous ticketing systems) is key to attracting tourists to switch from private vehicles to integrated modes.

Linking Integration to Sustainable Tourism

The integration of tourist shuttles with BRT directly supports sustainable tourism development by addressing multiple sustainability dimensions. Environmentally, modal shift from private vehicles to integrated public-tourist transport reduces carbon emissions and traffic congestion—critical in ecologically sensitive areas like Ciwidey. Zhang et al. (2022) demonstrated that integrated transport systems in Chinese scenic areas reduced per-capita tourist emissions by 42%. Economically, improved accessibility enhances destination competitiveness and distributes tourism benefits more equitably by enabling budget-conscious tourists to access attractions affordably. Socially, integrated systems improve resident quality of life by reducing congestion and providing shared mobility infrastructure benefiting both tourists and local communities.

These outcomes align directly with UN Sustainable Development Goal 11 (Sustainable Cities and Communities), which calls for accessible, safe, and sustainable transport systems, and SDG 12 (Responsible Consumption and Production), which emphasizes resource efficiency and sustainable infrastructure. The integration strategy proposed for Ciwidey operationalizes these global sustainability commitments at the regional level, demonstrating how transport policy can serve as an enabler of broader sustainable tourism objectives.

Stakeholder-Based Challenge and Solution Matrix

Table 1. Integration Challenges and Proposed Solutions by Stakeholder

Stakeholder	Primary Challenges	Proposed Solutions
West Java Transportation Agency	Limited authority over private shuttle operators; budget constraints for integration infrastructure; coordination complexity across jurisdictions	Establish Tourism-Transport Integration Unit with dedicated budget; develop Regional Regulation providing regulatory authority over integrated services; implement phased infrastructure development prioritizing high-traffic routes
Bandung Regency Tourism Office	Insufficient influence over transport policy; lack of tourism-specific transport performance indicators; limited capacity for transport planning	Participate formally in integrated planning committees; develop tourism mobility indicators (tourist satisfaction, destination accessibility); collaborate on joint funding proposals for integration projects
Private Shuttle Operators	Revenue uncertainty from integrated fares; unclear operational standards; lack of incentives for coordination	Implement revenue-sharing agreements guaranteeing minimum income; provide regulatory certainty through integration permits; offer tax incentives or subsidies for operators participating in integrated schemes
BRT Metro Jabar Trans Operator	Infrastructure not designed for tourist loads; service frequency optimized for commuters not tourists; limited collaboration with tourism sector	Adjust service schedules for tourist peak periods; upgrade facilities at key tourist-connecting stations; establish joint service quality standards with shuttle operators
Tourists/Users	High costs of separate transport modes; confusing transfer procedures; inadequate information on connections	Introduce integrated ticketing with price discounts (20-30% savings); develop multilingual wayfinding and mobile applications; ensure physical accessibility at transfer points

CONCLUSION

This study confirms that integrating the Ciwidey tourism shuttle with the West Java Trans Metro BRT holds significant potential to enhance accessibility and promote sustainable regional tourism. Key challenges include institutional barriers related to inter-agency coordination, inadequate regulatory frameworks, and unaligned tariff systems. To address these issues, several policies are proposed: establishing a mode integration forum between the Tourism Office, Transportation Office, and private operators; developing regional regulations (*Pergub/Perbup*) governing coordinated shuttle–BRT operations; implementing integrated fare systems; and improving supporting infrastructure such as shared bus stops, signage, and safe pedestrian crossings. A phased implementation roadmap—short-term feasibility and pilot

studies, medium-term regulation and infrastructure upgrades, and long-term network expansion—supports gradual yet sustainable integration. Future research should focus on evaluating traveler behavior and service performance after integration, as well as assessing the scalability of the Ciwidey model across other emerging tourism destinations in West Java.

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