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The Effectiveness of Bus Rapid Transit (BRT) Implementation as a Public Transportation Policy in Cirebon City

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A B S T R A C T

Urban traffic congestion is a public policy challenge that reflects the effectiveness of government interventions in managing urban mobility. The Cirebon City Government has implemented Bus Trans Cirebon as a Bus Rapid Transit (BRT) policy intended to provide an alternative to private vehicle use and support efforts to reduce traffic congestion. This study examines the effectiveness of Bus Trans Cirebon by assessing the alignment between policy implementation and the mobility needs of local communities. Using a qualitative descriptive approach, data were collected through semi-structured interviews with 14 informants, consisting of 3 transportation officials, 6 regular users, and 5 non-users, complemented by field observations and policy document analysis. The analysis focuses on service reliability, route and spatial alignment, and service consistency in shaping public trust and travel choices. The findings indicate that the effectiveness of Bus Trans Cirebon remains constrained by uncertain schedules, limited route connectivity, inadequate service frequency, and insufficient integration with actual mobility patterns. Although the service is generally perceived as relatively comfortable and safe, these limitations reduce its competitiveness compared with private vehicles and constrain its capacity to induce modal shift. The study further identifies a gap between government expectations and users' everyday mobility experiences. The study concludes that the effectiveness of BRT depends not merely on the formal provision of services but on whether the service can become a reliable, accessible, and competitive alternative to private mobility. These implementation conditions help explain why modal shift remains limited despite the availability of Bus Trans Cirebon.

INTRODUCTION

Urban traffic congestion is no longer viewed simply as a technical problem of transportation. It has become part of a broader public policy concern that involves urban planning, mobility governance, infrastructure capacity, and everyday travel behavior (Çolak et al., 2016). The growing use of private vehicles, increasing mobility demands, and the limited capacity of urban roads have placed greater pressure on transportation systems (Makino et al., 2018). These pressures affect not only travel efficiency but also economic activities, environmental conditions, and the overall quality of urban life. In this context, transportation policy becomes an important form of government intervention for managing mobility, improving access to urban activities, and organizing the use of road space. From a public policy perspective, such interventions are intended to address collective problems and achieve broader social objectives (Barmpounakis & Geroliminis, 2020; Farda & Balijepalli, 2018; Irawan et al., 2020).

Within this broader policy context, public transportation should be understood as more than a means of moving people from one place to another (Hasibuan & Mulyani, 2022; Shortell & Brown, 2016). It also functions as a policy instrument that can influence travel behavior and reduce dependence on private vehicles. Its effectiveness, therefore, cannot be judged only by the availability of buses, routes, or supporting facilities (Suryawan et al., 2024). What matters is whether the service is able to respond to actual mobility needs and provide a sufficiently reliable and attractive alternative for users. In general, policy effectiveness refers to the extent to which predetermined objectives are achieved through the appropriate use of available resources (Hidayati et al., 2021). Applied to public transportation, this means that a service can be considered effective when it is not only available, but also relevant to people's daily travel needs and capable of offering clear advantages over other travel options (Song et al., 2019). Recent studies further show that perceived service quality, passenger preferences, service integration, and the quality of supporting infrastructure are important in shaping the attractiveness and effectiveness of BRT systems (Ramli et al., 2026).

This issue is especially relevant in medium-sized cities such as Cirebon, where local mobility needs intersect with broader regional traffic flows. Cirebon serves not only as a center for economic and social activities, but also as an important transit point between surrounding areas. As a result, daily commuting patterns often overlap with interregional movements, creating congestion at certain locations and during particular periods. Under these conditions, expanding road infrastructure alone is unlikely to provide a sufficient response. What is needed is a transportation policy that takes into account the spatial structure of the city, actual travel patterns, access to public transport, and the institutional capacity required to manage the system effectively. Previous research in Cirebon also points to the importance of administrative and organizational capacity in supporting the delivery of urban transportation services (Budisiswanto, 2026; Fahreza & Hidayat, 2026; Mutiara Triani et al., 2026; Schouten et al., 2025).

Against this background, Bus Rapid Transit (BRT) has been adopted in many cities as an alternative form of public transportation aimed at improving urban mobility and reducing reliance on private vehicles. Compared with conventional bus services, BRT is generally expected to offer more reliable operations, more predictable travel times, better accessibility,

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and greater service efficiency. These features matter because people are more likely to shift from private vehicles to public transport when the available service offers clear advantages in terms of travel time, accessibility, reliability, and the overall travel experience. In other words, the success of BRT depends not only on whether the service is available, but also on whether users consider it a practical and competitive option for their daily mobility needs (Nugroho et al., 2020). Studies on BRT passenger preferences and service integration likewise indicate that travelers evaluate public transport not only in terms of fare and vehicle availability, but also through accessibility, service frequency, comfort, integration, and travel-time reliability (Jauregui-Fung et al., 2026; Wijaya et al., 2019).

However, the implementation of BRT does not automatically generate modal shift or improve urban mobility. Evidence from Indonesian cities indicates that BRT performance is strongly influenced by service reliability and operational consistency (Sogbe et al., 2025). Research on BRT and commuting outcomes also suggests that transportation interventions can influence travel conditions when supported by adequate institutional and operational arrangements (Bakar et al., 2022). Other studies have similarly emphasized that the effectiveness of public transport depends on the quality of stations, supporting infrastructure, service integration, and the broader quality of public service delivery (Veeneman & Mulley, 2018). These findings suggest that the effectiveness of BRT cannot be assessed simply by looking at the presence of buses and routes. More importantly, the service needs to function as a reliable, accessible, and competitive alternative that fits with people's everyday mobility needs.

In Cirebon, Bus Trans Cirebon was introduced as part of the local government's response to growing urban mobility pressures and the need to reduce dependence on private vehicles. Its presence, however, does not automatically mean that the service is effective. The more important question is whether its routes, service frequency, accessibility, reliability, and institutional support are aligned with the way people actually travel across the city. When these elements do not correspond with daily mobility needs, users may have little reason to shift from private vehicles to public transportation. Public confidence is also important in this context, since consistent and dependable service can influence people's willingness to rely on public transportation for their routine journeys (McLeod et al., 2017).

Several studies in Cirebon have examined different aspects of urban transportation. Flink & Chen (2021), highlight the importance of administrative and organizational capacity in supporting transportation service delivery. focuses on the role of public trust, while Cordella & Paletti (2019), examines the contribution of bus-stop infrastructure to service accessibility. At a broader level, studies on modal choice also show that people are more likely to shift from private to public transportation when the latter offers clear advantages in terms of convenience, accessibility, reliability, and the overall travel experience (Smith et al., 2018). Taken together, these studies indicate that BRT performance is shaped by several related factors. However, most existing studies in Cirebon have tended to examine institutional capacity, public trust, infrastructure, and modal choice separately, rather than considering how these factors interact in shaping the effectiveness of public transportation policy. The broader BRT literature also highlights the importance of passenger preferences, service quality, infrastructure performance, and integration across transport services (Abidin & Yusuf, 2025; Adi et al., 2020; Afriza & Manullang, 2020; Borsje et al., 2023).

Taken together, these studies provide substantial evidence on individual aspects of public transport effectiveness, but they tend to examine service quality, accessibility, organizational capacity, user perceptions, and modal choice separately. Less attention has been given to how these dimensions interact within a medium-sized urban context such as Cirebon. Accordingly, the research gap addressed in this study lies in the limited integrated explanation of how regulatory arrangements, spatial alignment, and institutional capacity jointly shape the implementation effectiveness of Bus Trans Cirebon and its capacity to support modal shift. This study therefore examines Bus Trans Cirebon not merely as a transport service, but as a public policy intervention whose effectiveness depends on the interaction between regulatory, spatial, and institutional conditions.

METHOD

The study was conducted in Cirebon City, Indonesia, where Bus Trans Cirebon operates as a local form of Bus Rapid Transit (BRT). Cirebon was selected because of its characteristics as a medium-sized city that functions both as a center of local economic and social activities and as an interregional transit corridor. These characteristics create a distinctive mobility environment in which local travel patterns interact with regional traffic flows.

Informants were selected using purposive sampling based on their direct involvement in, knowledge of, or experience with Bus Trans Cirebon. The study involved 14 informants, consisting of 3 transportation officials, 6 regular users, and 5 non-users. Transportation officials were selected because of their involvement in the planning, management, or operation of the service. Regular users were included to capture direct experiences concerning reliability, accessibility, routes, waiting times, and service quality, while non-users were included to identify factors that discourage the use of BRT and sustain reliance on alternative modes of transportation. **Table 1.** Characteristics of Research Informants

Informant Code	Category	Relevance to the Study	Data Collection Method
R-DH1	Transportation Official	Planning, management, and implementation of Bus Trans Cirebon	Semi-structured interview
R-DH2	Transportation Official	Operational management and service delivery of Bus Trans Cirebon	Semi-structured interview
R-DH3	Transportation Official	Institutional support, coordination, and service development	Semi-structured interview

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R-M1	Regular User	Experience with service reliability, schedule certainty, and waiting time	Semi-structured interview
R-M2	Regular User	Experience with travel time, service use, and everyday mobility	Semi-structured interview
R-M3	Regular User	Experience with route accessibility and connectivity to activity centers	Semi-structured interview
R-M4	Regular User	Experience with service frequency and accessibility of bus stops	Semi-structured interview
R-M5	Regular User	Experience with service quality, comfort, and travel preferences	Semi-structured interview
R-M6	Regular User	Experience with routine use of Bus Trans Cirebon and mobility needs	Semi-structured interview
R-M7	Non-user	Reasons for not using Bus Trans Cirebon and preference for other transport modes	Semi-structured interview
R-M8	Non-user	Perceptions of accessibility, route coverage, and service reliability	Semi-structured interview
R-M9	Non-user	Perceptions of Bus Trans Cirebon and changes in urban mobility and congestion	Semi-structured interview
R-M10	Non-user	Mobility preferences and practical barriers to using Bus Trans Cirebon	Semi-structured interview
R-M11	Non-user	Reasons for continued reliance on private or alternative transportation	Semi-structured interview

Source: Source: Authors' fieldwork (2026)

Data were collected through semi-structured interviews, field observations, and document analysis during March–May 2025. A total of 14 interviews were conducted, with each interview lasting approximately 30–45 minutes. The semi-structured format enabled the researchers to maintain consistency around the main research themes while allowing informants to elaborate on their experiences and perceptions.

The interviews explored several issues related to BRT implementation, including service frequency and schedule reliability, route accessibility, connectivity with major activity centers, travel-time considerations, perceptions of service quality, preferences between public and private transportation, and institutional constraints affecting service delivery. Field observations were conducted at selected Bus Trans Cirebon stops, major activity points, and along the main service routes in Cirebon City. The observations focused on bus arrival patterns, accessibility of stops, passenger activity, route conditions, and interactions between BRT operations and surrounding traffic. The findings from these observations were used to contextualize and cross-check information obtained from the interviews.

Document analysis covered local transportation regulations, planning documents, operational reports, official route maps, service information, and other documents issued by the Cirebon City Transportation Office related to Bus Trans Cirebon. These documents were used to examine the formal policy design, operational arrangements, and institutional context of the service, as well as to cross-check information obtained from interviews and field observations. Documentary evidence was used to examine the formal design and institutional context of the policy and to triangulate claims emerging from interviews and observations. Informant recruitment and data collection continued until analytical adequacy was achieved, indicated by the recurrence of major issues across informant categories and the availability of sufficient evidence to compare government perspectives with user and non-user experiences. In this study, analytical adequacy was considered to have been reached when the main issues repeatedly appeared across different informant categories and additional interviews no longer substantially changed the emerging patterns of interpretation. The study does not treat saturation as merely the absence of new statements; rather, adequacy was assessed according to whether the available interviews, observations, and documents provided sufficient evidence to explain the principal patterns relevant to the research questions.

The credibility of the findings was strengthened through source and method triangulation. Statements obtained from transportation officials were compared with the experiences of users and non-users and, where possible, cross-checked against observations and documentary evidence. Member checking was also conducted with selected informants to confirm the accuracy of key interpretations and reduce the risk of misrepresenting participants' perspectives.

Data were analyzed using thematic analysis through an iterative process of data reduction, coding, categorization, comparison, and interpretation. The analysis combined empirical coding and theoretically informed interpretation. In the initial stage, interview transcripts, observation notes, and documentary materials were reviewed to identify recurring empirical issues related to BRT implementation. Initial codes included issues such as schedule uncertainty, service frequency, route connectivity, stop accessibility, travel-time uncertainty, institutional capacity, operational limitations, and public confidence.

In the second stage, related codes were compared and grouped into broader thematic categories. Issues concerning service priority, competition with private vehicles, and the regulatory environment were grouped under regulatory conditions. Codes concerning route connectivity, accessibility, activity centers, and everyday travel patterns were grouped under spatial conditions. Issues concerning fiscal capacity, operational consistency, coordination, monitoring, and public confidence were grouped under institutional conditions.

In the final interpretive stage, these thematic categories were synthesized into three interrelated analytical dimensions: regulatory differentiation, spatial alignment, and institutional sustainability. These dimensions were not treated as statistically testable variables but as analytical categories used to

explain how different implementation conditions interact in shaping BRT effectiveness. More specific concepts such as regulatory leverage, behavioral inertia, and legitimacy gap were subsequently developed as interpretive concepts to explain mechanisms observed within and across these dimension

RESULTS AND DISCUSSION

The findings indicate that the effectiveness of Bus Trans Cirebon cannot be understood solely from the formal availability of the service. Across interviews, observations, and policy-related evidence, three interconnected issues emerged: the limited structural advantage of BRT over private vehicles, the incomplete alignment between the service and everyday mobility patterns, and institutional constraints affecting service reliability and public confidence. These findings are organized into three analytical dimensions: regulatory differentiation, spatial alignment, and institutional sustainability. Rather than being treated as mediating variables, these dimensions represent interrelated conditions through which the implementation effectiveness of Bus Trans Cirebon can be interpreted.

Regulatory Differentiation: The Limited Structural Advantage of BRT

The first major finding concerns the limited ability of Bus Trans Cirebon to provide a predictable mobility advantage over private vehicles. Users identified uncertainty in schedules and service frequency as recurring problems (R-M1, 2025). These experiences indicate that service reliability remains an important constraint on the attractiveness of BRT as an everyday mobility option. This concern was not limited to a single informant. Similar experiences were reported by several regular users, who described uncertain bus arrival times and long or unpredictable waiting periods as practical difficulties in using Bus Trans Cirebon for time-sensitive daily activities (R-M1, R-M4, and R-M6, 2025)). Rather than demonstrating that regulatory arrangements directly cause low ridership or congestion, the evidence suggests that existing operational conditions have not yet created a sufficiently clear advantage for users to consistently prefer BRT over private transportation.

This finding becomes particularly relevant when considered alongside the operational characteristics of the service. Bus Trans Cirebon operates within the general traffic environment rather than through a fully differentiated BRT system supported by dedicated lanes or consistent intersection priority. Consequently, the service remains exposed to many of the same traffic conditions experienced by private vehicles. From the perspective of users, this condition may reduce the comparative advantage normally expected from rapid public transportation, particularly when combined with uncertain waiting and travel times.

Previous studies of BRT systems have similarly emphasized that service effectiveness depends not simply on the provision of buses but on the consistency and operational advantages offered by the system. Fauziah et al. (2019), for example, demonstrate the importance of service performance and operational reliability in evaluating BRT implementation. Evidence concerning commuting outcomes also indicates that the benefits of BRT depend substantially on the institutional and operational environment in which the system operates (Gaduh et al., 2019). The Cirebon case therefore reinforces the argument that the presence of a public transport service alone does not necessarily establish a competitive alternative to private mobility.

The findings also reveal an institutional explanation for some of these limitations. A government informant indicated that the development of Bus Trans Cirebon has been implemented gradually according to fiscal capacity and fleet availability (R-DH1, 2025). As explained by the government informant, "The number of buses is still limited, so the service cannot yet operate at the frequency we expect. Budget constraints also mean that improvements have to be made gradually." (R-DH1, 2025).This suggests that the current service configuration reflects not simply a technical design choice but also resource constraints faced by the local government. A gradual implementation strategy may be administratively reasonable, but limited fleet availability and service frequency can restrict the extent to which users experience the system as a reliable mobility alternative.

These findings are interpreted through the concept of regulatory differentiation. In this study, regulatory differentiation refers to the extent to which the policy and operational environment creates meaningful advantages for public transportation relative to private vehicles. Within this dimension, regulatory leverage describes the government's capacity to use instruments such as road-space management, intersection priority, parking regulation, and other traffic-management measures to strengthen the position of public transportation.

However, the evidence from this qualitative case should not be interpreted as demonstrating a direct causal relationship between the absence of particular regulatory instruments and congestion outcomes. Rather, it indicates that limited service priority, combined with operational uncertainty, constitutes a plausible constraint on the ability of Bus Trans Cirebon to establish a clear comparative advantage. This interpretation is consistent with studies emphasizing the importance of supporting institutional and operational arrangements for BRT performance (Vergel-Tovar & Rodriguez, 2018).

From a policy perspective, the findings suggest that improving fleet numbers or service quality alone may be insufficient if public transportation continues to operate without meaningful advantages in travel time and predictability. Measures such as corridor-based priority, intersection management, and parking regulation may therefore be considered as potential supporting instruments. However, their suitability for Cirebon should be evaluated through additional traffic and mobility data rather than assumed solely from the present qualitative findings.

Spatial Alignment and Everyday Mobility Decisions

The second analytical dimension concerns the relationship between the spatial configuration of Bus Trans Cirebon and the everyday mobility needs of users. Interview evidence indicates that existing routes do not always connect residential areas effectively with major economic and educational activity centers, while access to bus stops is not consistently perceived as practical (R-M3, 2025)This issue also appeared in the accounts of other community informants, who described difficulties in using Bus Trans Cirebon for trips that required additional transfers, longer access to stops, or indirect connections to their destinations (R-M3, R-M5, and R-M8, 2025). The participant's actual statement about route accessibility or destination connectivity" (R-M5, 2025). These findings point to a potential mismatch between the spatial organization of the service and the actual journeys undertaken by residents.

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This issue is important because transportation decisions involve more than the time spent inside a vehicle. Users also consider the time and effort required to reach a stop, waiting time, transfers, travel-time predictability, and the distance between the destination and the final stop. One community informant working in the service sector identified the risk of arriving late as an important consideration in choosing a mode of transportation (R-M2, 2025).Similar concerns were expressed by other informants who associated uncertain waiting and travel times with the risk of arriving late at work, school, or other daily destinations (R-M2, R-M4, and R-M6, 2025). This recurring pattern suggests that travel-time uncertainty is not merely an individual preference but forms part of the practical considerations shaping everyday mode choice.This finding illustrates how service reliability and spatial accessibility interact in everyday mobility decisions. In this context, the attractiveness of public transportation is influenced not simply by fares or vehicle quality but by the combined burden of access, waiting, travel time, and uncertainty. When these components make a public transport journey less predictable or less convenient than private transportation, the incentive to shift modes may remain limited.

The Cirebon findings therefore support the concept of spatial alignment, defined here as the degree of correspondence between service routes, stop accessibility, activity centers, and actual mobility patterns. This interpretation also extends previous local research that has highlighted the importance of transport-supporting infrastructure and accessibility in Cirebon. The issue is not simply whether stops or routes exist, but whether their configuration allows the service to function as a practical part of everyday mobility.

The interaction between spatial conditions and user decision-making can also help explain the persistence of private vehicle use. In this study, behavioral inertia is used as an interpretive concept to describe the continuation of established mobility choices when the available public transportation alternative does not provide sufficiently clear advantages in accessibility, reliability, or travel-time certainty. It should not be interpreted as an independently measured psychological variable. Rather, it captures an empirical pattern in which users may continue using private vehicles because the perceived risks and costs associated with switching remain substantial.

This interpretation is important because it shifts attention from assumptions that non-use results simply from individual preference. Travel behavior is partly shaped by the options produced by the transportation system itself. If routes do not adequately correspond with activity patterns, access to stops remains difficult, or arrival times are unpredictable, continued private vehicle use may represent a rational response to the available mobility environment rather than resistance to public transportation.

Accordingly, the findings suggest that route development should be informed by actual patterns of daily mobility. Mapping residential origins, employment and educational destinations, transfer points, peak-hour movements, and pedestrian access could provide a stronger empirical basis for service adjustment. Increasing frequency during periods of high demand and providing reliable service information may also reduce uncertainty. Nevertheless, these recommendations require further validation using passenger-flow, origin-destination, and travel-time data.

Thus, spatial alignment should be understood as an analytical condition of implementation effectiveness rather than a mediating variable. The findings suggest that the ability of BRT to support modal shift depends partly on whether the spatial and temporal organization of the service corresponds with the mobility decisions users must make in their everyday lives.

Institutional Sustainability and Public Legitimacy

The third dimension concerns the institutional conditions required to sustain reliable public transportation. Evidence from the government perspective indicates that the development of Bus Trans Cirebon has been adjusted to available fiscal capacity and fleet resources (R-DH1, 2025). The institutional constraint described by R-DH1 was reflected in community accounts of irregular service frequency and limited operational coverage. This convergence between government and community perspectives suggests that institutional resource limitations are experienced by users through the day-to-day consistency of the service. This finding provides an important institutional context for understanding limitations in service frequency and operational coverage.

Institutional capacity is particularly relevant because reliability requires more than the initial establishment of a transportation service. Maintaining predictable schedules, adequate fleet availability, service coverage, monitoring, and coordination requires sustained organizational and financial capacity. Previous research in Cirebon has similarly demonstrated the importance of administrative and organizational performance in the provision of urban transportation services. The findings of the present study extend this discussion by showing how institutional limitations may become visible to users through everyday experiences of service inconsistency.

The community perspective further illustrates this relationship. An informant reported that the presence of Bus Trans Cirebon had not been accompanied by a clearly perceived improvement in congestion conditions (R-M9, 2025). R-M9 expressed this perception by stating, R-M9 perceived that the introduction of Bus Trans Cirebon had not yet produced a noticeable improvement in congestion or everyday mobility conditions. Similar perceptions were also reported by other community informants, who felt that the service had not yet substantially changed their travel conditions or reduced dependence on other modes (R-M7 and R-M8, 2025).This perception should not be interpreted as objective evidence that the BRT has failed to reduce traffic congestion. The study does not provide traffic-volume or before-and-after congestion measurements capable of establishing such an effect. Instead, the statement is important because it reveals a gap between the policy objective and the outcome perceived by members of the community.

This distinction is particularly relevant to the issue of public trust. Previous research in Cirebon indicates that trust influences people's relationship with transportation services. When policy objectives emphasize improved mobility or congestion reduction but users experience unreliable services or perceive little change in their daily journeys, confidence in the effectiveness of the intervention may weaken. Repeated service experiences therefore become an important component of policy legitimacy.

This study refers to such a discrepancy as a legitimacy gap: the distance between formally articulated policy objectives and the outcomes experienced or perceived by the public. As with

behavioral inertia, legitimacy gap is employed as an interpretive concept rather than a quantitatively measured variable. The concept helps explain why the administrative continuation of a policy does not necessarily translate into strong public confidence in its effectiveness.

These findings underpin the third analytical dimension, institutional sustainability, which refers to the capacity of local institutions to maintain operational reliability, fiscal support, coordination, monitoring, accountability, and public confidence over time. Institutional sustainability therefore extends beyond financial capacity. It concerns whether governance arrangements are capable of converting policy commitments into a sufficiently stable service experience. From a policy perspective, this finding highlights the importance of systematic performance monitoring. Indicators such as service frequency, waiting time, punctuality, passenger numbers, route utilization, and user satisfaction could provide a stronger basis for evaluating implementation. Publishing such information would also allow government claims regarding service improvement to be compared with measurable performance outcomes. This could strengthen accountability while providing evidence for future service adjustments.

Public participation in evaluation may further support institutional learning. Rather than treating community feedback solely as an assessment of satisfaction, user experiences can provide information about route accessibility, temporal reliability, and barriers to modal shift. This approach would connect institutional monitoring with actual mobility conditions and potentially reduce the gap between administrative performance and user experience.

Integrating Regulatory, Spatial, and Institutional Conditions

Taken together, the findings indicate that the effectiveness of Bus Trans Cirebon is shaped by the interaction of regulatory differentiation, spatial alignment, and institutional sustainability. These dimensions should not be interpreted as statistically tested mediating variables or as independent causal determinants. Instead, they constitute interrelated analytical conditions derived from the combination of empirical findings and theoretically informed interpretation.

The first dimension, regulatory differentiation, concerns whether the policy environment enables BRT to offer meaningful advantages over private transportation. The second, spatial alignment, concerns whether routes, accessibility, and service arrangements correspond with everyday mobility patterns. The third, institutional sustainability, concerns whether organizational and fiscal capacity can maintain reliable operations and public confidence.

The relationship among these dimensions is important. Improvements in service priority may have limited effects when routes do not correspond with users' destinations. Similarly, well-designed routes may not attract sustained use when schedules and service frequency remain unreliable. Institutional capacity may maintain an existing service, but administrative continuity alone does not necessarily produce modal shift if the service lacks spatial relevance or a meaningful advantage over private transportation. Across the three dimensions, the qualitative evidence shows a consistent pattern: operational uncertainty, spatial mismatch, and institutional limitations reinforce one another in shaping users' willingness to rely on Bus Trans Cirebon. Effectiveness should therefore be understood as emerging from the alignment of these conditions rather than from any single dimension in isolation (Pinandita et al., 2026; Sumasto et al., 2025).

This interpretation extends the conventional understanding of policy effectiveness as goal achievement, Al-Majali et al., (2026), drawing attention to the implementation conditions through which policy objectives become or fail to become meaningful in everyday mobility. It is also consistent with evidence that BRT outcomes depend on operational performance and institutional arrangements (Zhang et al., 2026), while modal choice is influenced by the comparative attractiveness of available transportation alternatives (Hidayati & Tan, 2025; Iannuzzi & Migheli, 2026; Junaid et al., 2025).

Importantly, the final two relationships should be interpreted cautiously. The present qualitative study provides evidence concerning implementation conditions, service experiences, and perceived mobility choices, but it does not directly measure changes in modal share or traffic congestion. Consequently, the framework does not claim that Bus Trans Cirebon has quantitatively caused or failed to cause a particular level of congestion reduction. Rather, it identifies the conditions that appear to constrain the service's capacity to support such outcomes.

The framework should nevertheless be regarded as an analytical proposition derived from the Cirebon case rather than a general model applicable to all medium-sized cities. Its transferability requires examination through comparative research involving other urban contexts and, ideally, complementary quantitative evidence on ridership, modal share, travel time, and traffic conditions. Within these limitations, the Cirebon case suggests that the effectiveness of BRT policy depends not merely on introducing a public transportation service but on creating an institutional and mobility environment in which that service becomes a reliable, spatially relevant, and competitive alternative to private transportation.

CONCLUSION

This study examined the effectiveness of Bus Trans Cirebon as a public transportation policy by focusing on the conditions that shape its capacity to provide a credible alternative to private mobility. The findings show that the main challenges are not limited to the formal availability of the service. They are also related to the interaction of regulatory differentiation, spatial alignment, and institutional sustainability. Limited service priority and operational reliability reduce the comparative advantage of BRT over private vehicles, while route configuration and accessibility do not always match everyday mobility patterns. At the same time, fiscal and institutional constraints affect the consistency and sustainability of service provision. Taken together, these conditions help explain why the availability of Bus Trans Cirebon has not yet been followed by a stronger shift from private to public transportation.

The findings should not be interpreted as evidence that Bus Trans Cirebon has failed to reduce traffic congestion, since this study does not employ traffic-volume, travel-speed, modal-share, or before-and-after congestion measurements. Rather, the qualitative evidence shows that the current implementation conditions have not yet provided the level of reliability, accessibility, and comparative attractiveness needed to support a substantial modal shift. This distinction is important because the study focuses on the implementation conditions through which BRT may influence mobility behavior, rather than directly

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measuring congestion reduction as a broader system-level outcome.

Conceptually, the study proposes a case-derived framework of BRT implementation effectiveness based on the interaction of regulatory differentiation, spatial alignment, and institutional sustainability. The Cirebon case suggests that public transportation effectiveness cannot be understood simply through the provision of buses, routes, and supporting facilities. Regulatory arrangements need to provide meaningful advantages for public transportation, spatial arrangements need to correspond with actual patterns of urban activity and travel, and institutional capacity needs to sustain reliable operations and public confidence. This study contributes by showing that the effectiveness of BRT in a medium-sized city depends on how regulatory support, spatial relevance, and institutional capacity work together in practice.

From a policy perspective, strengthening Bus Trans Cirebon requires an integrated rather than exclusively operational response. Improvements in service frequency and reliability need to be accompanied by route adjustments based on actual mobility patterns, better accessibility to stops, stronger performance monitoring, and appropriate traffic-management measures that improve the competitiveness of public transportation. These measures should be supported by mobility and traffic data before specific regulatory interventions are implemented.

This study has several limitations. First, it employs a qualitative single-case design, which limits the extent to which the findings can be generalized to other urban contexts. Second, the analysis relies substantially on the experiences and perceptions of government officials, users, and non-users and therefore does not independently establish changes in traffic conditions or modal share. Third, the study does not incorporate longitudinal measurements of ridership, travel time, traffic volume, or congestion before and after BRT implementation. Consequently, the proposed framework should be regarded as an analytical proposition derived from the Cirebon case rather than a universally applicable model. Future research should test and refine the framework through comparative studies across medium-sized cities and integrate qualitative evidence with longitudinal data on ridership, modal share, travel time, service reliability, and traffic volume. Such research would provide a stronger basis for assessing how regulatory, spatial, and institutional conditions translate into modal shift and, ultimately, contribute to urban congestion reduction.

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CRediT authorship contribution statement

Raden Mahendra Haryo Bharoto: Conceptualization, Methodology, Formal analysis, Writing – original draft, Project administration, Supervision. Hendri Suwarsono: Methodology, Formal analysis, Data curation, Writing – review & editing. Yanto Heryanto: Data curation, Investigation, Resources, Writing – review & editing. Iskandar Zulkarnaen: Investigation, Validation, Writing – review & editing. Moh. Sutarjo: Validation, Resources, Supervision, Writing – review & editing. Raden Mahendra Haryo Bharoto serves as the corresponding author and is responsible for communication with the journal.

Conflict of Interest

The authors declare that there are no conflicts of interest regarding the publication of this article.

Ethical Statement

This study was conducted in accordance with established ethical standards for research involving human participants. Informed consent was obtained from all participants prior to their involvement in the interviews and field observations, and participant confidentiality was strictly maintained throughout the study.

Data Availability

The data that support the findings of this study are available from the corresponding author upon reasonable request.

Declaration of Generative AI Use

During the preparation of this manuscript, the authors used QuillBot and Grammarly to assist with language editing, improving grammar, clarity, readability, and the overall presentation of the manuscript. All AI-generated outputs were carefully reviewed and revised by the authors. The authors take full responsibility for the scientific content, originality, accuracy, and integrity of this article.

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