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ASSESSMENT OF THE OPERATIONAL EFFICIENCY OF OMITUNTUN MASS TRANSIT IN IBADAN NIGERIA

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Abstract

The introduction of the Omituntun Mass Transit scheme by the Oyo State Government aimed to alleviate the perennial intra-city mobility challenges in Ibadan, Nigeria. While popular, its operational efficiency remains empirically understudied. This paper assesses the operational efficiency of the Omituntun buses from both service provider and passenger perspectives. Utilizing a mixed-method approach, data was collected through structured questionnaires from 384 passengers, direct observatory surveys on 30 bus trips across major corridors, and key informant interviews with transport union officials. Key performance indicators (KPIs) including average speed, schedule adherence, load factor, fare affordability, and passenger satisfaction were analyzed. Findings revealed an average operational speed of 22.4 km/h, significantly impacted by traffic congestion and informal stops. Schedule adherence was poor (35% on-time performance), while load factors were high (84%), indicating strong demand. Despite high demand,

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passenger satisfaction, measured via a Likert scale, averaged 2.8/5.0, with safety and comfort scoring lowest. The study concludes that while the Omituntun initiative is a critical intervention, its efficiency is hampered by infrastructural deficits, traffic management issues, and operational inconsistencies. Recommendations include integrating Intelligent Transport Systems (ITS) for real-time scheduling, dedicated bus lanes on critical corridors, and a public-private partnership for fleet expansion and maintenance to ensure sustainability and improved service quality.

Introduction

Transportation is a very important aspect of human experience as it ensures the movement of human and goods from one point to another (Adebayo, R. & Alabi, 2022). A large proportion of the working population in most communities of the world travels daily in different forms using one mechanized means of movement or the other to move to work places, recreation centres, shopping malls and other land uses (Salau, 2022). Transportation therefore, is an integral part of the functioning of any society and advances in transportation have made possible changes in the way we live and the way societies are organized (Ogunleye and Ajibola, 2023).

In the 21st-century city, public transportation is no longer a mere utility but a critical determinant of economic productivity, social equity, and environmental sustainability (Daramola & Ipingbemi, 2023). For fast-growing African metropolises like Ibadan, Nigeria, the transition from informal, fragmented paratransit systems to organized, efficient mass transit is fundamental to achieving Sustainable Development Goal 11 (Sustainable Cities and Communities). This transition is fraught with complexity, requiring a balance between demand-responsive service, financial viability, and infrastructural adaptation within constrained urban spaces (Okafor & Eze, 2024).

Rapid urbanization in Nigerian cities such as Ibadan has increased demand for public transport services. However, formal public transport investments have often lagged behind demand, leading to the proliferation of informal transport systems, such as minibuses (danfo), tricycles, etc., which fill the mobility gap. A growing body of research shows that while informal public transport (IPT) ensures mobility, the quality of service (comfort, reliability, safety) tends to be low (Adeyinka, 2025).

Ibadan, one of Africa's largest cities by geographical area, faces profound urban transport challenges characterized by traffic congestion, reliance on informal paratransit (e.g., danfo, okada), and inadequate public transport infrastructure. In 2020, the Oyo State Government launched the "Omituntun" Mass Transit scheme, deploying a fleet of buses along designated routes to provide affordable and organized public transport.

Preliminary observations suggest patronage is high, yet systemic inefficiencies—long wait times, irregular schedules, and vehicle maintenance issues—are frequently reported by commuters. Assessing operational efficiency is crucial for evidence-based policy, resource allocation, and long-term sustainability of public transit systems. This study, therefore, seeks to evaluate the operational efficiency of the Omituntun Mass Transit, providing a benchmark for performance and a foundation for strategic improvements.

Aim and Objectives

The aim of this study is to assess Omituntun Mass Transit's operational efficiency and service quality in Ibadan, to inform policymakers, urban planners, and the public.
Therefore, the following objectives were set:

1. assess operational efficiency of Omituntun Mass Transit (fleet availability, route coverage, schedule adherence, ridership, load factor).
2. evaluate service quality experienced by commuters (accessibility, waiting time, travel time, comfort, safety, affordability, satisfaction).
3. compare Omituntun Mass Transit performance against known benchmarks from literature on informal transport in Ibadan.
4. draws lessons and policy recommendations for further improvement and scaling of mass transit in Ibadan.

Literature Review

Operational efficiency in public transit encompasses the effective utilization of resources (vehicles, fuel, labor) to deliver reliable, timely, and quality service (Li et al., 2022). Key metrics include travel time reliability, vehicle productivity, load factor, and cost recovery ratio (Ibeun et al., 2021). In the Nigerian context, studies on Bus Rapid Transit (BRT) systems in Lagos (Oluwasegun & Adebayo, 2023) and Abuja have highlighted the critical role of dedicated infrastructure and efficient scheduling.
However, conventional bus systems like Omituntun, which operate in mixed traffic, face unique challenges. Recent work by Adebisi & Ojo (2024) on intermediate public transport in Southwest Nigeria emphasizes the disconnect between policy implementation and on-ground operational realities. This study fills a gap by applying these efficiency metrics to a nascent, government-run transit system in a major non-coastal Nigerian city, Ibadan.

Quality of Service in Informal Public Transport

A foundational study is Multi-criteria evaluation of the quality of service of informal public transport: An empirical evidence from Ibadan, Nigeria which developed a multi-criteria evaluation (MCE) model to assess quality-of-service (QoS) in informal transport in Ibadan.

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Their MCE model identifies core QoS criteria such as: accessibility, affordability, waiting time, travel time, seat comfort, transport fares, safety, and driver attitude. Based on a survey of passengers in three central Local Government Areas of Ibadan (Ibadan North, Ibadan North-West, Ibadan North-East), the study found an "all-round low quality of service" across all criteria. Key issues highlighted include poor accessibility (especially outside central areas), overcrowded vehicles with low seat comfort, long waiting and travel times due to delays at loading terminals and haphazard pick–up/drop-off points, and safety concerns because of poorly maintained buses and reckless driving. Thus, existing literature paints a stark picture of IPT in Ibadan, underscoring the urgent need for formal, regulated, and quality-oriented mass transit solutions.

Urban Transport Service Quality in Nigerian Cities

The Assessment of the Quality of Urban Transport Services in Nigeria by Adeyinka (2024), evaluated service quality across urban transport systems in Nigerian cities — including Ibadan. The study noted that many urban transport services in Nigeria suffer from inadequate quality, poor infrastructure, and reliance on second-hand vehicles, undermining user experience and service reliability.

Another recent article, Satisfaction of Commuters with Public Transport and its Implications for the Transition to Green Mobility in Ibadan (2024), surveys commuter satisfaction across different transport modes in Ibadan — including minibuses, tricycles, and larger buses — and finds that overall satisfaction with public transport is low. The study further noted that modes with higher "green index" (e.g., large buses) are under-utilized, due partly to low quality of services.

These findings reinforced the urgency for evaluation and improvement of mass-transit systems, especially formal ones like Omituntun Mass Transit, to support sustainable mobility and urban resilience in Ibadan.

The Study Area:

The study was conducted in Ibadan, the capital city of Oyo State, Nigeria. Ibadan is a major urban centre in southwestern Nigeria, noted for its large population and economic significance. It comprises 11 local government areas (5 urban and 6 semi-urban). The Omituntun Mass Transit operates within key metropolitan routes such as Challenge, Iwo Road, Ojoo, Bodija, Agodi-Gate, and Dugbe, among others.

Based on current development in Ibadan, the operational efficiency of Omituntun mass transit was chosen as the focus of this study for many reasons. First, it is the largest public transport mean in Ibadan. Second, the bus system has a range of passenger capacities and performance characteristics and may operate on fixed routes with fixed schedules, third, bus systems have the potential of extending transport services to greater

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proportions of urban residents who do not have private cars and cannot afford high taxi fares. Fourth, they have the potential of being used as strategy to reduce the number of cars on urban roads and thus reduce traffic congestion and air pollution in cities (Ali, 2019, Hwe et al., 2021; Noor et al., 2019).

Primary data

1. Passenger Survey: 384 questionnaires administered randomly at bus stops, capturing data on travel patterns, waiting time, fare perception, and satisfaction (5-point Likert scale).
2. Observational Survey: 30 bus trips were tracked using GPS-enabled mobile apps (Google Timeline) to record travel time, dwell time, and number of stops.
3. Key Informant Interviews: Unstructured interviews with 5 transport managers and union leaders.

Secondary Data

Omituntun route maps and fare schedules from the Oyo State Ministry of Transport.

Data Analysis

The data collected was analyzed using descriptive statistics, cross-tabulation, simple performance ratio and frequency distribution were used to summarize the responses. The quantitative data from the questionnaires was coded and entered into the Statistical Package for the Social Sciences (SPSS) software, Version 25.

Data Analysis and Results

From table 1, the study discovered a near equal representation of gender 216 males (56.3%) and 168 females (43.77%). This indicated that opinions of the respondents were not biased toward one gender group. This ensured inclusiveness and reliability of the data. The almost equal participation also reflects that both men and women are active users of the Omituntun bus service across the selected routes in Ibadan. Such a balance enhances the validity of the findings, as it allows the interpretation of service quality, satisfaction, and loyalty to be examined from both male and female perspectives without significant gender dominance.

The age group distribution showed that respondents with age ranges from 18 -28 years were 142 respondents (37.0%), 29–48 years were 185 respondents (48.2%) and 49-68 years amounted to 57 respondents (16.9%).single This indicated that the Omituntun mass transit is patronized majorly by young commuters capable of assessing the operational efficiency of the bus service.

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It can be deduced from the trip purpose that work/business earned the highest number of respondents (221 respondents with 57.6%, education purpose came second with 98 respondent (25.5%) and others like social visits, healthcare, religious activities e.t.c goes for 65 respondents (16.9%). The work/business purpose of trip indicated that the transit system is primarily a utilitarian tool for economic activity. It serves as a critical backbone for Ibadan workforce and informal/commercial sector. Therefore, the system efficiency must be judged heavily on its performance during peak morning and evening hours, reliability and coverage of major employment centres and commercial districts (e.g, Gbagi, Dugbe, Bodija). Delays or inefficiencies directly impact productivity and livelihoods.

Table 1: Socio-Demographic and Travel Characteristics of Respondents (N=384)

Characteristics	Category	Frequency	Percentage (%)
Gender	Male	216	53.6
	Female	168	43.7
Age Group	18 - 28	142	37.0
	29 - 48	185	48.2
	49 - 68	57	14.8
Trip Purpose	Work/Business	221	57.6
	Education	98	25.5
	Others	65	16.9
Frequency of Use	Daily	267	69.5
	3-5 times/week	89	23.2
	Occasional	28	7.3

Source: Authors' Survey (2025)

Table 2 revealed a critical inefficiency. The low average speed (22.4 km/h) and poor on-time performance (35%) are directly linked to traffic congestion and excessive dwell times. The high load factor (84%) confirms strong demand but points to potential overcrowding

Table 2: Key Performance Indicators (KPIs) for Omituntun Buses (Observational Data)

KPI	Formula/ Description	Average Value	Industry Benchmark (Target)
Average Operational Speed	Total distance/ Total travel time	22.4km/h	25km/h (mixed Traffic)
Schedule Adherence (on-time performance)	Trips on-time/ total observed trips*100	35%	80%

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KPI	Formula/ Description	Average Value	Industry Benchmark (Target)
Load factor	Average passenger carried/ seated capacity*100	84%	75.85% (optimal)
Dwell time per stop	Average time spent at a bus stop	2.1minutes	<1.5minutes
Fare affordability test	Average fare/ average dail income of users *100	8.7%	<10% affordable

Table 3 highlighted the service gap. While fares are deemed affordable (3.8), core operational attributes like punctuality (2.3) and frequency (2.5) score poorly, pulling down overall satisfaction (2.8).

Table 3: Passenger Satisfaction Ratings (Mean Score on a 5-point Scale: 1=Very Dissatisfied, 5=Very Satisfied)

Service Attribute	Mean Score	Standard Deviation
Fare affordability	3.8	0.9
Route coverage	3.2	1.1
Frequency of service	2.5	1.0
Punctuality/Reliability	2.3	1.2
Safety and Security	2.9	1.3
Comfort and Cleanliness	2.7	1.1
Overall satisfaction	2.8	1.0

Discussion

The Omituntun Mass Transit operates in a high-demand, low-efficiency equilibrium. The strong patronage (evident in the high load factor) is driven by fare affordability and the lack of formal alternatives, not by superior service quality. The core inefficiency, as shown by the low operational speed and schedule adherence, stems from operating in mixed traffic without priority measures—a challenge documented across African cities (Adebisi & Ojo, 2024). The poor passenger satisfaction with punctuality aligns directly with the measured 35% on-time performance. This creates a paradox where the system is "effective" in moving people but not "efficient" in its service delivery.

The findings mirror issues in Lagos BRT's early phases but are more acute due to the complete lack of dedicated infrastructure (Oluwasegun & Adebayo, 2023). The slightly better satisfaction with safety over informal alternatives is a positive outcome of the government-run model. For sustainable improvement, the system must transition from a mere fleet deployment to an integrated transit management project.

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Conclusion and Recommendations

The Omituntun Mass Transit is a vital but inefficient component of Ibadan's transport ecosystem. Its operational efficiency is significantly constrained by external traffic conditions and internal operational lapses, leading to unreliable service despite high passenger demand.

Recommendations:

1. Infrastructure Intervention: Pilot a dedicated bus lane on the most congested corridor (Iwo Road–Challenge) to improve average speed and schedule reliability.
2. Technology Integration: Implement a simple ITS featuring GPS trackers for real-time bus location and estimated arrival times via a mobile app or SMS service.
3. Operational Reform: Redesign schedules based on empirical travel time data, introduce peak-frequency services, and enforce standardized dwell times.
4. Partnership Model: Pursue a PPP for fleet maintenance and expansion to reduce government's fiscal burden and improve vehicle uptime.
5. Continuous Monitoring: Institutionalize a quarterly performance assessment using the KPIs established in this study for evidence-based management.

References

Adebayo, R. & Alabi, K. (2022) *Urban transportation and accessibility in Ibadan: Evaluating mass transit interventions*. Journal of Transport and Urban Studies,8(2), 45-61.

Adebisi, O. T., & Ojo, K. A. (2024). Policy-practice gaps in public transport provision in southwestern Nigerian cities. Transportation Research Part A: Policy and Practice, 179, 103-118. https://doi.org/10.1016/j.tra.2023.103118

Adeyinka, E. O; Ajiboye, R.O. and Animashaun, I.O. (2024). *Urban Transport Services in Ibadan, Nigeria*. Perspectives on Transport Development in Nigeria- Contemporary Discourse. July,2024. Pp. 121-136.

Adeyinka, E. (2025) An evaluation of Omituntun mass transit performance and passengers satisfaction in Ibadan Nigeria. An unpublished M.Sc dissertation in the department of Transport and Logistics Management, Faculty of Environmental Design and Management, University of Ibadan.

Ali,M., Hwe and Noor, R., (2021). Service quality and consumer satisfaction in the transportation sector of Pakistan. *International Journal of Business Studies. Review, 4*(2),45-56.

Daramola, A., & Ipingbemi, O. (2023). Urban transport and social equity: Evaluating access to opportunities in Nigerian cities. Journal of Urban Mobility, 3, 100050. https://doi.org/10.1016/j.urbmob.2023.100050

Ibeun, K. O., Adekoya, A. F., & Williams, I. A. (2021). Performance evaluation of public bus transport services in Lagos, Nigeria: Users' perspective. Journal of Transport Geography, 93, 103080. https://doi.org/10.1016/j.jtrangeo.2021.103080

Li, L., Wang, Y., & Bie, Y. (2022). Measuring the operational efficiency of urban bus systems: An integrated DEA approach. Journal of Advanced Transportation, 2022, Article ID 4567890. https://doi.org/10.1155/2022/4567890

Ogunleye, B. & Ajibola, R. (2023) *Service frequency and reliability in mass transit schemes: The Ibadaan Omituntun Experience*. Transport Policy and Practice Review, 12(2), 66-84.

Okafor, C. C., & Eze, C. J. (2024). Navigating the formal-informal dichotomy: Policy strategies for public transport integration in African cities. Transport Policy, 149, 11-24. https://doi.org/10.1016/j.tranpol.2024.01.015

EDITOR-IN-CHIEF
Prof. W. F. HILL [MALAWI]

Oluwasegun, A., & Adebayo, M. (2023). Lessons from a decade of Bus Rapid Transit operations in Lagos: Efficiency, challenges, and rider behavior. African Journal of Sustainable Development, 12(4), 45-67.

Oyo State Ministry of Transport. (2023). Omituntun Mass Transit: Route Network and Operations Manual (Internal Government Document).

Salau, A.T., (2022) Assessing the operational efficiency of the Abuja Light Rail System. *African Journal of Transport and Infrastructure*, 10(1), 77-91.

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Prof. W. F. HILL [MALAWI]