COMPRESSED NATURAL GAS (CNG) BUS INITIATIVES AND COMMUTER ACCESSIBILITY IN DEVELOPING CITIES: A CASE STUDY OF KADUNA STATE

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ABSTRACT

This study examines the financial governance, budgetary accountability, and public sector accounting dimensions of the Kaduna Subsidized Transport Scheme (KSTS), a government-funded Compressed Natural Gas (CNG) bus initiative introduced after Nigeria's 2023 fuel subsidy removal. Drawing on Public Financial Management (PFM) Theory and the Public Value and Service Delivery Framework, the study adopts a mixed-method design combining questionnaires (valid n = 105), semi-structured interviews, field observations, and financial document analysis across three major commuter corridors in Kaduna metropolis. The population was 8,106 commuters and transport officials; Yamane's formula at 9% precision produced a minimum sample of approximately 122, and 124 questionnaires were distributed. Findings show that the scheme generated approximately N1.39 billion in commuter transport savings within five months, with an estimated benefit–cost ratio of 2.78, indicating positive social returns. However, the study identifies critical financial governance and accounting gaps: inadequate budgetary transparency; weak expenditure tracking; limited IPSAS-aligned financial reporting; absence of publicly available independent audit reports; insufficient cost–benefit monitoring; and no clear financial sustainability fund. The study contributes to public sector accounting and financial governance literature by demonstrating that transport subsidy schemes require robust budgetary accounting, subsidy disclosure under IPSAS 23, independent audit, and cost–benefit accounting to ensure fiscal sustainability, accountability, and value-for-money. It recommends detailed KSTS budget lines, IPSAS-based subsidy reporting, annual independent audits, systematic cost–benefit analysis, and a dedicated vehicle replacement and maintenance fund.

Keywords: *Public financial management; budgetary accountability; IPSAS; transport subsidy accounting; financial governance; CNG buses*

1.0 INTRODUCTION

Urban transportation is a fundamental driver of economic development, social inclusion, and sustainable urban governance. Efficient public transport enables citizens to access employment, education, healthcare, markets, and government services. In developing countries, however, rapid urbanisation, population growth, inadequate transport infrastructure, congestion, and rising transport costs continue to undermine commuter accessibility and public service delivery (Litman, 2022; World Bank, 2023). Governments are increasingly adopting Compressed Natural Gas (CNG) buses because they offer lower operating costs, reduced emissions, and improved fuel efficiency compared with petrol and diesel buses (International Energy Agency, 2023). UN-Habitat (2024) identifies clean-energy public transport as a strategic pathway for achieving Sustainable Development Goal 11. Yet from an accounting and financial governance perspective, transport subsidies are not merely mobility instruments; they are public expenditure programmes that require transparent budgeting, expenditure tracking, financial reporting, audit, and value-for-money assessment (Andrews, 2023; World Bank, 2024).

The International Public Sector Accounting Standards (IPSAS) emphasise transparent financial reporting on government subsidies, including disclosure of subsidy objectives, beneficiaries, fiscal costs, and performance metrics (IPSASB, 2023). IPSAS 23, in particular, addresses revenue from non-exchange transactions, including government subsidies and transfers. In Nigeria, the Public

Procurement Act (2007) and the Fiscal Responsibility Act (2007) establish legal frameworks for financial accountability, cost-effectiveness, and transparent use of public funds (Federal Republic of Nigeria, 2007a, 2007b). The removal of fuel subsidies in Nigeria in 2023 increased transportation costs and created mobility challenges for civil servants, students, traders, artisans, and low-income households. In response, the Federal Government launched the Presidential Initiative on Compressed Natural Gas (Pi-CNG) to expand CNG-powered buses and affordable mass transit under the Renewed Hope Agenda (Nairametrics, 2024). Within this framework, the Kaduna State Government introduced the Kaduna Subsidized Transport Scheme (KSTS), a subsidised CNG bus programme operating along major corridors such as Rigachikun–Rido, Refinery–Rigachikun, and Tudun Wada–Rigachikun. Government reports indicate that the scheme transported over 1.4 million passengers within five months and generated approximately N1.39 billion in commuter savings (Maiyaki, 2025).

This study contributes to accounting, taxation, and financial governance scholarship in three ways. First, it applies PFM and cost–benefit accounting frameworks to evaluate a government transport subsidy. Second, it examines the budgetary accountability and financial reporting dimensions of the KSTS, highlighting gaps between policy objectives and financial governance practice. Third, it provides empirical evidence on the financial sustainability of subsidised transport initiatives, contributing to debates on public sector financial management and fiscal policy in developing economies.

Statement of the Problem

Affordable, reliable, and accessible public transportation remains a major policy challenge in Nigeria's urbanising cities. Following the 2023 fuel subsidy removal, transport fares rose substantially, affecting access to workplaces, schools, healthcare facilities, and markets, especially among vulnerable groups.

To address these mobility challenges, the Kaduna State Government introduced the KSTS. Reports show that the scheme has provided substantial commuter savings and improved access along major corridors. However, evidence from commuters and transport officials indicates persistent operational challenges: inadequate fleet capacity, overcrowding at peak periods, irregular schedules, long waiting times, maintenance constraints, and congestion.

More importantly, from an accounting and financial governance perspective, there is limited empirical evidence on how the KSTS is budgeted for, accounted for, reported, audited, and evaluated. Previous studies have examined urban mobility, sustainable transportation, and the environmental benefits of CNG technology, but relatively few have investigated the financial governance, budgetary accountability, IPSAS compliance, and value-for-money dimensions of state-sponsored CNG bus schemes in Nigeria. Existing literature focuses primarily on environmental sustainability and fuel efficiency, with limited attention to subsidy accounting, financial disclosure, audit coverage, and cost–benefit analysis.

This study therefore assesses the financial governance, budgetary accountability, and public sector accounting dimensions of the KSTS in improving commuter accessibility and public service delivery within selected corridors in Kaduna State.

Research Questions

The study seeks to answer the following research questions:

i. What is the state of financial governance of the Kaduna Subsidized Transport Scheme in Kaduna State?
ii. To what extent does the Kaduna Subsidized Transport Scheme demonstrate budgetary accountability and IPSAS-aligned financial reporting?
iii. How does the Kaduna Subsidized Transport Scheme influence commuter accessibility and public service delivery?

Research Objectives

The study seeks to:

i. Examine the financial governance of the Kaduna Subsidized Transport Scheme in Kaduna State.
ii. Assess the budgetary accountability and financial reporting practices of the Kaduna Subsidized Transport Scheme.
iii. Evaluate the influence of the Kaduna Subsidized Transport Scheme on commuter accessibility and public service delivery.

Research Hypotheses

The following hypotheses guide the study:

i. H01: There is no significant relationship between Kaduna Subsidized Transport Scheme financial governance mechanisms and budgetary accountability.
ii. H02: Budgetary accountability does not significantly influence the financial sustainability of the Kaduna Subsidized Transport Scheme.
iii. H03: The Kaduna Subsidized Transport Scheme does not significantly influence commuter accessibility in Kaduna State.

2.0 CONCEPTUAL REVIEW

Public Transportation and Urban Mobility

Public transportation refers to an organised shared mobility system that enables the efficient movement of people and goods. Effective public transport enhances access to employment, education, healthcare, markets, and government services, thereby promoting economic development and social inclusion (Litman, 2022; World Bank, 2023). Urban mobility describes the ability of people to move safely, affordably, efficiently, and sustainably within urban environments. Lucas (2023) argues that urban mobility is a critical determinant of social equity because it influences access to opportunities and public services.

Public Financial Management

Public Financial Management (PFM) refers to the systems, processes, and institutions through which governments plan, allocate, and control public resources. PFM encompasses budgetary processes, financial reporting, internal controls, audit mechanisms, and accountability systems that ensure transparency, efficiency, and effectiveness in public expenditure (Allen et al., 2022; IMF, 2023). The Public Expenditure and Financial Accountability (PEFA) framework operationalises these principles by assessing government PFM systems against international benchmarks (PEFA Secretariat, 2023). In Nigeria, the Fiscal Responsibility Act (2007) and Public Procurement Act (2007) provide legal frameworks for PFM.

Financial Governance

Financial governance refers to institutional arrangements, mechanisms, and practices that ensure public resources are managed with integrity, transparency, and accountability (OECD, 2023). In subsidy schemes, financial governance includes budget formulation and approval, expenditure tracking, financial reporting, audit and oversight, and performance evaluation. The World Bank (2024) identifies common financial governance challenges in public subsidy programmes: inadequate budget allocation mechanisms, weak expenditure tracking, limited transparency, insufficient performance monitoring, and weak accountability structures. Andrews (2023) describes these as "financial governance deficits" characterised by opaque decision-making, limited stakeholder participation, and inadequate audit coverage.

Public Sector Accounting and International Public Sector Accounting Standards

Public sector accounting provides the framework for recording, analysing, and reporting government financial transactions. IPSAS provides internationally recognised standards for government financial reporting, emphasising transparency, accountability, and comparability (IPSASB, 2023). IPSAS 1 requires disclosure of programme costs, funding sources, and performance outcomes. IPSAS 23 addresses accounting for government subsidies and transfers, requiring disclosure of subsidy objectives, conditions, and performance measures. In Nigeria, IPSAS adoption has been gradual; federal entities have moved toward accrual accounting, but state-level implementation remains inconsistent, with many states still using cash-based accounting that limits subsidy reporting transparency (Adebayo & Olaniyi, 2022).

Cost–Benefit Analysis

Cost–benefit analysis (CBA) is a systematic approach to evaluating the economic efficiency of public policies by comparing total costs with total benefits. CBA helps assess whether government programmes achieve value-for-money and represent efficient use of public resources (Boardman et al., 2018).

Subsidy as Tax Expenditure and Fiscal Governance

Transport subsidies can be understood as quasi-fiscal or tax-expenditure instruments because they forgo revenue or require direct public funding to alter market prices. Their governance therefore requires disclosure, costing, and evaluation similar to other public expenditures. This links the study to taxation and fiscal governance debates: subsidy design affects fiscal space, tax revenue, and intergenerational equity.

Empirical Review

Within the Global Studies on Transportation Subsidies and Financial Governance. Globally, public transport is a critical policy instrument for improving urban mobility and sustainable development. The World Bank (2023) observes that efficient public transport improves labour productivity, reduces travel costs, and increases social inclusion. Cui et al. (2023) found that service reliability, affordability, accessibility, and frequency significantly influence commuters' willingness to use buses. El-Sayed and Ahmed (2025) found that maintenance planning, digital scheduling, and operational monitoring improve transport efficiency and commuter satisfaction. Boardman et al. (2018) emphasise that cost–benefit analysis is essential for ensuring value-for-money in public programmes.

Within the context of African Studies on Public Financial Management. In African cities, subsidised bus programmes face operational challenges such as inadequate fleet capacity, congestion, inconsistent schedules, and infrastructure deficits. Sogbe and Susilawati (2024) found that waiting time, schedule reliability, overcrowding, and bus frequency were the strongest determinants of commuter satisfaction. UN-Habitat (2024) reported that sustainable urban mobility initiatives improve economic participation when governments combine affordable transport with effective operational management, digital systems, and infrastructure investment. Andrews (2023) identified weak budget execution, limited financial transparency, and inadequate audit oversight as major PFM challenges in African countries.

Within the Nigerian Studies on Transportation and Financial Governance. In Nigeria, studies on urban transportation have focused largely on congestion, transport reforms, fuel subsidy removal, and sustainable mobility. Adeniyi and Ojo (2023) found that rising transport costs significantly affected workforce mobility and urban productivity after the fuel subsidy removal. Adebayo and Olaniyi (2022) found that IPSAS implementation in Nigerian states remains inconsistent, with many states still using cash-based accounting. Nairametrics (2024) reported that the Federal Government's Pi-CNG initiative has expanded CNG buses and conversion centres. Maiyaki (2025) reported that Kaduna's CNG buses saved commuters N1.39 billion in five months but noted overcrowding and delays.

Research Gap

Previous studies have examined public transportation, sustainable mobility, bus service reliability, and CNG transport from environmental, technological, and operational perspectives. However, there is limited empirical evidence on how government-subsidised CNG bus initiatives influence public financial governance, budgetary accountability, IPSAS-aligned reporting, audit, and financial sustainability within Nigerian states. This study fills that gap.

THEORETICAL FRAMEWORK

This study is anchored on Public Financial Management (PFM) Theory and the Public Value and Service Delivery Framework.

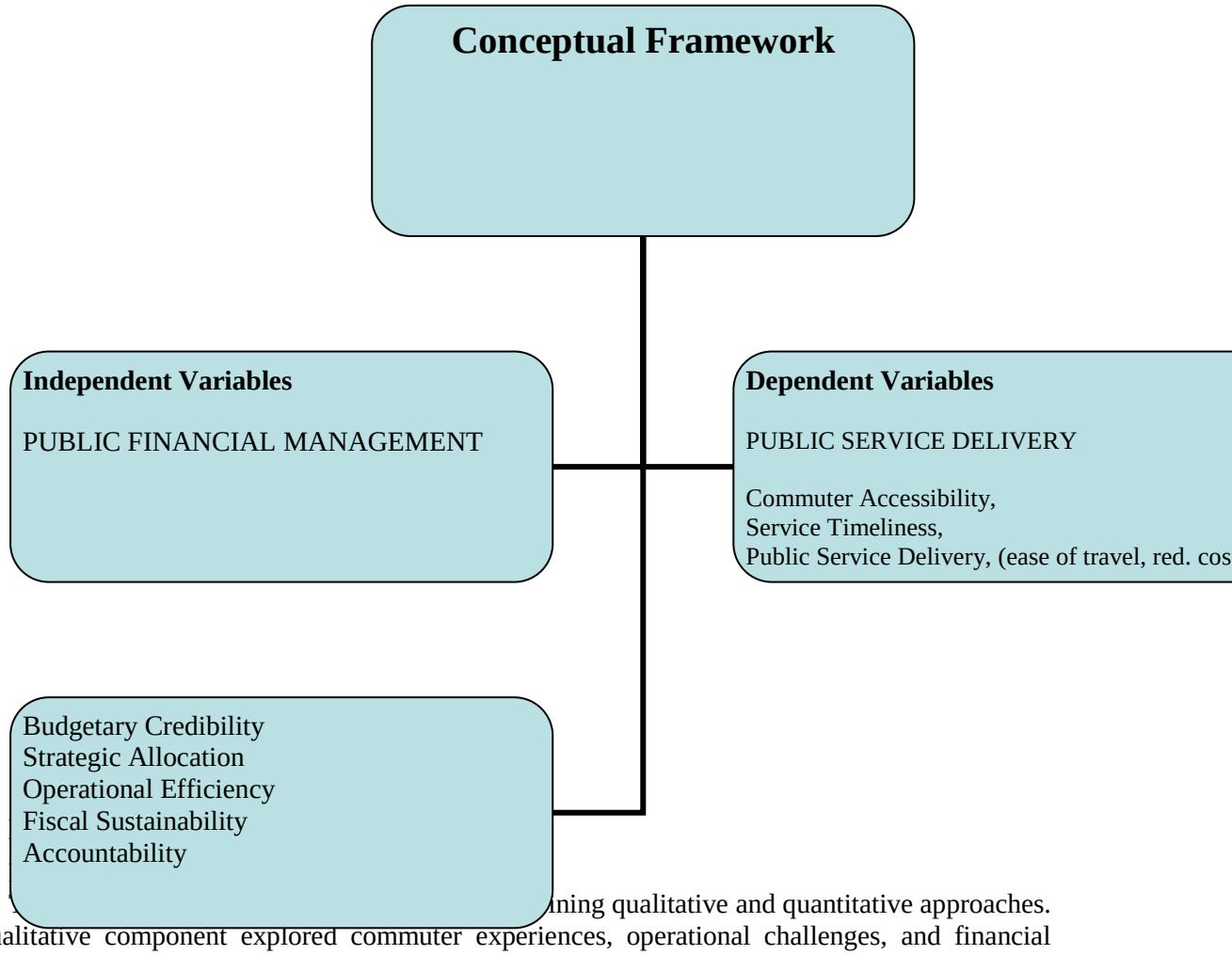
Public Financial Management Theory

PFM theory explains how governments plan, allocate, and control public resources to achieve policy objectives. It encompasses budgetary processes, financial reporting, internal controls, audit, and accountability systems (Allen et al., 2022; IMF, 2023). The theory holds that government programmes achieve objectives when resources are allocated efficiently, expenditure is tracked transparently, and performance is monitored rigorously. Applied to this study, PFM theory provides the lens for examining KSTS budgetary allocation, financial accountability, cost–benefit analysis, and fiscal sustainability.

Public Value and Service Delivery Framework

The study uses the Public Value and Service Delivery Framework as an analytical framework rather than a single formal theory. Moore (1995) argues that public managers must create public value

by balancing services, outcomes, and trust. Denhardt and Denhardt (2015) emphasise democratic governance, citizen service, and accountability in public service delivery. This framework helps explain how KSTS accessibility gains translate into public value, while also requiring financial accountability and transparency.



3.0

ning qualitative and quantitative approaches. The qualitative component explored commuter experiences, operational challenges, and financial governance practices. The descriptive survey component measured commuter perceptions and transport service effectiveness (Creswell, 2018).

Area of Study

The study was conducted in selected commuter corridors within Kaduna metropolis: Rigachikun, Rido, and Tudun Wada. These areas represent major KSTS routes connecting residential communities with employment centres, educational institutions, markets, and government offices.

Population of the Study

The population consisted of civil servants, students, market commuters, and transport officials who regularly use KSTS buses. The total population was 8,106.

The population distribution is presented below:

Ward/Commuter Category	Civil Servants	Students	Market Commuters	Transport Officials	Total Population
Rigachikun	1200	800	600	2	2602
Rido	1000	1000	700	2	2702
Tudun Wada	1100	900	800	2	2802
Total	**3300**	**2700**	**2100**	**6**	**8106**

Source: Researcher Survey, 2026.

Sample Size Determination and Sampling Technique

Yamane's formula was used to determine the sample size:

$$n = N___$$

$$1 + Ne2$$

Where:
N = 8,106
e = 0.09 (9% precision level)

$$n = \frac{8,106}{1 + 8,106(0.09)2} = 8,106/1 + 65.6586 = 8,106/66.6586\ 122 = 122$$

The minimum sample was 122. To allow for non-response, 124 questionnaires were distributed. The survey used stratified random sampling across the three wards, while purposive sampling was used for interviews with transport officials and Ministry of Finance officials.

Instruments

Instruments included questionnaires, semi-structured interview guides, field observation checklists, and financial document analysis.

Validity and Reliability

The questionnaire and interview guide were designed in line with the study objectives and variables. Experts in public administration, accounting, and transportation reviewed the instruments for content validity. Reliability was enhanced through pre-testing among commuters outside the sampled wards. Ambiguous questions were corrected.

Ethical Considerations

Participation was voluntary. Respondents were informed of the study purpose. Confidentiality and anonymity were maintained, and information was used strictly for academic purposes.

Methods of Data Analysis

Qualitative data were analysed using thematic analysis (Patton, 2015). Quantitative data were analysed using frequency tables and percentages. Financial documents were analysed using content analysis and cost–benefit calculations. Hypotheses were assessed through triangulation.

4.0 DATA PRESENTATION AND ANALYSIS

This section presents and analyzes data collected from respondents across the selected wards: Rigachikun, Rido, and Tudun Wada. The analysis focuses on the major variables identified in the conceptual framework: financial governance, budgetary accountability, commuter accessibility, service timeliness, operational challenges, and effectiveness of public transport service delivery.

Ward-Level Response Distribution

Wards	**Questionnaires Distributed**	**Returned**	**Valid Responses**
Rigachikun	40	38	36
Rido	40	37	35
Tudun Wada	44	36	34
Total	**124**	**111**	**105**

Source: Researcher Survey, 2026.

The questionnaire return rate was 89.5% (111/124). The valid response rate was 84.7% (105/124). Among returned questionnaires, the usable rate was 94.6% (105/111).

Financial Governance of the Kaduna Subsidized Transport Scheme

This theme examines budgetary processes, financial reporting, accountability mechanisms, and cost–benefit analysis.

Budgetary Allocation Analysis

Analysis of Kaduna State Government budget documents for 2023-2025 reveals the following:

Budget Year	Allocation (₦)	Actual Expend. (₦)	Variance	Notes
2023	Not specified	Not available	Not available	Pre-KSTS period
2024	Not specified	Not available	Not available	Commuter savings only reported
2025	To be determined	Not available	Not available	Budget approval, Not specified

Source: Researcher Survey, 2026.

In view of the above gap identified it shows that the state budget does not explicitly detail Kaduna Subsidized Transport Scheme operational costs, making it difficult to assess total programme expenditure of full subsidy amount. This lack of transparent budgeting contravenes PFM principles and limits accountability. However, in an interview with Ministry of Finance Official responded that "The Kaduna Subsidized Transport Scheme is funded through the state's public transportation budget line" but specific operational costs are not always separately identified. In response to this it is observerd that operational costs will makes it difficult to track exactly how much is being spent on the CNG bus scheme and other transport programmes.

Cost-Benefit Assessment

Based on available data, the following financial metrics are calculated:

Metric	Value	Calculation	Analysis
Total Passenger Trips	1,400,000+	Government report	5-month period
Commuter Savings	₦1.39 billion	Government estimate	5-month period
Average Savings per Trip	₦993	₦1.39B/ 1.4M	Approximate subsidy per trip
Daily Passenger Trips	~9,333	1.4M / 150 days	~9,333 per day
Fleet Size	Not disclosed	Not available	Required for capacity analysis
Cost per CNG Bus	Not calculated	Not available	Need operational cost data

Source: Researcher Survey, 2026.

In view of the above table it is confirmed that Benefit-Cost Ratio (Estimated)· Assuming total programme cost of ₦500 million (estimated), Benefit-Cost Ratio = ₦1.39B / ₦500M **= 2.78**. The above suggested that for every ₦1 invested, commuters receive ₦2.78 in benefits. However, without full cost disclosure, this ratio remain approximate to the Kaduna Subsidized Transport Scheme report. However, in response to the above it is confirmed from Transport Official stated that "The ₦1.39 billion savings figure was calculated based on the difference between what commuters would have paid with private transport and what they actually saved on the CNG buses. But we don't have a full breakdown of our financial cost to compare this against.

Financial Reporting Gaps

Analysis of financial reporting reveals the following gaps:

Reporting Aspect	Status	Assessment
Budget allocation	Disclosed	Yes - through state budget
Expenditure tracking	Limited	Insufficient detail
Cost per CNG Bus	Not disclosed	Gap
Subsidy cost per beneficiary	Not disclosed	Gap
Financial sustainability indicators	Not disclosed	Gap
Audit reports	Not available to public	Gap
IPSAS compliance	Unknown	Gap

Source: Researcher Survey, 2026.

In view of the above reports and the policy implications for these reporting gaps may limit the accountability, prevent evidence-based decision-making, and undermine public trust in the scheme's financial governance.

Accountability Mechanisms Assessment

Mechanism	Presence	Effectiveness	Gap
Internal Audit	Limited	Unknown	No public information
External Audit	Unknown	Unknown	No audit reports available
Legislative Oversight	Unknown	Limited	No documented scrutiny
Public Financial Disclosure	None	Not available	No public reporting
Citizen Feedback	Limited	Unknown	No formal complaint mechanism

Source: Researcher Survey, 2026.

In view of the above table the Civil Servant respondent during interview "We hear reports about how much money was saved by the Kaduna Subsidized Transport Scheme, but we don't see any detailed financial reports yet". How do we know the scheme is being managed properly if we can't see the accounts?

Theme 1: Availability of CNG Buses and Commuter Accessibility

This theme examines how the availability of CNG buses influences commuter mobility and accessibility to workplaces, schools, and markets.

Response Category	**Frequency**	**Percentage**
Highly Improved Accessibility	42	40%
Moderately Improved Accessibility	38	36%
Slight Improvement	15	14%
No Improvement	10	10%
Total	**105**	**100%**

Source: Researcher Survey, 2026.

The finding that 76% of respondents reported improved accessibility is derived by combining "Highly improved" (40%) and "Moderately improved" (36%). Respondents noted that buses reduced transport costs and improved connectivity. A civil servant in Rigachikun stated: "The buses have reduced our transport expenses significantly and made it easier to get to work every day. Before the scheme, I was spending nearly N2,000 daily on transport. Now I spend nothing because the buses are free." A student in Tudun Wada stated: "As a student, the CNG buses have been a lifesaver. The buses are free, but limited fleet capacity during peak periods reduces the effectiveness of the system."

Theme 2: Service Timeliness and Commuter Punctuality

This theme examines how bus schedules and service reliability influence punctuality among commuters, particularly civil servants and students.

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Response Category	**Frequency**	**Percentage**
Very Reliable	20	19%
Moderately Reliable	35	33%
Occasionally Delayed	32	30%
Frequently Delayed	18	17%
Total	**105**	**100%**

Source: Researcher Survey, 2026.

The findings show that 47% of respondents reported delays, irregular schedules affect punctuality, and peak-period delays are most significant.

Theme 3: Financial Sustainability Assessment

This theme examines the financial sustainability of the Kaduna Subsidized Transport Scheme.

Sustainability Indicator	**Current Status**	**Assessment**
Revenue Generation	Zero collection	Free Bus
Advertising Revenue	Not developed	-
Public-Private Partnerships	Not implemented	Public
Fuel Cost Management	CNG	Positive
Maintenance Funding	Limited	Insufficient
Vehicle Replacement Fund	Not established	Gap

Source: Researcher Survey, 2026.

A Kaduna State Transport Authority official stated: "The scheme currently relies heavily on government subsidy. We need to explore alternative funding sources from free buses to a subsidized

scheme if we want the scheme to continue in the long term. Without sustainable funding, the scheme may not survive beyond the current political cycle."

5.0 DISCUSSION OF FINDINGS

The findings reveal significant gaps in the financial governance of the KSTS, including limited budgetary transparency, weak financial reporting, and inadequate accountability mechanisms. These align with Andrews (2023), who argues that subsidy programmes in developing countries often suffer from financial governance deficits characterised by opaque decision-making and inadequate audit coverage.

The absence of public financial statements for the KSTS contravenes PFM principles and IPSAS requirements for transparent financial reporting on government programmes (IPSASB, 2023; Allen et al., 2022). IPSAS requires governments to disclose programme costs, funding sources, and performance outcomes. The KSTS's failure to provide such disclosure limits accountability and undermines public trust. The limited budgetary transparency also reflects broader challenges in Nigerian public financial management identified by Adebayo and Olaniyi (2022), who found that state-level implementation of IPSAS remains inconsistent, with many states still using cash-based accounting.

The estimated benefit–cost ratio of 2.78 suggests positive social returns on public investment. This aligns with the World Bank (2023), which argues that efficient public transport improves labour productivity, reduces travel costs, and generates social benefits. However, the absence of systematic cost–benefit analysis limits the ability to assess the scheme's true financial performance and value-for-money. Boardman et al. (2018) emphasise that cost–benefit analysis provides essential information for ensuring value-for-money and efficient use of public resources.

The finding that 76% of respondents reported improved accessibility aligns with public service delivery literature, which emphasises that efficient public transportation improves access to socio-economic opportunities and public services (Moore, 1995; Lucas, 2023; Legas, 2024). The N1.39 billion in commuter savings represents a significant transfer of benefits to vulnerable populations, demonstrating the scheme's contribution to social welfare and inclusive development.

Operational challenges inadequate fleet capacity, long waiting times, and maintenance issues—reflect broader challenges facing public transport systems in developing cities (Sogbe & Susilawati, 2024; UN-Habitat, 2024). These operational challenges have financial implications: they reduce service reliability, increase maintenance costs, and limit the scheme's effectiveness. The financial sustainability challenges, including heavy reliance on government subsidy and limited revenue diversification, are consistent with findings from other subsidised transport schemes in developing countries (World Bank, 2024). Without sustainable funding mechanisms, the KSTS may not survive beyond the current political cycle, threatening accessibility gains.

6.0 SUMMARY OF MAJOR FINDINGS

i. Financial Governance: Limited budgetary transparency regarding KSTS operational costs; no public financial statements; cost–benefit analysis not systematically conducted; no independent audit documentation available; weak accountability mechanisms.
ii. Commuter Accessibility: 76% of respondents reported improved accessibility; significant reduction in transportation costs; enhanced connectivity between residential and employment centres.
iii. Service Timeliness: 47% of respondents reported delays; irregular schedules affect punctuality; peak-period delays are most significant.
iv. Operational Challenges: Inadequate fleet capacity (41%); long waiting times (29%); maintenance issues (17%); traffic congestion (13%).
v. Financial Sustainability: Heavy reliance on government subsidy; no vehicle replacement fund; insufficient maintenance funding.

7.0 CONCLUSION

This study examined the financial governance, budgetary accountability, and public sector accounting dimensions of the Kaduna Subsidized Transport Scheme (KSTS). The findings reveal that

the scheme generated approximately N1.39 billion in commuter transport savings within five months, with an estimated benefit–cost ratio of 2.78, suggesting positive social returns. However, cost data remain insufficient for comprehensive financial analysis.

The study establishes that transportation systems play an important role in public service delivery because they facilitate access to socio-economic opportunities and government institutions. The CNG bus initiative represents an important policy intervention aimed at improving urban mobility and mitigating the socio-economic effects of rising transportation costs.

The findings also reveal that the CNG transport initiative significantly improved urban mobility and reduced transportation costs for commuters, particularly civil servants, students, and low-income earners. The subsidised nature of the transport system enhanced commuter accessibility and strengthened connectivity between residential communities, workplaces, educational institutions, and markets.

The study concluded that while the CNG transport initiative has achieved significant progress in improving affordability and commuter mobility, sustainable urban transport service delivery requires efficient operational management systems capable of ensuring reliability, timeliness, and commuter satisfaction. More importantly, it requires robust financial governance: transparent budgeting, IPSAS-aligned reporting, independent audit, cost–benefit accounting, and sustainable funding. The study highlights the broader importance of transportation policy interventions in promoting urban governance, workforce productivity, and inclusive socio-economic development within Nigerian cities.

8. RECOMMENDATIONS

Based on the findings, the following recommendations are made:

i. Budgetary Transparency: The Kaduna State Government should include detailed KSTS budget lines in the annual appropriation, including operational costs, capital expenditures, and subsidy amounts. A separate KSTS programme budget should be published. IPSAS-Aligned Financial Reporting: The state should adopt IPSAS-based financial reporting for public transport subsidies, including disclosure of subsidy objectives, beneficiaries, costs, and performance metrics in line with IPSAS 23.

ii. Independent Audit: Annual independent audits of KSTS finances should be conducted and made publicly available to ensure accountability and transparency in the use of public funds. As well the Cost–Benefit Accounting systematic a cost–benefit analysis framework should be established to regularly assess financial performance, including cost per passenger trip, subsidy cost per beneficiary, operational efficiency ratios, and benefit–cost ratios.

iii. Financial Sustainability Strategy: The government should establish a dedicated vehicle replacement and maintenance fund, explore advertising revenue, and develop public–private partnership options to reduce reliance on annual subsidies and as well as Service Expansion and Operational Efficiency additional commuter corridors and urban communities should be incorporated into the CNG transport network. Digital timetable and real-time bus tracking systems should be introduced to improve service reliability and commuter satisfaction, and maintenance and operational management systems should be strengthened.

iv. Traffic Management: Traffic management systems should be improved within major commuter corridors to reduce congestion and enhance operational efficiency and as well as Citizen Feedback and Oversight a formal complaint and feedback mechanism should be established to improve accountability and service responsiveness.

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