

Assessment of Commuters' Satisfaction with Public Transport Service Quality in Nasarawa State, Nigeria

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Abstract

Public transportation remains a critical component of urban mobility and socioeconomic development, particularly in rapidly growing urban centres. This study assessed commuters' satisfaction with public transport service quality in Akwanga, Karu, Keffi, and Lafia Local Government Areas of Nasarawa State, Nigeria. The study adopted a cross-sectional survey design and collected primary data from 400 commuters using a structured questionnaire. Service quality was measured using five dimensions: reliability of service, safety and security, comfort, driver conduct, and overcrowding level. Descriptive statistics and multiple regression analysis were employed to analyse the data. The findings revealed that commuters generally perceived public transport services positively, as all service quality dimensions recorded mean scores above the acceptable benchmark of 2.50. Reliability of service recorded the highest mean score (3.02), while comfort and overcrowding level recorded the lowest mean scores (2.86). Regression results showed a strong positive relationship between service quality and commuters' satisfaction ($R = 0.883$; $R^2 = 0.798$). The overall model was statistically significant ($F = 54.721$, $p < 0.001$), indicating that service quality dimensions jointly explained a substantial proportion of variations in commuter satisfaction. All service quality indicators exerted significant positive effects on satisfaction, with comfort emerging as the strongest predictor, followed by safety and security, overcrowding level, driver conduct, and reliability of service. The study concludes that improvements in service quality significantly enhance commuter satisfaction. Consequently, transport operators and policymakers should prioritize passenger comfort, safety enhancement, crowd management, service reliability, and driver professionalism to improve the quality and attractiveness of public transportation in Nasarawa State.

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1 INTRODUCTION

Public transport is an important means of mobility, supporting economic activities and improving social inclusion in an urban and peri-urban context. A public transport system is a system that provides affordable and accessible means of transport for residents, decreases the need for private cars, and helps to achieve sustainable urban development. The provision of public transport services is going to be a significant part of the solution to the growth of urban populations, with the importance of ensuring the quality of the services and user satisfaction a key consideration for transport planners and policy makers (Mouwen, 2015).

The issue of service quality has been considered as an important indicator in the transport sector due to the increasing attention of the commuter to the travel experience rather than only the provision of transport facilities. This means that the perception of service quality reflects the users' satisfaction and depends on reliability, safety, comfort, driver behaviour, and density of passengers (Eboli & Mazzulla, 2007). Happy commuters are more likely to use public transport, to recommend it to others, and to support policies to improve public transport (van Lierop, Badami, & El-Geneidy, 2018).

Therefore, it is important to understand the conditions that influence commuters' satisfaction in order to create customer-oriented transport services. Worldwide, low-quality service has been shown to deter public transportation use and promote the use of private vehicles. Redman et al. (2013) found that reliability, trip comfort, accessibility, and security continue to be among the most important factors in whether people use public transport. Likewise, Lai and Chen (2011) found that improvements in service quality dimensions positively affect passenger satisfaction and behavioral intentions. The results show that it is crucial to constantly monitor public transport service providers' activities from the user's point of view and to identify what needs to be improved. Public transport is a major mode of transport in Nigeria, serving a significant share of the population, especially in urban areas, where urbanization, high transportation fares, and low vehicle ownership rates are driving high demand.

Though public transport services in many Nigerian cities are plagued by various issues including poor vehicle condition, safety concerns, unprofessional driver behavior, irregular service schedules and overcrowding, Ipingbemi (2012) noted. These can impact commuters' journey and could affect their satisfaction with the services they experience. Although Public Transport plays an important role in enabling urban mobility, empirical studies on the satisfaction of commuters are still limited in many emerging urban centres. In recent years, there has been a significant population increase and urbanisation in the State, including in the major urban centres of Nasarawa State which include Akwanga, Karu, Keffi, and Lafia. The fact that Karu is located in proximity to the Federal Capital Territory has added to the travel pressure, and the rise in commercial, educational and administrative activities in Keffi, Akwanga, and Lafia, respectively, has added to the growth of dependence on public transport.

The role of public transport operators is therefore key to the mobility of these urban areas, enabling people to travel from one area to another and within the different urban spaces. However, many commuters have an issue with the reliability of the service, passenger comfort, safety, driver behaviour, and overcrowding. While existing literature has addressed the service quality of public transport in various parts of Nigeria and elsewhere, there has been little consideration of assessing commuter satisfaction for public transport in Nasarawa State. An understanding of the perception of commuters' transport services is essential to the understanding of the operational weaknesses and to the development of policies that enhance the delivery of transport services. Thus, this study evaluated the level of satisfaction of commuters about the quality of public transport service in Akwanga, Karu, Keffi, and Lafia L.G.A of Nasarawa State, Nigeria, about the following service qualities, which include reliability of service, level of safety and security, comfort, and the behavior of drivers and level of overcrowding.

2 LITERATURE REVIEW

2.1 Concept of service quality and satisfaction

Service quality refers to the extent to which a service meets or exceeds the expectations of customers. It is a multidimensional construct that reflects customers' evaluations of various aspects of service delivery, including reliability, responsiveness, assurance, empathy, and tangibility. In the transportation sector, service quality encompasses factors such as punctuality, safety, comfort, accessibility, affordability, and the behavior of service personnel. According to Parasuraman et al. (1988), service quality is determined by the gap between customers' expectations and their perceptions of actual service performance. When perceived performance exceeds expectations,

customers consider the service to be of high quality; when it falls short, service quality is judged negatively. Recent studies have emphasized that service quality is not only an operational issue but also a strategic tool for enhancing customer retention and organizational competitiveness. For example, Ladhari (2021) argued that service quality influences customer loyalty, word-of-mouth communication, and overall organizational performance. In public transportation, high service quality can encourage greater patronage, reduce reliance on private vehicles, and contribute to sustainable urban mobility.

Customer satisfaction is a psychological state that results from comparing expected service outcomes with actual experiences. It represents the degree of contentment or displeasure felt by customers after using a service. Satisfaction is often viewed as an outcome of service quality; however, the two concepts are distinct. While service quality focuses on the evaluation of specific service attributes, satisfaction reflects a broader emotional response to the entire service experience. Oliver (2014) defined customer satisfaction as the consumer's fulfillment response, indicating that a product or service has provided a pleasurable level of consumption-related fulfillment.

In contemporary service research, satisfaction is recognized as a critical determinant of behavioral intentions such as repeat usage, recommendation, and loyalty. According to Kotler & Keller (2022), satisfied customers are more likely to remain loyal and to advocate for the service provider. Within the context of public transportation, commuter satisfaction is influenced by perceptions of service quality dimensions such as reliability, safety, travel time, fare levels, and comfort. Consequently, improving service quality is often regarded as a fundamental strategy for enhancing commuter satisfaction and promoting sustained use of public transport services. The study conceptualized that commuters' satisfaction depends on service reliability, safety and security, commuters' comfort, driver conduct, and vehicle crowding level.

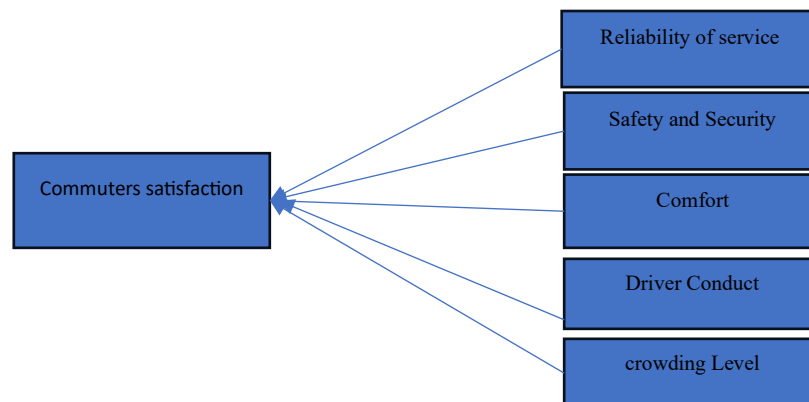


Figure 1: Conceptual Relationship (Sources: Authors Survey, 2026)

2.2 ServQual Model

The research in this study is based on the SERVQUAL Theory of Service Quality developed by Parasuraman, Zeithaml, and Berry (1988). The theory was formulated based on the assumption that the perception of the quality of service and its expectations are compared by the customers. According to the theory, service quality is determined by the extent to which service performance meets or exceeds customer expectations. If customers' perception of performance is higher than their expectations, then they will be satisfied; if customers' perception of performance is lower than their expectations, then it will be caused by their dissatisfaction.

According to the SERVQUAL model, five dimensions of service quality were initially identified: reliability, assurance, responsiveness, empathy, and tangibility. These dimensions have been widely used and adapted across other service sectors, including transport, health care, banking, tourism, and education. The model's flexibility has made it one of the most impactful approaches for measuring service quality and customer satisfaction. In the public transport industry, service quality can be assessed in a context-dependent manner tailored to passengers' needs. Researchers have therefore adapted the original SERVQUAL dimensions to better reflect attributes relevant to transport services. For this study, the dimensions of service quality are reliability of service, safety and security, comfort, driver conduct, and

level of overcrowding. Reliability of service indicates the consistency and dependability of public transport operations, including on-time service provision, vehicle availability, and on-time running.

Safety and security refer to commuters' sense of protection from accidents, reckless driving, theft, harassment, and other travel risks. Comfort also refers to the physical environment of vehicles, such as the number of seats, cleanliness, ventilation, and ride comfort. Driver conduct encompasses the professionalism, courtesy, respectfulness, and driving behavior of transport operators toward passengers. The level of overcrowding measures how many passengers are riding a vehicle compared to its capacity, and its impact on travel convenience and the overall travel experience.

According to the SERVQUAL theory, improving these service quality dimensions enhances customers' perceptions of actual service performance and, in turn, increases customer satisfaction. Concerning public transport, a higher level of satisfaction is more likely when commuters consider the transport reliable, safe, comfortable, professionally managed, and minimally overcrowded. Conversely, poor performance in any of these dimensions can lead to negative perceptions of service and lower customer satisfaction.

The SERVQUAL theory is used because of its ability to explain the evaluation process of commuters and the impact of this evaluation on their overall satisfaction with public transport services. The theory provides a good framework to study the relationship between the selected dimensions of service quality and commuters' satisfaction with public transport service in Nasarawa State, Nigeria. It is therefore useful as a theoretical basis to describe and explain the factors that affect commuter satisfaction and can be used to pinpoint opportunities to improve services and make public transport more attractive.

2.3 Empirical Review

The relationship between satisfaction and the attributes of public transport services (reliability, safety, comfort, driver behaviour and overcrowding) has been a constant feature of research on commuter satisfaction with public transport. Research literature was reviewed on passengers' perception, where it was observed that service quality dimensions are critical to the satisfaction of passengers and reliability is one of those dimensions that has a deep influence on passengers' trust level as reliable schedule and punctuality are key to the satisfaction of passengers (Salokhe and Halder, 2022). Likewise, in a large survey of commuters in Oslo, Lunke (2020) discovered that waiting time and transfers are also found to be important determinants, with an effect that significantly lowers satisfaction, which again shows that reliability is one of the universal considerations in commuter experience. Safety and security emphasized in contexts. The findings of the study presented by Van Lierop, Badami and El-Geneidy (2018) revealed that perceptions of the safety and cleanliness of the onboard environment are closely related to satisfaction and loyalty. This was further supported by Keerthana and Praveen (2024), who found that safety was statistically significant to overall satisfaction among Indian commuters, and Singh (2016) who studied in Lucknow, India, who found that orderly bus environments and safe travel conditions were critical to the perceptions of Indian commuters.

There are also frequent mentions of comfort and overcrowding. In Scotland, bus passengers are highly satisfied with the physical conditions of their vehicles, such as the people in their bus and how comfortable they feel seated, reports Morton et al. (2016). The findings from the study of commuters in the Netherlands by Mouwen (2015) indicate that overcrowding in commuters was found to directly lower satisfaction scores, while Diana (2010) reports that the size of the urban contexts and the level of congestion are found to be related to satisfaction scores. The results of this investigation indicate that comfort and crowding cannot be separated in its influence on the commuter's experience. Although less widely studied, driver behavior is a factor. In Southeast Asian context, courteous and competent driver behaviour had a positive effect on passenger satisfaction (Frinaldi et al., 2020). Likewise, Singh (2016) noted that staff interactions were also a factor affecting commuters' perceptions. The SERVQUAL review by Keshan and Bothra (2025) also emphasized the need for responsiveness and empathy, which are closely connected to driver behaviour, for passenger satisfaction. This discipline has been enriched with methodological innovations. De Oña and De Oña (2015) challenged the conventional methods of conducting surveys, suggesting the hybrid indices that integrate subjective and objective indicators. Eboli and Mazzulla (2009) developed a Heterogeneous Customer Satisfaction Index (HCSI) to take into account the variation of users' judgements, and they were able to demonstrate that attributes such as overcrowding have a strong impact if they are consistently judged to be bad.

De Oña, De Oña, and Calvo (2012) used classification tree analysis, which showed that, initially, perceptions of frequency are dominant, but after reflection, perceptions of safety and fare gain importance. The methodological advances show how difficult it is to measure satisfaction in a range of commuter groups. While international studies have established the significance of reliability, safety, comfort, driver's conduct, and overcrowding, very few empirical studies have comprehensively examined these variables in the Nigerian context, especially Nasarawa State. Although the importance of punctuality and safety is frequently cited, previous research has not considered the joint impact of driver actions and overcrowding on overall satisfaction. Furthermore, many studies have been conducted in European and Asian urban areas, and it is unclear how this service characteristics interact with the service demands of commuters in developing regions where infrastructural issues and socio-cultural issues may impact the attribute service demands. The gap is to be addressed to give Nasarawa State specific solutions and recommendations on how to improve the quality of public transport in Nasarawa State.

3 RESEARCH METHODOLOGY

This study adopted a cross-sectional survey research design, which involves collecting data from respondents at a specific point in time to assess their perceptions, opinions, and experiences regarding a particular phenomenon. The design was considered appropriate because it enables the examination of commuters' perceptions of public transport service quality and their level of satisfaction without manipulating any study variables. Specifically, the study assessed key service quality dimensions, including reliability of service, safety and security, comfort, driver conduct, and overcrowding level, and examined their influence on commuters' satisfaction.

The study was conducted in Akwanga, Karu, Keffi, and Lafia Local Government Areas of Nasarawa State, Nigeria. These areas were selected due to their relatively high population concentration, strategic economic importance, and substantial public transport activities compared to other local government areas in the state. The target population comprised all commuters utilizing public transport services within the selected local government areas.

Population figures from the 2006 National Population Census were projected to 2026 using the exponential population growth model. The projection adopted the annual growth rate of 3.2 percent recommended by the National Population Commission for population projections in Nigeria. The model is expressed as:

$$P_t = P_0(1 + r)^n$$

where P_t represents the projected population, P_0 denotes the base population, (r) is the annual growth rate, and (n) is the projection period. Application of the model produced projected populations of 210,064 for Akwanga, 405,911 for Karu, 619,219 for Lafia, and 173,719 for Keffi, resulting in a total projected population of 1,408,913 for the study area.

A multistage sampling approach was employed. First, purposive sampling was used to select Akwanga, Karu, Keffi, and Lafia Local Government Areas from the thirteen local government areas in Nasarawa State because of their population size and intensity of transport-related activities. Thereafter, simple random sampling was used to administer questionnaires to commuters within the selected locations.

The study relied on primary data obtained through a structured questionnaire. The sample size was determined using the Taro Yamane formula at a 5 percent level of precision, yielding a sample size of 400 respondents. The questionnaires were proportionately distributed across the selected local government areas.

The questionnaire consisted of three sections. Section A elicited information on the socio-demographic characteristics of respondents. Section B collected data on commuters' satisfaction with public transport services, while Section C focused on service quality dimensions, including reliability of service, safety and security, comfort, driver conduct, and overcrowding level. Responses in Sections B and C were measured using a five-point Likert scale ranging from 1 = Strongly Disagree to 5 = Strongly Agree.

To ensure the validity of the instrument, content validity was employed through expert review and assessment of questionnaire items in relation to the study objectives. The reliability of the instrument was evaluated using Cronbach's Alpha coefficient to ascertain the internal consistency of the measurement scales.

Data analysis was carried out using both descriptive and inferential statistical techniques. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were used to summarize respondents' characteristics and assess perceptions of service quality and satisfaction. Multiple regression analysis was employed to examine the relationship between public transport service quality and commuters' satisfaction. The regression model is specified as:

$$Y = a + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + e$$

where:

(Y) = Commuters' Satisfaction;
(a) = Constant term;
 β_1 – β_5 = Regression coefficients;
 X_1 = Reliability of Service;
 X_2 = Safety and Security;
 X_3 = Comfort;
 X_4 = Driver Conduct;
 X_5 = Overcrowding Level; and
(e) = Error term.

The model was used to determine the extent to which the identified service quality dimensions influence commuters' satisfaction with public transport services in the selected local government areas of Nasarawa State.

4 RESULTS AND DISCUSSION

4.1 Analysis of the sociodemographic factors

Table 2 presents the socio-demographic characteristics of the respondents, including gender, age, educational qualification, monthly income, and mode of public transportation used.

With respect to gender distribution, the findings reveal that out of the 400 respondents surveyed, 241 (60.25%) were male, while 159 (39.75%) were female. This indicates that male commuters constituted the majority of public transport users in the study area. The higher representation of males may be attributed to greater mobility demands associated with employment, business activities, and other socioeconomic engagements that require frequent travel. Nevertheless, the substantial proportion of female respondents suggests that public transport services are utilized by both genders and that their perceptions are important in assessing service quality and satisfaction.

Regarding age distribution, the results show that the majority of respondents were young and economically active individuals. Specifically, 152 respondents (38.0%) were within the age bracket of 18–25 years, while 132 respondents (33.0%) were between 26 and 35 years. Together, these age categories account for 71.0% of the total respondents. Respondents aged 36–45 years constituted 13.0%, those aged 46–55 years accounted for 9.0%, while only 6.0% were aged 56 years and above. Respondents below 18 years represented the smallest proportion at 1.0%. This distribution suggests that public transport services are predominantly patronized by young adults who are likely engaged in education, employment, and other activities requiring regular commuting.

The educational qualification of respondents indicates a relatively high literacy level among commuters. The largest proportion, 168 respondents (42.0%), possessed HND or Bachelor's degrees, followed by 96 respondents (24.0%) with NCE/OND qualifications. Furthermore, 76 respondents (19.0%) had secondary school certificates, while 36 respondents (9.0%) possessed postgraduate qualifications. Only 20 respondents (5.0%) had primary school certificates, and 4 respondents (1.0%) had no formal education. The high proportion of respondents with tertiary education suggests that the majority were capable of providing informed assessments regarding the quality of public transport services and their satisfaction with such services.

Analysis of monthly income shows that respondents were distributed across different income groups. The largest proportion, 108 respondents (27.0%), earned between ₦211,000 and ₦281,000 monthly. This was followed by

respondents earning above ₦282,000 (22.4%) and those earning between ₦141,000 and ₦210,000 (22.3%). Respondents earning between ₦71,000 and ₦140,000 accounted for 19.5%, while only 8.8% earned less than ₦70,000 monthly. The findings suggest that public transport services are utilized by individuals from diverse income categories, although a significant proportion belonged to the middle-income group.

Concerning the mode of transport used, tricycles (Keke) emerged as the most frequently used means of transportation, accounting for 107 respondents (26.75%). This was followed by minibuses with 79 respondents (19.75%), motorcycles (Okada) with 72 respondents (18.0%), taxis with 68 respondents (17.0%), and buses/coasters with 51 respondents (12.75%). Other modes of transportation accounted for 23 respondents (5.75%). The predominance of tricycles suggests that they play a vital role in urban mobility within the study area due to their affordability, accessibility, and ability to navigate congested routes. The distribution also reflects the multimodal nature of public transportation available to commuters in the study area.

Overall, the socio-demographic profile indicates that the respondents were predominantly male, young adults, relatively well educated, mostly within the middle-income category, and largely dependent on tricycles and minibuses for their daily transportation needs. These characteristics provide a useful context for interpreting commuters' perceptions of public transport service quality and their overall satisfaction.

Table 1: Gender Distribution of Respondents

s/n	Sociodemographic factor	Measured criteria	Frequency	Percentages
1	Gender	Male	241	60.25
		Female	159	39.75
		Total	400.0	100.0
2	Age distribution	Below 18 years	4	1.0
		18-25 years	152	38.0
		26-35 years	132	33.0
		36-45 years	52	13.0
		46-55 years	36	9.0
		56 years and above	24	6.0
		Total	400.0	100.0
3	Education qualification	No formal education	4	1.0
		Primary school cert	20	5.0
		Secondary school cert	76	19.0
		HND/Bachelor's degree	168	42.0
		Postgraduate	36	9.0
		NCE/OND	96	24.0
4	Monthly income	Total	400	100.0
		<70,000	35	8.8
		71,000-140,000	78	19.5
		141,000-210,000	89	22.3
		211,000-281,000	108	27.0
		>282,000	90	22.4
		Total	400	100.0
4	Type/mode of transport	Tricycle (Keke)	107	26.75
		Minibus	79	19.75
		Motorcycle (Okada)	72	18.00
		Taxi	68	17.00
		Bus/Coaster	51	12.75
		Others	23	5.75
		Total	400	100.0

Source: Field Survey (2026)

4.2 Analysis of the overall service Satisfaction

Figure 2 shows the overall commuters' satisfaction with the services offered by the public transport system in Nassarawa state. The analysis reveals that 40% of the respondents were moderately satisfied with the service offered, 27.5% were dissatisfied with public transport services, and 17.5% of them were satisfied with the services offered by the public transport system. Those who were very satisfied account for 8.8%, while those who were very dissatisfied were just a very few.

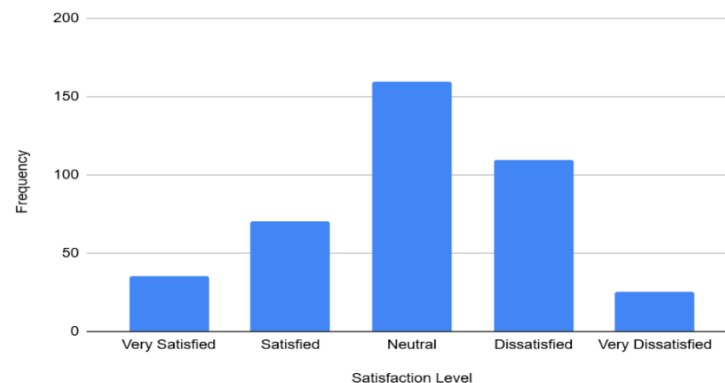


Figure 2: Overall Service satisfaction (Sources: Authors' survey, 2026)

4.3 Analysis of service quality

The results in Table 2 reveal that all the service quality indicators recorded mean values above the benchmark of 2.50, suggesting that commuters generally perceived the quality of public transport services in the study area as satisfactory. Among the indicators, reliability of service recorded the highest mean score of 3.02 with a standard deviation of 1.11. This finding implies that respondents generally agreed that public transport services were reasonably dependable in terms of availability, timeliness, and consistency of operations. The relatively moderate standard deviation further indicates some variation in commuters' experiences, although perceptions were generally positive.

Driver conduct ranked second with a mean score of 2.96 and a standard deviation of 1.09. This suggests that commuters were moderately satisfied with the behaviour, professionalism, and interpersonal relations of transport operators. The relatively low standard deviation indicates a fair degree of consistency in respondents' opinions regarding drivers' conduct. Similarly, safety and security attained a mean score of 2.94 with a standard deviation of 1.11, indicating that respondents generally perceived public transport services as reasonably safe and secure. This finding suggests that commuters had moderate confidence in the safety conditions of transport operations and their protection from accidents, theft, or other security-related concerns while travelling.

The indicators comfort and overcrowding level both recorded the lowest mean scores of 2.86, although they remained above the acceptable threshold. The mean value for comfort, with a standard deviation of 1.16, suggests that respondents were only moderately satisfied with factors such as seating conditions, cleanliness, ventilation, and overall travel convenience. Likewise, the overcrowding level, with the highest standard deviation of 1.25, indicates greater variability in respondents' perceptions. While the average rating suggests that overcrowding was not considered severe enough to constitute poor service quality, the higher dispersion implies that some commuters experienced considerable overcrowding during their trips.

Overall, the findings indicate that commuters perceived the quality of public transport services in the study area to be moderately satisfactory across all service dimensions examined. Reliability of service emerged as the strongest aspect of service quality, while comfort and overcrowding level represented the relatively weaker dimensions. Although none of the indicators fell below the benchmark value of 2.50, the mean scores being only slightly above the threshold suggest that there remains substantial room for improvement. Enhancing passenger comfort, reducing overcrowding, strengthening safety measures, and sustaining reliable service delivery could further improve commuters' perceptions of service quality and contribute to higher levels of satisfaction with public transport services in Nasarawa State.

Table 2: Service quality of public transport

Service Indicator	Mean	Std. Deviation
Reliability of service	3.02	1.11
Safety and Security	2.94	1.11
Comfort	2.86	1.16
Driver Conduct	2.96	1.09
Overcrowding Level	2.86	1.25

Sources: Authors' survey (2026)

4.4 Test of Hypothesis

The study null hypothesis states that;

H01: There is no statistically significant relationship between satisfaction and the quality of the public transport system.

The results presented in Table 3 show that the regression model produced a correlation coefficient ($R = 0.883$), indicating a strong positive relationship between public transport service quality and commuters' satisfaction. The coefficient of determination ($R^2 = 0.798$) implies that approximately 79.8% of the variation in commuters' satisfaction is explained by the combined effects of reliability of service, safety and security, comfort, driver conduct, and overcrowding level. The adjusted R^2 value of 0.765 indicates that after adjusting for the number of predictors, about 76.5% of the variation in commuters' satisfaction remains explained by the model. This suggests that the selected service quality dimensions are strong predictors of commuter satisfaction. Furthermore, the Durbin-Watson statistic of 1.993 is approximately equal to 2.0, indicating the absence of serious autocorrelation among the residuals and confirming that the regression model satisfies the independence assumption.

Table 3: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.883 ^a	.798	.765	.711	1.993

a. Predictors: (Constant), Reliability of service, Safety and Security, Comfort, Driver, Conduct, Overcrowding Level

b. Dependent Variable: commuters' satisfaction

The ANOVA results in Table 4 indicate that the overall regression model is statistically significant ($F = 54.721$, $p < 0.001$). Since the significance value is less than the 0.05 level of significance, the model provides sufficient evidence that the service quality dimensions jointly influence commuters' satisfaction. This finding demonstrates that public transport service quality significantly explains variations in commuter satisfaction.

Table 4: ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	101.843	5	21.369	54.721	.000 ^b
	Residual	38.037	395	.383		
	Total	139.880	400			

a. Dependent Variable: commuters' satisfaction

b. Predictors: (Constant), Reliability of service, Safety and Security, Comfort, Driver, Conduct, Overcrowding Level

The coefficient results in Table 5 reveal that all five service quality dimensions exert a positive and statistically significant influence on commuters' satisfaction. Reliability of service recorded a positive coefficient ($\beta = 0.321$, $p = 0.036$), indicating that improvements in service reliability significantly enhance commuter satisfaction. This suggests that dependable and timely transport services contribute positively to passengers' overall travel experiences. Additionally, safety and security had a positive and significant effect ($\beta = 0.399$, $p = 0.008$), indicating that commuters who perceive transport services as safe and secure tend to report higher satisfaction.

Also, comfort emerged as one of the strongest predictors of satisfaction ($\beta = 0.582$, $p = 0.001$). This finding indicates that improvements in vehicle cleanliness, seating conditions, ventilation, and overall travel convenience significantly increase commuter satisfaction. Furthermore, the driver conduct also demonstrated a positive and significant relationship with commuters' satisfaction ($\beta = 0.547$, $p = 0.005$). This suggests that courteous, professional, and responsible driver behaviour contributes substantially to positive commuter experiences.

Moreover, the level of overcrowding significantly influenced commuters' satisfaction ($\beta = 0.434$, $p = 0.000$). The positive coefficient implies that better management of passenger density and reduced congestion within vehicles lead to higher satisfaction among commuters.

Based on the standardized beta coefficients, comfort ($\beta = 0.808$) emerged as the most influential determinant of commuter satisfaction, followed by safety and security ($\beta = 0.741$), overcrowding level ($\beta = 0.657$), driver conduct ($\beta = 0.466$), and reliability of service ($\beta = 0.137$).

Since the overall regression model is statistically significant ($F = 54.721$, $p < 0.05$) and all service quality dimensions have significant p-values less than 0.05, the null hypothesis (H_01) is rejected. The study, therefore, concludes that there is a statistically significant positive relationship between public transport service quality and commuters' satisfaction in Nasarawa State, Nigeria. The findings indicate that improvements in reliability, safety and security, comfort, driver conduct, and overcrowding management significantly enhance commuter satisfaction. Therefore, efforts aimed at improving these service quality dimensions are likely to increase users' satisfaction and encourage greater patronage of public transport services.

Table 5: Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	7.158	.416		17.680	.000
	Reliability of service	.321	.137	.137	2.122	.036
	Safety and Security	.399	.025	.741	10.404	.008
	Comfort	.582	.056	.808	12.358	.001
	Driver Conduct	.547	.088	.466	6.887	.005
	Overcrowding Level	.434	.053	.657	9.268	.000

a. Dependent Variable: commuters' satisfaction

4.5 Discussion of Findings

The findings indicated that the public transport services in Nasarawa State were generally moderately satisfactory to the commuters. This result is congruent with the SERVQUAL premise that customers' satisfaction is highly dependent on their perceptions of service performance. When examining the various dimensions of service quality measured, the highest mean score was found for reliability of service, which reflects a relatively satisfactory level of commuters' perceptions of the availability, consistency and timeliness of transport services. This result is consistent with the findings of Salokhe and Halder (2022) which stated that reliability is one of the key factors that affect passenger satisfaction as it increases the travel experience and users' confidence in the transport services. Lunke (2020) also highlighted the importance of service reliability in determining the commuters' perception and satisfaction. The research also revealed that safety and security had a positive correlation with commuter satisfaction. This result is in line with the ones obtained by Van Lierop et al. (2018), who found that, safety perception is positively correlated with passenger satisfaction and loyalty.

The discovery also aligns with Keerthana and Praveen (2024) who found that the safety-related attributes play a significant role in assessing transport services. Comfort was determined as the most significant factor affecting commuter satisfaction. This indicates that commuters' experience can be significantly improved by better facilities for sitting and cleaning vehicles, better ventilation and better travel convenience. The results are consistent with Morton et al. (2016) that passengers consider the physical state of the transport vehicles to be of high importance and that comfort plays an important role in passenger satisfaction.

Driver behavior also had a significant positive impact on commuter satisfaction. This finding agrees with the findings of Frinaldi et al. (2020) who emphasized that driver behavior that is courteous and professional makes the passengers' travel experience and overall service evaluation better. The findings also support Singh, (2016) who found that the interaction between staff and passengers was a key factor in determining passenger satisfaction.

In addition, the level of overcrowding had a significant effect on satisfaction amongst commuters. Respondents considered overcrowding was not good enough, however the Mean score for this was not the highest and therefore there is a need to improve. This result corroborates the negative effect of overcrowding on commuters' satisfaction found by Mouwen (2015) and the effect of overcrowding as one of the most significant service characteristics which impacts passenger ratings as shown by Eboli and Mazzulla (2009). In general, the regression results support this hypothesis as service quality dimensions collectively have a statistically significant impact on commuter satisfaction, which validates the results obtained by Lai and Chen (2011) and De Oña and De Oña (2015), who determined that the better the quality of service, the higher the level of satisfaction experienced by passengers.

5 CONCLUSION AND RECOMMENDATION

This study evaluated the quality of public transport service and the satisfaction of commuters in the selected Local Government Areas (LGAs) of Nasarawa State, Nigeria. The results indicated a moderate level of satisfaction of commuters with the services provided. Reliability of service was found to be the most important dimension of service quality, whereas comfort and overcrowding level were areas that need to be improved. The regression analysis showed that reliability of service, safety and security, comfort, driver conduct, and level of overcrowding have a significant influence on commuter satisfaction. Of these aspects, comfort proved to be the best predictor of satisfaction. This study thus ends by concluding that the quality of public transport service is important to the commuters' satisfaction in Nasarawa State. Improving service quality attributes is a key aspect of improving the passenger experience, increasing the use of public transport, and supporting sustainable urban mobility in the state. This study therefore recommends that;

1. Transport operators should improve passenger comfort by ensuring adequate seating capacity, proper vehicle maintenance, cleanliness, and effective ventilation systems, as comfort emerged as the strongest determinant of commuter satisfaction.
2. Government agencies and transport operators should strengthen safety and security measures through regular vehicle inspections, enforcement of traffic regulations, installation of safety devices, and improved monitoring of transport operations.
3. Measures should be introduced to reduce overcrowding by increasing vehicle availability during peak periods and enforcing passenger capacity limits to improve travel convenience.
4. Transport operators should organize periodic training programmes for drivers focusing on professionalism, customer relations, road safety practices, and courteous behaviour to enhance passengers' travel experiences.
5. Efforts should be made to sustain and improve service reliability through better scheduling, route management, and timely service delivery to ensure consistency and dependability in transport operations.
6. The Nasarawa State Government should establish a regular passenger feedback and service evaluation mechanism to monitor service quality performance and support evidence-based transport policy interventions.

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