Passenger Expectations about the Quality of Service on the Inter-City Rail System in South-West Nigeria

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Abstract

Rail transport is essential for economic and industrial development. Passenger Perceptions of Service Quality on the Inter-City Rail System in South-West Nigeria are investigated in this study. To achieve this goal, a descriptive research design was utilised to analyse data obtained by a questionnaire survey from 300 passengers on a single route. The passengers were chosen using a convenient/purposive selection approach, and the respondents were chosen using simple random sampling procedures. With the use of SPSS, the data acquired through the questionnaire was examined utilising statistical tools such as descriptive and inferential analysis. Security and safety measures have a considerable impact on passenger happiness ($R2 = 0.762$, p value=0.000), while rail accessibility has a large impact on passenger satisfaction ($R2 = 0.762$, p value=0.000). The study's main finding is that passengers' evaluations of the service quality provided by the intercity rail system were mediocre. As a result, basic requirements and monitoring of passengers' assets must be carefully verified to ensure the safety of their possessions, and the government should strive to establish a strong road network so that passengers who use rail service regularly may access rail stations more easily.

Keywords: Accessibility, Rail service quality, passenger satisfaction

1. Introduction

Rail transport is essential for economic and industrial development. Rail transport not only conveys passengers but also freight across the country, according to Krishnakumar and Kavitha (2020). Since its inception as a method of public transit, rail transportation has been crucial to the growth of Nigerian transportation. Eboli and Mazzulla (2016). Rail transport is a crucial element in intermodal transportation of products and services, especially for developing countries like Nigeria, which has the natural advantage of being a bulk carrier, safer, and cheaper. It is also more environmentally friendly, has less traffic, and uses less fuel than other forms of transportation. A poorly utilised rail transportation system has a negative impact on the total national transportation system, resulting in low output and a lower contribution to the country's economy. Passenger rail traffic has increased in several countries, particularly in wealthy countries. However, the situation in Nigeria's South-West area, where train traffic has continued to deteriorate, is the polar opposite. Rail services, according to Mehta (2014), are an important means of transportation that is more convenient because it transports bulk commodities over vast distances, is less expensive, and is very safe and environmentally friendly.

The importance of transportation grows as society and economic systems become more complicated. Furthermore, transportation demand is derived since it is dependent on demand for the commodities carried or the benefit of personal travel, and each trip is unique in time and space. To enable economic growth and development, a good transportation system is required. For many years, Nigeria's single-narrow-gauge rail line, built during the colonial period, was the only form of freight transportation between the northern and southern sections of the country. In 1909, the Lagos – Ibadan line was extended to Jebba, and in 1915, it was combined with the Kano – Baro line. In 1916, the Port Harcourt line reached Enugu in Nigeria's east. The railway line served towns and cities like as Jos, Kaduna, Zaria, Namoda, Nigwu, Ifo, Maiduguri, and Gombe between 1916 and 1966. In 1966, the Alesa Eleme oil refinery in Port Harcourt was connected to the Enugu line (Ademiluyi & Dina 2011). According to Odeleye (2000), the Nigerian rail system consists of 3,505 kilometres of narrow gauge (1.067m) single track running parallel through the country from north to south and from south to north. Because there are 1,600 strong curves between 4 and 10 degrees over 1788 kilometres of this line, the maximum permitted speed has been restricted to 65 kilometres per hour. Unfortunately, the government has built no major railway extensions since independence in the last five decades. The present lines are mostly colonial remnants that Nigeria inherited from the colonial administration (Kefele, 2016).

Mobility is one of the most basic and crucial qualities of economic activity since it meets the basic demand of getting from one place to another, which is shared by passengers, freight, and information. As a result, the transportation industry is becoming an increasingly essential part of the economy, with implications for population development and welfare (Hundal, 2015). When transportation systems are efficient, they give economic and social opportunities and advantages, resulting in positive multipliers such as increased market access, employment, and investment (Agrawal, 2018). One of the most important service sectors in the world is railway transportation. It necessary for economic development. This will only be possible if clients receive high-quality service that meets their expectations. Railway transportation enables the quick movement of millions of people and massive freight in an increasingly global community and market sector. Railways' end product is the transportation services they provide to their customers. And a railway's major performance indicator is the quality of its service. The term "service quality" refers to the entire sequence of actions that must occur swiftly and effectively in order to transfer a passenger from one location to another. Customers' desire to enjoy comparably higher quality services has developed as quality has become increasingly important in our lives. It's especially important in a rapidly changing setting like Nigeria's railway operating environment. As a result, enhancing service quality is a critical problem that will decide the railways' long-term existence as well as the country's economic and social development.

1.1 Statement of the Problem

The building of an inter-city railway line in the city was prompted by the need to expand passenger mobility in Nigeria and the establishment of transportation sustainability. The train system was anticipated to provide high-quality service, alleviate the city's long-standing transportation crisis, and reduce passenger overcrowding. It was all about improving the lives of the people in the communities by making the country a better place to live and work in. It was all about using efficient, high-quality, and contemporary transportation infrastructure to promote rapid economic development, industrialization, and international competitiveness. The government aimed for such a project to encourage downtown residents while also providing a convenient transportation system for the city. Much is now unknown about the rail transit service delivery system, as passengers' requirements and preferences are becoming increasingly diverse. In this situation, rail management must be aware of the most recent shifts and trends in order to meet consumer requests on schedule.

In this approach, precise and timely information on a wide range of passenger demands and expectations becomes vital. More so, rail service operations are still marred by delays, ageing vehicles, and ambiguous train travel information, all of which deter passengers, and many of the services supplied fail to entice them. As a result of these circumstances, the quality of services is deteriorating, and railway operations are insufficient. This is due to insufficient infrastructure and rail facilities to meet demand for railway transportation services, as well as quality services that are still unsatisfactory to service consumers. Several studies have been conducted (Kimsa, 2020, Fasil, 2014, Tekle, 2014, Haptamu, 2015, Kefele, 2016 and so on), but there is currently little information that reveals the current state of service quality and passengers' perceptions of rail service quality in Nigeria. More empirical findings are required to fill the gap in this situation. It is critical for the Railway Corporation in general, as well as responsible government bodies, to understand the passengers' perspectives on the services provided to them and their level of satisfaction in order to develop future policies, provisions, quality service standards, and improvement action plans As a result, the purpose of this research is to investigate passenger views of service quality on the intercity train system in South-West Nigeria. The study's main goal is to look into passenger perceptions of service quality on South-West Nigeria's intercity rail system. Other specific objectives include: determining whether security and safety measures have an impact on passenger satisfaction with intra-city rail transportation in Nigeria; and determining whether security and safety measures have an impact on passenger satisfaction with intra-city rail transportation in Nigeria. Investigate the relationship between rail accessibility and intra-city train passenger pleasure in Nigeria.

1.2 Hypotheses

There is no association between rail accessibility and passenger satisfaction of intra-city rail transport in Nigeria; security and safety measures have no meaningful effect on passenger satisfaction of intra-city rail transport in Nigeria.

2. Literature Review: Theoretical and Conceptual framework

Gronroos conducted a study on the relationship between good service quality and a large investigation focus on service. Gronroos is a well-known contributor to the Nordic school of service quality. According to Rossides (2011), Gronroos (1984) proposed the "perceived service quality model," which he believed should replace the product attributes or characteristics of a physical object in the consumption of services. The author established two service quality dimensions: the technical aspect of "what" service is supplied and the functional aspect of

"how" service is provided. Customers view what they receive as the product of the process in which resources have been used through the technical dimension (or outcome quality of the process) of service quality. Gronroos (1984) defines the 'what' as the consequence of the service encounter, which is evaluated after the performance.

2.1 Passenger Perception on Rail Service Quality

Passengers' perceptions of train service, according to Hundal (2015), have become critical in the evolution of the rail transportation system. Passengers who are dissatisfied with their service will use the rail system less. Passenger satisfaction is defined as a passenger's attitude toward a service provider or organisation when their expectations are met or exceeded over the product or service's lifespan. In order to boost competition, service providers have recently focused on customers/passengers. Passengers' service expectations and needs have risen dramatically. Customers are demanding better and more reliable delivery as well as more responsive services as they become more informed. As a result, rail services must understand passenger wants and expectations and meet them by providing better services (Amaoko, 2017). The concept of fairness applies to passenger perception. As passengers, we want service providers to treat us fairly, follow through on promises, and be trustworthy. Passengers primarily expect the rail service to deliver speedy services, to provide comfortable service facilities and communication channels, and to fulfil obligations to provide personal attention, security, and safety of their things, as well as to provide significant and professional services. Also, the promise should reflect fairness in service offerings (Kumsa, 2020).

As a result, perception is a subjective assessment of something seen or experienced that varies from one consumer to the next. As a result, each passenger is confident in the service that their rail service providers deliver in terms of expectations and satisfaction. Because customer satisfaction is a determinant of customers' opinions of train service quality, whether outstanding or poor, this is the case. Passenger perception is independent in certain circumstances, but it provides enterprises with some important insights into how to enhance their service strategy. In this spirit, providing a high degree of quality service has become a selling feature for rail transit firms seeking to attract passenger loyalty. Wieseke et al. (2017) explored the impact of empathy on passenger satisfaction and the role of empathy on service quality. It has been proven that passengers who are served emphatically are more likely to become visitors and are more willing to forgive any mistakes that may arise. Empathy establishes an emotional bond with customers, giving them a sense of importance in the firm. Passengers considered rail transportation to be a dependable and timely means of transportation. Additionally, passengers expected rail transportation to have a cheap rate and frequent service. Passengers also expected rail transportation to have a solid transportation coverage and network, as well as a safety concern, to ensure that they are safe while using the service. Certain studies have found that various elements are directly and indirectly related to the quality of public transportation service and passenger satisfaction.

Ponrahono,et al (2015) used a convenient sample approach to study bus riders in Peninsular Malaysia. They used 1130 surveys of on-board passengers in the age range of 15–55 years.

They discovered that rider satisfaction is influenced by trip length, waiting time, occupancy, service frequency, reliability, comfort, cleanliness, and crew behaviour. Frequency of service is, of course, an important factor for passengers when it comes to the availability of public rail transportation and has an impact on customer satisfaction (Eboli, et al 2017). In fact, Mouwen (2015), Tyrinopoulos & Antoniou (2018), and Shen, Xiao, & Wang (2016) suggested that public transportation users consider frequency to be the most important factor of whether they would be inclined to use public transportation instead of driving. The railway service quality factors were also discovered by Vanniarajan and Stephen (2018). Users' perceptions of the service are influenced by reliability, certainty, tangibles, empathy, and responsiveness, according to the researchers

Their research goes on to say that factors including transit service availability, service monitoring, journey duration, safety and security, maintenance, and construction have an impact on riders' satisfaction levels. In addition, a study by Irfan, Kee, and Shahbaz (2017) looked at passengers' attitudes toward rail transportation by measuring their satisfaction with eight service quality features such as empathy, assurance, tangibles, punctuality, responsiveness, information system, food, safety, and security.

The survey highlighted responsiveness, safety, information, and timeliness as the primary factors of commuter satisfaction with the service (punctuality). Service quality is important not only to passengers, but also to operators and legislators, because passenger views of service quality are strongly related to the transit system's overall success. As a result, determining the passengers' perceptions of public transportation is critical, because people only use public transit when they believe the system is safe and efficient.

3. Research Methods

In this study, a survey research design was used. In this work, primary and secondary data were employed to acquire information for inference. Passengers travelling by rail from Lagos to Abuja are included in the target population. The sample was chosen from the population using the purposeful sampling technique. The sample size was determined using Mugends & Mugenda sample size determination from the total population (300) respondents. To obtain information from the respondents, a structured four-Likert-scale questionnaire (self-developed) was used. A basic random selection procedure was used to distribute the questionnaires. The validity of the instrument designed for this study was determined using content validity, and the questionnaire's reliability was determined using Cronbach's alpha of 0.86. Pearson coefficient and basic regression analysis were used to evaluate the hypotheses.

4. Results and Discussion

One hundred and eighty-one (181) of the total questionnaires administered were confirmed to be valid and were used in the analysis. To examine the hypotheses, the researchers utilised descriptive and inferential statistics.

Table 1: Descriptive Statistics of respondents' demographic information

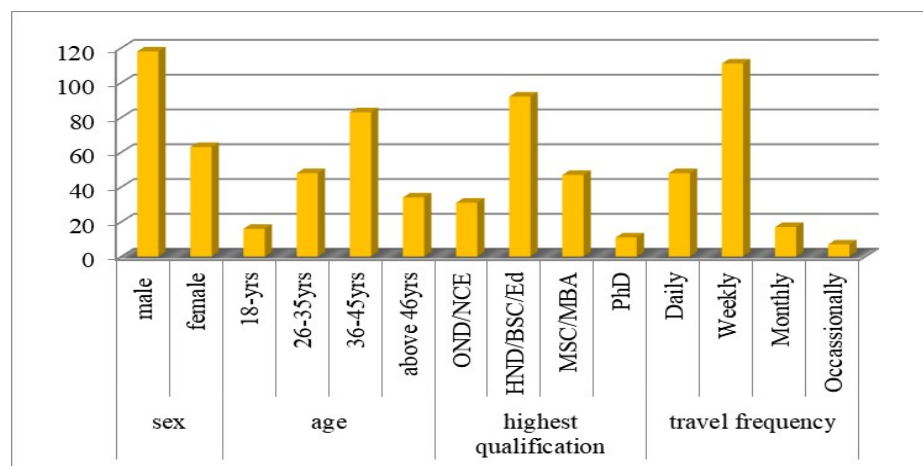|	Frequency	Percentage (%)
Sex		
Male	118	65.2%
Female	63	34.8%
Age		
18-25yrs	16	8.8%
26-35yrs	48	26.5%
36- 45yrs	83	45.9%
Above 46 yrs	34	17.8%
Highest Qualification		
OND/NCE	31	17.1%
HND/BSC/ (Ed.)	92	50.8%
M.Sc./MBA	47	26%
Ph.D.	11	6.1%
Travel frequency		
Daily	46	25.4%
Weekly	111	61.3%
Monthly	17	9.4%
Occasionally	7	3.9%

Source: field survey, 2022

Fig1: demographic response

Table 1 shows that 65.2 percent of the population is male and 34.8 percent is female. This indicates that there are more males than females in the population. Male travelers are more visible at rail stations than female travelers, as seen by the aforementioned result.

This could be because most women are terrified of taking a train to their destination. 8.8% of respondents are between the ages of 21 and 30, 26.5 percent are between the ages of 31 and 40, 45.9% are between the ages of 41 and 50, and 17.8% are 50 and up, indicating that the bulk of the respondents are between the ages of 41 and 50.This means that the age gap between passengers entering the train is small, despite the fact that the vast majority of passengers are of legal age to do so.

The bulk of the respondents reported HND/BSC/(ED) as their highest educational qualification, with 17.1% having OND/NCE, 50.8 percent having HND/BSC/(ED), 26% having M.SC/MBA, and 6.1 percent having PhD. This indicates that the majority of passengers are well-informed on rail transportation. The bulk of the respondents travel weekly, with 25.4 percent travelling daily, 61.3 percent travelling weekly, 9.4 percent travelling monthly, and 3.9 percent travelling infrequently. This demonstrates that the vast majority of people travel by rail to their destinations It may be concluded that a substantial number of respondents use the rail service frequently, as evidenced by the sample employed in this study, and that respondents are well-versed on the nature of service offered, allowing them to measure it accurately.

Table 2: Respondents' responses

S/N	*Security And Safety*	Strongly Agree (4)	Agree (3)	Disagree (2)	Strongly Disagree (1)
1	I feel safe from fears when using the rail.	124(68.6%)	50(27.6%)	7(3.9%)	-
2	The security personnel in the train are smart and attentive	78(43.1%)	83(45.9%)	19(10.5%)	1(0.6%)
3	The safety and security equipment are functional	89(49.2%)	71(39.2%)	21(11.6%)	-
4	The safety and security measure against crime at the waiting area is good	80(44.2%)	84(46.4%)	16(8.8%)	1(0.6%)
5	The passengers are checked for security purpose before boarding the train	92(50.8%)	70(38.7%)	18(9.9%	1(0.6%)
	Rail Accessibility				
6	The access to the rail terminal by the other modes is good	85(47%)	75(41.4%)	19(10.5%)	2(1.1%)
7	The road network access to the terminal is good	16(8.8%)	3(1.7%)	75(41.4%)	87(48.1%)
8	The road condition to the rail terminal is satisfactory	11(6.1%)	5(2.8%)	80(44.2%)	85(47%)
9	The rail service is accessible to every passenger	91(50.3%)	67(37%)	18(9.9%)	5(2.8%)
10	I am certain I will get to the station as early as possible because the road access to the station is good.	96(53%))	51(28.2%)	29(16%)	5(2.8%)
	Passenger satisfaction				
11	The train service met my expectation	85(47%)	64(35.4%)	21(11.6%)	11(6.1%)
12	I am satisfied with the train trip.	81(44.8%)	67(37%)	21(11.6%)	12(6.6%)
13	I am delighted with trip provided by the service	77 (42.5%)	71(39.25%)	24(13.3%)	9 (4.9%)
14	I am pleased with performance of service provided	79(43.6%)	69(38.1%)	24(13.3%)	9 (4.9%)
15	I prefer to use rail service always because I am satisfied with their service.	73 (40.3%)	71(39.2%)	24(13.3%)	13(7.2%)

Source: field survey, 2022

In table 2 ,According to the results, the majority of people are concerned about security and safety. When using the rail, 96.2 percent of respondents said they felt protected from their anxieties, while 7.3 percent said they did not. 89 percent of those polled believed that the train's security guards are smart and attentive, while 11.1 percent disagreed. 86.4 percent agreed that the safety and security equipment is operational, while 11.6 percent

disagreed. 90.6 percent of respondents thought that the waiting area's safety and security measures are good, while 9.4 percent disagreed. 89.5 percent of those polled agreed that passengers are screened for security reasons before to boarding the train, while 10.5 percent disagreed.

In terms of rail accessibility, 86.4 percent of respondents felt that access to the rail station by other modes is good, while 11.6 percent disagreed.89.5 percent of respondents disagree, while 10.5 percent believe that the road network access to the terminal is good. 91.2 percent of those polled dispute that the road to the rail terminal is in good condition, while 8.9% agree.87.3 percent of those polled believed that the rail system is accessible to all passengers, while 12.7 percent disagreed. 81.2 percent of respondents agreed that I will get at the station as soon as possible because the station's road access is good, while 18.8 percent disagreed. In terms of passenger satisfaction, 82.4 percent of respondents felt that the train service met their expectations, while 17.7% disagreed. 81.8 percent of respondents said the train travel was satisfactory, while 18.2 percent said it was not. 81.7 percent of respondents said they were pleased with the travel given by the service, while 18.2 percent said they were not. 81.7 percent of respondents said they were satisfied with the service provided, while 18.2 percent said they were not. 79.5 percent of respondents agreed that they prefer to use rail service whenever possible because they are satisfied with it, while 20.5 percent disagreed.

Hypotheses Testing

Hypothesis one

Ho$_1$: Security and safety measures has no significant effect on passenger satisfaction of intra – city rail transport in Nigeria

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Sig.
1	.873[a]	.762	.760	.29630	.000[b]

a. Predictors: (Constant), Security and safety

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.173	.190		-.914	.362
	Security and safety	1.047	.044	.873	23.912	.000

a. Dependent Variable: passenger satisfaction

Passenger happiness is influenced by security and safety measures, according to the model summary. The coefficient of determination (R^2 = 0.762) indicates that the train security and safety measures account for 76.2 percent of the success documented in passenger satisfaction. Because the p-value of the finding (0.000) is less than the 0.05 level of significance utilised in the study, it is statistically significant. This suggests that security and safety measures have a major impact on rail passenger pleasure. A unit adjustment in security and safety measures enhances passenger satisfaction by 1.047, according to the model. As a result, the null hypothesis was dismissed and the alternative hypothesis was accepted.

Hypothesis two

Ho$_2$: There is no correlation between rail accessibility and passenger satisfaction of intra – city rail transport in Nigeria

Correlations

		rail accessibility	passenger satisfaction
rail accessibility	Pearson Correlation	1	.610[**]
	Sig. (2-tailed)		.000
	N	181	181
passenger satisfaction	Pearson Correlation	.610[**]	1
	Sig. (2-tailed)	.000	
	N	181	181

**. Correlation is significant at the 0.01 level (2-tailed).

The association between rail accessibility and passenger happiness (r = 0.610, p-value 0.000) is revealed in the preceding result. The computed p-value (0.000) is less than the criterion of significance (0.050) employed in the study, indicating that the link is significant. This finding indicates that there is a significant positive relationship between rail accessibility and rail passenger satisfaction.

5. Results and Discussion

The majority of respondents agreed with the claims, according to the findings. However, just a few of them were in agreement. Security and safety measures have a considerable impact on passenger satisfaction, while rail accessibility has a big impact on passenger satisfaction, according to the hypotheses. This indicates that passengers are content with the rail service. However, there is still room for development in terms of rail transportation service delivery. Poor accessibility to train stations also leads passengers to believe that on-time rail boarding is not widely practiced in the city, limiting access to most locations, according to passengers. These findings were backed up by (Kumsa 2020, Karlsson and Larsson (2015), and Holmberg and Hyden (2016), who identified them as keywords of rail transport service quality indicators from the perspective of passengers. These findings are likewise in line with Marinov et al findings. .'s Overall satisfaction with intercity rail travel is influenced by aspects such as train and station cleanliness, ticketing service, information provision, safety and security, price, and rail accessibility, according to a 2015 study.

5.1 Conclusion/ Recommendations

Passengers' impressions of service quality on the Inter-City rail system in South-West Nigeria are investigated in this study. The railway transport sector is one of the world's most important service industries, according to literature. It is necessary for economic development. This will only be possible if travelers receive high-quality service that meets their expectations.

Security and safety measures have a considerable impact on passenger satisfaction, whereas rail accessibility has a large impact on passenger satisfaction, according to the research. This indicates that passengers are content with the rail service. According to the study, most passengers take more journeys each week and are more likely to rely on trains than other modes of transportation.

It was therefore recommended that;

- ❖ The Nigeria Railway Corporation should encourage its marketing and research divisions to do frequent passenger service research from time to time in order to stay on top of patrons' desires and market dynamics affecting their wants.
- ❖ When it comes to intra-city rail transportation, a good road network should be available to ensure that passengers arrive at the station on time.
- ❖ This will improve the quality of rail service while also attracting more passengers.
- ❖ Passengers place a high value on security and safety, thus basic criteria and monitoring of passengers' assets must be thoroughly examined to assure the protection of their goods.

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