

Assessment of Users' Satisfaction with the Efficiency of Lagos-Ibadan Rail Transportation Service

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Abstract:

This research examined passengers' satisfaction with the Lagos-Ibadan rail transport service. The study examined the socio-economic characteristics of the passengers, investigated the purpose of trip, and assessed users' satisfaction with railway services to and from Lagos-Ibadan. Data for this study were generated through an online survey administered between March and May 2024. Data obtained were analyzed using descriptive statistics which consist of simple frequency and percentage and Summation of Weight Value (SWV). Findings revealed that Users' are satisfied with attributes related to comfort such as temperature, seating capacity, quality of train, cleanliness, level of noise pollution, and waiting conditions with RMI between 3.1 and 3.9. However, attributes that relate to travel time such as access time, waiting time, transfer time, and punctuality all have RMI that is below 3.0000. The study, therefore recommended that attributes that relate to travel time such as access time, waiting time, transfer time, and punctuality should be improved upon. Also, the management of the Lagos-Ibadan rail service should frequently conduct rail user survey to assess their overall satisfaction with their most recent trip.

Keywords: Rail transportation, Service Quality, Lagos-Ibadan, Users' Satisfaction, Efficiency.

Introduction

Railway transportation has been described as an important component of countries' transportation sector globally. Its advantage is hinged on its ability to transport people and goods en masse over a long distance at an affordable price. Recognizing its importance, the Nigerian government renewed efforts in recent times to resuscitate and modernize the nation's moribund railway transport system with a view to providing an alternative cost-effective, affordable, energy savings and environmentally friendly mode of transport. Notable among these efforts is to upgrade and replace the colonial western truck line from Lagos to Kano. Among these planned routes, Kaduna- Abuja and Lagos- Ibadan have been completed and commissioned for use.

The Lagos-Ibadan line is envisaged to run 16 trips daily for the comfort of those who reside in Ibadan and work in Lagos as well as those who live in Lagos and work in Ibadan. However, this might not be achieved if passengers are unsatisfied with the services. According to Pezeshki, Sabokro, and Jalilian (2020), satisfaction is "the customer's perception and evaluation of the experience of receiving a service or consuming a product". It can be assessed by surveying customers' perception of the service provided, since, the passengers are the users of the system, they can evaluate whether the service meets their expectations or not (Obsie, Woldeamanuel, & Woldetensae, 2020).

User satisfaction has been extensively researched, however, the majority of these studies have focused on sectors such as telecommunication (Balaji &

Senthilkumar, 2024; Abdullah, Prabhu & Othman 2022; Alrwashdeh et al. 2020; Oghojafor et al 2014) and hotel and tourism (Voa et al 2022; Aakash & Aggarwal, 2020). Studies that have focused on the transportation sector, however, prioritize the aviation sector more (Henke et al, 2022; Wojuade, & Onatade, 2020; Oghojafor & Adekoya, 2014), whereas research on public transit has concentrated more on road transport (Wojuade, & Badiora, 2017; Obasanjo & Martina, 2015; Mireku, & Dauda, 2014), particularly in Africa countries where road transportation accounted for 90 percent of passenger traffic and 80 percent of the freight traffic (Economic Commission for Africa, 2009). There have been very few researches assessing users' satisfaction with rail transportation (Abdulrahim & Onikosi-Alliyu, 2021; Pius, Nwaogbe & Ogwude, 2018), especially in Nigeria where many railways are moribund.

This study becomes imperative because users' perception and satisfaction about public transport is an important input for government and transit operator for effective planning to improve the quality of service. Monsuur, Enoch, Quddus, and Meek (2017) noted that satisfaction surveys help transport managers and policymakers allocate resources to underperforming elements of the service. Similarly, it becomes important to identify new methods to make rail transport more attractive in terms of its sustainability and to discover ways to attract new users of public transportation while keeping the present ones.

However, there has been limited study on the performance of the Lagos-Ibadan railway service from users' perspective. Thus, there is no information on which service attributes contributes more to user satisfaction or dissatisfaction. Therefore, this study evaluates users' satisfaction with the efficiency of Lagos-Ibadan railway transport services with a view to influencing policy direction in improving the quality of service.

Materials and Methods

Study Area

Lagos –Ibadan rail service is a 157 kilometres double standard gauge rail. The service has three major stations which are Mobolaji Johnson Station, Lagos; Wole Soyinka Station, Abeokuta; and Obafemi Awolowo Station, Ibadan. However, there are other passenger stops which include Agege, Agbado, Kajola, Papalanto, Olodo, and Omi-Adio.

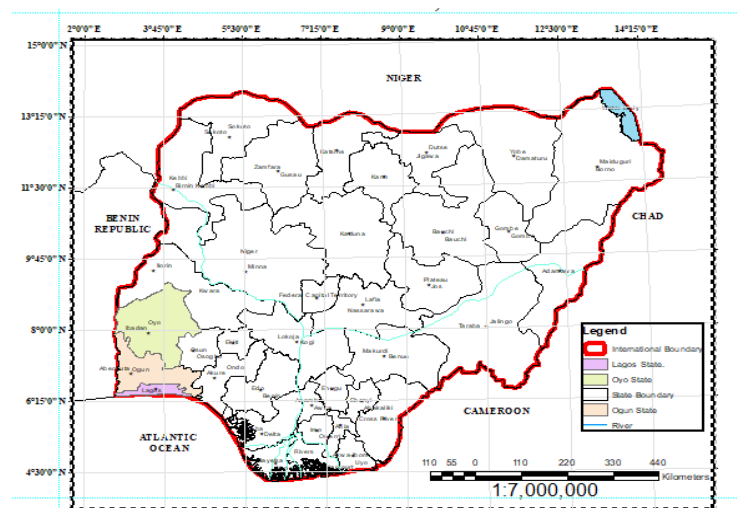


Fig 1: Map of Nigeria showing Lagos, Ogun and Oyo States

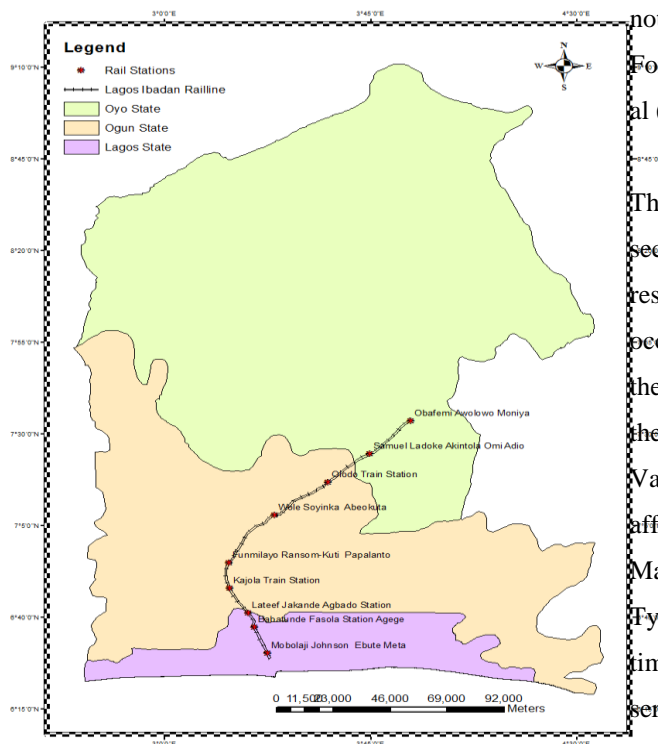


Fig 2: Map of Lagos, Ogun and Oyo States showing Lagos-Ibadan rail line and stations

Methods

This study adopted a survey design approach to collect data on users' satisfaction with Lagos-Ibadan rail services. This was complemented with personal participation and observations conducted through firsthand experience using the train from Lagos to Ibadan. Data for this study were generated through an online survey administered between March and May, 2024 and personal observation.

A pretested survey was circulated through WhatsApp using a convenience sampling framework. Respondents were also asked to filled and share the link. In order to improve the response rate, after four weeks, the questionnaire link was shared online again through the same channel to serve as a reminder. At the end of the survey, there were 288 complete responses. The

methodological framework for this study is consistent and not unfamiliar in the social science research literature. For instance, the method has been adopted by Helms et. al (2024) and Mavhandu-Mudzusi et al (2022) .

The questionnaire was divided into – sections. The first section focused on the socio-demographic profile of respondents which includes gender, age, education, occupation, and income. The second section focused on the purpose of the trip while the third section focused on the level of satisfaction with the rail transport service. Variables that have been reported in previous studies that affect user’s satisfaction were considered (Eboli & Mazzulla, 2012; Fu, Eboli, Mazzulla & Zhang 2017; Fyrinopoulos & Antoniou 2008).These include access time, accessibility, cleanliness, comfort, customer service, ease of transfer, frequency, information at the station, network coverage, noise, onboard information, onboard safety, operating hours, parking facilities, personnel behavior, punctuality, quality of train, safety at the station, seating capacity, temperature, ticket price, transfer time, travel speed, type of ticket, waiting condition, waiting time, Ease of booking , steps for boarding and disengagement .

Data were collated and analyzed using Microsoft Excel and Statistical Package for Social Science (SPSS). Descriptive statistics was applied to analyze the data collected from the respondents. The descriptive part consists of simple frequency and percentage and Summation of Weight Value (SWV). The Summation of Weight Value enhances the use of Relative Mean Index (RMI) value based on five (5) Likert scale with graduation values consisting of Very Dissatisfied (VD =1), Dissatisfied (D =2) Neither Satisfied nor Dissatisfied (NSD = 3), Satisfied (S =4), Very Satisfied (VS =5). The relative Mean Index value for each variable was arrived at by dividing SWV by the total number of responses. SWV for a variable is obtained through the addition of the product of the number of responses to each aspect and



the respective weight value attached to each rating. This is expressed mathematically as:

$$SWV = \sum_{i=1}^5 XiYi$$

Where:

SWV = Summation of Weight Value

X_i = Number of respondents to rating

Y_i = the number assigned a value $I = 1, 2, 3, 4, 5$

Thus, the higher the RMI, the higher the level of satisfaction of the user for the variable under consideration, and this is expressed quantitatively:

$$RMI = \frac{SWV}{\sum_{i=1}^5 i - X_i}$$

RMI =

Results

Results of investigations conducted in this study are presented under three broad sub-headings: Socio-demographic profile of respondents, purpose of trip and Users' opinion on the satisfactory level of the rail transport services. These results are presented in Table 1, Table 2 and Table 3

Table 1: Socio-Demographic Profile of Respondents

Variables	Category	Frequency	Percentage
Gender	Male	150	52.1
	Female	138	47.9
Total		288	100.0
Age	Below 20	26	9.0
	20-30	94	32.6
	31-40	42	14.6
	41-50	98	34.0
	Above 50	28	9.7
Total		288	100.0
Education	Primary	14	4.9
	Secondary	56	19.4
	ND/NCE	43	14.9
	HND/BSc	93	32.3
	MSc/MBA	82	28.5
	Total		288
Occupation	Trading	84	29.2
	Civil Service	82	28.5
	Self-employed	54	18.8
	Student	26	9.0
	Unemployed	42	14.6
Total		288	100.0
Monthly Income	Less than #30,000	12	4.2
	#30,001-50,000	20	6.9

#50,001-70,000	# 42	14.6
#71,001-# 90,000	98	34.0
Above # 90,000	116	40.3
Total	288	100.0

Source: Author's Computation

Table 2. Purpose of Trip

Trip purpose	Frequency	Percentages
Work/Business	159	55.2
Leisure	20	6.9
Education/School	47	16.3
Other (attending social functions and visiting friends and family)	62	21.6
Total	288	100.0

Source: Author's Computation

Table 3. Users' opinion on the satisfactory level of the rail transport services

Attributes	VD	D	NSD	S	VS	SWV	RMI	Rank
Access time	74	192	99	164	220	749	2.6007	19th
Accessibility	60	54	66	432	355	967	3.3576	8th
Cleanliness	28	66	147	380	415	1036	3.5972	6th
Comfort	22	36	129	432	485	1104	3.8333	3rd
Customer service	84	110	120	212	280	806	2.7986	14th
Ease of transfer	52	72	207	264	325	920	3.1944	9th
Frequency	104	184	120	44	205	657	2.2812	23rd
Information at station	65	72	123	336	310	906	3.1458	11th
Network coverage	52	190	114	292	150	798	2.7708	16th
Noise	74	74	63	312	390	913	3.1701	10th
On board information	34	64	36	600	300	1034	3.5903	7th
On-board safety	89	130	42	320	100	681	2.3646	21st
Operating hours	64	174	66	300	200	804	2.7917	15th
Parking facilities	73	136	162	252	150	773	2.6840	17th
Personnel behavior	72	80	162	248	300	862	2.9931	13th
Punctuality	98	230	9	140	185	662	2.2986	22nd
Quality of train	32	58	69	380	545	1084	3.7639	4th
Safety at station	96	142	147	200	110	695	2.4132	20th
Seating capacity	40	24	54	456	520	1094	3.7986	2nd
Temperature	16	28	126	404	575	1149	3.9896	1st
Ticket price	134	150	27	180	125	616	2.1389	24th
Transfer time	86	122	177	88	300	773	2.6840	17th
Travel speed	71	56	96	460	210	893	3.1007	12th
Type of ticket	152	118	21	180	125	596	2.0694	26th
Waiting condition	15	70	144	404	445	1078	3.7431	5th
Waiting time	147	108	48	200	105	608	2.1111	25th

Source: Author's Computation



Discussion

Socio-Demographic Profile of Respondents

Table 1 presents the socio-demographic characteristics of respondents. The majority (52.1%) of the respondents are male while 47.9% are female. This shows that male makes use of rail services more than their female counterpart.

From the age distribution of the users in the above table, the result indicates that about 9% of the respondents are below 20 years of age, 32.6% are between 20-30 years, 14.6% are between 31-40 years, 34% are between 41-50 years while 9.7% of the users are above 50 years of age. This implies that people between 31 and 50 years are mostly working class; they tend to use rail transit more than other age structures to link to their workplace, to avoid traffic and the stress of getting there on time. As shown in the table 1, all the respondents have formal education. However, about 4.9% of them have primary education, 19.4% have secondary education, 14.9% are ND/NCE certificate holders, 32.3% are HND/BSc certificate holders and 28.5% have MSc/MBA certificates. The occupation of passengers is not limited to being self-employed, unemployed, civil servants, and those in trading. Though, the majority of them are into trading which represents 29.2% of the entire response rate, 28.5% are civil servants, 14.6% are unemployed and 18.8% are self-employed. Fewer numbers of the users are students and contributed 9% of the entire sampled respondents. In terms of the income distribution of the rail transport users, 4.2% of the respondents claimed to earn below #30,000 monthly, 6.9% earn between ₦30,001 – ₦50,000 monthly, 14.6% earn between ₦50,001 – ₦70,000, 34% claimed to earn between ₦70,001 – ₦90,000 while the majority (40.3%) of the users earn above ₦90,000.

Purpose of Trip

As presented in Table 2, more than half (55.2%) of the respondents claimed that it serves as a means of getting to their place of work, 6.9% claimed it was for leisure, 16.3% said that they use it as a means of getting to school, while 21.5% of the respondents claimed it was for other purposes. Such purpose includes attending social functions and visiting friends and family.

Users' opinion on the satisfactory level of the rail transport services

On the user's opinion about the factors responsible for the satisfaction of rail transport services, it is shown in the table 3 above that the Users' are satisfied with attributes that relate to comfort such as temperature, seating capacity, quality of train, cleanliness, comfort, noise, and waiting condition with RMI between 3.1 and 3.9. For instance, the temperature of the coaches ranks 1st with RMI of 3.9896, this might not be unconnected with the fact that the coaches are fully air-conditioned. This is followed by seating capacity with RMI of 3.7986. Comfort with RMI of 3.8333 ranks 3rd. Quality of coaches, waiting condition and cleanliness with RMI of 3.7639, 3.7431, 3.5972 ranked 4th, 5th, and 6th respectively. However, noise with RMI of 3.1701 ranks 10th.

Findings also revealed that users' of Lagos-Ibadan rail service are very satisfied with attributes that relate to information such as on-board information and information at the station which ranked 7th and 11th with RMI of 3.5903 and 3.1458 respectively.

Respondents are also satisfied with service attributes related to accessibility such as ease of access and transfer. As shown in the table, accessibility with RMI of 3.3576 ranked 8th while ease of transfer with 3.1944 ranked 9th. The personal behavior of the staff of Lagos Ibadan rail service ranked 13th with RMI of 2.9931 while customer service attributes ranked 14th with RMI of 2.7986.



Of all the attributes that relate to travel time, the result of the study shows that respondents are satisfied with travel speed with RMI of 3.1007 ranking 12th. Other attributes that relate to travel time such as access time, waiting time, transfer time, and punctuality all have RMI that is below 3.0000. For instance, transfer time ranks 17th with RMI of 2.6840, access time ranks 19th with RMI of 2.6007, punctuality ranks 22nd with RMI of 2.2986 and waiting time ranks 25th at 2.1111. Respondents are not satisfied with attributes that have to do with the availability of service such as frequency which ranks 23rd with RMI of 2.2812. Other attributes respondents are not satisfied with include ticket price which rank 24th with RMI of 2.1389 and type of ticket which ranked 26th with RMI of 2.0694.

Conclusion and Future Works

This study assessed users' satisfaction with the efficiency of the Lagos to Ibadan rail transportation service. Findings from the study revealed that users of the rail service are satisfied with attributes that relate to comfort, accessibility of service, information, and customer service. However, attributes that relate to travel time, availability of service, ticket/pass safety at the station, and onboard safety needs to be improved upon. In terms of availability of service, the frequency of trips should be increased beyond the current two trips per day.

The study therefore recommends that the management of the Lagos-Ibadan rail service should frequently conduct rail user surveys. The survey should be targeted to those who have used the service in the last seven days to assess their overall satisfaction with their most recent trip. This will reduce cases of recall bias which is attributed to longer period between use and feedback which lead to less precise evaluation. However, there is a need for further study to compare users' satisfaction with the Lagos-Ibadan rail service and Abuja-Kaduna rail service.

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