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Research Paper

Assessment of ferry service and ridership in Metropolitan of Lagos State, Nigeria

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Abstract— The study aim is to assess the ferry service and ridership in metropolitan of Lagos state, Nigeria. The specific objectives are to assess the socio-economic characteristics of ferry users, determine the capacity supply, level of patronage and factors influencing the ferry ridership. The study was carried out on three water routes in Lagos state, Nigeria namely; Marina to Ikorodu (route1), Ikorodu to five cowries ferry terminal (route 2) and Marina to Apapa (route 3). Data used were derived from primary and secondary sources. The questionnaires were administered to water transport users and all registered operators operating within the three selected routes. The data generated were analyzed using descriptive statistics and multiple regressions. The study revealed that in route 1, the total seat capacity supplied are a total of 1,575 seat per day, route 2 were 1590 seats and 1635 seats were supplied route 3. The study also revealed that the capacity supplied in all the study routes are under-utilized (load factor is less the 1). Furthermore, the result shows that fare is the most significant determinant factor of ferry ridership in the study area, having a p-value of 5.32E-08. The study recommends that there is a need to educate potential IWT users in Nigeria about the inherent advantages and desirability of conveying their cargo using inland waterways

Keywords—Transportation, ferry, ridership, boat, supply, demand

1. Introduction

The socioeconomic development of nations depends heavily on the transportation industry. This is because other economic sectors are strongly influenced by and entwined with transportation [1]. Transport is crucial to the effective management of any government, commercial and all non-government institutions; and no growth or development effort can be made by any responsible government without anchoring it on the transformational wheel of transport'' [2]. One of the most prominent solutions to the problem of transportation in Lagos state is the rejuvenation of the inland water transportation services which for a long time seems to have been grounded in Lagos State in spite of the fact that over 60% of Lagos is occupied by water' [3].

The Lagos metropolitan is the largest and most intricate urban area in southwestern Nigeria with about 18 million inhabitants. According to [4] Lagos is one of the largest cities of the world and its population is growing at a rate of nearly 6% per annum. The city contains the largest manufacturing sector and also provides employment for more than 45% of skilled manpower of the country [4]. Despite the fact of the economy activities going on in the area, lack of adequate transport infrastructural expansion over the years to cope with the increasing population has resulted in heavy traffic congestion within the city. Travelling within Lagos takes double and sometimes triple the normal time, adversely effecting economic development and quality of life in the area. To address this problem, diversifying Lagos transportation options and encouraging passengers to use different forms of transportation are necessary to solve this issue.

Water transportation simply is the transportation of goods and people through waterways. It can be inland (within a specific area) or upland (on a wider range of distance). Emphasizing on inland waterways which is the primary focus of this study, a World Bank survey revealed that a large percentage of the world's industry can be served by inland waterway transportation due to its ability to transport large volumes of commodities and services and thereby attracting great population of people to a particular area. This project aims to highlight various determinants of ferry ridership in Lagos State. However, the word determinant was coined out of the word determination which is the quality that someone shows when he has decided to do something and he will not let anything stop him. In this context, the quality that a prospective passenger will show usually determines the rate or level of acceptance of a transport service in operation.

Transport service is nothing without passenger patronage; hence, interest of passengers must be won as active stakeholders in the transport sector [5]. The English dictionary states that determination is the act or an instance of making a decision. Here, determinant factors are factors that influence making that right decision. Every potential passenger is judgmental in making this decision for something has to trigger the choice of consumer before demands are made. Likewise, on the part of transport operators, ridership in terms of supply of service can be determined by some factors surrounding transport operations.

Ridership term in transport service and operations can be seen in different perspectives and it could be in simple form and complex nature. Transport service and operation is a vital issue that needs a serious attention in any national economy because it nerves centre of all transactions that keep the functionality of a viable economy stable. Water transport systems bear a huge share of travel in both rural and urban areas around the globe. Despite these, water transit is losing market share to other modes of transport such as road transportation. Population density, service frequency, transit fares waterway condition, navigation network extent, parking availability (Jetty) and operation cost, transit system safety and cleanliness, and so on all surely play a role. The fact here is that the relative importance of these determinant factors, and the interaction between them on ridership is not well clearly stated and implicit. However, it becomes imperative to clearly detail the relationship that exist within these factor and ferry ridership in water transport systems which involves transport investments, pricing and deployment of transit services. Several research literatures have so uneven while explaining transit ridership, in some cases poorly conceived, and the results are often ambiguous or contradictory [6].

Lagos State a major state in Nigeria where its roads are characterised by chronic traffic congestion arising from inadequate road network and misuse and abuse of those provided. Travelling by road in Lagos can be torturous with *go-slows* (local slang for traffic) often turning a two-kilometre journey into an hour – long ordeal. Lagos state occupies an area of 3,345 square kilometres, 22% or 787 square meters of which consists of lagoons and creeks' [7].
Given that Lagos state and its metropolitan are blessed with abundant water bodies that could be harnessed to offer fast, safe and comfortable water transportation services in comparison with other major urban development near or situated close to the sea and/or riverine and lagoon systems, the percentage of water transportation in the overall matrix of transport modes for Lagos state is well below 1%. Other cities like London, Rotterdam, Hong Kong, Bangkok, Melbourne, Sidney, New York to mention but a few have a well-established water transportation system which overall matric percentage of 5-10% of the overall commuter traffic flows [8].

With all the great potentials of inland water transportation, water transportation is under patronised, underutilised and highly undeveloped. It is in this regard, that this study deems it very apt to shed light on the determinants of ferry ridership in Lagos state so that the residents of the state will be educated on the advantages that can be derived from ferry system such as less travel time, more comfort, safety, less pollution to mention but a few.

2. Related Work

Recent study by [9][10] have assessed the socio-economic characteristic of the ferry passenger and operation of ferry service in Ikorodu waterway, Lagos state. The study revealed that the majority of the ferry passenger are married male who are in the age of between 28 to 38 years. According to [11] in his study that revealed the factor affect the ferry service in some part of river state Nigeria. The study established that lack of government support and environment problem affect the level of patronage along the water routes in the area. [12] investigated the running cost of ferry and revealed that expect the Legislature would pass a bill for government to support some of the services provided by the medical ferry there is the possibility that their operation would shut down. [13] study on the international models of service delivery in water transportation. The study investigated the use of models in the operation of ferry, stating what the commuters are excepting from the government operated ferry and the standard they are expected to maintain in the area of safety record, service reliability and availability of the ferry. The range of service provision models highlights the various approaches a city or state can have toward ferry service, as different circumstances lend themselves better to different types of service. According to [14] in the recent study on the domestic passenger ferry operations in the Philippines, the study identified safety issues and analysis on how accident investigation practices affect its current safety operational systems. The study revealed that the implementation of domestic passenger ferries as it has connected islands and its operational efficiency contributed to reducing the distance and operation time by creating shortcuts between these islands. [15] study on the ferry service route network in Lagos lagoon-Nigeria using graph theory. In the study passenger travel distance, travel times, travel delays and speed were used to develop a framework for adequate utilization of Lagos waterway. Above all the study revealed, none of the study examined the load factor along their study route. Therefore, these are the gap to fill in this study.

4. Methodology

Survey design was used to address objectives of the study. It involved the use of questionnaire which was administered to solicit information from respondents. Passengers' perception was implored through focus group discussion and questionnaire instrument. The research population was determined by the magnitude of daily patronage of passengers on one-trip travel precisely morning trip and evening trip. However, the average number of daily passengers' patronage in the selected jetties was 4161 passengers on morning and evening traffics between 6:30am and 6:00 pm (see table 1).

Table 1. Passengers manifest for the study

Route	Name of the study route	Number of commuters	Average commuters per day
Route 1	Marina to Apapa	1290- 1400	1345
Route 2	Ikorodu to five cowries ferry terminal	1380 – 1275	1215
Route 3	Marina to Ikorodu	1725-15890	1601
	Total		4161

Source: Authors finding (2022)

The total number of duly registered ferry operators that are currently operating in these corridors is 34. Data collected were summarized and analyzed in line with the data requirements for each objectives using both descriptive and multiple regression analysis. Load factors were calculated using the formula (Equation 1);

$$CS = [v_1 * c_1] + [v_2 * c_2]\,[v_3 * c_3] + \cdots \ldots \ldots n] \ldots \quad [1]$$

Where, $CS = Capacity\ supplied$, v_1 = available boat, c_1 = boat capacity,

The multiple regression models for determinant factors of ferry ridership can also be formulated as follows (See equation 2):

$$Y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \beta_5 x_5 + \beta_6 x_6 + e \ldots\ldots (2)$$

Where Y is Patronage of water transport (P_{wt}), $ß_i$ is coefficient of the intercept; $ß_1$, …. $ß_7$ are the coefficients of the independent variables, e is the error term that is assumed to be associated with the variables, $x_1 is\ fare\ (F)$, $x_2\ is\ speed\ (S)$, x_3 is income (I), $x_4\ is\ time\ (T)$, $x_5\ is\ space\ and\ comfort\ (S_c)$, $x_6\ is\ safety\ and\ security\ (S_s)$

5. Results and Discussion

A. **Socio-economic characteristics of ferry users in the study area**

Table 2 indicates that the percentage of gender patronage of water transport services in Lagos state is closely comparable. The percentage of male passengers was 53.7% while female passengers were 46.3%. The result reveals 183 (53.7%) boat passengers are either married or cohabiting. Respondents representing 19 (5.6%) are widows; while, respondents representing 34.6% were single. The divorcee constituted 21 (6.2%) representation in the statistics. This analysis reveals that, married persons (especially male) patronize water transport services in Lagos Metropolitan area. The differences in Age group of boat operators in the study. Respondents between the ages of 18-30 years constitute 30.8%. Those between the ages of 31-40 years constitute 48.4% of boat passenger interviewed. Ages between 41-50 and 51-60 are 5.9% and 15% respectively. An important variable to consider in transport service operation is age structure. The research reveals that active age groups that patronize water transport services are between 31-40 years and 41-50 years. The study revealed that 39.6% of the sample boat passenger population are traders, 17.6% are Artisan, Civil servants are 21.7, farmers are 1.5%, and farmers among the passenger respondents are 12 (3.5%). Meanwhile, other category of occupation as specified in the answered questionnaire are, bankers, seamen, students, company worker they represent 17.6% and are 60 in population out of total number of boat passengers interviewed. Inference from these statistics revealed that traders and Civil servant constitute the majorities of passengers (users) that patronize water transport services in the study area. Company workers and students also represent 60 (17.6%) of sampled boat passenger respondents. The substantial number of passengers is literate with higher levels of education. Hence, they have a higher judgmental reasoning in decision making and choices. The economics, the ability to make choices is determined by the level of access to information about appropriate service quality and satisfaction one is likely to derive form a particular product or service. Passengers with tertiary education constitute 148 (43.4%) of the sampled population. This is followed by passengers with secondary education with 131 (38.4%). Primary school certificate holders among the sampled passengers were 32 (9.4%), while no formal education constitute 8.8% of total population under study.

Table 2: Socio-economic characteristics of ferry users in the study area

	Frequency	**Percentage**
Male	183	53.7
Female	158	46.3
Marital Status of Respondents		
Married/Cohabiting	183	53.7
divorced	21	6.2
widow	19	5.6
Single	118	34.6
Age of Respondents		
18-30 years	105	30.8
31-40years	165	48.4
41-50years	20	5.9
51-60years	51	15
Occupation of Respondents		
Trader	135	39.6
Artisan	60	17.6
Civil Servant	74	21.7
Farmer	12	3.5
Others specify	60	17.6
Level of Education		
Primary School	32	9.4
Secondary School	131	38.4
Tertiary	148	43.4
No formal Education	30	8.8
Total	341	100

Source: Authors finding (2022)

i. **Passengers' frequency of Travels**

Study revealed that passengers' frequency of travel is highly recurring and steady. Daily travels constituted 89.4% of the total number of sampled respondents. Study also confirmed that the daily travel involves minimum number of two trips per passenger per day (to and fro). Meanwhile, passengers that make use of ferry services on monthly constituted 7.0% of the sampled respondents. Yearly patronage was found to be very low as it involved 12 (2.5%) passengers out of the total sampled passengers for the study (see table 3). The study revealed that there is a considerable level of patronage of ferry services in the study area, and this calls for concerted

effort of government agencies in charge of water transport operation and services in and around the study area to provide a sustainable standard for the management of the ferry services. Despite the fear expressed by the respondents, they still maintain the level of patronage is recurring and subsisting**.**

Table 3: Passengers' frequency of Travels

Frequency of Travel	Frequency	Percentage
Daily	305	89.4
Monthly	24	7.0
Yearly	12	3.5
Total	341	100

Source: Authors finding (2022)

ii. Passenger's common route

The study reveals CMS-Ikorodu water corridor has the highest number of passenger frequency of 166 (48.7%), while CMS-Takwa route had 93(27.3%) of the passenger traffic during the period of study. This is followed by CMS-Apapa water route with 54 passengers (15.8%). 12 (3.5%) passengers were captured among the passengers interviewed along Ikorodu-Apapa route. Lagos Island-CMS and Ikorodu-Victoria Island had the same traffic frequency being 8 (2.3%). (See figure 1)

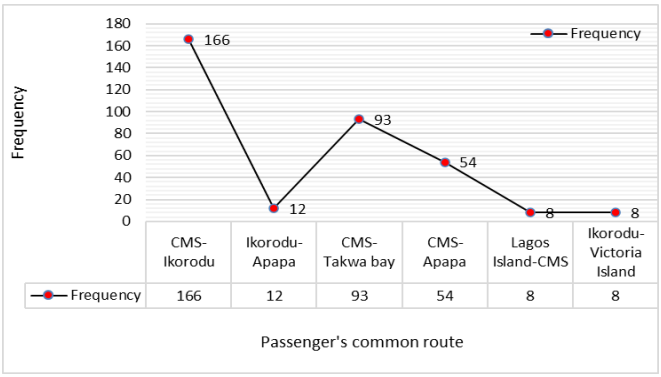

Figure 1: Passenger's common route

Source: Authors finding (2022)

iii. Time to Destination

Result in Table 4 show that 265 (77.7%) of passengers revealed that their time to destination falls between 20minutes-40minutes. This is followed by 41minutes - 60minutes time to destination with 44 (12.9%) passengers and the lowest time record was observed by 32 (9.4%) passengers during the period of study. Information from passengers revealed that there are factors that usually lead to this kind of delay in boarding ferry such factors are delay in ticketing, too many passengers arriving at the same time, unavailability of ferry at jetty terminals. Sometimes passengers would have to wait until a ferry arrives to dispatch her passengers before new passengers can go on-board. Weather factor can also contribute to time to destination.

Table 4: Time to Destination

Time to Destination	Frequency	Percentage
Below 20mins	32	9.4
20mins-40mins	265	77.7
41min-60mins	44	12.9
Total	341	100.0

Source: Authors finding (2022)

iv. Average fare charged per trip

Study also reveals in Table 5 average ridership fare charged by boat operators on each passenger. The fare ranges from N100 to N800 per passenger depending on the distances cover. The majority of passengers are charged between N100-N200. And this shows that the major patronage comes from people residing around water terminals. However, this corroborates the assertion that distance to residence is a determinant factor of ferry ridership in the study area. This study also revealed that people that reside in far areas patronize ferry service. 31.3% of respondents confirmed that they charge each passenger between N700 and N800 most especially for a long distances travel that usually take 25minutes and 30minutes in transit.

Table 5: Average fare charged per trip

Ridership Fare	Frequency	Percentage
N100-N200	45	40.2
N300-N400	19	17.0
N500-N600	12	10.7
N700-N800	35	31.3
Total	111	100

Source: Authors finding (2022)

B. The level of Supply of ferry by the operators in the study area

i. Fleet Size and Capacity Supplied in Marina to Apapa (Route 1) by Operators

In order to assess the level of supply along the study routes, the study first determined the type of boat and capacity available on the daily bases that were supplied by individual (Individual operators are those operators that has one or two boat used for they personal business) and cooperate Operators (Cooperate operators are those operators that are a jointly-owned enterprise that has more than one vessel). For individual operators, a total of twenty-two (22) functional boats were in use by fifteen Operators. Breaks down showed that two are wooden ferry, four are metallic ferries with capacities of 31 and above passengers' capacity. Fifteen (16) are unroofed speedboats with a capacity of 15 passengers as presented in Table 6. Therefore, using the upper limits, five hundred and forty (540) seats are the available carrying capacities supplied in route 1 by individual operators.

Table 6: Fleet Size and Capacity Supplied in route 1 by individual bodies

Boat Type	Passenger (PAX) Capacity				
	Less than 15 pax	16-30 pax	31-50 pax	> 50 pax	Total
Wooden ferry	0	0	2	0	2
Metallic ferry	0	0	2	2	4
Unroofed Speedboat	16	0	0	0	16
Roofed Speedboat	0	0	0	0	0
Total boat	16	0	4	2	22
Total seat					540 seats

Source: Authors finding (2022)

The result in Table 7 shows that the total number of functional boats supplied by five (5) corporate Operators along Route 1 was thirty-six (36). Thirteen of the passenger boats are with capacities of 15passengers, eighteen with capacities of 16-30passengers, five were 31-50 passengers.

The passenger carrying capacity supplied by cooperate operators is 1035 seats (Using equation 1).

Table 7: Cooperate Operators ferry supplied in study routes

Boat Type	Passenger (PAX) Capacity				
	Less than 15 pax/ seats	16-30 pax/ seats	31-50 pax	> 50 pax	Total
Sea coach	4 (60)	5 (60)	1 (50)	0	260
Lag ferry	2 (30)	6 (180)	0	2	210
Texas connection	2 (30)	2 (60)	1(50)	0	140
Waxi	3 (45)	1 (30)	0	0	75
Metro ferry	2 (30)	4 (120)	3 (150)	1 (50)	350
Total boat/seats	13 (195)	18 (540)	5 (250)	1 (50)	**1035**

Source: Authors finding (2022)

Therefore, in route 1, the total seat capacity supplied are a total of 1,575 seat per day.

ii. **Fleet Size and Capacity Supplied along Route 2**

A total of twenty-three (23) functional boats were in use by fifteen Operators. The study showed that two are wooden ferry, four are metallic ferries with capacities of 31 and above. Fifteen (15) are unroofed speedboats with a capacity of 15 passengers. Two roofed speedboats were available with capacity of less than 15 passengers (see Table 4.6). The total passenger carrying capacity by individual operators is a total of five hundred fifty-five (555) seats. The corporate organization found to be the same in all the routes considered. Therefore, the study established that the total seat supplied along the routes is a total of one thousand five hundred and ninety (1590) seat per day.

Table 8: Fleet Size and Capacity Supplied in Route 2 by individual bodies

Boat Type	Passenger (PAX) Capacity			
	Less than 15 pax	31-50 pax	> 50 pax	Total
Wooden ferry	0	2	0	2
Metallic ferry	0	2	2	4
Unroofed Speedboat	15	0	0	15
Roofed Speedboat	2	0	0	2
Total boat	17	4	2	23
Total seat				555 seats

Source: Authors finding (2022)

iii. Fleet Size and Capacity Supplied along Route 3

Here, a total of twenty-seven (27) functional boats were in use by fifteen Operators. The study showed that three are wooden ferry, five are metallic ferries with an average of 31 and above passengers' capacity. Seventeen (17) are unroofed speedboats with an average of 15 - 30 passenger capacity. Two roofed speedboats were available with capacity of less than 15 passengers (see Table 9). The total passenger carrying capacity supplied by individual operator along route 3 is six hundred (600) seats. Therefore, the total seat supplied is one thousand six hundred thirty-five (1635) seats.

Table 9: Fleet Size and Capacity Supplied along route 3 by individual bodies

Boat Type	Passenger (PAX) Capacity				
	Less than 15 pax	16-30 pax	31-50 pax	> 50 pax	Total
Wooden ferry	0	2	1	0	3
Metallic ferry	0	3	1	1	5
Unroofed Speedboat	14	3	0	0	17
Roofed Speedboat	2	0	0	0	2
Total boat	16	7	2	1	27
Total seat					600 seats

Source: Authors finding (2022)

C. **The level of ferry patronage along the three study routes**

i. **The level of ferry patronage along Route 1**

To assess the level of ferry patronage along the study routes, the study needs to determine the number of boat trips per day. From Table 10, the boat daily trip along route 1 shows that 5% of the boats make only one round trip per day, 45% make two trips per day, 40% operate 2-4round trips per day, and while 10% make more than 4 round trips per day. Going by this, it shows that all boats are fully engaged in day-to-day operation. This finding is similar with the study of Akpudo (2021). Therefore, the total daily distance covered by all the operators along the study route is estimated to be 80 kilometers. Recall that the total passenger seat supplied and used are 1575 (see Table 6 and 7) and 1345 seats respectively (see Table 2).

Table 10: Boat Trips in route 1

Daily No. of round trips	**Freq.**	**%**	**nm**	**Distance**	**km**	**Total km**
Once per day	1	5%	1.08	2	4	4
Twice per day	9	45%	1.08	2	4	36
2-4 times per day	8	40%	1.08	2	4	32
More than 4 times	2	10%	1.08	2	4	8
Total	20	100%				80

Source: Authors finding (2022)

However, the load factor along the route using equation 3

$$Load\ factor = \frac{RPK}{ASK} \quad \ldots\ldots\ldots\ldots \quad (3)$$

where, RPK denote demand passenger seat and ASK denote supplied passenger seat.

RPK = demand passenger seat*kilometer =1345*80=107,600

ASK= supplied passenger seat*kilometer=1575*80=126,000

Substitute value in equation 3 show a value of 0.9. Given this load factor, capacity is under-utilized along the route (load factor is less the 1). This implied that supplied is more than demand. The implication here is that they may be a decrease in the cost of transportation by operators in order to encourage more people to use the water transport, because it is fundamental economics that when supply exceeds demand for a good or service, prices fall.

ii. The level of ferry patronage along route 2

The result in Table 11 shows that 40% make two trips per day, 50% operate 2-4round trips per day, and while 10% make more than 4 round trips per day. Going by this, it shows that all boats are fully engaged in day-to-day operation as seen in the other routes where the majority of the boats are employed for 2-4 times per day. Also, recall that the total passenger seat supplied and used along Ikorodu to five

cowries ferry terminal are 1590 (see table 8) and 1215 seats respectively (see table 3.1). Therefore, the load factor is 0.8

Table 11: Boat Trips in route 2

Daily No. of round trips	**Freq.**	**%**	**nm**	**Distance**	**km**	**Total km**
Twice per day	8	40%	1,08	2	4	32
2-4 times per day	10	50%	1.08	2	4	40
More than 4 times	2	10%	1.08	2	4	8
Total	20	100%				80

Note nm = nautical mile, km = kilometer
Source: Authors finding (2022)

iii. The level of ferry patronage along route 3

The boat trip along route 3 in Table 11 is the same with that of route 2. Look at the load factor, recall that the total passenger seat supplied and used along route 3 are 1635 (see table 9) and 1601 seats respectively (see table 1). The load factor value is the same in the previous route considered which revealed that the boat supplied is under-utilized. The economic implications here is that the operators may not carry full load per trip.

D. Determinant factors of ferry ridership from passengers' perspective

Table 12 shows the regression analysis for determinant factors of ferry ridership from passengers' perspective. Following the result of the analysis, the result shows that fare is the most important significant determinant factor of ferry ridership in the study area, having a p-value of 5.32E-08. This is because it is the cheapest as already indicated by previous literature like [16], [17], [18], [19]. The next most significant determinate factors were space and comfort (0.0001), and safety and security (0.010). As said earlier, the most important and limiting factor to size of ship is buoyancy, once this is taken care of, space is not limitation and comfort aboard ferries cannot be compromised nor compare with what is available on other modes' vehicles. Ferries are safe as the rate of incidents and accidents with this mode of transport is very rare when compared with other modes. Ferries are secured as they have the presence of security operatives of the state and those engaged by the operators. The services are scheduled and so it is highly reliable and time conscious with no traffic congestion of any sort. But income is not significant determinant factor when it come ferry ridership. It is for all people.

The results of the regression were acceptable because the R-square showed that 77.7 percent of the 341 observations fit well into the model that the regression generated given a standard error margin of 5.967 for the seven independent variables and other variables not captured. The analysis of variance showed that the variables were highly correlated as the p-value for the ANOVA showed a value of and well below the 95% significance level adopted.

Table 12: Regression analysis for determinants factors of ferry ridership from passengers' perspective

R^2	0.777		
Adjusted R^2	0.743	n	341
R	0.867	k	6
Std. Error	5.967	Dep. Var.	**Demand**

ANOVA table

Source	*SS*	*df*	*MS*	*F*	*p-value*
Regression	41,386.0562	7	5,566.2462	157.86	2.11E-101
Residual	11,788.9423	334	37.7825		
Total	53,174.9985	341			

Regression output

					confidence interval
Variables	*coefficients*	*std. error*	*t (df=333)*	*p-value*	*95% lower*
Intercept	13.1007	1.5979	6.253	5.01E-10	7.8998
Fare	0.7561	0.1821	5.121	5.32E-08	0.5810
SC	0.7280	0.1502	3.176	.0001	0.3350
SS	0.4723	0.1671	2.276	.0010	0.2101
Time	0.4216	0.1718	2.607	.0162	0.0710
Speed	0.4456	0.1777	2.491	.0181	0.0699
Income	0.3390	0.1732	1.589	.2351	-0.0083

Source: Authors finding (2022)

6. Conclusion and Future Scope

Based on the study, the level of supply and patronage and as well as determinants factor of ferry ridership have been known to contribute immensely to the level of ferry patronage and provisions in the study area taking into considerations constant and variables which allowing each to change one at a time, a more thorough understanding of the demand side of the market can be achieved. However, there is need to be check irregularities that may crawl-into management and sustainability of water transport development in the Lagos State and Nigeria as a whole. There is no doubt that a perfect well planned transport system is an essential task to determine the quality of life enjoyed by the people and the functioning of trade, economy, and many other essential services. These aforementioned determinants can be considered in policy decisions, formulation and its implementation.

The study recommends that there is a need to create awareness among the potential water transport users in Nigeria on the inherent benefits and desirability of transporting their cargo through inland waterways

Data Availability
none.

Conflict of Interest
Authors declare that they do not have any conflict of interest.

Funding Source
none

Authors' Contributions

Author- 1: wrote the proposal and literature and data collection of the study. Author- 2: Supervise and interpret results,

Author -3: full supervision of the work and editing.

Author- 4: assist in data collection.

The final version of the manuscript was examined and edited by all authors, who also gave their approval

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