Passenger Boats as an Alternative Means Of Transport to Decongest Commuters, Lagos Case Study

ABSTRACT

An important aspect of every human activity and socioeconomic interaction is transportation; and lack of it tends to hinder economic activity and development. The constant search for a safe, faster, comfortable and cheap means of commuting is the bane of public transport operators in the 21st Century. Despite the availability of various transportation options, such as the use of ferries, the Lagos metropolis is notoriously popular for its traffic congestion, which causes downtimes and delays as well as inconsistency in journey times and extreme energy loss. This study investigated the passenger boats as an alternative means of transport to decongest commuters, Lagos case study. The study was carried out in Marina, Lagos. 450 respondents were selected for the study using random sampling. Data collected was analyzed descriptively using frequencies and percentages. The result of the study indicated that passenger boat means of transportation is moderately adopted in Lagos State alongside other means of transportation. The study also identified the importance of waterways transportation as well as some challenges confronting this means of transportation. Based on the result, conclusion was drawn and recommendations made.

KEYWORDS: Passenger boat, transportation, decongest, commuters

I. INTRODUCTION

Transportation in many cities is characterized by disorganization and unregulated systems causing demand to exceed supply, thus leaving citizens isolated and unproductive (Otunola, Kriticos & Harman, 2019). However, to enhance the functionality of both the cities and commuters alike, improving the transportation network, through the provision of an effective alternative transport networks is vital towards improving productivity and mobility. The most extensive form of transportation in the city of Lagos is the road. There are other forms of transportation, such as the waterways and railways which serves the transportation needs of Lagosians, but the road is the most used (Nwafor & Onya, 2019). Besieged by transportation challenge for so many years, the city of Lagos and its leaders renowned for its growth, is constantly under the pressure to provide and improve the quality of transport systems capable of meeting the needs of the urban populace (Otunola, et al., 2019).

Nwafor and Onya (2019) explained that the effective use of road transportation is hindered by the ever present dilapidated road networks, poor infrastructure and inadequacy of public transport vehicles, which is a source of worry to the government and its citizens. Furthermore, given the ever increasing population of Lagosians, there is a struggle with the number of cars on the roads which contributes to traffic congestion, resulting in commuters losing up to 75% of their weekly working hours (Obi, 2018). With the proposed rail system, Lagos Rail Mass Transit (LRMT), under construction, the waterways is looked upon as the available alternative to road transportation. However, the agency in charge of waterways revealed that the use of ferries and passenger boats is not a well-received option amongst commuters, given their concern for safety on water and the problem of not serving all locations (Mogaji, 2020). The loss of lives and recurring boat accidents have contributed towards making water transport unattractive to commuters as an alternative means of transportation despite the advantages attached (Salau, 2020). Against this background, this study investigates passenger boats as an alternative means of transport to decongest commuters in Lagos state.

Statement of problem

An important aspect of every human activity and socioeconomic interaction is transportation; hence the lack of it tends to hinder economic activity and development (Faajir & Zidan,

2016). The constant search for a safe, faster, comfortable and cheap means of commuting is the bane of public transport operators in the 21st Century (Stefanescu & Tavares, 2013). Despite the availability of various transportation options, such as the use of ferries, the Lagos metropolis is notoriously popular for its traffic congestion, which causes downtimes and delays as well as inconsistency in journey times and extreme energy loss (Nwafor & Onya, 2019). This negative effect therefore calls for a need to embrace the potentials offered by alternative means of transportation such as the water transportation which encompasses the use of passenger boats or ferries as a substitute (Hart, Adebiyi & Oyenuga, 2020). However, the option of water transportation as an alternative to other means of transportation, seem not to be popular with commuters in view of safety concerns and ease in accessibility. Thus, this paper seeks to investigate the use of passenger boats as an alternative means of transport to decongest commuters in Lagos state.

Research objectives

i. To assess peoples' preference of passenger boats compare to other means of transportation in Lagos.
ii. To examine the extent to which passenger boats serves as an alternative means of transport to decongest commuters in Lagos state.
iii. To determine the challenges confronting the adoption of boats serves as an alternative means of transport to decongest commuters in Lagos state.

Research question

i. What is your preferred means of transportation in Lagos?
ii. To what extent do passenger boats serve as an alternative means of transport to decongest commuters in Lagos state?
iii. What are the challenges confronting the adoption of boats in serving as an alternative means of transport to decongest commuters in Lagos state?

II.   LITERATURE REVIEW
Transportation in Lagos state

Lagos, a state located in the South Western part of Nigeria, is regarded as the commercial hub of the Nigeria (NNPC, 2020). Nigeria possesses about 8,600 kilometres of inland waterways, with an extensive area of coastland measuring over 800 kilometres (Usman & Animashaun, 2020). The period before the 1960s witnessed the inland waterways as the most important access routes from the coast and as an important means of moving more than 30% of the total produce; which reduced from the late 1960s. Despite the comparative affordability of the water transport, it is greatly undervalued and neglected in Nigeria (Adejare, Olusina & Olaleye, 2017). This is especially so in Lagos, where despite the water network possessed, is underutilized as a means of transporting people to various parts of the city. According to Ademiluyi, Fashola and Afolabi, (2016) the water transportation offers numerous potentials such as larger capacity, reduced cost and safety yet this has remained untapped. Adejare et al. (2017) attributed this underutilization to the inadequacy of the existing water transport facilities and inaccessibility to commuters.

The transportation needs of Lagos state are served by the railways, waterways and road; however, these infrastructures in place are grossly mismanaged, inadequate, and archaic, rendering it incapable of meeting the transportation demands of the residents (Mogaji, 2020). Other means of transportation such as the airways is greatly utilized, while the railway is being upgraded, such as the new rail system, Lagos Rail Mass Transit (LRMT), currently being constructed and expected to be launched by 2022. However, despite the waterways being managed by the Lagos State Waterways Authority (LSWA), the use of ferries and boats have not received much enthusiasm from residents given the general perception of being unsafe and incapable of serving most locations (Mogaji, 2020).

The utilization of water transport in Lagos state has several benefits in Lagos as it is expected to address the issues of road congestion and other negative effects such as prolonged travelling over a short distance, loss of productive hours, environmental and health related issues. The proper development of water transport would enhance mobility and reduce travel time, as congestion rarely occurs (Tobias, Ramos & Rodrigues, 2019). Developing this mode of transportation is more sustainable and economical, when compared to road transport, given its advantage of being less financially draining, due to minimal need for maintenance and an increased capacity for passengers and goods.

Empirical review

Usman and Animashaun (2020) investigated the utilization of the inland water transport services on Lagos lagoon, specifically the Ikorodu-Ebutte Ero route. The study adopted the use of questionnaires in collection data, while, secondary data was used to source information from government and private publications. The study

analyzed its data using descriptive techniques such as tables, graphs and frequency counts. From the findings made, it was revealed that there was an inadequate provision of terminal facilities and vessels in the area examined, and that most of the trips taken were for work related purpose. The study reported a low patronage which was attributed to safety concerns and high fare cost. It was further revealed that this means of transportation was more patronized by high income earners. However, it was found that there was a potential of this means of transportation being highly accepted if well managed, given the number of people who utilize it on a daily basis.

Hart, Adebiyi and Oyenuga (2020) adopted the analytical hierarchy process (AHP) in assessing commuters ferry services needs in order to aid decision making towards efficiency in operations and market penetration. The study purposively selected a sample size of two hundred four, to whom questionnaires were distributed and data derived. Pairwise comparison consistent with AHP methodology was used in data analysis. When compared to alternatives, the study found that comfort, constant maintenance, payment mode and seating arrangement were important to the commuters. The study suggested that competitive advantage over other modes of transportation can be attained if these indicators are effectively considered in water transportation policy.

Koimur, Kangogo and Nyaoga (2014) examined the perception of commuters regarding the efficiency of 14-seater vehicles in Nairobi over the alternative PSV modes. It aimed to determine if the phasing out of the 14-seater PSVs would achieve the objective of decongestion on the city's roads. The study's population comprised of low-cadre employees in government ministries in Nairobi. Random sampling was utilized in selecting the ministries and the departments for the study, while questionnaire was used in data collection. Linear regression model was used in the analysis of the data collected. It was found that the choice of the 14-seater PSV over the other alternative PSV modes was influenced by the availability of alternate routes, reduced time it took to travel from house to workplace; and the fare charged.

III. METHODOLOGY

This study adopted the use of the descriptive survey. The study was carried out in Marina, Lagos Island. Lagos Island was chosen based on its feature as a commercial hub center accommodating people from every parts of the state who travel by road, rail and water. Also Lagos Island forms part of the network design for ferry routes; Lagos Central (Marina, Ebute Ero) to Ikorodu; Ikorodu to Agboyi (Oworonshoki); Lagos Central (Marina, Ebute Ero) to Agboyi (Oworonshoki); Ikorodu to Victoria Island; Agboyi (Oworonshoki) to Victoria Island; Victoria Island to Lagos Central (Marina, Ebute Ero). Thus, using random sampling population, four hundred and fifty respondents were selected for the study. The respondents were randomly selected based on willingness, availability and knowledge of issue under study. Using questionnaires structured from the formulated research objectives data was derived. The questionnaire was constructed using the four point Likert scale of Strongly Disagree (SD=1), Disagree (D=2), undecided (3); Agree (A=4), Strongly Agree (SA=5). The data derived was analyzed descriptively with the aid of means and simple percentages.

IV. DATA PRESENTATION AND ANALYSIS

For this study 450 questionnaires were randomly distributed but only 366 was retrieved and considered valid. As such the data analysis was based on the 366 valid questionnaire answered. The result is as presented below:

Demographic Data
What is your gender?

Table 1: Gender of participants of the study

Option	Frequency	Percentage
Male	188	51
Female	178	49
Total	366	100
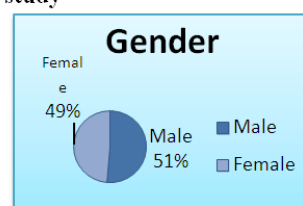
Source: Field survey 2021

Both males and female and male were adopted in this study with almost same proportion (Male, 51%; and female, 49%). This shows that the opinion of both male and female were sought for and each well represented to create a representative sample in terms of gender.

What are your educational qualifications of the respondents?

Table 2: Qualification to handle the job

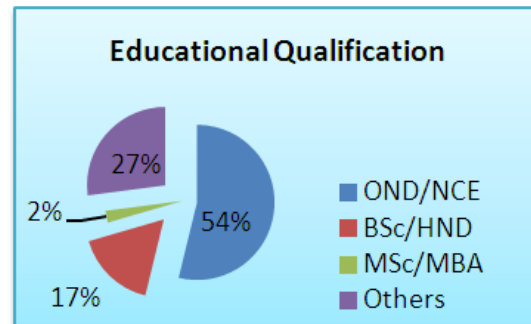| Option	Frequency	Percentage
OND/NCE	197	54
B.Sc./HND	61	17
M.Sc./MBA	9	2
Others	99	27
Total	**366**	**100**

Source: Field survey 2021

Table 2 shows the educational qualification of the respondents and the result showed that the participants cut across different levels of academic qualifications. As indicated in the Table, 54% of the respondents had OND/NCE; 17% had BSc/HND; 2% had MSc/MBA, while 27% selected others. This indicates that the selected participants in the study has some degree of literacy and thus could read and understand the questionnaire unassisted.

What is your occupation?

Table 3: Occupation

Option	Frequency	Percentage
Private sector	43	12
Self-employed	99	27
Government worker	11	3
Apprentice	71	20
Student	88	24
Unemployed	30	8
Others	20	6
Total	**366**	**100**
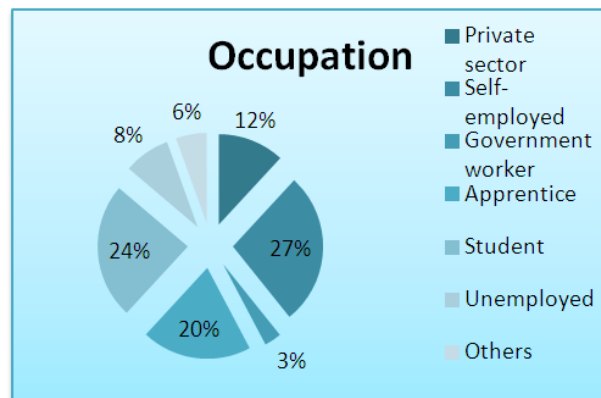
Field Survey 2021

The study revealed that the respondents in this study cut across different occupations. Some are private workers (12%); some are self employed (27%); some are government workers (3%); some are apprentice (20%); some are students (24%); some are unemployed (8%); while 6% selected others.

RQ1: What is your preferred means of transportation in Lagos?

Table 5: The respondents' preferred means of transportation

Options		5	4	3	2	1	% in agreement	Ranking
BRT	F	194	131	25	8	8	88.8	2nd
	%	53.0	35.8	6.8	2.2	2.2		

Danfo	F	135	164	32	28	7	81.9	4th
	%	36.9	44.9	8.7	7.4	2.0		
UBER/Taxi	F	144	167	28	20	7	85.2	3rd
	%	39.6	45.6	7.4	5.4	2.0		
Okada (Motorcycle)	F	169	158	29	0	10	89.2	1st
	%	46.3	42.9	8.0	0	2.6		
Keke/Tricycle	F	172	125	25	22	22	81.1	5th
	%	46.9	34.2	6.7	6.0	6.0		
Ferry	F	194	131	25	16	0	88.8	2nd
	%	53.0	35.8	6.8	4.4	0		
Train	F	130	164	32	28	12	80.4	6th
	%	35.5	44.9	8.7	7.7	2.0		

Source: Field Survey 2021

Note: **Individual responses were measured (from: Strongly disagreed --1--- 2--- 3--- 4 --- 5 to strongly agreed)**

Table 5 above presents the different means of transportation as adopted by different inhabitants in Lagos metropolis. The items indicate the diverse means of transportation about. One of the most selected choices of transportation according to this study is Okada (Motorcycle) which was ranked first with about 89.2%. This was followed BRT and Ferry with 88.8% in agreement respectively. Again, the study showed that about 85.2% are in agreement that they preferred UBER/Taxi as means of transportation, ranking 3rd. This was followed by Danfo selected by 81.9% of the respondents thus ranking 4th and followed by Keke with 81.1% in agreement. Train ranked 6th and the least used according to this study. This shows that several meant of transportation abound in Lagos and people have difference preferences, with 88.8% preferring ferry/passenger boat. This makes passenger boat an essential means of transportation.

To what extent do passenger boats serve as an alternative means of transport to decongest commuters in Lagos state? And Why?

Table 6: The extent to which passenger's boat are adopted in Lagos

Option	Frequency	Percentage
Slightly	71	17
Moderately	118	32
Very	99	27
Extremely	79	22
Total	366	100

Source: Field survey 2021
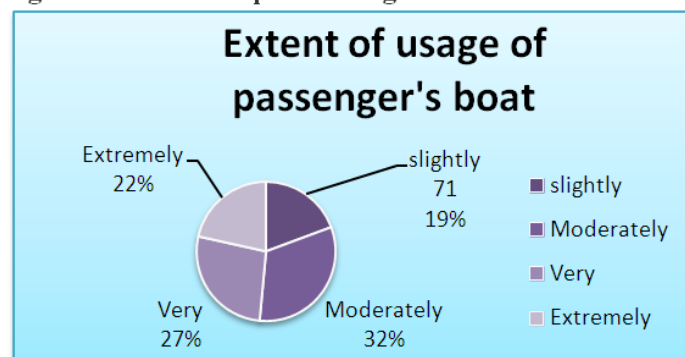
The second research questions seeks to compliment the first research question as it sought to investigate firstly, the extent to which passenger boats serve as an alternative means of transport with the aim to decongest commuters in Lagos. The respondents have different preferences and their evaluation on the extent of usage also varies. While some of the respondents revealed that passenger's boat are slightly adopted with 17% agreement; 32% revealed that it is moderately adopted; 27% are of the view that it is 'very' adopted and 22% says it is very adopted. Based on the result of this study, we can conclude that ferry or passenger's boats are 'moderately' adopted.

Table 7: The advantages of passenger's boat in Lagos state

Options		5	4	3	2	1	% in agreement	Ranking
Reduction of overcrowding on public transport	F	194	131	25	8	8	88.8	2nd
	%	53.0	35.8	6.8	2.2	2.2		
Decongest highways during the rush hour	F	135	164	32	28	7	81.9	4th
	%	36.9	44.9	8.7	7.4	2.0		
Reduction of time spent on the road	F	144	167	28	20	7	85.2	3rd
	%	39.6	45.6	7.4	5.4	2.0		
Increases economic activity	F	169	158	29	0	10	89.2	1st
	%	46.3	42.9	8.0	0	2.6		

Table 7 above showed the some of the advantages of passenger's boat in Lagos. Among these are: Reduction of overcrowding on public transport (88.8%); it helps to decongest highways during the rush hour (81.9%); it leads to the reduction of time spent on the road (85.2%); and also increases economic activity (89.2%). This shows that all the items in the Table are accepted as part of the advantages of passengers' boat in Lagos state.

RQ3: What are the challenges confronting the adoption of boats in serving as an alternative means of transporting to decongest commuters in Lagos state?

Table 8: the challenges affecting the adoption of passenger boats as alternative means of transportation meant for transporting to decongest commuters in Lagos state

Options		5	4	3	2	1	% in agreement	Ranking
Lack of adequate security	F	135	164	32	28	7	81.9	4th
	%	36.9	44.9	8.7	7.4	2.0		
Inadequate safety equipment	F	144	167	28	20	7	85.2	3rd
	%	39.6	45.6	7.4	5.4	2.0		
Inadequate supply of vessels	F	169	158	29	0	10	89.2	1st
	%	46.3	42.9	8.0	0	2.6		
High Cost of Transport	F	172	125	25	22	22	81.1	5th
	%	46.9	34.2	6.7	6.0	6.0		
Exposure to weather	F	194	131	25	16	0	88.8	2nd
	%	53.0	35.8	6.8	4.4	0		
Poor condition of vessels	F	130	164	32	28	12	80.4	6th
	%	35.5	44.9	8.7	7.7	2.0		

The Table shows that one of the challenges confronting the adoption of passenger boat include lack of adequate security (81.9%); Inadequate safety equipment (85.2%); Inadequate supply of vessels (89.2%); High Cost of Transport (81.1%); Exposure to weather (88.8%); Poor condition of vessels (80.4%). Thus the result indicated that all the items in the questionnaire were accepted as part of the primary challenges confronting the adoption of passenger's boats in Lagos.

V. DISCUSSION OF FINDINGS

One of the results of this study indicated that different means of transportation abound in Lagos state metropolis. Among these is Keke/tricycle, bike (motorcycle), Danfo, Bus, taxi, Uber, etc. The result supports that the most selected transport options frequently used are Okada (Motorcycle) which was ranked first with about 89.2%. This was followed BRT and Ferry with 88.8% in agreement respectively. This shows that the most preferred means of transportation by most

people living in Lagos is Motocycle/Okada. Perhaps because it is faster and easily overcomes traffic. The most important features are the fact that it take you to your doorstep. Ferry and BRT offers convenience and speed as both cannot affected by traffic given that they have their own route. With such high percent acceptance, it is obvious that ferry is an important means of transportation within Lagos and thus cannot be ignored. The utilization of water transport in Lagos state has several benefits in Lagos as it is expected to address the issues of road congestion and other negative effects such as prolonged travelling over a short distance, loss of productive hours, environmental and health related issues. The proper development of water transport would enhance mobility and reduce travel time, as congestion rarely occurs (Tobias, Ramos & Rodrigues, 2019). Developing this mode of transportation is more sustainable and economical, when compared to road transport, given its advantage of being less financially draining, due to minimal need for maintenance and an increased capacity for passengers and goods. The study supports that of other studies including Otunola, Kriticos and Harman (2019), Adejare, Olusina and Olaleye (2017) and Ademiluyi, Fashola and Afolabi (2016) who also identified different means of transportation especially ferry given that a larger portion of Lagos landscape is covered by water.

Again the study also revealed that passenger boat is moderately adopted in Lagos state. The reason for its adoption among others include to reduce overcrowding on public transport; helps to decongest highways during the rush hour; leads to the reduction of time spent on the road; and also increase economic activity. The result of this study supports Hart, Adebiyi and Oyenuga (2020) who also found passenger boat/ferry transportation with in Lagos.

Finally, the study identified the various challenges confronting the adoption of passenger boat or ferry in Lagos state. Among the challenges identified are lack of adequate security; inadequate safety equipment; inadequate supply of vessels; High Cost of Transport; Exposure to weather; and Poor condition of vessels. This finding corresponds with the result of Mogaji (2020) who identified some of the challenges confronting the adoption of waterways such as inadequate infrastructures, the challenge of gross mismanagement, inadequate, and archaic boat which puts people's lives at risk.

VI. CONCLUSION AND RECOMMENDATIONS

The result of this study has proven that passenger boats could be moderately adopted as an alternative means of transport to decongest commuters in Lagos state. This implies that along with other means of transportations already in existence in Lagos state, it is imperative to invest in waterways transportations with the goal of enriching the sector for effectiveness and efficiency. The study also recommends the constant removal of water pollutions, and the constant purifying of waters removing particles that make it unsafe for seafarers. The study recommends that law makers make appropriate policies of law meant to ensure that they protect the lives of the seafarers. The law/policy should embody mandatory training for all crew members on issues related the safety, maintenance of equipment, etc.

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