



Safety and Economic Impacts of Operating Passenger Boats without Proper Life Jackets and Other Lifesaving Appliances in Lagos

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ABSTRACT

The study examined the safety and economic impacts of passenger boat operation without proper life jackets and other lifesaving appliances in Lagos state. The research design adopted in the study was the cross-sectional research design. The cross-sectional research design was used because it allows the investigator to measure the outcome and the exposures in the study participants at the same time. A sample size of 365 was generated for the study using the Yaro Yamane formula. Data for this study were collected with the use of a questionnaire. Data collected were statistically treated with frequency and weighted mean. The major findings show that: there are available safety measures in place during a passenger boat operation, there is a safety effect of a passenger boats operation without proper life jackets and other lifesaving appliances and there is an economic effect of a passenger boat operation without proper life jackets and other lifesaving appliances. It was recommended among others that relevant authorities such as LASWA should ensure the provision of competent and trained boat operators and coastal guards, aquatic lifesavers, fire wardens/fighters, safety briefing halls for passengers, personal floatation device (PFD) and lifesaving appliances at beaches and jetties, to prevent incidents and to ensure the safety of lives. This will improve the economy of inland water transportation and Lagos state.

Keywords: Safety, Water inland transportation, Lagos.

1 INTRODUCTION

The population of Lagos has grown over the years and the city is projected by the United Nations to become the third-largest mega-city in the world. Lagos records a population of over nine million in the 2006 national census, (NPC, 2010). Transportation is the pivot around which the wheel of every modern economy revolves. The efficacy with which people, goods and services can move from one point to the other largely determines the quality of life of the society. Today, many mega-cities of the world depend on more than one mode of transportation and Lagos will not be exceptional. Therefore, the need to exploit alternative means of transportation mode cannot be over-emphasized given the complex nature of the sector in the state. One of such other alternatives being exploited by the government with passion is water transportation. (Ogunbajo, 2011a).

An estimated 4 million injuries and 200,000 deaths are due to road traffic crash occurring each year throughout Nigeria, contributing to Africa's road injury mortality rate of 28.3 per 100,000 population which is the highest among all geographic regions, and almost three times the rate in Europe. (Lagarde, 2007). Travelling within Lagos doubles and sometimes triples the normal travel time which affects economic development and the quality of life. Ironically, the construction of new roads and expansion of old ones by successive administrations in Lagos has never mitigated the problem. Lagos state is blessed with international commerce and industry with infrastructure decadence. In Lagos state, the traffic situation is chaotic and socio-economically unfriendly due to the non-coordination of the multi-transportation modal system. Urgent research and development attention is required to arrest the total collapse of the entire modal system. (Omotosho, 2007)

Duan et al (2010) in their research discovered that waterway transportation plays an important role in the economic development of China and in recent years, state and local governments increased their investment in water transportation and it grows continuously.

An attempt is made here to have an update on the above-mentioned matter as published in Ogunbajo (2011b) at the Nigerian Society of Engineers National Engineering conference that the issue of safety ranks highest amongst other concerns of waterways users in Lagos metropolitan area, while provision/licensing of more ferry service was generally advocated even amongst the operators (Ogunbajo, 2011b). The situation at hand now is that all the

ferries are not in use, due to the shorter time of service that the boat offers and fewer numbers of passengers on board.

Lagos State government through Lagos State Waterways Authority (LASWA) agency had distributed over 3,500 life jackets to boat operators to boost safety in water transport in the state and to improve waterways transportation economy (LASWA, 2015a)

The private companies also assist in the bid to make waterways safer as it was reported that 2,400 life jackets were donated in August 2015 by Total Nigeria Ltd., Nigeria National Petroleum Corporation (NNPC) and Emo Exploration and Production Ltd. The items include 1, 800 jackets for children and 600 for adults. (LASWA, 2015b).

The State government has also put in place several projects to assist the inland waterways transportation systems, since the inauguration of the LASWA act in 2008, amongst the developmental project, are the Ijegun-Egba jetty, Ebute-Ojo ferry terminal, Badore ferry terminal, Mile-2 ferry terminal, Osborne ferry terminal and the Ikorodu ferry terminal. The jetties and terminals have several facilities such as Floor spaces, Car park, Bus Park, Fuel Dump, slipway, Retail outlets (Shops, banking Hall, restaurant etc.) and Disability Access, while the Ijegun and Ebute-Ojo jetties also have a water treatment plant in addition. (LASWA, 2015d).

Despite the law/rules provided to passenger boat drivers by the Lagos State Waterways Authority (LASWA, 2015c) on passenger boat drivers who fail to provide life jackets and other saving appliances to their passengers will be prosecuted. There was a recent report of a boat mishap from Oke Ira Nla in Ajahen-route to Bayeku, Igboho in Ikorodu on Friday 25th of September 2015, the report has it that the boat has 20 passengers and 2 crews, all wearing life jackets. While other lifesaving appliances might not be available but it was revealed that late response could be responsible for the five (5) death after been rushed to the general hospital, but 17 lives were rescued. (LASWA, 2015d).

Hence this study seeks to examine the safety and economic impact of passenger boats operation without proper life jackets and other saving appliances.

1.1 OBJECTIVE OF THE STUDY

1. To determine the socio-economic characteristics of passengers on a passenger boat operation.
2. To determine the available safety measures in place during a passenger boat operation
3. To determine the safety impact of a passenger boats operation without proper life jackets and other lifesaving appliances.
4. To determine the economic impact of a passenger boats operation without proper life jackets and other lifesaving appliances

1.2 RESEARCH QUESTIONS

1. What are the available safety measures in place during a passenger boat operation?
2. What is the safety effect of a passenger boat operation without proper life jackets and other lifesaving appliances?
3. What is the economic effect of a passenger boat operation without proper life jackets and other lifesaving appliances?

1.3 RESEARCH HYPOTHESES

1. There are available safety measures in place during a passenger boat operation
2. There are safety effects of a passenger boat operation without proper life jackets and other lifesaving appliances
3. There are no economic effects of a passenger boat operation without proper life jackets and other lifesaving appliances

2.0 AREA OF STUDY

Lagos state is located between Longitude 20° 42' East and 30° 42' East and Latitude 6° 22' North and 6° 52' North, in Southwestern Nigeria. It occupies an area of 3,475.1 km² with 22% of the total land area consisting of creeks and lagoons. It lies entirely within the coastal plain and the land does not rise over 650 m above sea level. Most of its land area lies below 320 m above sea level and this subjects most of the areas to floods and beach erosion.

According to the 1991 national census the State had a population of 5,725,116, which had increased to 9,113,605 by 2006. The population was estimated to have risen to 11 million by 2011 and to 12.5 million in 2016 (Nigerian Bureau of Statistics (NBC), 2008 and 2013). The city's metropolitan area which had a population of only 290,000 in 1950 is now estimated to have a population of over 12 million and it is expected to grow to be the world's third-largest city by 2050. Seventeen out of the twenty Local Government Areas (LGAs) in the State fall within the metropolis while twelve LGAs encompass riverine communities (Figure 1). Lagos State operates 12 ferry routes under the supervision of the Lagos State Water Authority (LASWA). The routes as identified by Ademiluyi (2016), Bayode & Ipingbemi (2016) are IkoroduMarina/CMS; Marina-Mile 2; Ikorodu-Addax/Falomo; Ikorodu-EbuteEro, MarinaIjegunEgba-EbuteOjo; Mile 2-Marina/CMS-Mekwen-Falomo; Badore-Ijede; Badore-Five Cowries; Marina- Oworonshonki; EbuteOjo-IjegunEgba; Oworonshonki-Five Cowries; and Baiyeku- Langbasa.

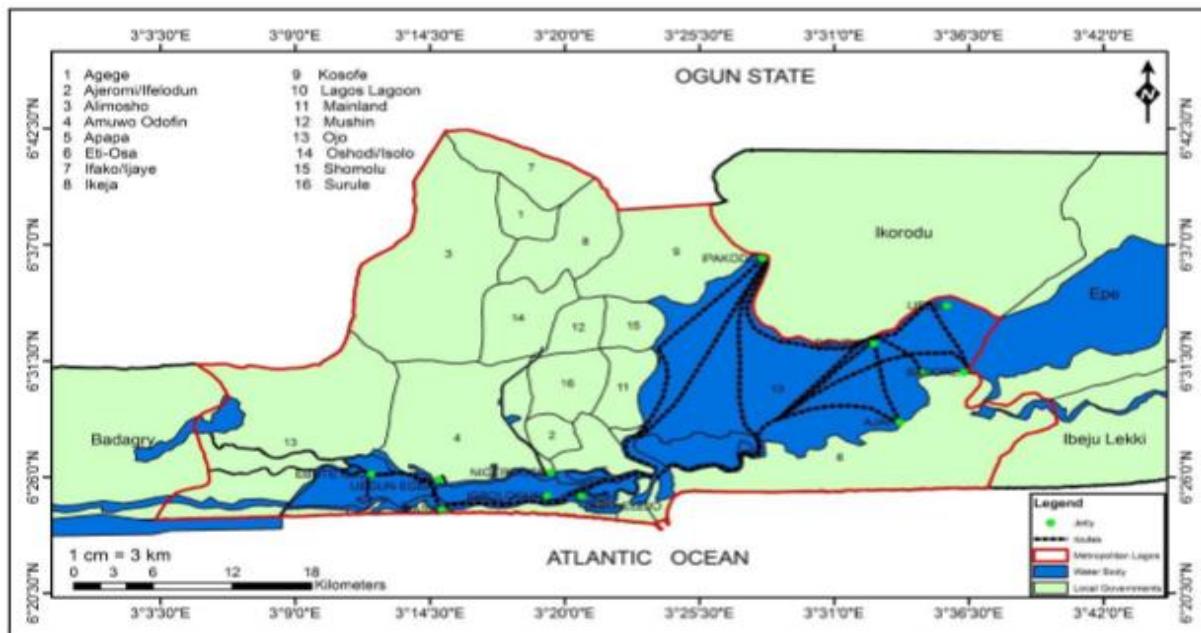


Figure 1: Lagos Inland Waterways Routes

Transportation in the study area is mostly by road which accounts for about 90% of traffic flow in the area. Despite the abundance of inland waterways in Lagos, waterborne transport is not as popular as road transport to get around the city. Apart from the few regular ferry services between Lagos Island and the Mainland, fibre-covered motorised boats and canoes also operate passenger services on the lagoon and some of the creeks.

3. METHODOLOGY

3.1 Research Design

The research design adopted in the study was the cross-sectional research design. The cross-sectional research design was used because it allows the investigator to measure the outcome and the exposures in the study participants at the same time. To achieve this, the researcher employed a structured questionnaire which was administered to regulators, operators and commuters of the waterways to assess their perception, knowledge of safety and economic impacts of passenger boats operation without proper life jackets and other life savings appliances.

3.2 Sample and Sampling Technique

The target population for the study included the operators, commuters and regulators of water transportation in the study areas. The justification for targeting this population is that the researcher felt that these populations are those who frequently use the land waterways (Celik and Cebi, 2009; Tzannatos, 2010).

The study is targeted at 10,000 respondents which comprise the operators, commuters and regulators of water transportation in Lagos state. Consequently, the sample size for this study was calculated using Yaro Yamane's formula (1992). The computation is as follows:

$$n = \frac{N}{1 + Ne^2}$$

Where

n = Sample size

N = Population of Study

e = Tolerable error (5%)

Therefore:

$$n = \frac{10000}{1 + 10000(0.05)^2}$$

n = 384

Copies of the questionnaire were administered using the systematic random sampling technique. However, 365 of the questionnaire was successfully returned. Therefore, for the effective administration of the copies of the questionnaire, the researcher employed the services of some field research assistants for the distribution of the questionnaire.

3.3 Validity and Reliability of Instrument

The research instrument was subjected to face and content validation. This was necessitated by the need for the items on the instrument to appear valid and logically linked to the study objectives, while also covering the full range of safety and economic impacts of operation passenger boats without proper life jackets and other lifesaving appliances.

3.4 Method of Data Analysis

The data collected were analysed using a frequency and percentage table. SPSS version 26 was used to carry out the analyses.

4.RESULT AND DISCUSSION

4.1. Presentation of data

Table 1. Social-Economic characteristics of respondents

Characteristics	Characteristics	Frequency	Percentage
Gender	Male	256	70.1
	Female	109	29.9
Age	18 – 25	56	15.3
	26 – 35	115	32
	36 – 45	101	27.7
	46 and above	93	25
	Total	365	100
Marital status	Single	109	29.9
	Married	129	35.3
	Divorced	49	13.4
	Widowed	78	29.9
Level of education	No formal education	5	1.4
	Primary education	0	0
	Secondary education	26	7.1
	Tertiary education	195	53.4
	Others	139	38.1
Occupation	Private sector	166	45.3
	Self-employed	66	18.1
	Government worker	98	26.9
	Apprentice	0	0
	Student	14	3.9
	Unemployed	21	5.8
Monthly income	Below ₦18,000	16	4.4
	₦18,000 - ₦49,000	54	14.79
	₦50,000 - ₦79,000	45	12.33
	₦80,000 - ₦109,000	94	25.75
	₦110,000 and above	156	42.73

The majority of the respondents were found to be males(70.1%) compared to females (29.9%). The preponderance of males among the passengers may be because males were more likely to take risks than females as travelling by water was perceived to be more dangerous than travelling by road in Nigeria. The long-term neglect of water transport by successive governments has been observed to be responsible for travel safety concerns among the people (Adeniyi, 2017). It was also found that most of the passengers fell within the middle-aged group. For instance, 59.7% were between 26 – 45 years, while 35.3% of the

passengers were married. In addition, a very high proportion (60.5%) of the respondents had secondary education and higher. This indicates that most of those who patronise water means of transport in the state were educated. Furthermore, most (90.3%) of the passengers were employed with about 68% of them earning above N 80,000 per month.

Research Question 1: What are the available safety measures in place during a passenger boat operation?

Table2: H1: There are available safety measures in place during a passenger boat operation

S/N	Questionnaire	SA	A	D	SD	N
1	Safety Jacket	110 (30.1%)	108 (29.6%)	78 (21.4%)	69 (18.9%)	365
2	Safety jacket and Life Ring	87 (23.8%)	99 (27.1%)	93 (25.5%)	86 (23.6%)	365
3	Safety jacket and Fire Extinguisher	88 (24.1%)	116 (31.8%)	80 (21.9%)	81 (22.2%)	365

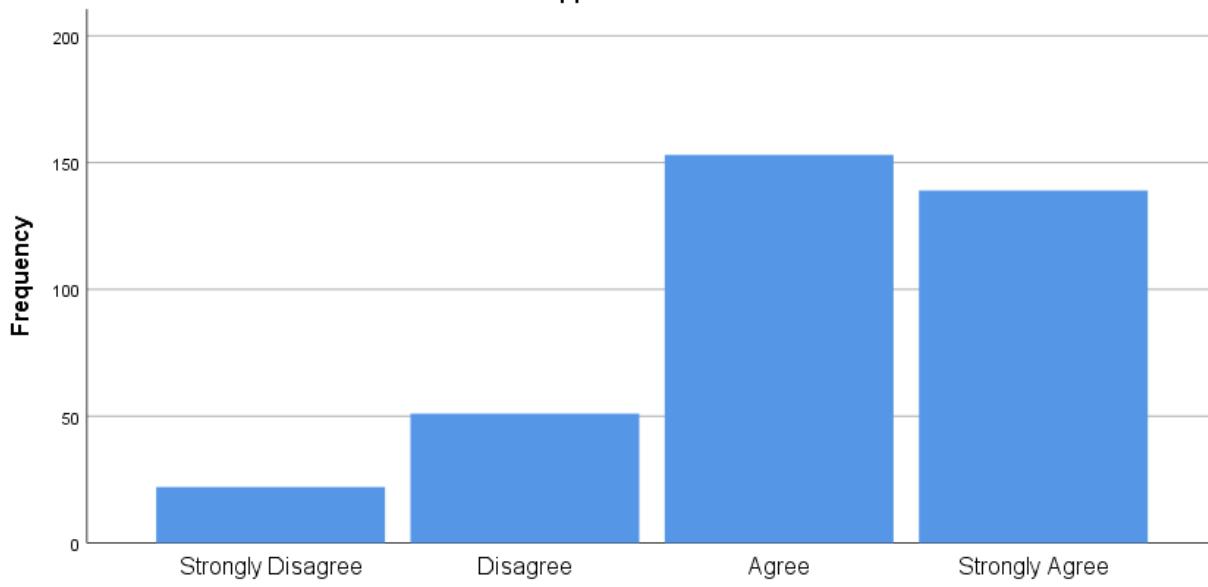
From table 2 above, it could be revealed that there are available safety measures in place during a passenger boat operation. 218 respondents agree that there is a safety jacket in place during a passenger boat operation. Also, 186 respondents agree that there is a safety jacket and life ring during a passenger boat operation. Lastly, 204 respondents agree that there are safety jackets and fire extinguishers during a passenger boat operation. This corroborates the findings of Bayode and Ipingbemi(2016) who stated that virtually all passenger boat operators had one safety measure or the others. The only safety measures put in place by passenger boat operators is the safety life jackets. This shows that there are safety measures in place in a passenger boat operation. Therefore, we accept the alternate hypothesis that says there are available safety measures in place during a passenger boat operation

Research Question 2: What is the safety effect of a passenger boat operation without proper life jackets and other lifesaving appliances?

Table 3: H1: There are safety effects of a passenger boats operation without proper life jackets and other lifesaving appliances.

Variables	Respondents	
	(Frequency)	(Percentage)
Strongly Agree (SA)	139	38.1
Agree (AG)	153	41.9
Disagree (DA)	51	14.0
Strongly Disagree (SD)	22	6.0
Total	365	100.0

There are safety effect of a passenger boats operation without proper life jackets and other lifesaving appliances



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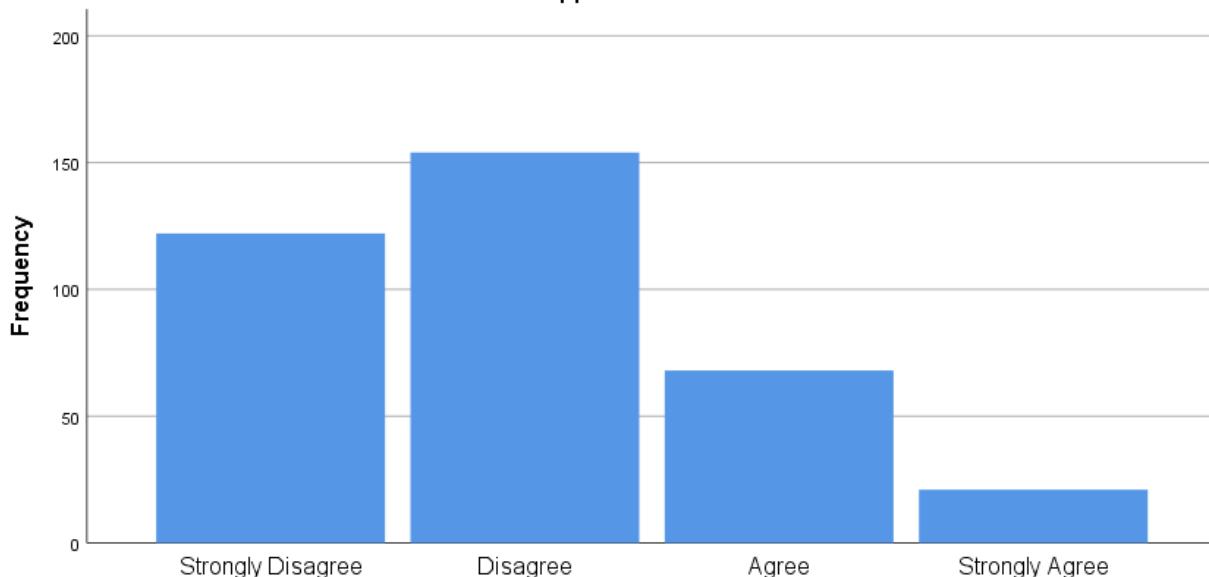
From the analysis from table 3 above, a total of 292 respondents accepted that a passenger boat operation without proper life jackets and other lifesaving appliances affects safety. This corroborates the report of Shipsandports (2019) who stated that Some passengers travelling on ferries within the Lagos metropolis endanger their lives by neglecting the use of life jackets. This is because the life jackets available on the boat are inappropriate, dirty and worn out. Shipsandports (2019) also stated that the death of 8 passengers on the boat travelling from Ikorodu to CMS in the year 2019 was because 8 of the passengers were not on life jackets which affected their safety. This goes to show that there is a safety effect of a passenger boats operation without proper life jackets and other lifesaving appliances and some of the safety effects include not putting on a life jacket. Therefore, we accept the alternate hypothesis.

Research Question 2: What is the economic effect of a passenger boat operation without proper life jackets and other lifesaving appliances?

Table 4: H0: There are no economic effects of a passenger boat operation without proper life jackets and other lifesaving appliances.

Variables	Respondents	
	(Frequency)	(Percentage)
Strongly Agree (SA)	21	5.8
Agree (AG)	68	18.6
Disagree (DA)	154	42.2
Strongly Disagree (SD)	122	33.4
Total	365	100.0

There are no economic effect of a passenger boats operation without proper life jackets and other lifesaving appliances



There are no economic effect of a passenger boats operation without proper life jackets and other lifesaving appliances

From table 4 above, a total of 276 respondents rejected that there is no economic effect of a passenger boat operation without proper life jackets and other lifesaving appliances. This outcome corroborates the findings of Duan et al. (2010) who stated that for Lagos state to have a complete economic development, water inland transportation is needed because it plays an important role in China's economic development both in state and local government and their inland water transportation capacity grows continuously. Therefore, if the Lagos state government can enforce the use of life jackets with other lifesaving appliances, it will improve the economy of Lagos state inland water transportation and even mitigate the road traffic congestion in the state. Hence, we reject the alternate hypothesis that says there is no economic effect of a passenger boat operation without proper life jackets and other lifesaving appliances.

5. CONCLUSION & RECOMMENDATION

In the developed nations, inland water transport is treated with serious attention, knowing the economic effects of its collapse. However, there is a sharp contrast between the developing nations in general and Nigeria, particularly in Lagos state. One of the issues that have militated against effective inland water transport in Lagos state is inadequate regulations and policing. This has resulted in reduced safety, security risk, poor safety practices, etc. Given this, the present study found that there are available safety measures in place during a passenger boat operation, there is a safety effect of a passenger boats operation without proper life jackets and other lifesaving appliances and there is an economic effect of a passenger boat operation without proper life jackets and other lifesaving appliances.

Based on the findings of this study, the following recommendations are advanced

1. Relevant authorities such as LASWA should ensure the provision of competent and trained boat operators and coastal guards, aquatic lifesavers, fire wardens/fighters, safety briefing halls for passengers, personal floatation devices (PFD) and lifesaving appliances at beaches and jetties, to prevent incidents and to ensure the safety of lives. This will improve the economy of inland water transportation and Lagos state.
2. Furthermore, the government should endeavour that the operators adhere strictly to the use of standard life jackets. Other safety materials on the waterways like life ring and fire extinguishers should be made compulsory
3. Relevant authorities such as LASWA to ensure inland water safety laws are implemented and adhered to.

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