



Enforcement of Life Saving Appliances Carriage by Passenger Boats to Ensure Protection during Boat Mishaps in Lagos

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ABSTRACT

Boating accidents has been frequent in Lagos water ways that draws attention as to what cases mishaps in Lagos. This study instigated the enforcement of life saving appliances carriages by passenger boats to ensure protection in case of boat accidents in Lagos. It is an exploratory study and descriptive in nature. It was carried out across 4 boat terminals in Lagos state; Mile two, Ajah, Ikorodu, and Lagos Island with 269 participants selected using purposive sampling technique. Four research questions guided the study and questionnaire was adopted for data collections. Data was collected and descriptively analyzed using tables, frequencies and percentages. The result of this study revealed that boat mishaps are usually caused by a number of factors such as poor maintenance of the ship; engine and equipment malfunction; harsh weather conditions; overloading and overcrowding; lack of enforcement of safety regulations by Government agencies; wrecks along the water channels. Other factors attributed to the causes of these boating accidents include overloading, violation of rules and routes, waterways obstruction, faulty engines, night travelling and non-utilization of life saving appliances. The outcome of this study further indicated that that passengers refuse to wear their life saving appliance due to ignorance, non-enforcement of regulations, and inadequate knowledge of boat operators as well as non-availability of life saving appliances in most of the boats. Finally, the study reveals that by adopting Lifesaving appliances, more lives will be saved in case of any accident. Based on these results, the study recommends the creation of awareness to passengers, training of boat operators as well as enforcement of punishment/consequences in case of defaulters.

Keywords: Enforcement, life-saving appliances carriage, passenger boats, protection during boat mishaps

Introduction

Boat accidents are a frequent occurrence in Nigeria usually attributed to human errors. The safety of passengers and riders on boats is of paramount importance while conducting commercial activities to the maritime sector. Passenger boats play important roles in the movement of people and cargo and as such are mandated to always carry proper lifesaving appliances such as life jackets, lifebuoys, life rafts, etc. and they must always be handy so that in the event of any mishaps during transit, they can be used to protect lives and be easily visible during rescue. Passenger boats are mainly used for transporting passengers and can carry more than twelve passengers. They are classified into Ferries which are vessels used on short-distance routes to transport passengers and vehicles and Cruise Ships, which are like luxurious floating hotels with modern facilities mainly used for recreational activities (Raunek, 2021).

Marine sector in Nigeria is greatly challenges by inadequate infrastructure; and in spite of the provisions of policies, boat operators tend to overload and overcrowd their boats. Dogarawa (2012) observed that attempts have been made by private initiatives to introduce and enforce the use of life jacket, yet it was discovered that passengers were still being carried without lifejackets, In addition to the problem of overloading and overcrowding. The study further observed that due to poor maintenance of boat engines, faults often develops in the boat engines and given the level of weight on the boat, it eventually sinks and drowns the passengers. Often times, there is no immediate help which leads to loss of lives.

To ensure effective marine operation, the international maritime organization is reliant on two conventions; the Safety Of Life At Sea (SOLAS) and the MARPOL, which are International Conventions enacted for the protection of human life and marine environment from all kinds of pollutions and accidents. These treaties provide stipulations for compliance in order to make a boat or ship safe for passengers and crew alike. However with the non compliance to regulations, maritime safety becomes compromised, giving rise to frequent cases of boat mishaps.

Statement of research problem

Boating mishaps have been largely attributed to the ineffective regulation of the activities of boat operators and passenger ferry by the appropriate authorities (Tosin, 2014). The lack of compliance on the part of the boat operators have been ascribed to factors such as uncaring attitude towards

regulations and policies, and poverty. Other factors attributed to the causes of these boating accidents include overloading, violation of rules and routes, waterways obstruction, faulty engines, night travelling and non utilization of life saving appliances (Daily Trust, 2021). This describes the situation in Lagos state, where boat accident is a frequent occurrence, causing the loss of lives. Investigations conducted by researchers have revealed the Lagos waterways to be disorderly and chaotic; and that ferry operators conduct their operations with no regard for best practices. The waterways are plied by rickety boats whose operators are usually untrained in safety measures and engage in unsafe practices thus resulting in boating accidents. Passengers also play a role in their own safety; however their lack of awareness about safety measures and guiding regulations makes them liable to boat accidents. Thus as a way of checkmating the rate of boat accidents, it was proposed by the National Inland Waterways Authority (NIWA) that passengers should be compelled to adhere strictly to safety guidelines stipulated by the organization; and to ensure that the life jacket and other life saving apparatus made available is utilized. To this end, this study assesses the extent to which enforcement of Life Saving appliances carriage by passenger boats will ensure protection during boat mishaps in Lagos.

Research objectives

The specific objective of this study is to;

1. Identify the factors responsible for boat mishaps in Lagos state.
2. Examine the factors responsible for the low utilization of life saving appliances in passenger boats.
3. Determine the extent to which enforcement of Life Saving appliances carriage by passenger boats will ensure protection during boat mishaps
4. Assess the measures that can enforce compliance to the carriage and usage of life saving appliances

Research questions

The specific objective of this study is to;

1. What are the factors responsible for boat mishaps in Lagos state?
2. What are the factors responsible for the low utilization of life saving appliances in passenger boats?
3. To what extent will the enforcement of Life Saving appliances carriage by passenger boats ensure protection during boat mishaps?
4. What are the measures that can be taken to enforce compliance to the carriage and usage of life saving appliances?

Literature review: Conceptual framework

Water transportation in Nigeria has undergone severe neglect of both infrastructural and human capacities, a state of affairs that caused an increase in boat mishaps and death rate all over the country. For some years, the difficulties associated with boat accidents have been under stressed. Most boat accidents result from the failure of relevant bodies such as the National Inland Waterways Authority (NIWA) to regulate passenger boats activities. Inefficient management, unskilled manpower, inadequate training and certification in safety measures ignorance of boat passengers and riders in safety measures while on sea, non-compliance of operational facilities by boat workers, overloading, waterways obstructions, failure of passengers to heed safety measures and refusal to use life jackets during transit (Bello, 2021) are all contributory factors to the precarious nature of water transportation in Nigeria.

Lifesaving appliances are those appliances or equipment that helps save life at sea in case of accidents. They are used globally by individuals who work or travel over open water. Workers depend on these lifesaving appliances to offer protections from harsh environments, and lessen the risk of harm or death in the occurrence of a marine accident. Owing to their significance in helping to protect lives at sea, these appliances are constructed and tested according to specific standards and regulations to guarantee that they deliver the level of performance required. Sometimes, these appliances do not always perform as predicted which can cause unexpected injuries or loss of life. This is why they must meet specific performance goals as prescribed by standards and regulations (Power & Ré, 2015). The Safety Of Life At Sea (SOLAS) convention has made it mandatory that vessels carry these appliances. Some of these lifesaving appliances include:

Ring-Life Buoys: these lifesaving equipment is present in all vessels. They provide the fastest aid for floatation and are thrown to a person who has gone overboard (Singh, 2021).

Life Preservers or Personal Floatation Devices: these come in different designs, sizes and shapes. They may be inflatable or of solid buoyancy. Life jackets have built in whistles and lights which help get the attention of rescuers. They may also be made with reflective material (Singh, 2021).

Fire and immersion suit: in cases of fire at sea, this device protects the wearer. They are usually bright in colour and made of rubber to help the wearer stay afloat without exposing the body to the sea. It also helps to prevent death by hypothermia.

Others include line throwing devices, emergency fire alarm systems, public address systems, two-way radio telephone sets, etc. (Singh, 2021).

Theoretical framework: Reason's Swiss Cheese model

This model was first proposed in 1990 by James Reason and according to this theory, there is likelihood of failure in every stage in a process. The Swiss Cheese Model establishes how, usually, a failure cannot be traced back to a sole root cause as accidents are often the consequence of a combination of factors (Bell, 2020). Each level of defense is signified by a slice of Swiss cheese, and the likely problems or failures in that defense are represented by the holes in the cheese. Two types of failures that can occur are active and latent. Active failures refer to unsafe acts that openly contribute to an

accident while latent failure refer to conditions that exist but may lay sedentary for a period until the end result is an accident. In this study, enforcing the carriage of life saving appliances by passenger boats is the first level of a process and the next could be knowledge of their use. If the enforcement is not in place or is in place but seafarers have no knowledge of the uses of the equipment, the problem moves from that line of defense and through to the next hole. This goes on until there are no more layers of defense, causing an alignment of the holes (which are weaknesses in the process) and giving room for mishaps. The aim of this model is to help regulatory bodies avoid common snags and also address the importance of minimizing hidden errors, which, when prompted by active errors, may result in accidents.

Methodology

The study adopted the descriptive research method in investigating the enforcement of Life Saving appliances carriage by passenger boats to ensure protection during boat mishaps. The study purposively selected four boat terminals in Lagos state; Mile two, Ajah, Ikorodu, and Lagos Island. From these terminals, 280 respondents were randomly selected comprising of passengers from each of the terminals, maritime workers' union and boat operators. Questionnaires structured with a four point likert scale format were distributed to the respondents. The instruments were distributed with the aid of research assistants. Data collected were descriptively analyzed.

Data Presentation, analysis and discussion

1. What are the factors responsible for boat mishaps in Lagos state?

Table 1: Showing the factors responsible for boat mishaps in Lagos state

ITEMS		SA	A	D	SD	% in agreement
What are the factors responsible for boat mishaps in Lagos state?						
Poor maintenance of the ship	F	135	83	51	0	81.0
	%	50.0	31.0	19.0	0.0	
Engine and equipment malfunction	F	166	59	44	0	83.8
	%	61.7	22.1	16.2	0.0	
Harsh weather conditions	F	176	46	47	0	82.5
	%	65.5	17.0	17.5	0.0	
Overloading and overcrowding	F	176	46	0	47	82.5
	%	65.5	17.0	0.0	17.5	
Lack of enforcement of safety regulations by Government agencies	F	166	59	44	0	83.8
	%	61.7	22.1	16.2	0.0	
Wrecks along the water channels	F	71	140	37	21	78.2
	%	26.3	51.9	14.5	7.9	

Field survey (2021)

Table 1 above presents the result from the data collected in this study to investigate factors that are responsible for boat mishaps in Lagos. According to the result of this study, 81% of the respondents agree that boat mishaps is caused by poor maintenance of the ship; 83.8% blamed it on engine and equipment malfunctions; 82.5% believe that harsh weather conditions are responsible for boat mishaps in Lagos state as well as overloading and overcrowding; 83.8 revealed that boat mishaps are caused by the lack of enforcement of safety regulations by Government agencies; whereas 78.2% are of the opinion that boat mishap is caused by wrecks along the water channels. With the respective high percentages in agreement to all the items in the Table 1 above, this study concluded that all the aforementioned factors contribute one way or the other in causing boat mishaps in Lagos state. This result confirms the Swiss Cheese Model which revealed that a failure cannot be traced back to a sole root cause as accidents are often the consequence of a combination of factors, according to Bell (2020). Likewise, the result of this study confirms that of earlier study by Ukoji and Ukoji (2015) who also identified similar factors as responsible for boat accidents in the study area.

2. What are the factors responsible for the low utilization of life saving appliances in passenger boats?

Table 2: Showing the factors responsible for low utilization of life saving appliances in passenger boats

What are the factors responsible for the low utilization of life saving appliances in passenger boats?		SA	A	D	SD	% in agreement
Ignorance	F	109	113	47	0	82.7
	%	40.7	42.0	17.4	0.0	
Non enforcement of regulations	F	148	77	44	0	83.4
	%	54.9	28.5	16.5	0.0	
Inadequate knowledge of boat operators	F	135	83	51	0	81.0
	%	50.0	31.0	19.0	0.0	
Non availability of life saving appliances	F	176	46	0	47	82.5
	%	65.5	17.0	0.0	17.5	

Field survey (2021)

Table 2 above presents the researcher's opinion on the factors responsible for low utilization of life saving appliances in passenger boats. As indicated in the table above, with above 80% in agreement to all the items, the study indicates that passengers refuse to wear their life saving appliance due to ignorance, non-enforcement of regulations, and inadequate knowledge of boat operators as well as non-availability of life saving appliances in most of the boats. The result of the study confirms that of earlier studies who share similar opinions like Oyadongha (2014) and Dogarawa (2012) respectively.

3. To what extent will the enforcement of Life Saving appliances carriage by passenger boats ensure protection during boat mishaps?

Table 3: Showing the extent to which the enforcement of Life Saving appliances carriage by passenger boats ensure protection during boat mishaps

To what extent will the enforcement of Life Saving appliances carriage by passenger boats ensure protection during boat mishaps?		SA	A	D	SD	% in agreement
It protects lives in case of emergencies	F	71	140	37	21	78.2
	%	26.3	51.9	14.5	7.9	
It increases the confidence of passengers in the use of boats for transportation	F	45	190	34	0	87.3
	%	16.6	70.7	13	0	
It will ensure greater collaboration among stakeholders	F	166	59	44	0	83.8
	%	61.7	22.1	16.2	0.0	

Field survey (2021)

Table 3 above presents the extent to which the enforcement of Life Saving appliances carriage by passenger boats ensure protection during boat mishaps. As indicated in the table, 78.2% of the respondents are in supports that life savings appliances protect lives in cases of emergencies. 87.3% agreed that Life Saving appliance increases the confidence of passengers in the use of boats for transportation. Finally, 83.8% of the respondents are of the opinion that Lifesaving appliances will ensure greater collaboration among stakeholders. Base on this result, the study concluded that Life Saving appliances will increase the chances of survival of the passengers if used during boat mishaps. The study supports Tosin (2014) who share similar findings that Life Savings appliances increases the chances of survival in case of accident.

4. What are the measures that can be taken to enforce compliance to the carriage and usage of life saving appliances?

Table 4: Showing the measures that can be taken to enforce compliance to the carriage and usage of life saving appliances

What are the measures that can be taken to enforce compliance to the carriage and usage of life saving appliances?		SA	A	D	SD	% in agreement
Creation of awareness to passengers	F	129	94	43	0	83.1
	%	48.1	35.0	16.9	0	
Training of boat operators	F	166	59	44	0	83.8
	%	61.7	22.1	16.2	0.0	
Enforcement of consequences in case of defaulters	F	130	90	0	49	81.9
	%	48.4	33.5	0.0	18.1	

Field survey (2021)

Finally, table 4 above presents the measures suggested that could be adopted to enforce compliance to the carriage and usage on life saving appliances. With above 80% in agreement, the study revealed that enforcement of compliance of carriage and usage of life saving appliances could be achieved

through the creation of awareness to passengers, training of boat operators as well as through enforcement of consequences in case of defaulters. The result of this study supports Ukoji and Ukoji (2015) and Tosin (2014) respectively, who made similar recommendations.

Conclusions and recommendations

It is important to note that boating accidents which has been on the increase lately is attributed to several factors which according to this study include poor maintenance of the ship; engine and equipment malfunction; harsh weather conditions; overloading and overcrowding; lack of enforcement of safety regulations by Government agencies; wrecks along the water channels. The result supporting Tosin (2014) who blamed boat accident to ineffective regulation of the activities of boat operators and passenger ferry by the appropriate authorities. The lack of compliance on the part of the boat operators have been ascribed to factors such as uncaring attitude towards regulations and policies, and poverty. Other factors attributed to the causes of these boating accidents include overloading, violation of rules and routes, waterways obstruction, faulty engines, night travelling and non-utilization of life saving appliances. This describes the situation in Lagos state, where accident boat is a frequent occurrence, causing the loss of lives. The outcome of this study further indicated that that passengers refuse to wear their life saving appliance due to ignorance, non-enforcement of regulations, and inadequate knowledge of boat operators as well as non-availability of life saving appliances in most of the boats. However, the result of this study reveals that by adopting Lifesaving appliances, more lives will be saved in case of any accident. Based on these results, the study recommends the creation of awareness to passengers, training of boat operators as well as enforcement of punishment/consequences in case of defaulters. The study further recommends regular check and services of the boat to ensure everything is in good working conditions.

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Appendix

**IMPORTANCE OF EFFECTIVE MANAGEMENT OF NIGERIAN BLUE ECONOMY
REQUEST FOR INFORMATION**

Dear Respondent,

I am carrying out a study on “importance of effective management of Nigerian blue economy”, and you have been chosen to be part of the study. This questionnaire is only for academic purposes. Kindly select the response which applies to you and all information will be kept confidential

Instructions: Please tick (√) as appropriate where

SA = Strongly Agree (SA), A = Agree, D = Disagree (D), SD = Strongly Disagree (SD)

Key: Strongly agree (4), Agree (3), Disagree (2), and strongly disagree (1).

S/N	ITEMS	SA	A	D	SD
RQ1	What are the factors responsible for boat mishaps in Lagos state?				
1	Poor maintenance of the ship				
2	Engine and equipment malfunction				
3	Harsh weather conditions				
4	Overloading and overcrowding				
5	Lack of enforcement of safety regulations by Government agencies				
6	Wrecks along the water channels				
RQ2	What are the factors responsible for the low utilization of life saving appliances in passenger boats?				
7	Ignorance				
8	Non enforcement of regulations				
9	Inadequate knowledge of boat operators				
10	Non availability of life saving appliances				
RQ3	To what extent will the enforcement of Life Saving appliances carriage by passenger boats ensure protection during boat mishaps?				
11	It protects lives in case of emergencies				
12	It increases the confidence of passengers in the use of boats for transportation				
13	It will ensure greater collaboration among stakeholders				
RQ4	What are the measures that can be taken to enforce compliance to the carriage and usage of life saving appliances?				
14	Creation of awareness to passengers				
15	Training of boat operators				
16	Enforcement of consequences in case of defaulters				