

Occupational Safety Management and its Effect on Water Transportation Sector: Evidence from Lagos State Water Ways Authority

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ABSTRACT

The incessant fatalities on our water ways which is as a result of noncompliance to safety measures is creating problems for water transportation in Lagos State, Nigeria. The study examined occupational safety management and water transportation in Lagos state water ways Authority. The study adopted the descriptive survey research design, the total population is one hundred and eight and using Krejcie, and Morgan formalar a sample size of eight six was arrived at. The questionnaire was designed on a five point likert scale and the study made use of pearson product moment correlation and multiple regression in analyzing the collected data. The findings revealed there is a 94.5% and 83.9% strong and positive relationship between occupational safety awareness occupational hazard and water transportation respectively. The findings further revealed that occupational safety awareness and occupational hazard account for 95.2% of water transportation. The study concluded that strict compliance to safety rules is imperative to ensure safety of lives and properties in water transportation system. However the study recommended among others, that the authorities responsible for regularizing the water transportation system must regularly sensitize and enlighten employees and customers on the need to keep to safety rules and standard and ensure regular maintenance of their ferries.

Key Words: Occupational Safety Management, Water Transportation, Occupational Hazard.

INTRODUCTION

Globally the issue of safety management have become of great concern over the years. Occupational safety management has been increasingly important to employees, organizations and the society at large.

Recently safety of water transportation have become topical in Lagos, Nigeria due to the increase in fatal accident, which occurs mostly as a result of noncompliance to safety measures.

Mathis and Jackson (2014) posits that safety has to do with protecting the physical well being of people. According to the international labour organization (2021) about 340 million Occupational accidents occurs and 360 million individual are affected by occupational accidents.

Occupational safety management is concerned with preventing work related fatalities and injuries and is related to working conditions which could be considered a subject of management. It aims at improving work place

setting emphasizing the adoption of occupational health and safety practices that promotes the well being of the society at large.

Accordingly ensuring the protection of lives through a safe work environment and implementing safety, and health policies must be emphasized to reduce water transportation accident. The study seeks to examine occupational safety management and water transportation in the Nigerian transportation sector.

Statement of the problem

The increasing population in Lagos metropolitan city Nigeria has made it imperative for the government to develop other means of transportation, also the incessant traffic congestion on Lagos road being the commercial hub of Nigeria and Africa's largest city in terms of population has made it expedient for the populace to make use of other mode of transportation.

The challenges of non compliance to safety measures, is a major factor creating problems for water transportation in Lagos state, such as over loading, bad conditions of the boat, failure to put on life jackets, bad weather condition, among others.

Several studies have been carried out on occupational safety (Mehmet, 2021; Onoh, 2021 & Perera, 2019) but little has been done in the water transportation sector. The loss of man hours and accidents that occur on Lagos roads due to traffic is affecting the economic activities in Lagos state. This has made it imperative for this study to be carried out.

This study therefore examines the link between occupational safety management and water transportations.

Research Objectives

The main objective of this study is to examine occupational safety management and water transportation. The specific objectives are to examine the relationship between occupational safety awareness and water transportation, investigate the relationship between occupational hazard and water transportation and ascertain the joint effect of occupational safety awareness and hazard on water transportation.

Research Hypotheses

1. There is no significant relationship between occupational safety awareness and water transportation system
2. There is no significant relationship between occupational hazard and water transportation system.
3. There is no significant joint effect of occupational safety awareness and hazard on water transportation. System.

Significance of the Study

Every government should be concerned with the best possible way of improving the well being of the people and the economy at large.

The findings from this study will contribute to the improvement of the society in general.

In specific term the study will assist the government to take measures that will guarantee safety of lives and properties in the water transport system which will help them to achieve overall efficiency and effectiveness in operations.

Further more the findings from the study will also help policy makers and practitioners to formulate policies that will improve the water transportation system and adopt new ideas that will guarantee efficiency service delivery

Conceptual Review

Occupational safety can be described as workers working in conditions suitable to human honour in every way. Occupational safety system involves put in place measures to reduce risks at the work place and taking precautions against hazard..

Further more occupational safety management system was established to handle the hazards in many industries. The increasing interest in occupational safety management has to with additional regularization of executive applications in safety.

Granerudi (2011) posits that occupational health safety management system are systemic instruments that enable organizations to cope with their occupational risks and assist manages to maintain safety issues in the workplace..

Theoretical Review

1. The human relations approach (1920) Elton Mayo

The Human Relation Approach

Elton Mayo studies in the Hawthorne plant of the western electric company from 1927 – 1952 led to this approach. Although the Hawthorne experiment were originally designed to test the effect of physical working conditions such as illumination, lighting temperature and work schedules on workers productivity.

The conclusions and contributions of the Hawthorne studies on human relations movement

- i. That greater productivity can be achieved by strengthening the work groups rather than merely directing management attention to the individual as an isolated member of the organization.
- ii. That it is not economic rationality or financial incentives and rewards which strictly determine human behaviors and output rather group dynamics and norms and the human desire to associate to fulfill his social and optional needs are the main determinant of human action and the productivity of individual workers.
- iii. That an employee is most influence by the people he or she works with. Thus, group production, standards are much more important than management of wage incentive in affecting individual output.
- iv. That special attention given to workers by management increase productivity regardless of actual changes in working conditions. This is known as the Hawthorne effect.

Recommendations of Human Relation Approach

- i. The humanization of technology organization structure and job design using the principles of job enlargement, dencenrtlization, loose organization, human emphasis flexible procedure positive environment people orientation among others.
- ii. A combination of the informal organization structure and the formal authority.
- iii. An increase in welfare schemes and recreational facilities group performance.

Justification for the theory adopted for the study

The study reviewed the human relations theory which was used to provides explanatory framework.

Empirical Review

Several empirical studies have been carried out on occupational safety management for instance in a study conducted by Erol (2019) on occupational health and work safety systems in compliance with industry 4.0: research directions. The research adopted the structure literature review with literature process, divided into

the phases which include selection of data base, selection of keywords, Elimjnation of papers, Analysis and research directions. The study concluded that if the technologies of industry 4.0 grows in a disconnected manner and the occupational health and safety proposals of decision makers are disorganized risk will escalate and some of the benefits made in hazard blocking so for many be missing. The study further concluded that more research is necessary to achieve that transformation smoothly since there have been very few research attempts with respect to industry 4.0 related OHS framework and their application.

Turkmenoglu (2021) conducted a study on occupational health and safety and job satisfaction the research adopted the quantitative method, two hundred and two participants were sampled from the furniture manufacturing firm in Bursa, Turkey. Questionnaire were distributed and multiple aggression was used to analyze data. The findings revealed that occupational health and safety positively influence the job satisfaction of employees.

Linus (2021) conducted a study on effect of safety practices on job performance of health care workers in Enugu state university teaching hospital, the study adapted a cross sectional study three hundred and fifty health care workers were sampled. The result revealed that 95.4% agree that adherence to safety practices like hand washing draping, waste segregation and use of boots have impact on quality of their job performance. Also 98% agree that the use of personal protective equipment like gloves, face mask can reduce the risk of accidents.

In a study conducted by Perera (2019) on Occupational health and safety practice and job performance: Role of job satisfaction, the study adopted the descriptive survey research design, questionnaire were distributed two hundred and fifty machine operators in a manufacturing firm. The findings revealed significant influences among occupational health and safety practices, job satisfaction and job performance and job satisfaction fully mediated the relationship between occupational health and safety practices and job performance.

METHOD

In view of the nature and scopes of this study this research is limited to Lagos State water ways authority\ , Ikoyi, Lagos State, Nigeria.

The total population is one hundred and eight and using Krejcie and Morgan formular a sample size of eight six was arrived at. The organization has about 11 terminals and 37 jetties in the five divisions of Lagos State, (Lagos Island, Epe, Ikorodu, Badagry Ikeja). The study adopted the survey descriptive research method data were collected using google form questionnaire. The questionnaire was designed on a five point likert scale. Purposive sampling technique was used, the occupational safety scale and water transportation scale were adapted from the institute for work and health (2016) & Aiyegbaje & Dienne (2021) . The organization was chosen for convenience and availability of data and the choice of Lagos State is based on the fact that it is the commercial hub of Nigeria. The instrument was pilot tested using the test re test method and a reliability coefficient of 0.70 was obtained.

The study made use of product moment correlation and multiple regression in analyzing data using S.P.S.S 27.0 version.

Hypothesis One: There is no signifcant relationship between occupational safety awareness and water transportation in Lagos State.

Table 4.1: Correlation result of occupational safety awareness and water transportation in Lagos state.

		Occupational Safety Awareness	Water Transportation
Occupational Safety Awareness	Pearson Correlation	1	.945
	Sig. (2-tailed)		.000
	N	86	86

WaterTransportation	Pearson Correlation	.945**	1
	Sig. (2-tailed)	.000	
	N	86	86
**. Correlation is significant at the 0.01 level (2-tailed).			

Pearson Product Moment Correlation (PPMC) was conducted to determine the relationship between occupational safety awareness and water transportation in Nigeria. The result in Table 4.1 shows that there is a positive significant correlation ($r = .945$, $n = 86$, $p < 0.01$) between occupational safety awareness and water transportation in Nigeria. Therefore, the null hypothesis is rejected, and concluded that there is a positive significant relationship between occupational safety awareness and water transportation in Nigeria. The finding implies that as occupational safety awareness increases, there is a tendency for water transportation services to improve in Lagos State..

Hypothesis Two: There is no significant relationship between occupational Hazards and water transportation in Nigeria.

Table 4.2: Correlations result of Occupational Hazards and Water Transportation

		Occupational Hazards	Water Transportation
Occupational Hazards	Pearson Correlation	1	.839
	Sig. (2-tailed)		.000
	N	86	86
Water Transportation	Pearson Correlation	.839	1
	Sig. (2-tailed)	.000	
	N	86	86
**. Correlation is significant at the 0.01 level (2-tailed).			

Pearson Product Moment Correlation (PPMC) was conducted to determine the relationship between occupational Hazards and water transportation in Nigeria. The result in Table 4.2 shows that there is a significant positive correlation ($r = .839$, $n = 86$, $p < 0.01$) between occupational Hazards and water transportation in Nigeria. Therefore, the null hypothesis is rejected, and concluded that there is a significant positive relationship between occupational Hazards and water transportation in Nigeria. The findings implies that as the level of inherent risks associated with water transportation activities rises, it poses significant threats to the safety and well-being of water transportation employees.

Hypothesis three

H_{04} : There is no significant joint effect of occupational safety awareness and occupational hazards on water transportation in in Nigeria.

Table 4.3a. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.976 ^a	.952	.951	.41786
a. Predictors: (Constant), OccupationalHazards, Occupational_ SafetyAwareness				

The model summary in table 4.3a shows the multiple correlation coefficient and coefficient of determination. The result shows that the R value of 0.976 indicates a high positive relationship between Occupational Hazards, Occupational Safety Awareness and water transportation services in Nigeria. while the R^2 value of .952 indicates that 95.2% total variation recorded in water transportation services was explained by Occupational Hazards, Occupational Safety Awareness.

Table 4.3b : Summary of F-test results showing overall model fit

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	286.031	2	143.015	819.072	.000 ^b
	Residual	14.492	83	.175		
	Total	300.523	85			
a. Dependent Variable: Water Transportation						
b. Predictors: (Constant), Occupational Hazards, Occupational Safety Awareness						

Table 4.3b shows the significance of the model (model fit). The coefficient of $F_{(2, 83)} = 819.072$ and significance value of 0.000 prob. < 0.01, shows that overall, the regression model statistically and significantly predicts water transportation services in Nigeria.

Table 4.3c: Regression results showing joint effect of Occupational Hazards and Occupational Safety Awareness on water transportation services in manufacturing sector in Nigeria

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-1.612	2.391		-.674	.502
	Occupational Safety Awareness	1.265	.061	.702	20.641	.000
	Occupational Hazards	-.712	.070	-.344	-10.109	.000
a. Dependent Variable: Water Transportation						

Table 4.3c shows a multiple regression analysis of the joint effect of Occupational Hazards and Occupational Safety Awareness on water transportation services in Nigeria. The coefficient of Occupational Safety Awareness is 1.265 while the coefficient of Occupational Hazards is -.712. Meanwhile the t values of the variables are 20.641 and -10.109 respectively. From the result, it can be inferred that Occupational Safety Awareness ($t = 20.641$, prob. < 0.01) occupational Hazards ($t = -10.109$, prob. < 0.01) predict water transportation services in Nigeria.

This shows that employee involvement and Occupational Hazards and Occupational Safety Awareness have a significant impact on water transportation services in Nigeria. Higher levels of occupational safety awareness among workers in the water transportation sector are linked to increased activity or effectiveness in water transportation, as indicated by the positive coefficient (1.265) in the regression analysis's coefficients. On the other hand, the negative coefficient (-0.712) suggests that the industry's occupational dangers are associated with lower activity or efficacy in water transportation operations.

DISCUSSION OF FINDINGS

Hypothesis one reveals the interaction between occupational safety awareness and water transportation.

The result shows there is a 94.5% strong and positive relationship between occupational safety awareness and water transportation. The implication of this is that as occupational safety awareness increases, there is a tendency for water transportation services to improve in Lagos state.

The result corroborates with previous study of Turkmenogly (2021).

Hypothesis two shows the relationship between occupational hazard and water transportation. The result reveals that there is a 83.9 strong and positive relationship between occupational hazards and water transportation. The implies that as risk associated with water transportation activities increases, it poses significant threats to the safety and well being of people and goals..

Hypothesis three revealed that combined effect of the indicators of occupational safety management on water transportation. The findings showed that there is a direct and positive relationship between occupational safety management and water transportation.

The findings further revealed that occupational safety management account for 95.2% of water transportation. This implies that occupational safety awareness and occupational hazard contribute 95.2% to the safety of water transportation.

The implication of this is that owners and managers of water transportation must ensure they continue to sensitize and enlighten their employees and customers on the need for them to keep to safety rules and standards to maximize accidents and hazards in water transportation. This result corroborates with previous study of Linus (2021)

CONCLUSION

The study concluded from its findings that the indicators of the management variable are good measures of occupational safety management. The study also concluded that occupational safety awareness and occupational hazard has a strong and positive relationship with water transportation system which implies that strict compliance to safety rules is expedient to ensure safety of lives and properties in water transportation system.

RECOMMENDATIONS

1. Based on the findings the following recommendations were made. The authorities responsible for regulating water transportation system must regularly sensitize and enlighten its employees and customers on the need to keep to safety rulers and standard to prevent loss of life and goods in water transportation.
2. Managers and owners of water transportation business must ensure regular maintenance of their boats, ferrys to make sure they are in good conditions.
3. The safety guards at every terminal and jetty must ensure every passenger put on his or her life jackets.
4. The authorities and managers of water transportation must also ensure that the boats and Ferrys are not overloaded to prevent any accident on water ways.
5. Finally where tidal variation between low and high tide is high the use of floating jetties should be built in such areas

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