

ANALYSIS OF SAFETY MANAGEMENT PRACTICES AND QUALITY EDUCATION DELIVERY IN PUBLIC TERTIARY INSTITUTIONS IN IMO STATE, NIGERIA

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Abstract

This study examined safety management practices as correlate of quality education delivery in public tertiary institutions in Imo State, Nigeria. Three (3) research questions and three hypotheses were formulated to guide the study. The methodology used the Ordinary Least Square (OLS) since it enabled the researcher to capture the essence of the work effectively in addition to its high level of simplicity and global acceptability. The diagnostic tests such as normality, serial correlation, heteroscedasticity and multicollinearity were all examined. The population of the study consists of all the lecturers in the four selected public tertiary institutions in Imo State, Nigeria, and a sample of size two hundred and twelve (212) was employed in this study. Research questions 1–2 were answered using Simple Pearson (r) correlation coefficient statistic, while research question 3 was answered using multiple Pearson correlation coefficient statistic. Hypotheses 1–2 were tested using simple linear regression statistic, while hypothesis 3 was tested using multiple linear regression statistic at a $p < 0.05$ level of significance. The findings revealed the following: there is a high significant relationship between environmental safety practices and quality education delivery in public tertiary institutions in Imo State; there is a very high significant relationship between safety training and quality education delivery in public tertiary institutions in Imo State; there is a very significant multiple linear relationships among environmental safety practices, safety training and quality education delivery in public tertiary institutions in Imo State. Based on the findings, the study recommended that: the school management should make adequate provision of safety facilities that would enhance the safety of the staff and students in public tertiary institutions in Imo State; the school management should also endeavour to ensure that the available facilities and social amenities are in good condition through adequate maintenance to ensure the safety of the staff and students in public tertiary institutions in Imo State, among others.

Keywords: Safety Management Practices, Quality Education Delivery, Public Higher Institutions, Environmental safety practices, Safety training.

Introduction

Education in Nigeria is considered as an instruments “par excellence” for effecting national development. This might be the reason why every researcher irrespective of the school of taught agrees to the fact that education is the bedrock of economic, political and technological development of a nation. In all human societies, education is meant to pass on to the new generations the existing knowledge of their physical environment, to introduce individuals to the organization of society, teach them skills for performing their jobs and enjoying their leisure, as well as to inculcate sound moral values in them for their own benefit and that of the society. According to Esu and Junaid, (2010), there is a symbiotic relationship between the education industry and the society at large. Education derives inspiration and nourishment from the society and in turn, its output contributes to the growth, renewal and development of the society.

There is a technique every society adopts be it complex or simple of educating its youths; and education for good life has been one of the persistent concerns of man throughout history. In African education, it emphasizes on social responsibility, job orientation, and political participation, spiritual and moral values. In addition, education has been from the beginning of the World, the process by which man makes effort to better the lot of himself and his environment. At the family, community, state and federal government levels, education is discussed, planned and processed. It is believed that education makes both the person and the nation; it also influences values and attitudes (Olubadewo, 2006).

In Nigeria, there was the epoch of the traditional education when there were no formally established places for teaching and learning-the schools. The education of the child predominantly took place in the family where the child learnt by doing – learning the trade of the father if a boy or that of the mother, if a girl. In this traditional setting, all adults were teachers and all children were learners. The objectives were functional and utilitarian (Ukeje, 2000). Their education was qualitative enough to keep them afloat of the vagaries of life. However, with the coming of the Europeans into Africa, aside their missionary activities, these non-Africans brought along western educational system, thus the first western school was built in Nigeria in 1843 by the Methodist. It was the Anglican Church Missionary Society that later established chains of missions and schools in 1850s and followed by the Roman Catholics in the late 1850s. Consequently, Western education started spreading like wildfire throughout the country as the average Nigerian family started to embrace it, believing it to be a vehicle for social engineering, of moving from the lower rung of the economic ladder to the apex as epitomized by some educated Nigerians who rubbed shoulders with the white ruling class.

According to Banji and Padmashree (2010), there has been a decline in quality in tertiary institutions over the last two decades owing to a confluence of factors acting in tandem, including: episodic and uncertain political-policy environments and declining investment in teaching and research facilities. It is further noted by Banji and Padmashree (2010) that, the Structural Adjustment Programme (SAP) of a one-time military regime led to reduced educational expenditure; slowed down the scientific and technological development in Nigeria which in turn results in poor and low skills mix of graduates, low employment opportunities and diminishing value of earned income.

Among other problems in Nigeria tertiary institutions are lack of research endowments and systematic research funding, limited funding, poor performance of universities, lack of funding for research facilities and programmes, physical and institutional infrastructure problems (Banji and Padmashree, 2010), non-friendly study environments (which includes cultism, physical environment, social influence among others), lack of adequate or practising quality management and lack of adequate continuous quality improvement in students' knowledge.

Meanwhile, the desire of all parents is to bequeath qualitative and functional education to their children from nursery school to the university level. This is in compliance with the axiomatic truth that quality education is the only permanent legacy that parents can pass on to their children to ensure their future success. Quality education is a potent tool for socio-economic and national development. Consequently every nation makes conscious efforts to ensure that its educational system produces sound, effective and functional citizens. No wonder the UNESCO declaration requiring developing countries to devote 26% of their total annual budget to education. Another major problem in the teacher education is the low rate of production of quality teacher from the tertiary institutions which result into ratio 1:76 of "teacher: pupils" in primary schools and secondary schools (Theobald *et al.* 2007). The low number of graduates going into the teaching profession is also of grave concern. The major causes are possibly due to inadequate funding levels and poor salaries.

Thus, in Nigeria, the need for well qualified teachers (hence quality teacher education system) has gained pre-eminence because it is considered that teacher education is a means of not only providing teachers with the necessary skills and knowledge needed to adequately carry out their teaching jobs but also of professional growth (Osunde and Omoruyi, 2004). Teacher education is the process of training that deals with the art of acquiring professional competence and growth.

The safety of these students in the public tertiary institutions remains paramount. Safety is the state or condition of freedom from danger, or risk as well as the condition of being protected from harm or other non-desirable outcomes (Hughes & Ferrett, 2013). Safety management is a systematic identification of hazards, assessment and control of risks, evaluation and review of risk control measures to ensure that they are effectively implemented and maintained (Bluff as cited in Byebunu, 2016). The periodic act of embarking on school health programme to identify potential health hazards and problems associated with the cleanliness of the environment, classroom ventilation, conveniences and refuse disposal with a view to preventing them from resulting in accidents or serious health problem also constitutes safety management practices (Ukala & Nwabueze, 2016).

Provision of adequate safety and health in schools has been rapid and widespread in recent years. Many schools are now giving an appropriate high priority to getting their safety and health procedure right especially in developed countries. Today, addressing the issue of management of safety and health in Nigerian schools is quite germane given the growing incidence of abduction and violence across Nigerian schools at all levels and the resultant destruction of lives and property (Oku, 2016). It is believed that the chronicle of violent attacks on educational institutions, the absence of trained security personnel in and around the school premises, the absence of security equipment and gadgets in schools, the unhealthy and unsafe nature of school

buildings, unhealthy toilets, overgrown lawn, overcrowded and un-conducive classrooms, inadequate laboratories, hazardous furniture and equipment, pipe burst, flood, building collapse, ignorance of child rights acts by some teachers and poor safety culture may have become major setbacks to quality education delivery, and consequently, an impediment to achieving educational goals in Nigeria.

Statement of the Problem

The persistent cases of kidnapping, terrorism, ritual activities, child illnesses, fire outbreak, flood, epidemics, building collapse and other hazards in the Nigerian tertiary institutions are issues of great concern, not only to the education industry but also to the entire society. Tertiary institutions, which is designed to help students explore and learn through inquiry, creativity and exploration of nature and their environment, seems not to be free from the above mentioned hazards. Findings from personal observation of the researcher shows that inadequacy of safety facilities and personnel, poor planning and management of safety and health in the tertiary institutions, mostly owned by government, has been observed to be developing into a culture bound to pose significant level of security and health threat to students and staff alike, and which may impair the quality of teaching and learning.

Tertiary educations are employed to deliver quality education to the students by giving them a well-rooted foundation for self dependence after graduation. In doing so, it is expected of them to show high level of commitment, to manage the lecture halls effectively, to have good teaching skills and techniques. Given the knowledge of the existence of the safety management situations in schools and the vulnerability of students, one begins to wonder what quality education delivery is being given by the students in this level of tertiary education centers. It is against this backdrop that the researcher conducted this study to ascertain the relationship between safety management practices and quality education delivery in public tertiary institution in Imo State Nigeria.

Purpose of the Study

The general purpose of the study is to investigate safety management practices and quality education delivery in public tertiary institutions in Imo State. Specifically, the study seeks to:

1. Determine if there is any relationship between environmental safety practices and quality education delivery in public tertiary institutions in Imo State;
2. Establish if there is any relationship between safety training and quality education delivery in public tertiary institutions in Imo State;
3. Examine if there any multiple linear relationships among environmental safety practices, safety training and quality education delivery in public tertiary institutions in Imo State.

Research Questions

1. To what extent is the relationship between environmental safety practices and quality education delivery in public tertiary institutions in Imo State?
2. What is the relationship between safety training and quality education delivery in public tertiary institutions in Imo State?
3. To what extent is the relationship among environmental safety practices, safety training and quality education delivery in public tertiary institutions in Imo State?

Literature Review

AbdulAzeez (2016) investigated total quality management practices and quality teacher education in public tertiary institutions in Lagos State. The study was therefore designed to analyse management practices in Lagos state tertiary institutions through total quality management structural framework. The selected public tertiary institutions in Lagos State were Lagos State University (LASU) Ojo, University of Lagos (UNILAG) Akoka, Michael Otedola College of Primary Education (MOCOPE) Inaforija, Epe, Federal College of Education Technical (FCET)Akoka, and Adeniran Ogunsanya College of Education (AOCOED) Oto-Ijanikin. A descriptive survey research design was adopted. A Total Quality Management practices and Quality Teacher Education Questionnaire (TQMP-QTEQ) was used to obtain data for the study. The structured questionnaire was administered on 905 academic and non-academic staff members and final year students of sampled institutions using purposive sampling technique. The questionnaire was content-validated using expert opinion method and Kaiser-Meyer-Olkin (KMO) statistics of sampling adequacy. In terms of the measure of reliability, the Cronbach's Alpha values for the two major constructs of the study are satisfactory – quality teacher education (0.838) and TQM (0.879). Their Kaiser-Meyer-Olkin (KMO) statistics of sampling adequacy were equally above the acceptable standard of 0.7. The hypotheses were tested at the 5 percent level of significance. Among the findings was that there was a substantial, significant, and positive relationship between Total Quality Management practices and quality teacher education in public tertiary institutions in Lagos State ($r = 0.695$; $p < 0.05$). The study also found that there was a significant positive relationship between Total Quality Management practices and quality teacher education in public colleges of education in Lagos State ($r = 0.315$; $p < 0.05$), and in public universities too ($r = 0.245$; $p < 0.05$) One of the recommendations of the study was that an effective quality management was required to be put in place in all the public tertiary institutions in Lagos state.

Ukala and Nwabueze (2016) carried out a study on the application of health and safety management practices for quality education delivery in early childhood centers in Rivers State. Two research questions and two hypotheses guided the study. Descriptive survey design was adopted for the study. The population of the study consisted of 508 head-teachers in the 508 Early Childhood Centers (ECC) in Rivers State. A sample size of 200 head-teachers was drawn using stratified random sampling technique, which represented 39.4% of the population. A questionnaire tagged “Health and Safety Management Questionnaire” (HSMQ) and a checklist developed by researchers were used to generate items based on the variables of the study. The instrument was validated and the reliability established with test-retest method and calculated with Pearson's product moment yielded a value of 0.92. Mean scores and standard deviation were used to answer the research questions, and z-test was used to test the hypotheses. The result showed that health and safety management practices needed in early childhood education for quality education delivery in Rivers State include: (a) putting good safety and health arrangement in place for staff, pupils and any other person affected by the work activities of the school; (b) making well-planned safety and health systems in the centers for teachers and other staff to induce confidence in them in carrying out their responsibility properly; (c) and providing appropriate information, instruction, training and supervision of staff on health and safety related issues. Based on the findings, the work recommended that head-teachers and teachers should

constantly keep available health and safety facilities in order after use, while the management should carry out a proper maintenance of the available facilities regularly.

Oragwu and Nwabueze (2016) investigated the provision and maintenance of health and safety facilities for quality service delivery in secondary schools in Rivers State, Nigeria. Three research questions and two hypotheses guided the study. The study adopted a descriptive survey design with a population of 247 secondary schools in Rivers State having 247 principals from which a sample size of 120 principals was drawn using stratified random sampling technique. This represented 48.6% of the population. It included 95 male and 25 female principals; 80 principals from rural and 40 from urban areas. The instruments used were document analysis and a questionnaire tagged “Management of Health and Safety Facilities Questionnaire” (MHSFQ) developed by the researchers. The questionnaire was validated and the reliability was gotten using test re-test method and calculated with Pearson’s product moment correlation which yielded an index of 0.88. Mean standard deviation and rank order scores were used to answer the research questions and z-test was used to test the hypotheses at an alpha significant level of 0.05. The findings of the study revealed that health and safety facilities needed for quality service include: good school buildings, ventilated classrooms, ventilated libraries, smooth sitting/writing desks, well fenced environment, good laboratory facilities, clean toilet facilities, functional health centers, fire-fighting equipments, refuse disposal bins, good working ambulance, life guards, first aid boxes, functional street lights, constant electricity generation, good drinking water and well protected doors and windows. Ways of maintaining health and safety facilities in schools include: appropriate preventive maintenance, routine maintenance and emergency repairs by school management, regular rehabilitation of health and safety facilities and frequent provision of funds by government for facilities maintenance.

Nwideduh and Adieme (2016) conducted a study on building an effective health and safety management at the work environment of the universities in Rivers state. The purpose of the study was to (a) assess the safety measures that are taken to protect academic staff from hazards at the work environment of the universities in Rivers State and (b) highlight the strategies the school management adopts for promoting health and safety at work environment of the universities in Rivers State. To guide the study, two research questions were raised and one hypothesis was formulated. Descriptive survey design was used for the study. A stratified random sampling technique was used to draw 600 respondents from a population of 3001 academic staff of the three universities in Rivers State. The respondents represent 20% of the entire population. A self-developed questionnaire and a checklist were used to collect data from the respondents. The instruments were duly validated and reliability of the questionnaire was tested using test re-test method which was calculated using the Pearson’s Product Moment Correlation and it yielded an index of 0.79. The study employed frequency counts, percentage, mean standard deviation and rank order scores to provide answers to the research questions while z-test was used to test the hypothesis of no significant difference. The findings revealed that the strategies which the university managements adopt for maintenance and promotion of health and safety at work environment include: setting up health and safety committees, turning off all electrical appliances in the offices at the close of work, communication hazards and safety information through signs and symbols, monitoring the health of employees and responding to illness caused by workplace activity, designing working hours in a manner that supports a safe working environment and provision of recreational facilities for staff. The findings also revealed that

some safety measures that are being taken to protect the academic staff from hazards at the work environment include: provision of hygienic learning environment, safety and caution signs, recycling and waste reduction practices, mounting of security personnel at strategic places among others. Based on the findings, the researchers recommended that periodic health and safety training programmes should be organized for staff, especially those that are newly employed in the system in order to enable them to be safety conscious at all times.

Obasi and Madu (2016) carried out a study on the maintenance of school facilities for safety in public secondary schools in Imo State. The study specifically sought to find out the condition of the available school facilities, the maintenance strategies in place for these facilities and the financial plan available for school facility for safety in public secondary schools in Imo State. Descriptive survey design was adopted for the study. The population comprised the 285 public secondary schools in Imo State. Using the stratified random sampling technique, 25% of the population was chosen comprising 20 schools from Okigwe Zone, 26 schools from Orlu Zone and 24 schools from Owerri Zone. Three research questions guided the study. Instrument for data collection was a self-designed questionnaire validated by two experts in Educational Management. It was tested for reliability using the Cronbach alpha reliability technique and had a reliability index of 0.88. Frequency and percentage were used to analyze the data. The findings revealed among others that most school facilities are in bad condition and therefore unsafe for the users. Based on the findings, the study recommended that the principals should endeavor to ensure that the available facilities in schools are in good condition through adequate maintenance to ensure the safety of the users. This study is in line with the current study.

Woke et al (2016) researched on safety management for quality public senior secondary school education in Rivers State. Four research questions and null hypotheses were tested at 5% level of significance. The descriptive survey design was adopted and the sample size of 1,100 consisting of head teachers and deputy head teachers in public senior secondary schools in Rivers State. The questionnaire titled "Safety Management for Quality Senior Secondary School Education Questionnaire" (SMQSSSEQ) was formulated and used. It was validated by experts while the reliability was established using test retest method of a pilot study of one hundred respondents given a reliability of 0.84. The research questions were analyzed with mean score, rank order (RO) while z-test was used to test the null hypotheses. The findings revealed that there is inadequate safety policies and bad safety management in public senior secondary school education in Rivers State. Based on the findings, it was concluded that effective safety management have not been adequately given proper attention by the Rivers State senior secondary school board. The following recommendations were made: (i) Rivers State Ministry of Education should ensure adequate school safety management policies for effective teaching and learning in public senior secondary schools; (ii) Rivers State Ministry of Education should implement good school safety policies to enhance safety organizational climate in various senior secondary schools.

Byebunu (2016) examined managing safety and health as strategy for improving service delivery in senior secondary schools in Rivers State in the 21st century. The population of the study comprised of all the 247 public senior secondary schools and 264 private senior secondary schools in Rivers State. A sample size of 180 principals was selected using stratified multistage random sampling technique (public 86: private 94). Instrument of date collection used in a

modified four point likert scale rating questionnaire titled “Managing School Safety and Health as Strategy for Improving Service Delivery” (MSSHSISD). The instrument has a reliability coefficient of 0.79, using test retest method and Pearson moment correlation. The data gathered were analyzed using percentages, mean, standard deviation, correlation and z-test statistical tool. The research questions were answered descriptively, whereas the null hypotheses were tested at 0.05 significant. The findings of the study revealed that safety and health management were poor particularly in public schools in Rivers State and safety and health was more effectively managed in private schools than in public schools.

Research Design

The study adopted a linear correlation research design. It is a design used in order to establish the linear function relationship existing between the dependent and independent variables of a study. It is a quantitative method of research in which two or more quantitative variables from the same group of participants are studied so as to determine if there is a relationship or co-variation between them (Waters, 2017).

Model Specification

The model to be estimated expresses quality education delivery (QED or Y) as a function of safety management practices represented by, environmental safety practices (ESP or X₁), and safety training (ST or X₂). The relation is expressed mathematically thus:

$$Y = f(X_1, X_2) \tag{1}$$

This is further written as a regression equation thus:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + e \tag{2}$$

Where X₁ = Environmental Safety Practices, X₂ = Safety Training. β_0 is a constant (intercept); while β_1 , and β_2 represent slope coefficients and e is the error term.

Analytical Procedure

In the analytical procedure, the data collected for this study will be subjected to diagnostic tests before proceeding to the proper analysis. The simple and multiple linear regressions shall be used in this study via the statistical software packages known as E-views and SPSS.

Method of Data Collection

Direct Administrative Technique (DAT) was used. The researcher and two trained research assistants administered the instrument to the respondents in the sampled tertiary institutions in Imo State Nigeria. A total of two hundred and twelve 212 copies of the instrument were administered to the respondents. To reduce falsehood, the researcher made the respondents to be anonymous in their responses. The copies of the completed instrument were retrieved immediately to ensure high percentage of return.

Method of Data Analysis

The research questions 1 and 2 were answered with simple Pearson (r) correlation statistic while research question 3 was answered with multiple Pearson correlation statistics, so as to establish the relationship between the dependent and independent variables in the study. The basis for the decision for the research questions' conclusion was as follows: 0.00 – 0.20 = very low relationship, 0.21 – 0.40 = low relationship, 0.41 – 0.60 = moderate relationship, 0.61 – 0.80 = high relationship and 0.81 – 1.00 = very high relationship. Hypotheses 1 and 2 were tested with simple linear regression technique while hypothesis 3 was tested using multiple linear regression technique, so as to measure the “significance” of the degree of relationships existing between the dependent and independent variables. This implied that it helped to ascertain if the coefficient of the relationship is significant or not. The acceptance or rejection of null hypothesis was based on whether the calculated p-value is less than the level of significance (0.05).

Diagnostic Tests

In this section, the diagnostic tests that the study shall consider are normality, serial correlation, heteroscedasticity, and multicollinearity.

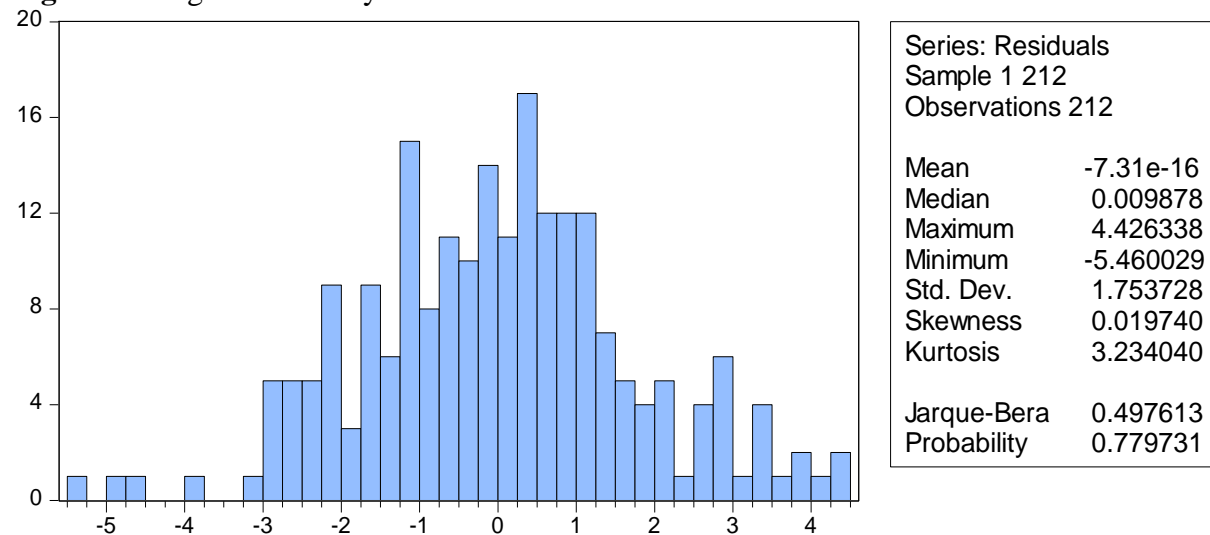
Testing for Normally Distributed Errors

To test for normal distributed errors, we use the Jarque-Bera test for normality. The hypotheses of the Jarque-Bera test are as follows:

H_0 : Errors are normally distributed

H_1 : Errors are not normally distributed

Fig. 1: Testing for Normally Distributed Errors



Source: E-view software

Since the p-value (0.779731) is greater than 0.05 from Fig. 1, the null hypothesis is not rejected. This implies that the assumption of normality distributed errors is satisfied.

Testing for Serial Correlation

To test for serial correlation, we use the Breusch-Godfrey Serial Correlation LM Test. The hypotheses of the Jarque-Bera test are as follows:

H₀: There is no serial correlation of the equation errors up to lag k

H₁: There is serial correlation of the equation errors up to lag k

Table 2: Testing for Serial Correlation

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	28.49659	Prob. F(2,207)	0.0000
Obs*R-squared	45.76843	Prob. Chi-Square(2)	0.0000

Test Equation:

Dependent Variable: RESID

Method: Least Squares

Date: 08/20/18 Time: 17:14

Sample: 1 212

Included observations: 212

Presample missing value lagged residuals set to zero.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.228351	0.346213	-0.659567	0.5103
ESM	0.004861	0.052083	0.093341	0.9257
ST	0.018209	0.047893	0.380212	0.7042
RESID(-1)	0.478779	0.069679	6.871222	0.0000
RESID(-2)	-0.026174	0.069900	-0.374452	0.7085

R-squared	0.215889	Mean dependent var	-7.31E-16
Adjusted R-squared	0.200737	S.D. dependent var	1.753728
S.E. of regression	1.567859	Akaike info criterion	3.760601
Sum squared resid	508.8436	Schwarz criterion	3.839766
Log likelihood	-393.6237	Hannan-Quinn criter.	3.792598
F-statistic	14.24829	Durbin-Watson stat	1.989862
Prob(F-statistic)	0.000000		

Source: E-view software

The null hypothesis of these two tests is that there is no serial correlation of the equation errors

up to lag k (mentioned above). Since the probability associated to the two tests is below 0.05, then the null hypothesis is rejected, so we reject the non existence of serial correlation.

Testing for Heteroscedasticity

To test for heteroscedasticity, we use the Breusch-Pagan-Godfrey Test. The hypotheses of the Breusch-Pagan-Godfrey test are as follows:

H_0 : There is presence of homoscedacity

H_1 : There is presence of heteroscedacity

Table 3: Testing for Heteroskedacity

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	2.439748	Prob. F(2,209)	0.0897
Obs*R-squared	4.836618	Prob. Chi-Square(2)	0.0891
Scaled explained SS	5.250777	Prob. Chi-Square(2)	0.0724

Test Equation:

Dependent Variable: RESID^2

Method: Least Squares

Date: 08/20/18 Time: 17:23

Sample: 1 212

Included observations: 212

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.801365	1.001295	2.797741	0.0056
ESM	-0.282487	0.150905	-1.871947	0.0626
ST	0.302794	0.138199	2.191002	0.0296

R-squared	0.022814	Mean dependent var	3.061053
Adjusted R-squared	0.013463	S.D. dependent var	4.586095
S.E. of regression	4.555119	Akaike info criterion	5.884430
Sum squared resid	4336.563	Schwarz criterion	5.931929
Log likelihood	-620.7496	Hannan-Quinn criter.	5.903628
F-statistic	2.439748	Durbin-Watson stat	1.727086
Prob(F-statistic)	0.089662		

Source: E-view software

Table 3 shows that heteroskedacity does not seem to be a problem since the p-value (0.0897) is greater than 0.05. Hence, the null hypothesis is not rejected in testing for heteroskedacity.

Testing for Multicollinearity

To test for multicollinearity, we use the VIF. Making process in Multicollinearity test, the decision criteria are:

1. If the VIF value lies between 1 – 10, then there is no multicollinearity
2. If the VIF < 1 or > 10, then there is multicollinearity

Table 4: Testing for Multicollinearity

		Coefficients^a							
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics		
		B	Std. Error	Beta			Tolerance	VIF	
1	(Constant)	.198	.387		.511	.610			
	ESM	.423	.058	.412	7.248	.000	.402	2.485	
	ST	.463	.053	.493	8.665	.000	.402	2.485	

a. Dependent Variable: QED

Source: SPSS software

The VIF value of 2.485 obtained as shown in Table 4 shows that the value is between 1 and 10; which implies no multicollinearity symptoms.

Analysis of Data

Analysis of Research Questions

Research Question One

To what extent is the relationship between environmental safety practices and quality education delivery in public tertiary institutions in Imo State?

Hypotheses One

H₀: There is no significant relationship between environmental safety practices and quality education delivery in public tertiary institutions in Imo State.

H₁: There is significant relationship between environmental safety practices and quality education delivery in public tertiary institutions in Imo State.

Table 5: Analyses Concerning Research Question One and Hypotheses One

Dependent Variable: QED
 Method: Least Squares
 Date: 08/20/18 Time: 19:03
 Sample: 1 212
 Included observations: 212

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.991386	0.437740	2.264783	0.0245
ESM	0.814130	0.043075	18.90046	0.0000
R-squared	0.629778	Mean dependent var	8.825472	
Adjusted R-squared	0.628015	S.D. dependent var	3.360308	
S.E. of regression	2.049471	Akaike info criterion	4.282429	
Sum squared resid	882.0693	Schwarz criterion	4.314095	
Log likelihood	-451.9375	Hannan-Quinn criter.	4.295228	
F-statistic	357.2274	Durbin-Watson stat	1.133587	
Prob(F-statistic)	0.000000			

Source: E-view software

Table 5 shows the result obtained in respect of research question one and hypotheses one. The result reveals that the correlation coefficient is 0.794, which is high. This implies that there is a high relationship between environmental safety practices and quality education delivery. Furthermore, the table also displayed that the p-value for F-statistic is 0.000, which is less than the 0.05, hence leading to the rejection of the null hypothesis, concluding that there is significant relationship between environmental safety practices and quality education delivery in public tertiary institutions in Imo State.

Research Question Two

What is the relationship between safety training and quality education delivery in public tertiary institutions in Imo State?

Hypotheses Two

H₀: There is no significant relationship between safety training and quality education delivery in public tertiary institutions in Imo State.

H₁: There is significant relationship between safety training and quality education delivery in public tertiary institutions in Imo State.

Table 6: Analyses Concerning Research Question Two and Hypotheses Two

Dependent Variable: QED

Method: Least Squares

Date: 08/20/18 Time: 19:28

Sample: 1 212

Included observations: 212

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.323678	0.395998	3.342642	0.0010
ST	0.762772	0.037850	20.15233	0.0000
R-squared	0.659155	Mean dependent var	8.825472	
Adjusted R-squared	0.657532	S.D. dependent var	3.360308	
S.E. of regression	1.966477	Akaike info criterion	4.199754	
Sum squared resid	812.0771	Schwarz criterion	4.231420	
Log likelihood	-443.1739	Hannan-Quinn criter.	4.212553	
F-statistic	406.1163	Durbin-Watson stat	1.001545	
Prob(F-statistic)	0.000000			

Source: E-view software

Table 6 shows the result obtained in respect of research question two and hypotheses two. The result reveals that the correlation coefficient is 0.812, which is very high. This implies that there is a very high relationship between safety training and quality education delivery. Furthermore, the table also displayed that the p-value for F-statistic is 0.000, which is less than the 0.05, hence leading to the rejection of the null hypothesis, concluding that there is significant relationship between safety training and quality education delivery in public tertiary institutions in Imo State.

Research Question Three

To what extent is the relationship among environmental safety practices, safety training and quality education delivery in public tertiary institutions in Imo State?

Hypotheses Three

H₀: There is no significant multiple linear relationships among environmental safety practices, safety training and quality education delivery in public tertiary institutions in Imo State.

H₁: There is significant multiple linear relationships among environmental safety practices, safety training and quality education delivery in public tertiary institutions in Imo State.

Table 7: Analyses Concerning Research Question Three and Hypotheses Three

Dependent Variable: QED
 Method: Least Squares
 Date: 08/20/18 Time: 19:41
 Sample: 1 212
 Included observations: 212

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.197949	0.387340	0.511047	0.6099
ESM	0.423133	0.058376	7.248395	0.0000
ST	0.463234	0.053461	8.664933	0.0000
R-squared	0.727626	Mean dependent var	8.825472	
Adjusted R-squared	0.725019	S.D. dependent var	3.360308	
S.E. of regression	1.762099	Akaike info criterion	3.984938	
Sum squared resid	648.9432	Schwarz criterion	4.032437	
Log likelihood	-419.4034	Hannan-Quinn criter.	4.004136	
F-statistic	279.1633	Durbin-Watson stat	1.072201	
Prob(F-statistic)	0.000000			

Source: E-view software

Table 7 shows the result obtained in respect of research question three and hypotheses three. The result reveals that the correlation coefficient is 0.853, which is very high. This implies that there is a very high relationship among environmental safety practices, safety training and quality education delivery in public tertiary institutions in Imo State. Furthermore, the table also displayed that the p-value for F-statistic is 0.000, which is less than the 0.05, hence leading to the rejection of the null hypothesis, concluding that there is significant multiple linear relationships among environmental safety practices, safety training and quality education delivery in public tertiary institutions in Imo State.

Summary of the Findings

From the data collected and analyzed on the research questions and the tested hypotheses, the following findings were deduced from the study;

1. There is a high significant relationship between environmental safety practices and quality education delivery in public tertiary institutions in Imo State.
2. There is a very high significant relationship between safety training and quality education delivery in public tertiary institutions in Imo State.
3. There is a very significant multiple linear relationships among environmental safety practices, safety training and quality education delivery in public tertiary institutions in Imo State.

Conclusion

It is concluded in this study that there is a very high positive significant mutual association among environmental safety management, safety training and the quality education delivery in public tertiary institutions in Imo State.

Recommendations

In consideration of the findings of this study, the following recommendations are made:

1. The school management should make adequate provision of safety facilities that would enhance the safety of the staff and students in public tertiary institutions in Imo State.
2. The school management should also endeavour to ensure that the available facilities and social amenities are in good condition through adequate maintenance to ensure the safety of the staff and students in public tertiary institutions in Imo State.
3. There should be regular safety management training for the staff of public tertiary institutions in Imo State through seminars, workshops and symposia in order to get them acquainted with current school safety management practices.

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Questionnaire for the Study

Please tick (✓) where you deem appropriate.

Key: Strongly Agree (SA) = 4Points, Agree (A) = 3Points, Disagree (D) = 2Points, Strongly Disagree (SD) = 1Point

SAFTEY MANAGEMENT PRACTICE SCALE (SMPS) FOR LECTURERS					
S/N	Item Statement	SA	A	D	SD
	<i>The following safety management are practiced in my institution:</i>				
A	Environmental safety practices: The following environmental safety management are practiced in my institution:				
1	Lecture floor is sound and free from ditch and holes				
2	Leaking proofs are detected and replaced immediately				
3	Regular cutting of bushes around the institution premises				
4	Emergency exit in case of stampede				
5	Fire extinguisher are in the lecture halls				
B	Safety training: Lecturers in my school are trained:				
6	Through seminars on safety management				

7	Through workshops on safety management				
8	To respond quick to emergency				
9	To pay special attention to vulnerable students				
10	To always uphold school safety policy				
QUALITY EDUCATION DELIVERY SCALE (QEDS) FOR HEAD LECTURERS					
C	The following quality education delivery are practiced in the school by the teacher:				
11	Ensures adequate coverage of behavioural objectives				
12	Ensuring above average performance of students in academics				
13	Effective manipulation and lecturing with the required instructional materials				
14	Commitment and dedication in ensuring effective lecturing and learning				
15	Application of desired and required technique in managing students behavior				