



## ENVIRONMENTAL COSTS DISCLOSURE AND FIRMS' PERFORMANCE: A LONGITUDINAL ANALYSIS OF LISTED OIL AND GAS FIRMS IN NIGERIA (2011-2020)

Amarachi Queen Gabriel-Odom<sup>1</sup>, Uche Chukwu<sup>1</sup> and Isaac Monday Ikor<sup>2</sup>

<sup>1</sup>Department of Accountancy, Ebonyi State University Abakaliki.

<sup>2</sup>Department of Accountancy, Alex Ekwueme Federal University Ndufu-Alike Ebonyi State, Nigeria.

### Abstract

This research examines environmental cost disclosure practices and the effect it has on firms' performance using longitudinal analysis. We specifically analyzed the following costs- Environmental Prevention Cost (EPC), Environmental Internal Failure Cost (EIFC) and Environmental External Failure Cost (EEFC) as independent variables. The dependent variable- Return on Asset (RoA) – is taken as the performance measure in the study. Using *Ex post facto* research design for data obtained between the period 2011 to 2020, and the Multiple Regression Model, our study indicates that EIFC and EEFC each have a negative and significant effect on financial performance within the period. However, EPC was found to be positive and significant in determining the performance of oil and gas firms in Nigeria. The findings imply that an increase in environmental costs significantly affects firms' performance in Nigeria. It was concluded that increased environmental cost reduces performance. The study therefore recommends among others that firms should urgently attend to damages caused on host communities to increase cooperation and patronage as well as to reduce fines and penalties as such could improve RoA.

**Keywords:** environmental cost, environmental prevention cost, environmental internal failure cost, environmental external failure cost and firm performance.

### Introduction

Firms' attention has been redirected towards environmental sensitivity as a result of the increases in global environmental awareness and the campaign for sustainable economic development. This entails understanding the fragility of our environment and the importance of its protection as well as environmental steward and participation in creating a sustainable performance for stakeholders. It is also the awareness around the natural environment and the choices that either promote its well-being as well as to protect the earth for its survival. This quest for sustainability has caused an emergence of

many global institutions enunciating varying norms that guide human interaction with the environment. Specifically, the environment provides natural resources for production and consumption activities; absorbs waste emanating from production and consumption activities. It supports life and other human endeavours. Environment is a contributor to both production and human welfare through the provision of resources, including space for human activity, waste absorption services such as neutralization, dispersion or recycling of wastes from human activity (UN- IEEA, 2020). Amaegbu and Onyali opined that constant evolution of accounting has

ushered in the inculcation of environmental information into conventional accounting procedures to improve relevance, reliability and decision-usefulness of accounting information. This has brought in the term, “Environmental accounting”. Environmental accounting is the measurement and analysis of the environmental performance of corporations and the reporting of such results to concerned groups both within and outside the corporation (Mohammed, 2018). Ranko and Anthole (2014), revealed that environmental costs are the basis of environmental accounting which are the totality of the expenses borne by the productive economic entity (either voluntarily or as a result of the legal settlements into force) for the recondition or protection of the environment as a result of their operations.

Eze, Nweze and Enekwe (2016), posit that environmental accounting should reflect any costs and benefits that arise from changes to firms’ products or processes, where the change also involves a change in environmental impacts. It is applied in the assessment of full environmental costs associated with the activities and products as well as the assessment of organisations’ environmental performance with some key monitoring areas ranging from emission to air, water, effluent discharge, soil contamination and boundary noise. Environmental costs can take different forms and this could be a function of the operational peculiarities of firms. Firms in exploration activities like oil and gas firms are associated with oil spills, water pollution, land degradation, air pollution, employee health hazards, destruction of communal land and agricultural investments.

On the other hand, firm performance involves the disclosure of financial information that relates to the financial position of an entity on how the firm is performing over a specific period of time. Firms’ performances and parameters have changed from owners’ profit maximisation to include environmental responsiveness. Failures and success of firms are not going to be based only on the market acceptability of their products and services or the net returns on investment but also on other parameters that question their responsibility and responsiveness to the

environment in which they operate and depend (Makori and Jagongo, 2015). Firm performances have been measured predominantly as they affect shareholders’ benefits thereby ignoring the interest of other stakeholders. The oil and gas sector is one of the most important sectors in Nigeria’s economy, accounting for more than 90% of the country’s exports and 80% of the Federal government’s revenue. It includes the global processes of exploration, extraction, refining, transporting (often by oil tankers and pipelines) and marketing of petroleum products. Its largest volume of products is fuel oil and gasoline (petrol). Oil and gas production has been hampered in Nigeria in the past few years due to the attack on oil and gas infrastructure by militants as well as the outbreak of COVID-19. This has resulted in huge losses to operating companies in Nigeria (Globe Newswire, 2021). The basic duty of every financial manager is to maximise shareholders’ wealth and increase firms’ value which is possible when the firms’ performance can be increased. Likewise, decision-makers are considered to measure a company’s performance, especially its profitability before decisions are made based on certain performance measurement metrics (Mohammed, 2019; Ogah-Alo, 2019).

In a bid to make a living and provide basic needs, the present activities of man have been observed to have tremendous negative effects on the sustainability of earths’ prospects. This has a possibility of threatening the basic necessities of living, for future generations. Therefore, efforts should be made by firms to replace the losses which occur as a result of these activities or reduce its negative consequences on the environment. These firms whose growths are assessed based on its success or failure may not be determined only based on their services or products but also the complexity of its environment. Thus, protecting the environment as well as sustainability of firms’ operations are common subject of discussion all over the world. This interaction with the environment has implications and costs associated with it. In line with these financial performance indices return on asset could be highly influenced by environmental costs associated with prevention, internal failure and external failure of an oil and gas firms.

Hence, the quest for the effect of environmental cost on firm performance of oil and gas firms is sought.

### **Statement of the Problem**

The industrial revolutions lead to economic improvement for most people in the industrialized society. These economic developments are not without costs. Industrialization which required the use of natural resources including energy brought about factory pollutant and greater land use, which harmed the natural environment. These environmental problems caused by oil and gas pollution has impact on the global, national, regional and community health of individuals most especially those within the vicinity of the pollution. It also affects agriculture and causes acid rain with a attendant effect on forest and other physical infrastructure (Christiansen and Haugland, 2013; Ikor et al 2024). This is evidenced in environmental degradation which includes soil and water contamination, erosion and atmospheric pollution is generally experienced in the world and particularly in Nigeria today.

Most firms are becoming progressively aware of its environmental and social liabilities as it pertains to their operations and products. Thus, in a bid to remove environmental pollution, additional cost known as Environmental cost is incurred by the firm. There are researchers who have analyzed environmental costs to determine whether they exerts significant effects on firm performance. The outcome of such studies has been inconsistency. The limited awareness of environmental costing relevance has become an important issue to be addressed. Virtually all studies on this centered on Manufacturing, Construction, Banking, and Mining, firms while few on oil and gas did not go beyond 2015 even as they inversely relate to firm performance. This study therefore intends to highlight the need for oil and gas firms specifically to consciously take care of the environment in which they operate in relation to the life that exist within the environment. This is the bedrock on which this study seeks to assess to what effect this cost in particular; Environmental Prevention Cost (EPC), Environmental Internal

Failure Cost (EIFC) and Environmental External Failure Cost (EEFC) has on the financial performance of oil and gas firms in Nigeria using performance variable such as Return on Assets (RoA) as to offer some improvements and to establish the effect of environmental cost on firm performance. The research questions this study addresses are as follows:

**Research Question 1:** To what extent do environmental prevention cost affect the return on assets of oil and gas firms in Nigeria?

**Research question 2:** To what extent do environmental internal failure cost affect return on assets of oil and gas firms in Nigeria?

**Research Question 3:** To what extent do environmental external failure cost affect return on assets of oil and gas firms in Nigeria?

This study intends to contribute to the burgeoning research on environmental costs which is an aspect of sustainability reporting in developing countries with particular emphasis on Nigeria. This work will aid management of various firms with the knowledge and understanding of environmental costs which will promote accurate costing and pricing of products. It will broaden the horizon of knowledge of government, regulatory authorities and relevant professional bodies by putting in place measures to encourage environmental costing practices as well as policy formulation and implementation amongst selected oil and gas firms in Nigeria. This research will enhance investors' ability on how to predict future cashflows of a firm. It will also reveal to investors how efficient and effective the management have discharged their social responsibility. It will further help future researchers who might want to dig deep on the subject matter as it will serve as a basis of reserved knowledge to be consulted so as to have an easy and successful research study.

### **Scope and Limitations of the Study**

The scope of the study covered ten (10) listed oil and gas firms in Nigeria out of which seven (7) were studied. They include Exxonmobil Plc, Shell Petroleum Development Company of Nigeria, Total Petroleum Nigeria Ltd, Chevron Nigeria, Nigerian AGIP Oil Plc, Seplat Petroleum

Development Company and Nigeria LNG (NLNG) as at 31<sup>st</sup> December 2020. These firms were selected because they are strategic and active on the stock exchange as well as the availability of key environmental cost information and other necessary information for the study. The study focused primarily on the effect of environmental cost on firm performance of oil and gas firms in Nigeria covering a period of ten (10) years (2011 - 2020). The need for relevant materials was taken care by the researcher's effort to access Annual reports and accounts of selected oil and gas firms from available data base of relevant bodies like Nigerian Stock Exchange.

## Review of Literature

### Conceptual Review

#### Environmental cost

According to the Environmental Protection and Management Act (2009), environment is a unit of all objects, power, circumstances and mortals including human beings and their behavior which influences the nature, continuity of life, human welfare and any other mortals. It consists of living and non-living elements and their effects that influence human life. Onyekachi, Ihendinihu and Azubuiké (2020), opined that environmental cost is the costs, capital or recurrent which are incurred by a firm to ensure that organizations' activities do not cause harm to the environment or replenishment to the damaged environment resulting from the firms' activities. It is the costs of making sure that a company's activities do not damage the environment or that any such damage are put right. Ezeagbas, John-Akamelu and Umeoduagu (2017), opined that environmental costs are costs which are incurred by organisations for the purpose of protecting the environment, prevention of environmental problems and also to minimise damages that the environment may suffer. It is useful to classify environmental costs into four (4) categories namely:

**Environmental Appraisal Costs:** these are cost of activities performed to monitor environmental effect that a firm is responsible for. Examples include the costs arising from inspection of products and contamination testing.

**Environmental Prevention Costs:** are the cost of activities performed to prevent the products of waste that could cause damage to the environment. Examples include costs of recycling products, training staff and carrying out environmental studies.

**Environmental Internal Failure Costs:** are the costs of activities that have to be performed when contaminants and waste have been produced by a company but not discharged into the environment. Examples include treating toxic waste and maintaining pollution equipment.

**Environmental External Failure Costs:** these are the costs incurred by a company if it discharges waste into the environment. Examples include the costs of cleaning up oil spills or cleaning a polluted river. A company may also incur fines or other penalties or lose sales if it acquires a poor environmental reputation.

Environmental costs should be treated in line with the basic accounting treatment of business costs which capitalizes costs whose benefits is expected to exceed over accounting period and expense the others whose accruing benefits will elapse in the given accounting period.

#### Firm Performance

According to Adam (2014), financial performance refers to the act of performing financial activity. It is used to measure firm's overall financial health over a given period of time as well as to compare similar firms across the same industry or to compare industries or sections in aggregation. In assessing the overall financial condition of a company, the income statement and the statement of financial position are important reports, as the income statement captures the company's operating performance and the statement of financial position shows its net worth. Financial performance could be assessed using key measures which are important to assess the current financial position and performance of firms. These performance indicators are Revenue, Market share, Profitability, Cashflow and Value added productivity. Amidst of these performance indicators, profitability is preferred. As aptly captured by Amahalu, Agbionu and Obi (2017), profitability is the primary goal of all business



ventures. It is measured with income and expenses. Income is money generated from the activities of the business while expenses are the cost of resources used up or consumed by the activities of the business. These profitability indicators are Net Profit Margin (NPM), Return on Equity (RoE), Return on Assets (RoA), Total Assets Turnover (AT), Debt to Total Assets (DAR), Debt to Equity (DER), Time Interest Earned (TIE) and Current Ratio (CR). The choice of return on assets is based on the need for adopting a balanced approach to performance measurement as well as need for using leading and lagging indicators in a coordinated way.

### Return on Assets

According to Bansal (2014), return on assets is the relationship between net profit after tax and how assets are used in business to generate profits. It gives an idea as to how efficient management is at using its assets to generate earnings. It is used by companies, banks, financial institutions and other stakeholders for determining the performance in business. Return on Asset (RoA) indicates that the profitability position of the firm with respect to assets employed in the business. The higher the RoA figure the better because it indicates that the firm is earning more fund less investment. It is a profitability ratio that provides how much profit a company is able to generate from its assets. Thus, it's computed as:

$$\text{RoA} = \frac{\text{Profit After Tax (PAT)} \times 100}{\text{Total Assets (TA)}}$$

### Empirical Review

Amaegbu and Onyali (2021), carried out empirical analysis of the effect of environmental cost on corporate performance of selected manufacturing firms on NSE. Specifically, the study explored the effect of environmental prevention cost, environmental damage costs and environmental management and education costs respectively on return on investment of the listed firm from 2012 to 2019. The *ex post facto* research design was used in this study. The dependent variable of the study is Return on investment used to proxy firm performance while the environmental cost is the independent variable. Data were analysed using descriptive statistics, Hausman test and Panel least squares regression

statistical techniques. Findings revealed that cost relating to the prevention of environmental degradation, management and education cost has negative effect on financial performance while cost on environmental damage was found to be positive and significant in determining performance. It was concluded that increased environmental cost reduces performance. It was recommended among others that companies could take up more preventive measures that are embedded in business strategy and save the firms' financial resources such as reducing waste-prone operations and using environmentally materials for manufacturing. Falope, Offor and Ofurum (2019), in their work titled, "Environmental Cost Disclosure and Corporate Performance of quoted Construction Firms in Nigeria", ascertained the degree in which pollution control cost, environmental protection cost and environmental recycling disclosure affects Return on Assets (RoA), of quoted construction firms in Nigeria. The study adopted *ex-post facto* research design. Hypotheses were formulated in line with research objectives and tested using linear analysis of SPSS version 20.0. The findings showed that environmental pollution prevention cost, environmental protection cost and environmental recycling disclosure have effects on return on assets of quoted construction firms in Nigeria. The study recommended among others that regular and continuous environmental evaluation will improve organizations sales, income and ensure that environmental situational needs are met.

Ikpor, Enuma and Okereke (2019), studied Environmental Accounting and Sustainable Financial Performance: Evidence from the Nigerian Petroleum Industry. This paper therefore re-examines the effect of the neglected but important issue of Environmental accounting in the context of how it affects sustainable financial performance of firms in Nigeria. Data collected was analyzed through the lenses of ordinary least square regression method. Finding of the study suggests that environmental operating costs and environmental prevention costs have significant and negative effect on the performance of petroleum firms in Nigeria. However, the study found important differences in the correlates of firms' capital expenditure on sustainable financial

performance. The findings of this study therefore have important implications for policy. Oyedokun, Egberioyinemi and Tonademukai (2019), examined the effect of environmental accounting disclosure on firm value of listed industrial goods companies in Nigeria from 2007 to 2016. The *ex post facto* research design was adopted in this study while the data were gathered through the individual sample of company annual financial statement. Multiple regressions was used to analyze the effect of environmental accounting disclosure on firm value measured by Tobin Q. From the result it is evident that environmental accounting disclosures have a positive significant effect on firm value.

Olaoye and Adekanmbi (2018), examined the impact of environmental management accounting practices and report on organization performance. Specifically, the study investigated the present accounting practices for managing the significant environmental costs in the south-west Nigerian Universities and to establish elements that can improve environmental management accounting sustainability within South-West Nigerian Universities. The study used descriptive design survey through structured questionnaire and employed stratified random and purposive sampling as sampling techniques. The findings revealed that there is low present practice of environmental management accounting in South-West Nigerian Universities.

### **Theoretical Framework of the Study: Stakeholder Theory**

This study is guided by stakeholders' theory which was propounded by Dr. F. Edward Freeman in the year 1984. Stakeholders' theory is a theory of organizational management and business ethics that accounts for multiple constituencies impacted by business entities like employees, suppliers, local communities, creditors and others. It addresses morals and values in managing an organization such as those related to corporate social responsibility, market economy and social contract theory. One common version of stakeholder theory seeks to define the specific stakeholders of a company (the normative theory of stakeholder identification) and thus examine the conditions under which managers treat these

parties as stakeholders (the descriptive theory of stakeholders' salience). Stakeholders' theory suggests that stakeholders' need should be put at the beginning of any action. It is based on the assumption that business can only be considered successful when they deliver value to the majority of their stakeholders. This implies that profit alone cannot be considered as the only measure of success. This study therefore adopts this theory because the success of oil and gas firms cannot be complete without impacting positively on the lives of the stakeholders within the environment in which they operate.

### **Data and Methods**

The research design adopted for this study is *ex post facto* design. This includes time series data generated from published annual report for the period 2011 to 2020 to obtain the desired result. This is to enable us use quantitative data to describe and investigate the relationship between a dependent variable (performance measure proxy by Return on Assets (RoA)) and independent variables (Environmental Prevention Cost, Environmental Internal Failure Cost and Environmental External Failure Cost). The data source for the study was purely secondary in nature sourced from published annual reports and account of seven (7) listed oil and gas firms in Nigeria for the period of ten (10) years (2011 – 2020) ended 31<sup>st</sup> December, 2020. These firms are Exxonmobil Plc, Shell Petroleum Development Company of Nigeria, Total Petroleum Nigeria Ltd, Chevron Nigeria, Nigerian AGIP Oil Plc, Seplat Petroleum Development Company and Nigeria LNG (NLNG). The analytical tools used in analyzing the data collected for this study were Regression analysis techniques. The justification for adopting was based on the premise that the least square estimate is assumed to be the best linear unbiased estimator and it has minimum variance.

### **Model Specification**

Generally, the Multiple Regression Model specified as:  $Y = f(X_1, X_2, X_3, X_n)$

To empirically evaluate the relationship between firm performance proxy by RoA and

environmental cost proxy by EPC, EIFC and EEFC, thus;

Firm performance is a function of Environmental cost. This can be represented functional as:

$$FP = f(FC) \tag{1}$$

But Environmental Cost (EC) indicators include EPC, EIFC and EEFC Where:

RoA = Return on Asset  
 EPC = Environmental Prevention Cost EIFC = Environmental Internal Failure Cost  
 EEFC = Environmental External Failure Cost  
 FP = Firm Performance

fEC = function of Environmental Cost  
 Substituting these on equation 1, we have:  
 $FP = f(EPC, EIFC \& EEFC)$   
 (2)

Where FP is measured by RoA  
 Therefore,  $RoA = b_0 + b_1EPC + b_2 EIFC + b_3EEFC + \epsilon_i$   
 .....  
 (3)

Equation 3 is the baseline equation. To control for the possibility of purchase and inflation, we have a robustness test as shown in equation 4  
 $RoA = b_0 + b_1EPC + b_2 EIFC + b_3EEFC + \epsilon_i$   
 .....

(4)  
 Where:  
 $\epsilon_i$  = Error term, b = Coefficient

**FINDINGS**

Table 1 shows the summary of descriptive statistics and normality test for all the variables of interest adopted in the model of the study. The maximum value for capital expenditure in our sample was N41.76m with a minimum value of N6.99m approximately. Also the maximum value of EPC, EIFC and EEFC stood at 584200.00, 183555.00 and 99422.00 respectively with minimum values of 10443.00, 11750.00 and 14049.00. The standard deviations of 135207.66, 27679.62 and 22579.28 for the variables implied that those individual observations did not deviate so much from their respective mean of 196817.25, 56941.76 and 48417.00 respectively.

**Table 1: Descriptive statistics of the variables**

	N	Mini-Statistic	Maximum Statistic	Mean Statistic	Std. Deviation Statistic	Kurtosis Statistic	Std. Error
ROA	60	-6.99	41.76	5.612	7.385	9.701	0.608
INFR	60	8.06	16.52	11.755	2.734	-0.911	0.608
EEFC	60	14049.00	99422.00	48417.000	22579.281	-0.991	0.608
EIFC	59	11750.00	183555.00	56941.762	27679.619	6.100	0.613
EPC	60	10443.00	584200.00	196817.250	135207.660	0.763	0.608
Valid (listwise)	N 59						

Source: Authors E-views output 2022 Diagnostic test results

To ensure that there is no multicollinearity problem in the model, the VIF (Variable inflation factor) and Tolerance test were employed and results are as shown in the table below.

**Table 2: Multicollinearity Test**

Variables	Tolerance	VIF
EPC	0.758	1.320
EIFC	0.922	1.084
EEFC	0.731	1.368

Due to the fact that serious multicollinearity leads to large standard errors as well as false regression result, it therefore, becomes very necessary to check for the presence of multicollinearity among the repressors. The existence of a linear relationship between two or more explanatory variables is known as multicollinearity. Multicollinearity does not exist if the following conditions are met: first, correlation coefficient of less than 0.9. Second, Tolerance value above 0.2 and VIF below 10. Based on the two assumptions, our results satisfy that there we do not have presence of multicollinearity issues in our model as the coefficient is less than 0.9 for all the variables, tolerance values are above 0.2

while VIF are all below the threshold of 10, hence we proceed with our further empirical tests. Table 1 able explains further.

### Regression Results

Table 3 shows the regression coefficient of the independent variables. The results show that some of the coefficient of the results are positive and statistically significant in explaining our apriori expectations while others are negative. This implies that one percent increase in all the variables will lead to a corresponding increase in the dependent variable for EIFC and EEFC while the reverse is the case for EPC

**Table 3: Empirical Result of the Regression Analysis**

Variables	B	Std.Error	t-test	Sig
Constant	7.665	2.787	2.750	0.008
EPC	0.937	0.000	1.133	0.262
EIFC	0.998	0.000	-0.270	0.788
EEFC	0.694	0.000	-1.371	0.176

**Source: Authors E-views output**

### 2022 Standard Error Test

Standard error is used to ascertain whether the variables in the study were statistically significant or not; and this is done when standard error is compared with half of the coefficients. The decision rule is to fail to reject the null hypotheses if standard error is greater than half of the coefficients. Table 4 shows that the half coefficients of all the variables are greater than

their respective standard errors. Thus, the null hypotheses were rejected and conclude that all the explanatory variables are statistically significant and reliable in estimating the variables. The results as shown in table 4 below.

**Table 4 Empirical Result of standard error test**

Variables	C	EPC	EIFC	EEFC
Coefficient	7.665	0.937	0.998	0.694
Standard Error	2.787	0.000	0.000	0.000
Half of coefficient	3.832	0.469	0.499	0.347
Decision	Accept H <sub>1</sub>	Accept H <sub>1</sub>	Accept H <sub>1</sub>	Accept H <sub>1</sub>

**Source: Authors E-views output 2022**

### T-statistics

To further establish the empirical significant influence or otherwise of the stated hypothesis, the t-statistics were used. This is achieved by

comparing t-test calculated with t- test critical value. The decision rule is to fail to reject the null hypothesis when the t-statistics critical value is greater than t- statistics calculated at 5% level of



significance. Our results in table 5 shows that the estimated t-statistics values are greater than the theoretical value of t- statistics, hence we

conclude that there is a significant influence of the independent variables on the dependent variable. This is shown in table 5 below:

**Table 5. T.statistics Result**

Variables	C	EPC	EIFC	EEFC
Parameters	$b_0$	$b_1$	$b_2$	$b_3$
t-statistics	2.750	1.133	-0.270	-1.371
t-table @0.05	1.976	1.976	1.976	1.976
Decision	Accept $H_1$	Accept $H_1$	Accept $H_1$	Accept $H_1$

### Implication of the study

The broad objective of this study to evaluate the effect of environmental cost on firm performance with particular reference to the listed oil and gas firms in Nigeria. The result of the regression analysis revealed that EPC, EIFC & EEFC have statistically significant influence on the RoA of oil and gas firms in Nigeria. Therefore, this implies that within the period reviewed, the financial performance RoA of oil and gas firms is significantly influenced jointly by all the components of capital expenditures EPC, EIFC and EEFC as adopted in the model.

### Summary, Conclusion and Recommendations

This section showcases the key findings of the study, which explains how this research work has assisted in meeting its set objectives. Based on the outlined findings, requisite conclusion and recommendations were made. Findings arising from this research were summarized as follows:

1. The result revealed that RoA was influenced by EPC. This exerted a significant and positive influence on RoA. Its implication is that a unit increase will exert a corresponding increase on RoA of the selected oil and gas firms in Nigeria.
2. Result indicated that RoA was influenced by EIFC. The extent of the influence exerted on RoA by EIFC is significant and negative. This implies that a unit increase in EIFC will have a corresponding decrease in RoA of the selected oil and gas firms in Nigeria. Results showed that RoA was influenced by EEFC which exerted a significant and negative influence on RoA. This implies that a unit increase in EEFC will exert a corresponding decrease in RoA of the selected oil and gas firms in Nigeria.

### Conclusions

The study appraises the impact of environmental costs on firm performance of selected oil and gas firms in Nigeria. It specifically examined the effect of EPC, EIFC and EEFC respectively on return on assets of selected listed oil and gas firms. These environmental costs incorporate all significant and relevant costs for sound decision-making purposes. The literature reviewed by the researcher indicated that the development and operation of Nigerian oil and gas firms such as Exxonmobil Plc, Shell Petroleum Development Company of Nigeria, Total Petroleum Nigeria Ltd, Chevron Nigeria, Nigerian AGIP Oil Plc, Seplat Petroleum Development Company and Nigeria LNG (NLNG) have their RoA affected by EPC, EIFC and EEFC. The empirical results showed a clear and strongly expressed impact of environmental cost on firms' performance as most of the explanatory variables showed a negative relationship with RoA of selected oil and gas firms in Nigeria. However, one common observation across the classifications of the selected firms is that EIFC and EEFC are found to be the most influencing variables on the RoA of the selected oil and gas firms. The researcher therefore concludes that accountants and other stakeholders should take proactive role in the environmental prevention process so as to minimise costs and enhance corporate performance.

### Recommendations

Based on the findings of this study, the following recommendations were made:

1. Oil and gas firms should urgently attend to

damages caused to host communities so as to increase co-operation and patronage as well as reduce fines and penalties as such could improve RoA of firms.

2. Oil and gas firms should ensure compliance with Environmental laws so as to reduce environmental liabilities, thereby enhancing their performance.

The Management of oil and gas firms should review and enhance environmental internal and external measures as enshrined in their business strategy by engaging the services of environmental experts as well as time to time audits so as to boost corporate performance.

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