Environmental Conservation, Sustainability and Financial Performance of listed Oil and Gas Companies in Nigeria

Oyedokun, Godwin Emmanuel*, and Erinoso, Olusayo Mary

Department of Management and Accounting, Faculty of Management and Social Sciences,
Lead City University, Ibadan, Nigeria
Corresponding Author

Abstract: **Research has shown that many of the Nigerian oil and gas quoted companies frequently pay insufficient attention to the communities in which they operate, which is typically due to the need to continuously improve their profit maximization strategy. This study, therefore, investigated the effect of environmental conservation, sustainability, and financial performance of listed oil and gas companies in Nigeria, spanning from 2011-2020. The study adopted ex-post facto as its research design and the data were gathered from the listed oil and gas companies on the Nigerian Stock Exchange as of 31st December 2020. A sample of 11 listed oil and gas companies was selected out of the 13 listed oil and gas companies on the Nigeria stock exchange. Environmental accounting disclosure was measured by environmental conservation and environmental sustainability and while financial performance was measured by return on asset, return on equity, and profit after tax. Panel data regression was used to analyze the effect of environmental conservation and environmental sustainability on financial performance and the result of the analysis showed that environmental sustainability has a significant effect on the financial performance of listed oil and gas companies in Nigeria with a profitability value of 0.0014 and 0.0440 respectively, which indicates that environmental sustainability is significantly related with the returns on equity and profits after tax and environmental conservation has effects on the financial performance of listed oil and gas companies in Nigeria with probability values that are greater than 5% (prob. Value > 5%), This implies that alternate hypothesis should be accepted while the null hypothesis will be rejected. Therefore, as a result of this finding, the study concluded that oil and gas producing companies should prioritize their environment in order to improve future performance and operational profitability of their operation.**

Keywords: **Environmental accounting disclosure, Environmental conservation, Environmental sustainability, Financial performance, Oil and gas.**

JEL Classification: **G30, M41, Q56**

I. INTRODUCTION

Disclosure of environmental information is of paramount importance to corporate organizations, hosting communities, other stakeholders to the organization, and countries at large. This significance is because of expanded familiarity with the cooperation among firms and the environment where in they work worries about resources exhaustion, resources scarcity, environmental debasement, oil spillages, water contamination, air, and clamor contamination, wellbeing perils, and contamination of the communities. The result of the corporate organizations' activities on the environment has led to the depletion of the ozone layer and thereby causing an imbalance in the environmental system (Adediran & Alade, 2013). These increasing concerns about environmental degradation, resource depletion, and the quest for sustainability of economic activity have improved environmental accounting and reporting an area of significant interest in Nigeria.

According to Beredugo and Mefor (2013) environmental accounting is an inclusive field of accounting and it offers a report for both internal usage by providing environmental information to help management make pricing decisions, overhead controlling and capital budgeting, and external usage by revealing environmental information to the interest of the general public and the financial sector. The development of environmental accounting and reporting, which is a field of major interest to organizations operating in Nigeria and beyond to raise awareness of the interaction between corporations and the environment and its subsequent impact on the environment to ensure accountability and sustainability, was prompted by the growing concern about resource depletion, environmental degradation, resource scarcity, water, air, and noise pollution, oil spillages, health risks, and the search for sustainable economic activity. As awareness regarding environmentally friendly practices rises, corporate entities are confronted with the challenge of presenting information regarding environmental issues in their annual reports (Etale & Otuya, 2018). Numerous global organizations have emerged as a result of the need for sustainability, enunciating various principles that govern how people interact with the environment (Omaliko, Nweze & Nwadialor, 2020).

In Nigeria, there is no specific accounting standard for presenting environmental information to ensure consistency and uniformity in reporting environmental issues, but rather guidelines issued by some organizations, such as the Regulation Enforcement Agency Act of 2007, Environmental Impact Assessment Act 2004, Harmful Waste (Special

Criminal Provision) Act 2004, National-Environmental Standards and Regulations Enforcement Agency (Establishment) Act 2008. These guidelines are advisory rather than mandatory because most companies tend to disclose information voluntarily merely to comply with industry standards and pressure from environmental activists (Okafor, 2018).

In recent years, more studies closely examined the dynamics in organizations' approach and commitment to environmental preservation, especially how oil and gas companies' activities bring about environmental pollution, spillage, and gas emissions amongst others effects of manufacturing activities that deplete environmental performance (Oraka, 2021).

Oil and gas companies in Nigeria have been known to cause numerous environmental issues in the areas where they function, primarily because of their ever-increasing approach to ensuring profit maximization and implementation of various advanced oil exploration methods in their activity. It is dejected that despite the significant benefit accruable to these oil and gas industries quarterly and yearly, most of these petroleum companies continue to believe that any expenses incurred on environmental issues will frequently bring about the additional cost to them for the time being, which may likewise diminish their effectiveness and efficiency in the long term (Nwaiwu & Oluka, 2018). Environmental accounting disclosures decidedly sway the business worth of an association and consequently work on financial performance.

Though environmental policy, pressure group dynamic, and consumer understanding are minimal in developing countries, some companies in these countries are becoming aware of their global market and making significant efforts in terms of environmental practices. Nigeria's sampled sector on environmental accounting disclosure and financial performance has indicated a mixed finding. Ilelaboye and Alade (2022), Nkwoji, (2021), Charles, John, and Umeoduagu (2017) are a few studies that show a negative relationship while studies by Uniamikogbo and Ifeanyichukwu (2021), Ekemezie and Okafor (2020), Oti and Mbu-Ogar (2018), Olasupon and Akinselure (2017) are few studies that show a positive relationship. The dissimilar results necessitate curiosity for further studies. This paper examines the effect of environmental sustainability, conservation, and financial performance of listed oil and gas.

This study, therefore, examined the environmental accounting disclosure and financial performance of listed oil and gas companies in Nigeria with specific objectives listed:

i. Ascertain the effect of environmental sustainability on the financial performance of listed oil and gas companies in Nigeria
ii. Determine the effect of environmental conservation and preservation on the financial performance of listed oil and gas companies in Nigeria

II. REVIEW OF RELATED LITERATURE

Environmental Accounting Disclosure

Environmental Accounting Disclosure (EAD) as of late progressively acquiring noticeable quality in various areas of the planet as organizations, companies, and conglomerates presently try to advance their worth to guarantee long-haul sustainability by focusing on the exposure of environmental issues by an element for the planning of environmental financial statements. Environmental accounting disclosures are the process of communicating to specific interest groups and the public about the social and environmental consequences of an organization's economic decisions through the annual report (Etale & Otuya, 2018). Environmental accounting disclosures are public relations tools that affect how the public views a company's reputation and brand (Uniamikogbo & Ifeanyichukwu, 2021). The elevated spotlight on environmental accounting disclosure (EAD) comes from the requirement for organizations to familiarize stakeholders with their environmental exhibition to upgrade core values and corporate picture as well as make the base for further developed earnings and operations in the long run since businesses affect the environment (Udo, 2018).

Environmental accounting, which is occasionally alluded to as 'green accounting' or environmental management accounting, is an essential component of accounting. Green accounting for the most part utilizes currency or other non-financial units to record information connected with natural resources and the environment (Asiri, Khand & Kend, 2020). According to the ACCA (2015), environmental accounting disclosure is the generation of financial and non-financial information about an organization's environmental impact or footprints for a specific accounting period. Corporate environmental disclosure entails reporting on the impact of an organization's activities on the natural environment. Among them are waste management, recycling, repackaging, energy and resource conservation, carbon management, emission reduction, pollution control, and the preservation of wetlands (Gatimbu & Wabwire, 2016).

According to Levin and Fransen (2017), environmental accounting disclosures (EAD) is into two parts: mandatory and voluntary disclosures. While mandatory environmental accounting disclosures are where companies' sustainability information is disclosed based on the country's legal rules and regulations, voluntary environmental accounting disclosures are the disclosure of companies' environmental information voluntarily without any legal obligation. Companies recognize that it is their corporate obligation to achieve sustainable development by meeting the present necessities without jeopardizing the capacity of future generations to meet their own needs, and informed their choice of environmental accounting disclosures practices to the stakeholders in the environment where they conduct their business activity.

Environmental costs can be arranged into costs that directly sway an organization's bottom line which are alluded to as private costs and costs for people, society, and the environment for which an organization isn't accountable, which are called societal costs. Private costs can additionally be ordered into, conventional costs, potentially hidden costs, contingent costs, and image and relationship costs. This order makes both a choice situated information basis for the environmental management system and the preparation; control and oversight of material and energy flows (Ezeagba, Akamelu & Umeoduagu, 2017).

Conventional Costs: The costs of utilizing utilities, raw materials, capital goods, and supplies are normally tended to in cost accounting and capital budgeting. In any case, the environmental segments of these costs are not typically considered environmental costs. It is critical to factor these costs into business decisions, regardless of whether not viewed as environmental costs.

Potentially Hidden Costs: These are environmental costs that might be possibly stowed away from directors due to their rare nature and the fact that considering their collection in organization overhead records (EPA 742-R-95-003, 1995). Various kinds of environmental costs that might be possibly stowed away from managers are forthright environmental costs, regulatory and voluntary environmental costs, and back-end environmental costs.

Contingent Costs: These are costs that could be caused sooner or later. Examples include the cost of helping and making up for future unintentional arrivals of toxins into the environment, (for example oil slicks). fines and penalties for future administrative infractions. Since these expenses may not as of now be perceived for different purposes, they may not get satisfactory consideration in internal management accounting systems and forward-looking decisions.

Image and Relationship Costs: These expenses are incurred in designed to persuade management's, customers', employees', communities', and regulators' subjective (though measurable) perceptions. This cost also has been regarded as a "corporate image" and "relationship" cost. Costs for yearly environmental reports and local area relations exercises, costs caused willfully for environmental activities (for example, planting trees) and charges for recognition programs can all be included in this category.

Societal Costs or External Costs: These are the costs that a business imposes on the environment and the society for which it is not legally liable. They include destruction of the environment and negative effects on people, their property, and their well-being that cannot be compensated for it through the legal system. Now, valuing societal costs is both difficult and contentious; however, it is critical for any environmentally friendly organization to determine external impacts and, to the greatest extent possible, value societal costs to incorporate them into its making plans and judgment. (Ezeagba, Akamelu & Umeoduagu, 2017).

Environmental Sustainability

According to KPMG (2013), Sustainability is considered the measurement and spread of quantitative and qualitative data financial, social, and environmental execution of the organization in a decent way comparable to the environment and the society of which it is a section. Environmental sustainability is portrayed as an endless excursion, where ceaseless improvement and advancements ought to constantly occur and raise new accomplishments and challenges.

Environmental sustainability is the ability of the environment to continue to function properly indefinitely (Ezeabasili, 2009). It refers to the ability to interact with the environment without depleting its natural resources, which is the foundation of human existence; it is also the ability to preserve over time the three basic functions of the environment; supply of resources, waste disposal, and direct effectiveness. It can also be referred to as the capability of the environment to function properly indefinitely. It is the building block for development. Sustainable development cannot be achieved without environmental sustainability (Pettinger, 2019).

The World Commission on Environment and Development (WCED, 1987) describes environmental sustainability as an advancement that addresses the issues of the current without jeopardizing the future generations' ability to address their needs. Sustainable Development is also been characterized as a method of social and economic betterment that satisfies the needs and values of all interest groups while maintaining future options and conserving natural resources and diversity (IUCN, 1980). Environmental sustainability is the scheme's seventh goal, according to the Millennium Development Goals (MDGs). Most of those universally recognized global environmental problems (for example, greenhouse effect, ozone layer depletion, soil degradation, chemical management, acidified rain, and water contamination) are directly or by implication achieved by man's invention, execution, or decommissioning of the built environment. Environmental sustainability and development are intertwined. Nigeria is struggling with numerous environmental issues that, as a result of neglect, are now endangering the nation's socioeconomic well-being. The survival of humans and other forms of life depends critically on sustaining our environment.

Environmental Conservation

Environmental conservation has emerged as one of the most critical issues to address in the fight against climate change and global warming. Environmental conservation is a practice that prepares people, organizations, and governments to protect the environment and natural resources (Kaine & Womenazu, 2022). Working for environmental conservation has become intrinsically linked in today's world. The following are essential requirements to prevent further environmental degradation: (i) Eliminate pollution in the air, water, and land; (ii) Assist in resource conservation for future generations; (iii) Ensure biodiversity protection and

Implement sustainable development (iv)Restore environmental balance, and (v) Protect our planet from the catastrophic effects of global warming. If environmental conservation does not become a powerful mass movement that can bring about a revolution to save our world from destruction, especially in the age of digital communication, it is naive to expect positive progress (Ifureze, Lyndon, & Bingilar, 2013).

Financial Performance

Financial performance has been defined by numerous scholars in the existing literature. According to Verma (2019), financial performance alludes to the extent to which financial objectives have been implemented. It assesses the monetary outcomes of a company's policies and operations, as well as its overall financial health over time. It can also be used to contrast businesses in the same sector, industry, or combination of sectors.

Kentos (2018) defined financial performance as a subjective measure of how successfully a company can employ assets from its core mode of operation to generate revenues. This term is also used as a general measure of a firm's financial health over a given period and can be used for comparison across industries. Financial performance is used to measure the results of a firm's policies and operations in monetary terms, these results are reflected in the firm's profitability (Okafor, 2018).

Kenedy and Macmilan (2017) opined on financial performance as an estimation of profitability and financial strength of any business concern. Financial performance is also the extent to which financial objectives are being achieved (Yayaya & Lamidi 2015). Financial Performance is the measurement of a company's operating results, policies, and activities. The return on investment, assets, equity, capital employed, and profitability of the company all reflect these results (Solomon, 2020).

From the foregoing, it can be inferred that financial performance is utilized as an indicator of a company's financial health over time and can be estimated in a variety of ways such as profitability, return on investment, liquidity, and market share.

Nigeria's Oil and Gas Industry

Nigeria's oil and gas industries have been thriving ever since the Shell Group discovered crude oil there in 1956. However, until the early 1990s, when Nigerian businesses started to enter the market, the sector was largely controlled by multinational corporations. The implementation of the Nigerian Content Directives issued by the Nigerian National Petroleum Corporation (NNPC) about ten years ago, and ultimately, the effective implementation of the Nigerian Oil and Gas Industry Content Development (NOGIC) Act (The Act) in 2010 both helped to increase local participation. The Act aims to encourage the selection of Nigerian firms and resources for oil-related projects, contracts, and licenses. The industry can be generally divided into two sectors based on structure: upstream and downstream. The upstream sector is distinguished by crude oil and gas exploration and production (petroleum operations).

The Federal Government (FG) receives about 80% of its income from the upstream oil industry, which accounts for over 90% of Nigeria's exports and the majority of its economic output. On the other hand, the downstream sector consists of transmission and conveyance, which involves moving oil and gas to refineries and gas stations. The refinery or plant is connected to the wellhead by a pipeline network. Additionally, tankers and specially designed vessels are employed for this purpose and refining, which entails converting crude oil into products such as diesel, PMS, kerosene, etc. The marketing and distribution of refined petroleum products, as well as other ancillary activities, are also included. Additionally, distribution includes the movement of refined petroleum products from the refineries to the storage/sale depots via pipelines, coastal vessels, trucks, rail cars, etc.

Most companies in the oil and gas sector do not comply with the listing rules' requirements to disclose or report on their environmental footprints, which makes the business environment unstable and unfavorable for businesses to thrive as these companies are seen as being unfriendly to the environment, which hurts their ability to project a positive image and hurts their financial performance.

Theoretical Framework

This study is anchored on stakeholder theory which was propounded by Freeman in the year 1983. According to the study, there has been a rise in environmental consciousness, necessitating the management of stakeholder interests by businesses for them to become more considerate of the environment in which they are located. The main focus of the stakeholder's theory in environmental accounting is to address environmental disclosure components, valuation, and inclusion for external users of the financial statements. The theory demonstrates that the company's sole objective is to fulfill the needs of its shareholders by generating profit. If the environment in which the business operates is neglected, profit might not be possible. The theory also holds that a company's stakeholders include relatively much everyone who is impacted by how the company operates. According to this theory, businesses should consider all stakeholders in the conduct of their operations in addition to their shareholders, including the local community, government, environmental organizations, suppliers, customers, and others without whose support the organization would be unable to function (Omaliko, Nweze &Nwadialor 2020).

This study is focused on the stakeholders' theory, to encourage organization managers to pursue environmental practices that non-financial stakeholders value greatly to maximize stakeholder value while minimizing environmental costs.

Empirical Review

Junaidu and Kabiru (2022) conducted a study on the impact of Environmental Disclosure and the Financial Performance of Listed Non-Financial Companies in Nigeria. From the total population of one hundred thirteen (113) companies, a sample of seventy-six (76) companies classified as non-financial ware was utilized. Data was extracted from audited annual reports and accounts from 2013-2020. Descriptive statistics and multiple regressions were used for the data analysis and the study employed an explanatory research design to determine the impact of environmental disclosure on financial performance. The independent variable which is the Environmental disclosure was measured using an ordinal coding scheme based on GRI guidelines (G4), with a focus on environmental prevention expenditure disclosure, waste disposal cost disclosure, and prevention environmental management cost disclosure as proxies while the dependent variable which is financial performance was measured by using earnings per share and Tobin's Q as proxies. The findings showed that there is a significant positive correlation between environmental prevention expenditure disclosures (EPED), waste disposal cost disclosure (WDCD), prevention and environmental management cost disclosure (PMCD), and earnings per share (EPS), but a negative correlation with TQ of listed Nigerian non-financial companies. The study recommended that the management of Nigeria's listed non-financial companies should raise awareness of the importance of Environmental prevention expenditure disclosures, Waste disposal cost disclosure, and prevention of environmental management cost disclosure.

Ilelaboye and Alade (2022) investigated the impact of environmental accounting on the performance of family-owned companies in Nigeria. The study utilizes community development costs, restoration costs, and health & security costs as proxies for environmental accounting. The ex-post facto research design was employed and the study's population included all twelve (12) family-owned industrial and oil and gas sectors companies listed on the Nigerian Stock Exchange (NSE). Data were gathered from the annual reports of the family-owned companies ranging from 2012 to 2020. The findings revealed that community development costs have a negative and significant impact on financial performance, restoration cost has a negative and insignificant and health safety costs have a positive and insignificant impact on financial performance. The study concluded that only health and safety costs can improve the performance of family-owned companies in Nigeria.

Omesi and Ordu (2022) conducted a study on Environmental Accounting and Tax Revenue of Listed Oil and Gas Companies in Nigeria. The study examined the correlation between environmental accounting and the rise in tax revenue in Nigeria from 2012 to 2018. Data were acquired from annual reports of the listed oil and gas companies on the Nigeria Stock Exchange as well as reports from the Planning, Reporting, and Statistics Department of the Federal Inland Revenue Service (FIRS) for various years. For the data

analysis, regression analysis was utilized. The findings revealed that the firms' environmental accounting initiatives have a significant correlation with the growth of tax revenues in Nigeria, particularly those related to tertiary education tax revenue. The study concluded that the Nigerian stock exchange and other regulatory organizations in Nigeria should adopt and implement mandatory environmental accounting procedures for oil and gas corporations in Nigeria and that the government and regulatory authorities should take sanctions and other enforcement measures to guarantee thorough compliance.

Uniamikogbo and Ifeanyichukwu (2021) investigated the relationship between environmental accounting disclosure and the financial performance of manufacturing firms in Nigeria. The ex-post-facto research design was engaged in this study, using a sample of 40 manufacturing firms. Data were gathered from the content analysis disclosure index and corporate annual reports of the sampled manufacturing firms listed on the Nigerian Stock Exchange for the period 2010-2019 financial years. The findings revealed that environmental accounting disclosures had a significant effect each on Share Price, Return on Asset, and Return on equity of manufacturing firms in Nigeria.

Oraka (2021) investigated the environmental costs and financial performance of oil and gas companies on the Nigeria stock exchange. The article's objective is to determine the impact of environmental remediation costs on Tobin's Q of oil and gas companies listed on the Nigerian Stock Exchange and assess the impact of compliance costs on Tobin's Q. The study utilized an Expo-facto research design and data were obtained from the audited financial statements of eleven (11) oil and gas companies over a twelve (12) year period spanning from 2008-2019. The study findings revealed that Remediation Costs and compliance costs have a significant impact on Tobin's Q of oil and gas companies listed on the Nigeria Stock Exchange. The study recommended that oil and gas companies should be environmentally friendly since environmental remediation costs and financial performance have a positive relationship.

Omaliko, Nweze, and Nwadialor (2020) examined the effect of social and environmental disclosures on the performance of non-financial firms in Nigeria. An ex-post facto research design was employed for the study by utilizing data collected from the Nigeria Stock Exchange (NSE) Factbook and published annual financial reports of the entire 112 non-financial companies listed on the Nigeria Stock Exchange (NSE) with data covering from 2011 to 2018. According to the findings of the study, social and environmental disclosures have a significant positive impact on net asset per share (firm performance) over time. The study opined that companies should have a good mindset toward social and environmentally friendly practices.

Oyedokun, Egberioyinemi, and Tonade (2019) examined the effects of environmental accounting disclosure on the firm value of listed industrial goods companies in Nigeria from

2007 to 2016. This study used an ex-post facto research design, with data collected from individual sample company annual financial statements. Non-financial indicators, financial indicators, and performance indicators were utilized to evaluate the environmental accounting disclosure, while Tobin's Q was utilized to measure the firm value. The result indicates that non-financial indicators have a positive significant effect on firm value, whereas performance indicators have a negative significant effect on firm value, and financial indicators have no significant effect on the firm value of Nigeria's industrial goods companies. The study recommended that sanctions be implemented to encourage disclosures, particularly non-financial indicators because they have a direct impact on the firm value of Nigeria's industrial goods companies.

Polycarp (2019) conducted a study on environmental accounting and financial performance of Nigerian oil and gas companies spanning from 2016-2017. The study made use of secondary data and the data was obtained from the Nigerian Stock Exchange (NSE) (Annual Reports and Accounts of the Oil companies in Nigeria. Based on the availability of annual reports the researcher randomly chose eleven (11) oil companies operating in Nigeria. The performance was measured using return on equity (ROE), earnings per share (EPS), Dividend per share (DPS), and net profit margin (NPM) as proxies while the environmental accounting disclosure cost was used to measure the independent variable. The findings revealed that there is no correlation between environmental disclosure and financial performance.

III. METHODOLOGY

The study adopted the ex-post facto research method. The population of this study consists of all the thirteen (13) listed oil and gas companies on the Nigerian Stock Exchange as of the end of December 2020. The Census sampling technique was used to sample eleven (11) oil and gas companies out of thirteen (13) due to incomplete data of two (2) of the companies and the study span from 2011-2020. The study made use of secondary data from the annual report of the sampled companies and it adopted content analysis as its research instrument and data was analyzed using multiple regression. The study adopted and modified the model of Okpala and Iredele (2018). The models were expressed in functional and econometric forms. The regression model is represented as:

$$finPerf = f(EAD) \text{ -------------- equation (1)}$$

To write it in a more explicit functional equation, it becomes;

$$ROA_i = (sus, cons) \text{ ---------equation (2)}$$
$$ROE_i = (sus, cons) \text{ ----- equation (3)}$$
$$PAT_i = (sus, cons) \text{ ------ equation (4)}$$
$$ROA_i = \beta o + \beta_1 Sus + \beta_2 Cons + \mu \text{ -------- (5)}$$
$$ROE_i = \beta o + \beta_1 Sus + \beta_2 Cons + \mu \text{ -------- (6)}$$
$$PAT_i = \beta o + \beta_1 Sus + \beta_2 Cons + \mu \text{ -------- (7)}$$

Where:

ROA = Returns on Asset (Proxy for Financial performance)
ROE= Returns on Equity (Proxy for Financial performance)
PAT= Profit after Tax (Proxy for Financial performance)
Sus= Environmental sustainability
Cons = Environmental conservation
e= error term
β =Constant

IV. DATA ANALYSIS AND RESULTS

The data for the study comprises environmental accounting disclosure variables (Environmental sustainability and Environmental conservation) and Financial Performance which is measured by (Return on Asset, Return on Equity, and Profit after tax). The analysis carried out includes descriptive statistics, the Augmented Dickey-Fuller (ADF) test, and the regression analysis.

Table 1: Summary of Descriptive Statistics

	ROA	ROE	PAT	Environmental conservation	Environmental sustainability
Mean	0.016063	1.6740	458042	0.000000	0.67894
Median	0.0267	2.5711	145304	0.0000	0.0000
Maximum	1.7626	176.2669	964160	0.0000	50.0000
Minimum	-0.7349	-73.4942	-1.8408	0.0000	0.0000
Std. Dev.	0.2211	21.0771	265329	0.0000	5.1208
Skewness	4.6064	4.6278	-2.1473	NA	9.55360
Kurtosis	43.73880	45.6787	27.5595	NA	92.5198
Jarque-Bera	6905.426	8741.082	2849.071	NA	33166.45
Probability	0.0000	0.000000	0.0000	NA	0.0000
Sum	1.5259	184.1508	5.0408	0.0000	64.5000
Sum Sq. Dev.	4.5952	48422.86	7.6716	0.0000	2464.958
Observations	110	110	110	110	110

Source: Author's Computation from E-views (2022)

Table 1 presents the descriptive statistics of all the variables utilized for the study and from the results obtained it is indicated that all the mean values of all variables used were reported to be positive. This implies that all the variables used have recorded an increasing trend for most periods of the years being studied (that is 2011-2020). The maximum and minimum values indicate the highest points and lowest points of the variables throughout the study period.

The maximum value for Return on Assets (ROA) during the period under study was 1.7626 while the minimum, which is the lowest -0.7349, indicating that the returns on assets were decreasing at some point for some of the firms in the gas sector. The mean for PAT and ROE are 45804 and 1.6740 respectively, with kurtosis values higher than 3, to 27.559 and 45.678. The almost nil values for Environmental conservation indicate that almost all firms in the oil and gas sector do not report on the variable. The standard deviation for the Environmental conservation is 0.0000 which indicated that the variable is not disclosed in the financial statement during the period of the study, environmental sustainability is 5.1208 all the variables have their kurtosis values 20.93157, ROA (43.7388), ROE 45.6787 and PAT 27.5595, Also, the Jarque-Bera probability all variables which have its value to be less than the 5% level of significance (P < 0.05) further reveals a statistically significant deviation of the variable from normality.

The total observation is 110 because it is comprised of the data from 10 listed oil and gas companies in Nigeria over 10 years.

Unit Root Test of Stationarity

Table 2: Panel Unit Root Test Result (ADF)

Variables	ADF Test Statistics Level		ADF Test Statistics 1st Difference		ADF Test Statistics 2nd Difference		Order of Integration
	Statistical value	5% critical Value	Statistical value	5% critical value	Statistical value	5% critical value	
Environmental Conservation	11.356707	0.0986	3.434978	0.0345	N/A	N/A	I(1)
Environmental sustainability	3.80131	0.7035	17.0435	0.0334	N/A	N/A	I(1)

The a priori expectation when using the Augmented Dickey-Fuller (ADF) test is that a variable is stationary when the value of the Augmented Dickey-Fuller (ADF) test statistic is higher than the critical value at 5%. All of the variables utilized met this a priori expectation at first difference. The above empirical ADF test in table 2 shows that all the variables are integrated of order one (1) with intercept and trend and intercept, meaning they are integrated of the same order; I (1), and free of the problems caused by Unit Root.

Regression Analysis

The results of the regression analysis are discussed below:

Table 3: Regression Table between environmental sustainability, conservation, and ROA

Dependent variable: ROA

Variable	Coefficient	Standard Error	T-statistic	Prob.
C	17.06454	2.189673	7.793192	0.0000
Environmental sustainability	-3.173260	0.924995	-3.430570	0.0045*
Environmental Conservation	0.000249	0.002386	3.037535	0.0095*
R-squared	0.8767	Durbin-Watson	2.3965	
Adjusted R²	0.7863	F-statistic	9.4421	
Prob. (F-statistic)	0.00182			

Source: Author's Computation from E-views (2022)

Asterisked prob. Values are significant

Table 4: Regression Table between environmental sustainability, conservation, and ROE

Dependent variable: ROE

Variable	Coefficient	Standard Error	T-statistic	Prob.
C	7.0663	2.1896	3.2272	0.0000
Environmental sustainability	0.0934	0.014715	6.3506	0.0014*
Environmental Conservation	-0.51939	5.314264	-0.09773	0.9229
R-squared	0.7496			
Adjusted R²	0.7268			
F-statistic	11.9822			
Prob. (F-statistic)	0.0182			
Durbin-Watson stat	2.0184			

Source: Author's Computation from E-views (2022)

Asterisked prob. Values are significant

Table 5: Regression Table between Environmental sustainability, conservation, and PAT

Dependent variable: PAT

Variable	Coefficient	Standard Error	T-statistic	Prob.
C	-0.038038	0.043308	2.185608	0.0478
Environmental sustainability	0.0336	0.0147	2.2857	0.0440*
Environmental conservation	0.0037	0.3407	0.0108	0.9287
R-squared	0.8465			
Adjusted R^2	0.8294			
F-statistic	3.0457	Prob. (F-statistic)	0.0272	
Durbin-Watson	2.0711			

Source: Author's Computation from E-views (2022)

Asterisked prob. Values are significant

Hypotheses

Ho₁: Environmental sustainability has no significant effect on the financial performance of listed oil and gas companies in Nigeria

Decision rule: reject Ho₁, if prob. Value < 5%, otherwise accept

Environmental sustainability has a negative relationship with financial performance, and its probability value is less than 5% (prob. Value < 5%) at 0.0045, we hereby reject the null hypothesis and conclude that Environmental sustainability has a significant effect on the financial performance of listed oil and gas companies in Nigeria. It could also be observed in Tables 4 and 5 with probability values of 0.0014 and 0.0440 respectively, which indicates that environmental sustainability is significantly related to the returns on equity and profits after tax, this is largely down to the fact the environmental sustainability hep to sustain the ecological environment

Ho₂: Environmental conservation has no significant effect on the financial performance of listed oil and gas companies in Nigeria

Decision rule: reject Ho₁, if prob. Value < 5%, otherwise accept

Environmental conservation has probability values that are greater than 5% (prob. Value > 5%) in two of three models, which implies that it is not significantly related to the Return on equity (ROE) and Profits After Tax (TAX), but it significantly affects the Returns On Assets (ROA), this is because the deliberate efforts of the firms to preserve its assets and resources has further boosted the returns, which is earned on such assets; hence an improved financial performance of listed oil and gas companies in Nigeria. Conclusively, environmental conservation and preservation do not have a significant effect on the financial performance of oil and gas firms in Nigeria**.**

This findings is consistent with the results of Uniamikogbo and Ifeanyichukwu (2021), Okafor, (2018), and Akino and Iredele (2014).

V. CONCLUSION AND RECOMMENDATIONS

The profitability of Oil and Gas firms in Nigeria largely thrives on their level of environmental disclosures. Therefore this study examined the effect of environmental conservation, environmental sustainability, and Financial Performance of listed Oil and Gas companies in Nigeria. Panel regression analysis was used to determine the effect of environmental sustainability and environmental conservation on financial performance as measured by Return on Asset, Return on equity & profit after tax.

From the findings, the study concludes that environmental conservation has effects on the financial performance of listed oil and gas companies in Nigeria with probability values that are greater than 5% (prob. Value > 5%) in two of three models, which indicates that it is not significantly related to the ROE and PAT, but it significantly affects the Returns on Assets (ROA).

environmental sustainability has a significant effect on the financial performance of listed oil and gas companies in Nigeria with profitability values of 0.0014 and 0.0440 respectively, which indicates that environmental sustainability is significantly related to the returns on equity and profits after tax and environmental conservation has effects on the financial performance of listed oil and gas companies in Nigeria with probability values that are greater than 5% (prob. Value > 5%) in two of three models, which indicates that it is not significantly related to the ROE and Profits After Tax (PAT), but it significantly affects the Returns on Assets (ROA).

Based on the findings discovered from the foregoing data analysis and interpretation, this study, therefore, posits the following recommendations:

1. Oil and gas companies should embrace environmental sustainability principles and impliment the concept into corporate strategy.
2. Stable financial policies guiding environmental conservation should be developed particularly among oil and gas firms in Nigeria.
3. payment of environmental cost should be sustained, as a safe and secure environment enhances the financial performance of oil and gas companies.
4. Environmental sustainability practises should be viewed as a crucial investment for sustainable financial performance.

REFERENCES

[1] Adediran, S.A. & Alade, S.O. (2013). Impact of Environmental Accounting On Corporate Performance in Nigeria. European Journal of Business and Management, 5(25), 1-13.
[2] Association of Chartered Certified Accountants (ACCA, 2015). Environmental accounting and reporting. Retrieved from http://www.accaglobal.com/hk/en/exam-support-resources/.

[3] Beredugo, S. B. & Mefor, I. P. (2012). The impact of environmental accounting and reporting on sustainability development in Nigeria. Research Journal of Finance and Accounting, 3 (7), 55-63.

[4] Ekemezie, N.C. & Okafor, G.O. (2020). Relationship between Environmental Accounting Disclosure and Financial Performance of Manfacturing Firm in Nigeria. International Journal in Management and Social Science, 8(2), 2020, 171-189.

[5] Etale, L.M. & Otuya, S. (2018). Environmental responsibility reporting and financial performance of quoted oil and gas companies in Nigeria. European Journal of Business Innovation, 6(6):23-34.

[6] Ezeagba, C.E., Akamelu, J. & Umeoduagu, C. (2017). Environmental accounting disclosures and financial performance: A study of selected food and beverage companies in Nigeria, International Journal of Academic Research in Business and Social Sciences, 7(9), 162-174.

[7] Gatimbu, K. & Wabwire, J. (2016). Effect of corporate environmental disclosure on financial performance of firms listed at Nairobi securities exchange, Kenya. International Journal of Sustainability Management and Information Technologies,2 (2):1 - 6.

[8] Ifurueze, M., Lyndon, M., & Bingilar, M. (2013). Impact of environmental cost on corporate profitability of oil companies in Niger Delta States of Nigeria. Journal of Business and Financial Management, 6(1), 40-58.

[9] Ilelaboye, C.S. & Alade, M.E. (2022). Environmental Accounting and Financial Performance of Listed Family-Owned Companies in Nigeria, International Review of Business and Economics, 6(1), 71-82.

[10] Junaidu, M.K. & Kabiru, S. (2022), Environmental Disclosure and Financial Performance of Listed Non-Financial Companies in Nigeria, European Journal of Accounting, Auditing and Finance Research, 10(2), 31-51.

[11] Kaine, H. & Womenazu, H.S. (2022). Environmental Degradation Cost and Financial Performance of oil and gas Companies in Nigeria. Sustainability Accounting, Management and Policy Journal, 9(2), 112-122.

[12] Kenedy, F.J, & Macmilan I.T. (2018) Financial Performance definition. Retrieved from https://www.investopedia.com/terms/f/financial-statements.

[13] KPMG (2013), Advisory under the spotlight: Corporate Governance and Sustainability. Retrieved from https://assets.kpmg/content/dam/kpmg/2013/12/corporate-responsibility-reporting-survey%20%20%202013

[14] Levin, K. & Fransen, T. (2017). Understanding the "emissions gap" in 5 charts. Working Paper. World Resources Institute Indonesia.

[15] Nkwoji, N. (2021). Environmental accounting and profitability of selected quoted oil and gas companies in Nigeria (2012-2017). Journal of Accounting and Financial Management, 7(3), 22-39.

[16] Nwaiwu, N.J. & Oluka, N. O. (2018). Environmental Cost Disclosure and Financial Performance of Oil and Gas In Nigeria. International Journal of Advanced Academic Research | Financial Management, 4 (2).

[17] Okafor, T.G. (2018). Environmental Costs Accounting and Reporting on Firm Financial Performance: A survey of Quoted Nigerian Oil Companies. International Journal of Finance and Accounting, 7(1), 1-6.

[18] Okpala, O.P. & Iredele, O.O. (2018), Corporate Social and Environmental Disclosures and Market Value of Listed Firms in Nigeria, Copernican Journal of Finance & Accounting, 7(3), 9–28.

[19] Olasupo, F.S. & Akinselure, O.P. (2017). Impact of environment accounting on financial performance of selected quoted companies. International Research Journal of Management and Commerce, 4(11), 2017, 337-348.

[20] Omaliko, E., Nweze, A., & Nwadialor, E. (2020). Effect of social and environmental disclosures on performance of non-financial firms in Nigeria, Journal of Accounting and Management. 2(2), 23-30.

[21] Omesi, I. & Ordu, P.A. (2022). Environmental Accounting and Tax Revenue of Listed Oil and Gas Companies in Nigeria. Innovative Journal of Marketing, Management and Accounting Research, 8(1), 132-146.

[22] Oraka, A. O. (2021). Environmental Cost and Financial Performance of Oil and Gas Companies in Nigeria. Research Journal of Management Practices, 1(5), 1-18.

[23] Oyedokun, G.E., Egberioyinemi, E. & Tonade, M. A.(2019). Environmental Accounting Disclosure and Firm Value of Industrial Goods Companies in Nigeria. Journal of Economics and Finance, 10(1),7-21.

[24] Polycarp, S. U. (2019), Environmental accounting and financial performance of oil and gas companies in Nigeria, Research Journal of Finance and Accounting, 10(10),192-202.

[25] Solomon, P.J. (2020). Environmental Disclosure and Financial Performance of Listed Oil and Gas Companies in Nigeria: A Review on Literature, Journal of Business and management, 22(9), 58-66.

[26] Pettinger, T. (2019), Environmental Sustainability – Definition and issues, Retrieved from: https://www.economicshelp.org/blog/143879/economics/environmental-sustainability-definition-and-issues/

[27] Uniamikogbo, E. & Ifeanyichukwu, A. (2021). Environmental accounting disclosure and financial performance of manufacturing firms in Nigeria. Journal of Economics and International Business Management, 9(2), 71-81.

[28] Verma, E. Financial Performance Definition, Retrieved from https://www.investopedia.com/terms/f/financialperformance.asp

[29] Yahaya, O.A., & Lamidi, Y. (2015).Empirical Examination of the Financial Performance of Islamic Bank in Nigeria. International Journal of Accounting Research, 2(7), 1-13.