



Environmental Disclosure: A Study of Financial Performance of Listed Oil and Gas Companies in Nigeria

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ABSTRACT

This study ascertained the effect of environmental disclosure on the financial performance of listed Oil and Gas companies in Nigeria for a period of eleven (11) years spanning from 2011 to 2021. Specifically, this study determined the effect of employee health and safety disclosure, waste management disclosure, and environmental protection disclosure on cash value added. This study employed Panel data which were extracted from audited annual reports and accounts of eleven (11) listed Oil and Gas companies for the periods 2011-2021. *Ex-Post Facto* research design was employed. Descriptive statistics was used to analyze the data and inferential statistics was employed using Pearson correlation coefficient and Panel least square regression analysis to test the hypotheses of the study. The results showed that there is a significant and positive relationship between employee health and safety disclosure, waste management disclosure, environmental protection disclosure and cash value added. The study recommended that in an attempt to sustain the positive relationship between waste management disclosure, firm should endeavour to identify wastes, evaluate waste and manage wastes in order to provide economic benefits for the community and the ability to lower production costs which can translate to bigger savings as well as profits in the long run.

Key words: Employee health and safety disclosure, Waste management disclosure, Environmental protection disclosure and Cash value added

INTRODUCTION

The activities of Oil and Gas industry, in pursuit of their wealth maximization motive, are directly or indirectly affecting the green environment where they operate. The severity of environmental problems has its adverse effects on their employee welfare and other stakeholders' quality of life. Environmental disclosure in the oil and gas sector has become one of the foremost issues on the agenda of nations and business since early 1990s (Okoye & Ngwakwe, 2013). Many government enactments, laws and regulations on environmental protection have been made in several nations of the world. Chairina and Bambang (2023) reported that the United States of America, Canada, Norway, the United Kingdom and the Netherlands have led in the pursuit of degradation and pollution prevention, control and the need for environmental safety. Besides, some of the developing countries like Nigeria, Zimbabwe, Namibia, Philippines and Indonesia have led in championing policies to address need for accounting and accountability for environmental costs management. Various laws and regulations are awakening to strengthen environmental protection such as the Environmental Impact Assessment Act, 1992 and the Department of Petroleum Resources (DPR), environmental guidelines and standards for the petroleum industry in Nigeria.

Environmental disclosure has been expanded to account for product design for sustainability, recycling and disassembly; process design to reduce environmental impact of operations; worker training; research and development. It provides a common framework for organizations to identify and account for their past, present and future environmental cost to support management decision making, control and public disclosure (Moodaley & Telukdarie, 2023). Therefore, host communities, government authority, investors, and other stakeholders should give an utmost importance to the social and environmental management provided by firms. Bhaskaran (2023) describe environmental disclosure as the reporting of the actions undertaken by the economic entity and by third parties on behalf of an economic entity with the purpose of preventing, reducing or repairing the environmental damages resulted from operational activities. Some of the disclosure reporting include: environmental maintenance disclosure, environmental treatment disclosure, environmental pollution compensation disclosure, environmental development disclosure, waste storage and disposal, soil protection, underground and surface water protection, clean air and climate protection, noise reduction, biodiversity and landscape protection.

Financial performance is a general measure of how a firm uses its resources to generate profits and can be measured using accounting measures of profitability and liquidity. In a broader sense, financial performance refers to a degree to which financial objectives are met; it is process of measuring the result of a firm's policies and operations in financial terms (Kenton, 2022).

Evidently, there are significant losses of the aesthetic values of natural beaches due to unsightly oil spills; damage to marine wildlife, modification of the ecosystem through species elimination and the delay in biota succession, and decrease in sea lives (Fauna & Flora International, 2005). It is against

this background that a number of companies and other organizations are solidifying their environmental approaches and developing business activities that take the environment into consideration as environmental conservation efforts continues to increase. Organizations have ranked business considerations based on profitability. Companies have also recognized all indirect expenditures as overheads without paying attention to the environment. Conventional accounting practice has not recognized environmental accounting for materials, water, energy and other natural resource usage. Similarly, conventional accounting has no provision for such practice. Scholars reveal that little is recognized of the environmental depletion and degradation to the environment. While others opines that it is not ethical having great corporate profits and material well-being if they come at the cost of large scale of the ecosystem by which we are nourished. It becomes clear that degradation, pollution and accelerated destruction of the ecosystem and the depletion of non-renewable environment biodiversity would soon become very dangerous to human existence (Yahaya, 2018). This is particularly critical for the oil and gas sector which impact heavily on the environment in Nigeria. For emphasis, the Nigerian business environment is yet to recognize environmental cost management for environmental information and issues of raw materials, energy consumption and use of natural resources which have systematically depleted the environment. This is expected to facilitate effective and efficient costs management, measurement and reporting for corporate decision making.

Few studies have argued in support of a positive association between environmental disclosure and financial performance (Zarefar, Agustia & Soewarno, 2022; Nnamani, Onyekwelu & Ugwu, 2017; however, there are still arguments to the contrary that environmental accounting negatively affects the level of profitability (Ghardallou, 2022; Dibia & Onwuchekwa, 2015). The lack of consensus in their findings has led to inconclusive results. In order to fill the gap in literature, this study employed a contemporary financial performance measure using cash value added as against prior studies that used traditional measures such as return on assets, return on equity and so on. Specifically, the study intends to:

1. Ascertain the effect of employee health and safety disclosure on cash value added of listed oil and gas companies in Nigeria.
2. Determine the effect of waste management disclosure on cash value added of listed oil and gas companies in Nigeria.
3. Investigate the effect of environmental protection disclosure on cash value added of listed oil and gas companies in Nigeria.

Research Hypotheses

The following null hypotheses were tested:

H₀₁: Employee health and safety disclosure has no significant effect on cash value added of oil and gas companies in Nigeria.

H₀₂: Waste management disclosure has no significant effect on cash value added of oil and gas companies in Nigeria.

H₀₃: Environmental protection disclosure has no significant effect on cash value added of oil and gas companies in Nigeria.

Significance of the Study

Environmental accounting enhances the quality of decision-making, requiring organizations (Oil and Gas Companies) to establish a baseline (standard) of its greenhouse Oil and Gas emissions, energy usage, resource usage and set reductions targets.

It also helps the realization of the importance of changing unsustainable consumption and production patterns alongside protecting and managing Nigerian natural resources and resource intensity through environmental performance reporting occasioned by the ratio between an environmental variable and a financial variable that measures the environmental performance of an enterprise with respect to its financial performance.

The study is beneficial to host communities who increasingly require companies to manufacture goods efficiently eliminating negative influence to the environment; the aim is to enhance sustainable development by reducing the negative environmental effect while increasing the value of an enterprise, satisfying human needs and thereby contributing to the quality of life.

The importance of this study is beneficial to the researchers who are in Nigeria and elsewhere and as well as researchers for further development and improvement in the subject matter.

Scope of the Study

The study focused on environmental disclosure and financial performance of listed Oil and Gas companies in Nigeria. Cash value added was used a measure of the dependent variable; financial Performance. Similarly, employee health and safety disclosure, waste management disclosure and environmental protection disclosure were the proxies used to measure the independent variable; environmental disclosure. The scope of this study covered eleven (11) listed oil and gas firms for the period of eleven (11) years spanning from 2011 to 2021. The basis for selecting the base year of 2011 was informed due to the price of crude oil that increased from 30.4 dollars per barrel in 2000 to 94.9 in 2011 over the same period Nigeria's population that increased from about 123 million to 158 million. By 2011, the fuel subsidy accounted for 30 percent of the Nigerian government's expenditure and it was about 4 percent of GDP and 118 percent of the capital budget.

REVIEW OF LITERATURE

Environmental Disclosure

Disclosure is the process of making facts or information known to the public. Proper disclosure by corporations is the act of making its customers, investors, and any people involved in doing business with the company aware of pertinent information (Potters, 2021). Disclosures are at the center of the public's crisis of confidence when it comes to the corporate world (Wayman, 2021). Environmental disclosure is a form of corporate responsibility to the society as a result of activities which emerging a negative impact on the environment. Meanwhile, environmental disclosure is as the accountability of fulfilling the information needs of the company for investors, shareholders, customers, and other parties (Solikhah & Ukhti, 2022). Mandatory Environmental Disclosure is disclosure about a company's environmental activities that is required by law while voluntary environmental reporting involves the disclosure of a company's environmental information on a voluntary basis.

Environmental disclosure can typically be thought of as comprising information relating to a corporation's activities, aspirations and public image with regard to environmental, community, employee and consumer issues (Al-Jubouri & Chakroun, 2022). Sustainability disclosure is the practice of measuring, reporting, and being accountable to internal and external stakeholders for organizational performance towards the goal of sustainable development' (Shalhoob & Hussainey, 2023). Studying the environmental disclosures of industrial companies can reveal how they use annual reports to manage stakeholder perceptions (Alharbi, 2022).

Employee Health and Safety Disclosure

Employee health and safety is generally defined as a multidimensional construct concerned with the anticipation, recognition, evaluation and control of hazards arising in or from the workplace that could impair the health and well-being of workers, taking also into account possible impacts on the surrounding communities and the environment (Jo & Kwon, 2021). It is a continuously evolving field shaped by socioeconomic, political and technological changes: competitive industry pressures, globalization and liberalization of world trade, demographic fluctuations and population movements, disruptive (technological) innovations, developments in transport and communication, regulatory changes, shifting employment patterns, transitions in the size as well as the structure and life cycle of enterprises (Bamahros, Alquhaif, Qasem, Wan-Hussin, Thomran, Al-Duais, Shukeri & Khojally, 2022). Reporting on employee health and safety issues reflects a critical point of corporate sustainability disclosure against a turbulent environment that generates new forms of employment hazards, exposures, risks and opportunities (Westman, McKenzie & Burch, 2020). Employee health and safety accounting and reporting pertains to the collection, processing and disclosure of related information with the aim of facilitating organizational leadership, managerial effectiveness and empowering stakeholder decision-making (Hu & Kee, 2022).

Waste Management Disclosure

Waste management is the collection, transport, treatment and disposal of waste, (b) control, monitoring and regulation of the production, collection, transport, treatment and disposal of waste, and. (c) prevention of waste production through in - process modifications, reuse and recycling (Hu & Kee, 2022). *Waste management* involves the processes of *waste collection*, transportation, processing, as well as waste recycling or disposal (Liu & Zhang, 2017).

Waste management or waste disposal includes the processes and actions required to manage waste from its inception to its final disposal. This includes the collection, transport, treatment and disposal of waste, together with monitoring and regulation of the waste management process and waste-related laws, technologies, economic mechanisms (Xie, Nozawa, Yagi, Fujii & Managi, 2019).

Waste management is intended to reduce adverse effects of waste on human health, the environment, planetary resources and aesthetics. The aim of waste management is to reduce the dangerous effects of such waste on the environment and human health. A big part of waste management deals with municipal solid waste, which is created by industrial, commercial, and household activity. Waste management is an important element of environmental protection. Its purpose is to provide hygienic, efficient and economic solid waste storage, collection, transportation and treatment or disposal of waste without polluting the atmosphere, soil or water system (Molla, Hasan, Miraz, Azim, & Hossain, 2021; Liu, He & Ren, 2021).

Environmental Protection Disclosure

Environmental protection refers to any activity to maintain or restore the quality of environmental media through preventing the emission of pollutants or reducing the presence of polluting substances in environmental media (Yuan & Pan, 2022). Environmental protection is the practice of protecting the natural environment by individuals, organizations and governments. Its objectives are to conserve natural resources and the existing natural environment and, where possible, to repair damage and reverse trends. Environmental protection focuses on solving problems arising from the interaction between humans and environmental systems and includes issues related to conservation, pollution, loss of biodiversity, land degradation or environmental policy (Hategan, Pitorac & Milu, 2021). The key aim of environmental protection is to prevent the degradation of the natural environment which is affected by increasing population, technology and overconsumption, all of which have created a negative impact on the environment and continue to put humans and animals at risk. Another element of environmental protection is resource management – the way humans interact with the natural world in order to protect and preserve natural ecosystems. This may involve considering ethical, economic and ecological variables in order to limit environmental degradation (Belenes, Bogdan & Popa, 2021).

Environmental Protection includes programs that are aimed at reducing risks to the environment from contaminants such as hazardous materials and wastes, fuels, and oils. These programs address pollution prevention measures and regulatory compliance by providing procedures for safely working with these materials, inspecting the storage vessels and locations, and designating preventative maintenance procedures. Also included are environmental emergency plans, which provide the appropriate actions to be taken in the event of a spill or release. Environmental conservation enables nature to get on with the job of keeping humans and the planet healthy (Tunio, Jamali & Mirani, 2021; Oncioiu, Petrescu, Bilcan, Petrescu, Popescu & Anghel, 2020).

Financial Performance

Kenton (2018) defined financial performance as a subjective measure of how well a firm can use asset from its primary mode of business and generate revenue. This term is also used as a general measure of firm's financial health over a period of time and can be used for comparison across industries. Kennedy and Macmillan (2017) viewed financial performance as an evaluation of profitability and financial strength of any business concern. Financial performance is measuring the result of a firm policies and operation in monetary terms, these result are reflected in the firm's return on investment, asset among others (Okafor, 2018).

Cash Value Added

Cash value added (CVA) is a measure of a company's ability to generate cash flow above and beyond the required return to its investors. A high CVA indicates a company's ability to produce liquid profits from one financial period to another (Bloomenthal, 2022). Cash value added is a measure of company performance that looks at how much money a company generates through its operations. Generally, a high cash value added figure is beneficial for both companies and investors, as it demonstrates a company's ability to generate cash from one financial period to another, creating solid liquid profits (Kvilhaug, 2022). Cash Value Added (CVA) helps to measure the amount of cash a company generates through its operations. CVA gives investors an idea of the company's ability to generate cash from one financial period to another. A value of more than 1.0 indicates that a company is profitable, while a value below 1.0 suggests it is failing to return a profit (Chen, 2022).

$CVA = \text{Operational Cash Flow} - \text{Depreciation} - \text{Capital Charge}$

Empirical Review

Osazefua (2019) investigated the impact of operational efficiency on the financial sustainability of listed manufacturing companies in Nigeria. A secondary panel dataset ranging from 2009 to 2016 for 16 listed manufacturing companies was obtained from the Bloomberg portal and analyzed using Ordinary Least Square method. The finding revealed that in relation to ROA, operating expenses and asset turnover had negative and positive significant relationship respectively. Employees' growth, account receivables, turnover, and inventory turnover was found to be insignificant. In relation to Tobin's Q, both inventory and asset turnover had a positive significant relationship. Operating expense had a negative significant relationship. Nwaiwu and Oluka (2018) examined the effect of environmental cost and financial performance measures of quoted oil and gas companies in Nigeria. *Ex post facto* research design was used for the study. The study covered 2011 to 2015. Environmental cost was proxies with waste management cost, environmental taxes and fines, laws and regulations, abatement cost. The data collected was analyzed using Pearson product moment correlation coefficient and multiple regression analysis with the aid of special package for social sciences version 24.0. The study shows significant positive relationship between environmental cost disclosure and financial performance measures of oil companies in Nigeria. Falope, Offor and Ofurum (2019) examined Environmental Cost Disclosure and Corporate Performance of Quoted Construction Firms in Nigeria *Ex-post facto* ROA Environmental pollution control cost Environmental protection cost Environmental cost resource recycling. 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. met. Ikpor, IEnuma, and Okezie, (2019) studied Environmental Accounting and Sustainable Financial Performance: Evidence from the Nigerian Petroleum Industry *Ex-post facto* Profitability EOPEX EOPEX EXAPEX The finding suggested that environmental operating costs and environmental prevention costs have significant and negative effect on the performance of petroleum firms in Nigeria. However, we found important differences in the correlates of firm's capital expenditure on sustainable financial performance. The findings of this study therefore have important implications for policy. Okafor (2018) assessed the Environmental Costs Accounting and Reporting on Firm Financial Performance: A Survey of Quoted Nigerian Oil Companies Regression ROA Cost of environmental remediation and pollution control Cost of environmental laws compliance and penalty Donations and charitable contributions The findings indicate that better environmental performance positively impact business value of an organization. Moreover, environmental accounting provides the organization an opportunity to reduce environmental and social costs and improve their performance. Akparhuere (2019) examined the effectiveness of environment reporting in annual reports using a comparative analysis of reporting practices of listed firms in Nigeria. A total of 84 respondents were drawn from the population. Both primary and secondary data were used in the study. Primary Data were collected using questionnaires drawn using the Likert's Scale with five points ranging from very great extent to no extent, while secondary data were sourced from already published materials. Hypotheses were formulated and data were analyzed using SPSS Software and other Descriptive statistical tools such as; percentages and tables. The result of the study showed that accounting practices had a significant relationship with performance of Oil and Gas Companies, particularly, the Return on Assets and Return on Capital Employed. Obara, Ohaka and Nangih (2017) used

simple regression analysis technique to examine the effect of accounting for waste management expenditure on the profitability of oil and gas companies in Nigeria. The finding showed that waste management has high positive and significant influence on the Return on Assets, Return on Equity and Operating Profit Level of the oil and gas companies in Nigeria. Alawiye-Adams and Akomolafe (2017) examined the inadequacies of corporate environmental disclosures both in quantity and quality amongst manufacturing firms in Nigeria Using regression analysis, for a period of six years (2010 to 2015). The finding revealed that corporate environmental disclosure was still at its lowest ebb amongst manufacturing firms in Nigeria and there would be a need for sensitization, regulatory compulsion or government intervention for companies to participate in corporate environmental disclosure. Okegbe and Ofurum (2019) empirically examined the effect of environmental management accounting and financial performance of Nigerian consumer goods firms. The study employed ordinary least square regression estimation technique and found that environmental restoration cost, pollution prevention cost and environmental protection cost have effect on return on assets of quoted Nigerian consumer goods firms. Ndubuisi-Okolo, Anekwe and Attah (2016) employed Pearson Product Moment Correlation (PPMC) coefficient and one-sample Kolmogorov-Smirnov (K-S) test to investigate waste management and sustainable development in Nigeria with particular reference to Anambra State Waste Management Agency (ASWAMA). The finding revealed that waste management practice has a significant relationship with environmental sustainability in Anambra State.

METHODOLOGY

Design

The research design adopted for this study is ex - post facto research design to examine the effect of environmental disclosure on the performance of oil and gas companies in Nigeria. Okoye and Adeniyi (2018) described ex - post facto design as a means of extracting data that is historical.

Population of the Study

The population of this study consisted of all the twelve (12) oil and gas companies listed on the Nigerian Exchange (NGX) Group as at 31st December, 2021. They include: 11 Plc (formerly Mobil Oil Plc); Anino International Plc; Capital Oil Plc; Conoil Plc; Eterna Plc; Ardova Plc (formerly Forte Oil Plc); Japaul Oil & Maritime Services; MRS Oil Nigeria Plc; Oando Plc; Rak Unity Petroleum Company Plc; Seplat Petroleum Development Company Plc; Total Nigeria Plc.

Sample size and Sampling Technique

Purposive sampling technique was used to select eleven (11) Oil and Gas firms based on the availability of the sampled firm's financial statement filed with the Nigerian Exchange (NGX) Group for the period of eleven (11) years spanning from 2011 to 2021. The firms are: 11 Plc (formerly Mobil Oil Plc); Anino International Plc; Capital Oil Plc; Conoil Plc; Eterna Plc; Japaul Oil & Maritime Services; MRS Oil Nigeria Plc; Oando Plc; Rak Unity Petroleum Company Plc; Seplat Petroleum Development Company Plc; Total Nigeria Plc.

Nature and Sources of Data

The secondary data used in this study were sourced from annual financial account and reports of sample firm's corporate websites and the Nigerian Exchange Group Fact books. The data collected were on annual basis from 2011-2021.

Model Specification

The model used for this study is presented as follows:

This study adapts the model of Okere (2017) who examined the effect of the environmental investment on the financial performance of listed manufacturing companies in Nigeria.

$$\text{FinP} = f(\text{Environmental Disclosure}) \dots\dots\dots (i)$$

$$\text{FinP} = f(\text{EHSD, WMD, EPD, ECD, CDD}) \dots\dots\dots (ii)$$

$$\text{CVA}_{it} = \beta_0_{it} + \beta_1 \text{EHSD}_{it} + e_{it} \dots\dots\dots (iii) \quad \text{CVA}_{it} = \beta_0_{it} + \beta_2 \text{WMD}_{it} +$$

$$e_{it} \dots\dots\dots (iv)$$

$$\text{CVA}_{it} = \beta_0_{it} + \beta_3 \text{EPD}_{it} + e_{it} \dots\dots\dots (v)$$

Explicitly, the regression model is:

$$\text{CVA}_{it} = \beta_0_{it} + \beta_1 \text{EHSD}_{it} + \beta_2 \text{WMD}_{it} + \beta_3 \text{EPD}_{it} + e_{it} \dots\dots\dots (viii)$$

Where:

β_0 is the intercept of the regression.

$\beta_1 - \beta_3$ are the coefficients of the regression

CVA_{it} = Cash Value Added of firm i in period t

EHSD_{it} = Employee Health and Safety Disclosure of firm i in period t

WMD_{it} = Waste Management Disclosure of firm i in period t

EPD_{it} = Environmental Protection Disclosure of firm i in period t

i = individual firms (1,2,3...11)

t = time periods (2011, 2009 ... 2021)

e_{it} = Error term

Method of Data Analysis

Descriptive statistics was utilized to describe the mean, median, standard deviation, kurtosis, skewness, maximum and minimum values of the study variables via E-Views 10 statistical software. Inferential statistics of this study was carried out using:

Panel Least Square (PLS) regression analysis was used to predict the value of the dependent variable based on the value of the independent variables.

Content analysis was applied in this study. Content analysis is a research tool used to determine the presence of certain words, themes, or concepts within some given qualitative data. Using content analysis, researchers can quantify and analyze the presence, meanings, and relationships of such certain words, themes, or concepts. This study adopted the Global Reporting Initiative (GRI) framework disclosures according to the G4 guidelines for the purpose of developing the Environmental disclosure indices. Environmental Reporting was evaluated by 21 indicators.

For each of these sustainability reports, all the 21 indicators were scored as follows:

- a score of 0 for an item not referred to in a report;
- a score of 1 when the report only briefly mentioned something pertinent to the item or provided only qualitative statements;
- a score of 2 when the report provided detailed information with some numerical support; and rarely;
- a score of 3 was given when a report provided extensive numerical support with data on goals achieved or fully accomplished.

So, a total score for environmental disclosure could reach the maximum score of 63 (that is, = $21 \times 3 = 63$).

Therefore,

$$EDI = TDP/MP$$

Where;

EDI = Environmental Disclosure Index

TDP = Total Disclosure Points of a Firm

MP = Maximum Points for a Firm

Decision Rule

Accept the alternative hypothesis, if the P-value of the test is less than 0.05. Otherwise reject.

DATA ANALYSIS

Table 1 Descriptive Statistics

	CVA	EHSD	WMD	EPD
Mean	0.2336	0.1355	0.0418	0.0455
Median	0.1600	0.1100	0.0400	0.0500
Maximum	0.4400	0.2300	0.0800	0.0700
Minimum	0.1200	0.0600	0.0200	0.0100
Std. Dev.	0.1218	0.0611	0.0183	0.0197
Skewness	0.6965	0.5919	0.6390	-0.4012
Kurtosis	1.9060	1.9262	2.6832	2.1087
Jarque-Bera	1.4380	1.1708	0.7946	0.6593
Probability	0.4873	0.5569	0.6721	0.7192
Sum	2.5700	1.4900	0.4600	0.5000
Sum Sq. Dev.	0.1483	0.0373	0.0034	0.0039
Observations	121	121	121	121

Source: E-Views 10.0 Descriptive output, 2022

Interpretation

Based on table 1, it can be observed that on the average, as indicated by the mean, the cash value added for the sample oil and gas firms is 23.36% with a maximum CVA of about 44%, minimum CVA of 12% and a standard deviation of 0.1218. EHSD has an of 0.1355. The implication is that on the

average, the sample oil and gas firm's involvement in employee health and safety disclosure is about 13.55%. However, throughout the period of 2011 to 2021, the maximum level of employee health and safety disclosure is 23% while the minimum degree of employee health and safety disclosure stood at 6%, with a standard deviation of 0.0611. Waste management disclosure has a mean of 0.0418 (4.18%) with a standard deviation of 0.0183. The maximum level for waste management disclosure is 8% with a minimum disclosure level of 2%. On the average, EPD remains at 0.0455 (4.55%), a maximum environmental protection disclosure at 7% minimum firm environmental protection disclosure of 1% and standard deviation of 0.0197.

Test of Hypotheses

H₀₁: Employee health and safety disclosure has no significant effect on cash value added of listed oil and gas companies in Nigeria.

H₀₂: Waste management disclosure has no significant effect on cash value added of listed oil and gas companies in Nigeria.

H₀₃: Environmental protection disclosure has no significant effect on cash value added of listed oil and gas companies in Nigeria.

Table 2: Panel Least Square Regression analysis testing the effect of EHSD, WMD, EPD, ECD, CDD on CVA

Dependent Variable: CVA

Method: Panel Least Squares

Date: 01/21/23 Time: 17:30

Sample: 2011 2021

Periods included: 11

Cross-sections included: 11

Total panel (balanced) observations: 121

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.191159	0.083238	2.296539	0.0235
EHSD	0.819226	0.325296	2.518406	0.0132
WMD	0.333520	0.147749	2.257344	0.0259
EPD	0.118142	0.014792	7.986709	0.0000
R-squared	0.639939	Mean dependent var		0.233946
Adjusted R-squared	0.606893	S.D. dependent var		0.116569
S.E. of regression	0.103812	Akaike info criterion		-1.644152
Sum squared resid	1.239351	Schwarz criterion		-1.505518
Log likelihood	105.4712	Hannan-Quinn criter.		-1.587848
F-statistic	73.99388	Durbin-Watson stat		1.840364
Prob(F-statistic)	0.000000			

Source: E-Views 10 Regression Output, 2023

Interpretation of Regression Output

Table 2 shows the analysis of the coefficient regression result on the effect of environmental disclosure measure on financial performance index. The result of the model is written as:

$$CVA_{it} = 0.191159 + 0.819226EHSD_{it} + 0.333520WMD_{it} + 0.118142EPD_{it} + \mu_{it}$$

The model infers that one naira increase in EHSD, WMD, and EPD will exert 81.92%, 33.35%, 11.81%, 16.08% and 0.069% increase on CVA of listed oil and gas firms in Nigeria respectively. Furthermore, the regression result shows that EHSD ($\beta_1=0.819226$); WMD ($\beta_2=0.333520$) and EPD ($\beta_3=0.118142$) have a positive relationship towards CVA. The slope coefficients reveal that; $P(x_1=0.0132<0.05$; $x_2=0.0259<0.05$; $x_3=0.0000<0.05$). The model demonstrates that at 95% confidence level, there is a significant positive relationship between EHSD, WMD and EPD. The adjusted R-Squared has value of 0.606893 showing that 60.69% of the systematic variation in CVA could be explained by EHSD, WMD and EPD while the remaining 39.31% is explained by the error term as part of the CVA which is not interpreted by the regression model.

Decision

Following the F-statistics of 73.99388 with an associated P-value of 0.000000 ($p<0.05$) which is less than 5%. Therefore, hypothesis H₁ is accepted while H₀ is rejected. Hence, EHSD, WMD and EPD have a significant positive effect on Cash Value Added of listed Oil and Gas firms in Nigeria at 5% level of significance respectively.

CONCLUSION AND RECOMMENDATIONS

This study ascertained the effect of environmental disclosure on the financial performance of listed Oil and Gas companies in Nigeria for a period of eleven (11) years spanning from 2011 to 2021. Panel data were obtained from annual reports and accounts of the sampled oil and gas firms for the

study period, using a sample of eleven (11) listed oil and gas firms. Regression analysis was employed via E-Views 10.0. The results of the tested hypotheses revealed that there is a significant and positive relationship between employee health and safety disclosure, waste management disclosure, environmental protection disclosure and cash value added. In conclusion, the study posits that environmental disclosure has a significant and positive effect on financial performance of listed Oil and Gas companies in Nigeria at 5% level of significance.

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

- i. For increased improved health and wellbeing, greater productivity, higher performance and increased job satisfaction, firms should continue to invest in employee health and safety disclosure.
- ii. In an attempt to sustain the positive relationship between waste management disclosure, firm should endeavour to identify wastes, evaluate waste and manage wastes in order to provide economic benefits for the community and the ability to lower production costs which can translate to bigger savings as well as profits in the long run.
- iii. Firms should imbibe the culture of environmental management which will help to identify the factors that may lead to environmental degradation and help in future predictions that might affect the present and future generations' lives, because environmental protection is one of the basic prerequisites for the overall development of a company.

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