

EVALUATING CORPORATE ENVIRONMENTAL DISCLOSURES AND PERFORMANCE OF QUOTED NON-FINANCIAL FIRMS IN NIGERIA

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Abstract

With growing awareness that some company's activities are not only devastating natural environment but might prevent future generation from meeting their own need, there has been considerable advances in disclosing environmental issues in annual reports. This paper adopted ex post facto research design to examine whether such cumulative and specific environmental sustainability disclosures affect performance of firms in Nigeria. Data were extracted through content analysis from annual report of 93 selected non-financial firms listed on the Nigerian Stock Exchange from 2006 to 2015. Data were analysed with pooled ordinary least square regression conducting diagnostic tests to confirm the assumptions of the regression. Analyses revealed that: aggregate environmental disclosures have significant positive effects on firm performance; when taken individually, environmental compliance policy and disclosure of environmental donation has significant positive effect on firm performance; energy consumption negatively and significantly affect firm performance; environmental sensitive products and environmental conservative disclosure has positive but insignificant effect on firm performance. The paper recommends among other things that Firms in Nigeria should as a matter of priority adopt and disclose environmental friendly policies like making donation towards environmental protection, avoiding pollution and hazardous wastes to the environment as this assist firms in gaining social legitimacy which enables them to enjoy increase patronage and revenue

Keywords: Corporate Environmental disclosure, Firm Performance, Agency Theory, Sustainability Disclosure, Legitimacy theory.

1. Introduction

Sustainable development is the most important issue facing society today. Meanwhile it has been observed that some company's activities are devastating the natural environment which might not only prevent future generations from meeting their own needs but also lead to end of these resources. Recent awareness concerning dwindling of natural resources is one of the major threats to human survival and actualization of sustainable development by firms. As observed by Garg (2015), current generation has caused damage to the environment more than previous generations which might have future impact on the society, the ecosystem/ecosphere and the economy. Consider that gas flaring is a controversial environmental issue which contributes significantly to greenhouse gas (GHG) emission yet, as observed by Hassan & Kouhy (2013) Nigeria flares more natural gas than any other country in the world except Russia. This lead to reputational damage based on perceived misuse of resources. Meanwhile investors are aware that how firms respond to environmental conditions in the society can have impact on current business operations and its long term sustainability.

There has been growing demand by investors and other stakeholders for reporting model to be repositioned in a way to adequately meet up to a business environment in which value creation depends not only on company's financial issues but also its ability to understand and respond to environmental issues. This was based on the increasing concerns that existing system of corporate reporting lack transparency and no longer provide all the information stakeholders need to properly assess corporate performance. It contains very little non-financial information necessary to provide a clear view on current performance and enable more accurate predictions

regarding future prospects. In response to this concern, companies now reflect these emerging environmental issues which are drivers of long-term performance in their corporate report. The nature of company's culture and how they respond to these emerging issues are recognised as having significant impact on long term sustainability (Cleverly, Phillips, & Tilley, 2010).

According to Ezeabasili (2009), environmental sustainability is the ability of the environment to continue to function properly indefinitely. Environmental reporting is the practice of measuring, disclosing, and reporting to internal and external stakeholders the organizational environmental performance so as to achieve the goal of sustainable development (GRI, 2011). Corporate environmental reporting also refers to the way and manner by which a company communicates the environmental effects of its activities to particular interest groups within society and to society at large (Dibia & Onwuchekwa, 2015). Disclosing firm's environmental practices is important and useful for responsible investment that ignoring them will lead to distortions and incomplete performance measurement. In line with this view, Binh (2012) opined that having financial and non-financial items included in the list which listed companies disclose is relevant for investment decision-making. Environmental disclosure in addition to creating greater transparency, can provide firms with knowledge necessary to reduce their use of natural resources, increase efficiency and improve their operational performance.

Environmental reporting has been part of corporate reporting in both developed and emerging economies for well over two decade. However considering that countries are at different stages of economic development with corporations having differing levels of awareness and attitudes to corporate environmental disclosure, extent of its disclosure may not apply universally to all countries (Makori & Jagongo, 2013; Suttipun & Stanton, 2012; Uwuigbe, 2012). On the extent of environmental disclosures in Nigeria, most companies show one form of environmental reporting or the other as part of the annual report, but these reports are not elaborate and do not follow a particular standard or guideline (Mgbame & Onoyase, 2015). The reason for the diversity in reporting content and format is because environmental disclosure still relies heavily on voluntary initiatives of the reporting entities (Uwuigbe, 2012). Nevertheless, Owolabi (2008) found that sixty percent of the sampled sectors provide some form of environmental disclosure in their annual report. He went on to add that with improved drive towards environmental information reporting and disclosure in annual reports at the international level, the level and content of disclosure of environmental information is also expected to increase in Nigeria. To support the concern for environmental disclosures, various countries have various regulations concerning environmental issues. In line with this trend, Nigerian Government has established various environmental laws among which include the National Environmental Standards and Regulations Enforcement Agency (NESREA) Act of 2007 among others. Also each States in Nigeria including the Local jurisdictions within each State of the country have also enacted many other environmental laws based on hazardous contamination control like the waste disposal law, law against bush burning and periodic environmental sanitation exercises.

Increase in firms providing information on environmental practices have led to considerable researches from developed and emerging markets on whether the inclusion of environmental issues does indeed influence the financial performance of the firm. Makori & Jagongo (2013) noted that several approaches have been used to study this relationship: regression analysis (longer-term econometric approaches); portfolio analysis; and event studies (Fisher-Vanden & Thorburn, 2011; von Arx & Ziegler, 2008). These previous research produced mixed results concerning the relationship between different variables of environmental disclosure/reporting and firm performance. Inability of previous studies to provide definite conclusion regarding the link between environmental disclosures and firm performance calls for more research using approaches different from extant literature.

This study explores the effect of corporate environmental disclosures on financial performance of listed non-financial firms in Nigerian stock exchange. Specifically, the paper set out to:

- i. examine the effect of environmental compliance policy on firm performance;
- ii. determine the extent to which environmental pollution affect performance;
- iii. ascertain the effect of environmental conservative disclosures on firm performance;

- iv. evaluate the effect of environmental donations on firm performance;
- v. examine the extent to which energy consumption affect firm performance.

The assertion of this paper in their null form is that disclosure of environmental compliance policy, environmental pollution, environmental conservative disclosures, environmental donations and energy consumption has no significant effect on firm performance. This paper extends extant literature to relatively unexplored but important sectors in Nigeria economy and using quantitative and qualitative environmental disclosures which previous Nigerian researchers have overlooked. Data were extracted from annual report of selected ninety three non-financial firms from 2006 to 2015 through content analysis. Pooled regression analysis was employed as statistical tool of analysis.

The remainder of this paper is organized as follows. Section 2 presents a review of related literature. Section 3 describes sources and method of collecting data, how the dependent and independent variables were measured and the empirical methods used to test the hypotheses. Section 4 considers the results. Section 5 concludes the study.

2. Review of Related Literature

Theoretical Framework

The underlying assumptions of this study is that provision of corporate environmental disclosures is important to a firm's ability to reduce information asymmetry which arises due to separation between ownership and control; also provision of corporate environmental disclosures enable a firm operate within the bounds and norms of the society to obtain acceptance while simultaneously improving overall performance. Thus Agency theory with its assumptions of conflict of interest and information asymmetry which will be reduced through environmental disclosure and legitimacy theory that proposes that adherence to societal norms (acting in such a manner that the society is not damaged) create harmony between society and firm which can translate to value creation has been put in in place to predict the cause effect relationship between environmental disclosures and firm performance.

Empirical Review

Environmental Sustainability Indicators and Firm Performance

Eze, Nweze, & Enekwe (2016) examined the effects of environmental accounting on a developing nation with emphasis on Nigerian and discover that environmental information in the annual report is positively related to a firm's size. That environmentally friendly organisations enjoy high level of competitiveness. Khlif, Guidara, & Souissi (2015), document a significant positive relationship between social and environmental disclosure and corporate financial performance. Plumlee, Brown, Hayes, & Marshall (2015) examine the relationship between environmental disclosure quality and firm value. They document a positive relation between voluntary disclosure quality and firm value through both the cash flow and cost of capital components. Makori & Jagongo (2013) find a significant negative relationship between environmental costs which cover all cost incurred concerning environmental protection, emissions treatment as well as wasted material and Return on Capital Employed (ROCE) and Earnings per Share (EPS) and a significant positive relationship between environmental costs and Net Profit Margin and Dividend per Share. The result of study by Nyirenda, Ngwakwe, & Ambe (2013) shows that there is no significant relationship existing between firms environmental management practices and its return on equity. Specifically carbon emission reduction, energy efficiency and efficiency in water usage does not affect firm's return on equity. Further analysis incorporating the control variables indicates a significant relationship but close scrutiny of the significance levels of individual independent variables shows that this positive significance level is caused by the presence of the control variables – shareholders' equity and the net income respectively. The environmental variables remain insignificant, thus indicating that they do not constitute a causative factor on return on equity. Bassey, Effiok, & Eton (2013), document that environmental cost significantly influences a firm's profitability.

Also environmental information in the annual report is positively related to a firm's size. Latridis (2013) examines the association between environmental disclosure and environmental performance and the financial attributes of companies with different environmental disclosure scores. The study shows that environmental disclosure is positively associated with environmental performance. Specifically companies that display small amounts of hazardous waste or take on initiative to reduce toxic chemicals exhibit higher environmental disclosure scores. The study also document that companies with effective environmental and corporate governance structures would be expected to face less capital constraints. High quality environmental disclosers are audited by a big 4 auditor or cross-listed on foreign stock exchanges and display significant levels of managerial and institutional ownership. High quality disclosures are value relevant and improve investor perceptions. Study by Oti, Effiong, & Tapang (2012), reveal significant relationship between employee health and safely, waste management and community development and return on investment of the environmentally responsible firms. There is also significant relationship between employee health and safely, waste management and community development and the level of fines, penalties and compensation. This means that investment in environmental responsibilities in form of Employee Health and Safely, Waste Management and Community Development are related to improved return on investment of the environmentally responsible firms. Similarly in a survey of companies operating in the Niger Delta Region of Nigeria, Asuquo (2012) documents that environmental friendly policies as well as firm competitiveness have significant relationship with the firms' profitability. This means that when environmentally friendly firms disclose sufficient environmental related information, they enjoy competitive advantage, high liquidity and reduced environmental cost in the long run. When firms are environmentally friendly they enjoy competitive advantage which subsequently results in high corporate performance/profitability. Uwuigbe (2012), investigated the relationship between the financial performance of firms and the level of web-based corporate environmental disclosure among other objectives. The study provides analytical evidence that a positive association existed between the variable corporate environmental disclosure and Return on Assets, Return on Equity and Firm Size and they are all significant. The study further provides an insight to the fact that to a very great extent, the financial performance and the size of firms do plays a very significant role in or has a strong influence on the level of web-based corporate environmental disclosure among the selected firms. Oba, Fodio, & Soje (2012), show that the two explanatory variables: quality of environmental responsibility disclosures and foreign directors has a positive and significant relationship with financial performance. This implies that an adherence to sound environmental policies, practices and information disclosure influences the bottom line of firms. Further in a study linking sustainability reporting with firm performance, Cortez & Cudia (2011) document that sustainability performance measured in environmental costs has positive and significant impact on revenue generation a proxy for financial performance as well as a negative relationship of environmental cost on liabilities by reducing accounting risks. The study, however, is not able to establish the relationship of environmental costs with profitability, firm size and shareholders' equity since result of the study reveals insignificant positive impact. Fisher-Vanden & Thorburn (2011) examined the valuation effect of voluntary corporate environmental initiatives on shareholders wealth using an event study approach. The study show that when firms announce their membership in the Environmental Protection Agency's Climate Leaders, a program intended to reduce greenhouse gas emissions, the announcement is met with negative abnormal returns. The study of Clarkson, Fang, Li, & Richardson (2010) which was concerned with providing insights on the fundamental issue of whether environmental disclosures incrementally affect firm valuation, cost of equity capital and/or stakeholder sentiment more generally given knowledge of environmental performance. The study reveals that environmental disclosure provides incremental information for investor to assess firm value. Freedman & Patten (2004) find that companies with higher levels of toxic air releases (adjusted for firm size) as reported in the 1987 TRI report suffer more negative market reactions than firms with better performance records.

3. Methodology

This study adopted ex post facto research design. The existing data of corporate environmental disclosures (explanatory variables) were extracted from the annual reports of the selected companies through content analysis using dummy variables of '1' and '0' to assign quantitative values to all qualitative specific disclosures in addition to quantitative specific environmental disclosure. On the other hand, data for the firm performance (dependent

variables) and control variables were gathered from MachameRATIOS, a database maintained by TalkData Associates (www.machameRATIOS.com). Taro Yamane method of sample estimation was used to select 93 out of 122 non-financial firms listed on the Nigerian Stock Exchange from 2006 to 2015 that has data on the variables. The data was analysed using pooled ordinary least square regression with the aid of STATA software. Before analyzing the pooled data, some preliminary statistics such as descriptive statistics, normality, correlation and two post-regression diagnostic test (multicollinearity and heteroscedasticity) was also conducted to confirm assumptions of regression. Details of the preliminary and diagnostic tests are included in the Appendix.

Model Specification

To test the hypotheses of this study whether specific environmental sustainability disclosures affect firm performance and whether cumulative environmental disclosure index has effect on firm performance the following econometric models were used.

$$ROA_{it} = \alpha_0 + \beta_1 ENCOMPO_{it} + \beta_2 ENSPROD_{it} + \beta_3 ENVCONSD_{it} + \beta_4 ENVDO_{it} + \beta_5 ENGYCON_{it} + \beta_6 FSIZE_{it} + \beta_7 FAGE_{it} + \beta_8 TLBTA_{it} + \varepsilon_{it}$$

$$ROA_{it} = \alpha_0 + \beta_1 ENVI_{it} + \beta_2 FSIZE_{it} + \beta_3 FAGE_{it} + \beta_4 TLBTA_{it} + \varepsilon_{it}$$

Where:

- ROA = Firm performance measured as Profit after Tax/Total Asset
- β_0 = Intercept estimates
- β_{1-8} = Coefficient of the independent variables
- e = error term

Variables and measurement

Table 3.1 Variables and measurement

Variable	Code	Measurement
Dependent Variables		
Return on Asset	ROA	Profit after Tax/Total Asset
Independent Variables		
Environmental Sustainability Disclosures		
Environmental Compliance Policy	ENCOMPO	Measured as dummy “1” for Disclosure of Environmental Compliance Policy and “0” otherwise.
Environmental Sensitive Products,	ENSPROD	Measured as dummy “1” for products with Emission and “0” otherwise
Environmental Conservative Disclosure	ENVCONS D	Measured as dummy “1” for Environmental Conservation disclosure and “0” otherwise.
Environmental Donation	ENVDO	Measured as dummy “1” for Report of Environmental related donations and “0” otherwise.
Energy consuming Assets,	ENGYCON	Measured as log of Plant and Machinery Assets
Environmental Disclosure Index	ENVI	Individual environmental sustainability disclosures were used to generate Cumulative Scores through Principal Component Analysis (PCA)

4. Empirical Analysis

Descriptive statistics on Table 1 in the Appendix provides information regarding the mean, maximum, minimum, standard deviation, and median for each of the specific environmental variables. The statistics showed that on the

average, there is a fair level of compliance to environmental policy among listed companies in Nigeria. This is indicated from the mean value of (encompo) 58% which may be likely related to the fact that disclosure of policies on environmental sustainability are not mandatory, hence strict adherence is not in force. For the variable of environmental sensitive products, the statistics (ensprod) mean value of 14% show that only a few firms in our sample of study produces environmental sensitive products hence we expect the volume of pollution to be relatively low compared to countries where companies whose environmental sensitive products is large. Furthermore the statistics from the variable of environmental conservative disclosure (envconsd) 6% indicates a very low level of environmental conservation disclosure in Nigeria. As seen from the mean value of the variable of environmental donations (engycon=13%) from the descriptive statistics result, it reveals that reports of environmental related donations have been performed by only thirteen percent of listed companies under consideration. From the Normality Test in Table 2 of Appendix all the variables of interest are normally distributed and satisfies the test of significance at 1% level of significance except for the variables of firm size, which did not pass even at 10%. However, this situation may be overlooked since it is a control variable. Overall, the statistics revealed that there is no sample selection bias or outlier in the data that would impair the generalization from this study. Table 3 in the Appendix is the correlation matrix table which shows the relationship that exists between the variables used for the study. Table 5, 6, 9 and 10 from the appendix shows the result obtained from the variance inflation factor analysis and also the test for heteroscedasticity. Here the mean VIF value of 2.21 and 1.51 which are less than the benchmark value of 10 indicates the absence of multicollinearity (Kehinde & Osifo, 2017). Breusch-Pagan/Cook-Weisberg test for heteroscedasticity with probability value of 0.30 and 0.45 resulting from the test are statistically insignificant which implies that the data are free from the presence of unequal variance.

Table 4.1: Firm Performance (ROA) and Environmental Sustainability Disclosure Model

Independent Variables	Coef.	t-Stat	P>/t/
encompo	5.203	4.24	0.000***
ensprod	0.501	0.28	0.776
enconsd	2.945	1.18	0.238
envdo	0.879	0.49	0.024*
engycon	-3.886	-2.42	0.016*
fsize	5.240	2.93	0.004***
fage	0.056	1.26	0.207
tlbta	0.067	13.88	0.000***
F - Stat	28.19		0.000***
R-squared	0.225		
Adjusted R-squared	0.217		

Extract from STATA Output

Where *, ***, implies statistical significance at 05% and 1% levels respectively

From table 4.1 above (extracted from Table 4 in the Appendix), the R-squared and adjusted R-squared values of 0.22 and 0.21 shows that about 22% of the systematic variations in firms' performance in the pooled companies over the period of interest was jointly explained by the independent variables. The model is considered to be overall statistically significant, giving the p-value of 0.000 for the F-statistics of 28.19 and therefore rejecting the null hypothesis of insignificance. It means that the variables we use in the regression specification can jointly predict the firm performance in our sample of Nigerian companies.

Table 4.2: Firm Performance and Environmental Disclosure Index Regression Model

Independent Variables	Coef.	t-Stat	P>/t/
ENVI	0.806	1.42	0.005***
Fsize	-0.425	-0.41	0.685
Fage	0.009	0.19	0.850
Tlbtta	-0.054	-11.85	0.000***
F – Stat	42.74		0.000***
R-squared	0.228		
Adjusted R-squared	0.222		

Extract from STATA Output

Where *, *, implies statistical significance at 05% and 1% levels respectively**

Table 4.2 above show results of the cumulative environmental disclosure index employed in the study and each control variable from the regression model and provides interpretation as follows:

It is important to note that the R-squared value of 0.228 and Adjusted R-squared of 0.222 indicate that 22% of the systematic variations in firm performance variable of return on assets of the pooled companies over the period of interest was jointly explained by the independent variables. This implies that variation in firm performance in Nigeria cannot be completely explained by the explanatory variable employed in this study. Thus about 78% causes of variations are attributed to some other variables. The F-statistic value of 42.74 and its associated P-value of 0.000 shows that the OLS Pooled regression models on the overall are statistically significant at 1% level, which connote that the coefficients of the independent variables are statistically different from zero and may be adopted for policy purposes.

Discussion of Results

Specifically, table 4.1 above revealed that the variable of *Environmental Compliance Policy* (*encompo = 5.203*) have a positive influence on firm performance and is statistically significant at 1%. The t-value is 4.24 while its P-value is 0.00. In other words, the alternative hypothesis concerning environmental compliance policy provides a satisfactory basis for explaining the breadth of environmental management practices implemented by Nigerian companies. This result indicates that the variable of environmental compliance policy is a significant driver of performance via return on asset. The results indicate that compliance with environmental policies such as: Harmful Waste Act 42 of 1988, Associated Gas Re-injection Act Cap 26, LFN 1990 and its attendant regulations. The Oil in Navigable Waters Act Cap 331, LFN 1990, National Environmental Standards and Regulations Enforcement Agency (NESREA) Act of 2007 etc improves performance significantly in Nigeria listed companies during the period under review. This finding agrees with the previous findings of Asuquo (2012) that firms' performance has significant positive relationship with environmental policies. From the foregoing we conclude by rejecting the null hypothesis which states that environmental compliance policy is not significantly related to firm performance in Nigeria. As regards the variable of *Environmental Sensitive Products* (*ensprod = 0.501*), its impact on firm performance among listed companies in Nigeria have a positive relationship with firm performance but is statistically insignificant even at 10%. The t-value showed 0.28 while its P-value is 0.776. In other words, firms products capable of emitting toxics and harmful waste is positively but insignificantly related to firm financial performance. This result is in consonant with the findings of Nyirenda et al (2013) that there is no significant relationship between emission reduction and return on equity. Cortez & Cudia (2011), Aggarwal (2013). But contrary to the work of Oti et al (2012) that waste management has significant relationship with return on investment. Fisher-Vanden & Thorburn (2011) found that there is significant losses in the market value of firms announcement of a greenhouse gas emissions reduction goals. It is therefore evident that we should reject the alternative hypothesis of a significant relationship between environmental sensitive products and firm financial performance. *Environmental Conservative Disclosure* (*encosd = 2.945*) Evidence from the result suggest that the variable of environmental conservative disclosure is positive but not significantly related to firm financial

performance among listed firms in Nigeria during the period under review. This is revealed from the P-value of 0.238 which is greater than 5% level of significance adopted for this study. This finding indicate that as listed firms in Nigeria engage in disclosure of environmental conservative practices and activities, financial performance of these companies improves but at an insignificant level. However, this finding lend credence to the empirical result of Isa (2014), Plumlee et al (2015), Bassey et al (2013), Latridis (2013), Uwuigbe (2012), Oba et al (2012), Clarkson et al (2010), In line with this finding, this study carefully rejects the alternative hypothesis of a significant relationship between environmental conservative disclosure and firm financial performance among listed companies in Nigeria. **Environmental Donations** (envdon) As regards the variable of environmental donations, it can be deduced based on the slope coefficient of (0.879) that the variable have a positive influence on our sampled quoted company's financial performance and is statistically significant at 5 percent since it p-value of 0.02 is less than 0.05. This result therefore suggests that we should accept the alternative hypothesis of a significant relationship between environmental donations and firm financial performance of Nigerian listed companies for the period under study. Based on the above finding, we find a discordant relationship with previous studies of Aggarwal (2013). **Energy Consuming Assets** (engycon) As regards the variable of Energy Consuming Assets, it can be deduced that based on the slope coefficient of (-3.886) the variable have a negative influence on our sampled company's financial performance and was statistically significant at 5 percent since it p-value was less than 0.05[0.02]. This result therefore suggest that we should reject the null hypothesis of no significance relationship between Energy Consuming Assets and firm financial performance of Nigerian listed companies for the period under study. This implies that shareholders, investors, and financial institutions value firms lowly if the firm increase investing more on energy consuming assets capable of emitting wasteful greenhouse gases (GHGs) that causes global warming, disequilibrium of the earth, unpredictable weather changes and major natural disasters causing harm to humans, animals, plants and the entire physical environment. The above finding showed a discordant relationship with previous studies of Nyirenda et al (2013) that there is no significant relationship between energy usage and Return on Equity. The more sampled companies are spending money buying energy consuming assets with the associated increase in carbon emission, the lesser the profit. But by switching to a more environmentally friendly production process, energy saving cost minimizing innovations process that would otherwise be unexploited, firms differentiate themselves from their dirtier competitors. This will be rewarding to the firm. **FIRM SIZE** (fsize) have a positive influence on firm financial performance. Much concern should be placed on it since it was statistically significant in influencing firm financial performance in a model which comprises of environmental sustainability variables of listed companies in Nigeria. In other words larger firms produce better performance in terms of return on asset. This is evident from the slope coefficient of 5.24 with a P-value of 0.004 significant at 1% level. This empirical evidence coincides with previous findings of Latridis (2013) and Uwuigbe (2012). **Firm Age** (AGE) showed a positive (coefficient of 0.056) and statistically insignificant (P-value of 0.207) relationship with firm accounting financial performance variable of return on total assets. This mean that the age of a firm does not necessarily guarantee a better performance in terms of firm financial performance. Much concern may not be assigned to this variable as it appeared to be insignificantly related to the dependent variable of return on total assets (roa). This result clearly suggests that we accept the null hypothesis of no significant relationship between firm age and financial performance of firms listed on the Nigerian stock exchange market for the period under review. With respect to the variable of **LEVERAGE** (tlbta = 0.605), its impact on firm financial performance among listed companies in Nigeria is positive and statistically significant at 1%. The t-value showed 13.88 while its P-value is 0.000. In this model, result reveals that as financial leverage which shows the degree of proportion of external capital and internal capital used to finance the company's assets increases, firm financial performance among listed companies in Nigeria will significantly increase. It is therefore evident that we accept the alternative hypothesis of a significant relationship between firm financial leverage and accounting performance variable of return on assets among listed firms in Nigeria.

Following the result from table 4.2, the variable **Cumulative Environmental Disclosures Index** with coefficient of 0.806 and P-value of 0.005 have positive and significant effect on return on assets of pooled firms in Nigeria during the period of study. The result indicates that a unit increase in environmental sustainability disclosures will result to a significant increase in the return on assets of sampled firms during the period of study. Stretching this result further, it is evident that environmental compliance policy, environmental sensitive products, environmental

sustainability disclosure, environmental donation reporting and energy consuming assets put together are significant drivers of corporate performance via return on assets. Furthermore, for the control variable of **Firm Size (fsize)** the results reveal a negative effect on firm market performance of ROA where its slope coefficient is -0.425. The positive effect is insignificant as its probability value is more than 5% benchmark adopted for this study. (P-value = 0.685). **Firm Age (AGE)** showed a positive and statistically insignificant effect on firm accounting financial performance variable of return on total assets as shown by the coefficient value of 0.009 and P-value of 0.850. The variable of **LEVERAGE** (coefficient -0.054) have a negative influence on firm accounting financial performance and is statistically significant at 1% with P-value of 0.000.

Conclusion and Recommendation

The findings of this study supported the proposition of legitimacy theory that environmental practices such as making donations towards environmental disasters help a firm in gaining social legitimacy which enables them to enjoy increase patronage and revenue. It also confirms the agency theory that when information asymmetry which is one of the problem associated with divorce of ownership from control reduced through environmental disclosure, agency costs will reduce and market value of firm are likely to improve. Aggregate environmental disclosure is a significant driver of performance via return on assets. By interacting each specific environmental disclosure, it was discovered that environmental sustainability disclosures through compliance with environmental policies by firms improves bottom line. Shareholders, investors, and others value firms lowly if the firm increase investing more on energy consuming assets. This indicates that firms that uses more energy don't outperform others. Firms in Nigeria whose accounting activities covers disclosure on environmental related donations experienced significant improvement in its performance of shareholders value.

Firms in Nigeria should as a matter of priority adopt and disclose environmental friendly policies like making donation towards environmental protection, avoiding pollution and hazardous wastes to the environment. They should make provision for alternative source of energy considering resultant carbon emissions associated with using more energy consuming assets. Environmental sustainability activities when implemented allows managers to achieve both social and firm purposes. Environmental disclosures as at moment vary widely, effort should be made to keep everyone on a level playing field by harmonizing the format and content of the report.

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Appendix: Data Analyses

TABLE 1: DESCRIPTIVE STATISTICS (ENVIRONMENTAL)

stats	encompo	ensprod	enconsd	envdon	engycon	ENVS
mean	.5880361	.1444695	.0677201	.1275395	6.432077	1.31e-09
p50	1	0	0	0	6.48	-.2848658
min	0	0	0	0	3.92	-2.295757
max	1	1	1	1	8.96	5.468668
sd	.4924666	.3517638	.2514069	.3337648	.8811275	1.32549
N	886	886	886	886	886	886

TABLE 2: NORMALITY TEST

Variable	Skewness/Kurtosis tests for Normality				
	Obs	Pr(Skewness)	Pr(Kurtosis)	adj chi2(2)	joint Prob>chi2
roa	885	0.0000	0.0000	.	0.0000
encompo	886	0.0000	.	.	.
ensprod	886	0.0000	0.0000	.	0.0000
enconsd	886	0.0000	0.0000	.	0.0000
envdon	886	0.0000	0.0000	.	0.0000
engycon	886	0.2357	0.6234	1.65	0.0383
fsize	886	0.5810	0.1850	2.06	0.3565
fage	886	0.2637	0.0000	70.70	0.0000
tlbta	883	0.0000	0.0000	.	0.0000
ENVI	886	0.0000	0.0000	.	0.0000

TABLE 3: CORRELATION ANALYSIS

	roa	encompo	ensprod	enconsd	envdon	engycon	fsize	fage	tlbta	ENVI
roa	1.0000									
encompo	0.0911	1.0000								
ensprod	0.0700	0.1114	1.0000							
enconsd	0.0818	0.0706	0.3394	1.0000						
envdon	0.0544	0.0058	0.1506	0.1987	1.0000					
engycon	0.1431	0.2341	0.1594	0.2975	0.2256	1.0000				
fsize	0.1929	0.1279	0.1623	0.2886	0.2251	0.9048	1.0000			
fage	0.0418	-0.0392	0.2280	0.1072	0.1668	0.0299	0.0486	1.0000		
tlbta	-0.4426	0.0789	-0.0395	-0.0336	-0.0305	-0.1840	-0.2455	0.0165	1.0000	
ENVI	0.1487	0.3771	0.6191	0.7130	0.5122	0.6794	0.6168	0.1751	-0.0903	1.0000

TABLE 4: ACCOUNTING PERFORMANCE AND ENVIRONMENTAL SUSTAINABILITY INDICATOR (E) regress roa encompo ensprod enconsd envdon engycon fsize fage tlbta

Source	SS	df	MS	Number of obs =	882
Model	72149.7318	9	8016.63687	F(9, 872) =	28.19
Residual	247934.975	872	284.3291	Prob > F =	0.0000
				R-squared =	0.2254
				Adj R-squared =	0.2174
Total	320084.707	881	363.319758	Root MSE =	16.862

retoa	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
encompo	5.203135	1.227236	4.24	0.000	2.794454	7.611817
ensprod	.5019041	1.763402	0.28	0.776	-2.959105	3.962913
enconsd	2.945595	2.496251	1.18	0.238	-1.953766	7.844957
evrdon	.8799017	1.792149	0.49	0.024	-2.637529	4.397332
engycon	-3.88677	1.604387	-2.42	0.016	-7.035681	-.7378586
fsize	5.240255	1.790303	2.93	0.004	1.726448	8.754062
fage	.0563064	.0445845	1.26	0.207	-.031199	.1438119
tlbta	.0605822	.0043651	13.88	0.000	.0691495	.0520149
_cons	-8.387802	5.733762	-1.46	0.144	-19.64139	2.865785

Table 5: TEST FOR MULTICOLLINEARITY (VIF TEST)

variable	VIF	1/VIF
engycon	6.10	0.163809
fsize	5.99	0.166855
enconsd	1.23	0.816001
ensprod	1.20	0.835614
encompo	1.13	0.884549
evrdon	1.10	0.905384
tlbta	1.09	0.919711
fage	1.08	0.925948
Mean VIF	2.21	

Table 6: TEST FOR HETEROSCEDASTICITY

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity

H0: Constant variance

Variables: fitted values of retoa

chi2(1) = 1938.80

Prob > chi2 = 0.3000

TABLE 7: ENVIRONMENTAL SUSTAINABILITY INDICATORS SCORE|

Principal components/correlation

Number of obs = 886

Number of comp. = 5

Trace = 5

Rotation: (unrotated = principal)

Rho = 1.0000

Component	Eigenvalue	Difference	Proportion	Cumulative
Comp1	1.75692	.731107	0.3514	0.3514
Comp2	1.02582	.125255	0.2052	0.5565
Comp3	.900562	.17162	0.1801	0.7367
Comp4	.728942	.141188	0.1458	0.8824
Comp5	.587753	.	0.1176	1.0000

Principal components (eigenvectors)

variable	Comp1	Comp2	Comp3	Comp4	Comp5	Unexplained
encompo	0.2874	0.8234	-0.0406	0.3585	0.3305	0
ensprod	0.4661	-0.2157	-0.5910	0.4503	-0.4292	0
enconsd	0.5332	-0.2477	-0.2772	-0.4526	0.6104	0
envdon	0.3876	-0.3736	0.6791	0.4703	0.1670	0
engycon	0.5154	0.2731	0.3332	-0.4926	-0.5532	0

TABLE 8: ACCOUNTING PERFORMANCE AND ENVIRONMENTAL SCORE COMPONENT

regress	roa	ENVI				
Source	SS	df	MS			
Model	72965.1707	6	12160.8618	Number of obs =	874	
Residual	246694.059	867	284.537553	F(6, 867) =	42.74	
				Prob > F =	0.0000	
				R-squared =	0.2283	
				Adj R-squared =	0.2229	
				Root MSE =	16.868	

roa	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
ENVS	.8062005	.5658202	1.42	0.005	-.304337	1.916738
fsize	-.425835	1.049107	-0.41	0.685	-2.484921	1.633251
fage	.0090034	.0477408	0.19	0.850	-.0846976	.1027044
tlbta	-.0543905	.0045911	-11.85	0.000	-.0634015	-.0453796
_cons	9.820521	7.587133	1.29	0.196	-5.070775	24.71182

Table 9: TEST FOR MULTICOLINEARITY (VIF TEST)

variable	VIF	1/VIF
fsize	2.04	0.490047
ENVI	1.72	0.581662
fage	1.22	0.819099
tlbta	1.20	0.832168
Mean VIF	1.51	

Table 10: TEST FOR HETEROSCEDATICITY

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity

H0: Constant variance

Variables: fitted values of roa

chi2(1) = 1184.74

Prob > chi2 = 0.4500