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EFFECT OF CORPORATE ATTRIBUTES ON ENVIRONMENTAL DISCLOSURE OF LISTED OIL AND GAS COMPANIES IN NIGERIA

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ABSTRACT*:* *This study investigates the influence of corporate attributes on environmental disclosure by oil companies in Nigeria. The study uses secondary data collected from the annual reports and accounts of 9 randomly selected oil companies for the period 2011 to 2017. The study analysed the data using the logistic regression technique. The study finds that corporate attributes significantly affect the environmental accounting disclosure by oil companies in Nigeria. Based on the findings, the study concludes financial leverage has a significant positive effect on environmental accounting disclosure by oil companies in Nigeria. Second, profitability has a significant positive effect on environmental accounting disclosure by oil companies in Nigeria. Third, the study also find that firm size has a significant positive effect on environmental accounting disclosure. Fourth, the study finds a positive but insignificant effect of auditor types on the environmental accounting disclosure by oil companies in Nigeria. The study recommends that the regulators of the oil companies in Nigeria should encourage the use of more debts in the oil companies' capital structure, which will make them disclose more information about the environment based on the close monitoring and demand by the debt holders.*

KEYWORDS*:* corporate attributes, environmental disclosure, listed oil and gas companies, Nigeria

INTRODUCTION

In the past few decades, accounting disclosure relating to environmental activities has gained prevalence as well as taken centre stage recently on the agenda of countries whose firms or corporations engage in activities that may affect the environment adversely as well as affect the matrix of financial reporting which should conform to globally accepted standards. The increasing need for corporate entities to disclose environmental information in their annual reports is due to reasons such as demand by corporate stakeholders, pressure from regulations, power of environmental groups, influence of competitors, and improving corporate productivity (Muttanachai & Stanton, 2012). Thus the increasing demands for clear and hard facts about the corporate environmental performance of organizations by an increasingly well informed breed of stakeholders have made corporate environmental disclosure an essential issue of debate (Uwalomwa, 2011).

Environmental accounting is an inclusive field of accounting. It provides reports for both internal use generating environmental information to help make management decisions on pricing, controlling overhead and capital budgeting and external use, disclosing environmental information of interest to the public and to the financial community (Yaklou & Dorweile, 2003, cited in Beredugo & Mefor, 2013). The current position of environmental accounting reporting and disclosures might best be described as full of ambiguity. Statutory, regulatory, quasi-regulatory agents and standard setters are yet to prioritize the reporting and disclosure of environmental

In the developing countries, and Nigeria in particular, research previously conducted has shown that environmental accounting disclosure are voluntary as a result of non-availability of either local or international standards to guide disclosure. Companies tend to disclose this information to conform to industry practices, pressures from environmental activist and advocates, relationship with parent company (Multi-National corporations), ownership structure of the company, size and level of profitability. These areas of discipline are particularly critical for the downstream oil sector in Nigeria which impacts heavily on the environment and thus, livelihood in Nigeria. Thus, oil companies and industry groups have also recognized that international oil companies operating in emerging economies such as Nigeria, with inadequate environmental laws should adopt best practice. (Uwalomwa, 2011).

A number of previous studies have assessed the determinants of environmental accounting disclosure in different contexts and domain (Sumiani et al., 2007; Deegan et al., 2002; de Villiers and Barnard 2000; Tilling and Tilt 2010). Others have established the relationship between environmental information disclosed and firm characteristics (Nor et al. 2016; Cormier et al. 2005; Deegan et al. 2002). While the above studies suggest a considerable amount of research has been undertaken on environmental disclosure issues, findings of most of the studies have largely been based on views of employees usually by means of a cross-sectional survey (Ahmad et al. 2003; Fifka 2012; Suttipu & Stanton 2012; Sulaimana et al. 2014; Chandok et al. 2017). In practice however, it is difficult to generalize conclusions drawn on the level of environmental disclosures by firms based on these studies and hence, there has been calls for longitudinal studies (Ahmad et al. 2003; Suttipun & Stanton 2012). Thus, to understand the cause-and-effect relationship between firm specific factors and environmental accounting disclosure, there is the need to assess the problem over a longer period of time.

In terms of sector-in-focus, there are a few studies that have examined environmental disclosures in the oil and gas industry (Al-drugi & Abdo, 2012; Ariweriokuma, 2009; Eljayash, James, & Kong 2012; Dibia & Onwuchekwa, 2015; Oba & Fodio, 2012; Abdullah & Azhar, 2016). However the variables in most of these prior studies concentrated on developed countries. The variables tested in previous studies also varied as well as their ensuing results from studies conducted by researchers. While some studies posited that only profitability has a positive effect on environmental disclosure but opined that firm size, leverage and audit firm all have a negative effect on environmental accounting disclosure, others did not mention leverage as a variable conclusively but stated that firm size, audit firm type, and profitability all had a positive effect/relationship with environmental accounting disclosure by oil and gas companies in Nigeria (Dibia & Onwuchekwa, 2015; Suleiman, Abdullahi & Fatima, 2014; Uwalomwa, 2011; Abdullah

& Azhar, 2016; Ebiringa 2013; Abubakar 2017). To the best of our knowledge, no previous study has examined the combination of the variables (firm size, profitability, leverage and audit quality) in relation to environmental accounting disclosure. Therefore, this study attempts to fill the existing gaps in previous literatures, by investigating the influence of corporate attributes on environmental disclosure by oil companies in a developing country such as Nigeria.
The following hypotheses are postulated for the study.
$H0_1$: Leverage has no significant effect on environmental accounting disclosures by oil companies in Nigeria
$H0_2$: Firm size has no significant effect on environmental accounting disclosures by oil companies in Nigeria
$H0_3$: Profitability has no significant effect on environmental accounting disclosures by oil companies in Nigeria
$H0_4$: Audit firm type has no significant effect on environmental accounting disclosures by oil companies in Nigeria.

The study contributes to knowledge in two ways. One of the major theoretical contributions of the current work to knowledge is the construction of the Environmental performance index EPI using 20 indicators to reflect the disclosures of environmental data. Secondly, in terms of sector in focus, only a handful researchers have keyed into this area of study globally and more so, to focus on Nigerian oil and gas sector specifically. This research work is designed to examine the effects of corporate attributes on environmental disclosures by a sample of ten (10) oil companies operating in Nigeria, and the study covers a seven year period (2010-2017). The study considers the period relevant because there is an increase in the demand for environmental accounting disclosure from various corporate stakeholders. This is because the most recent annual financial reports for most oil companies available are all as at 2017 financial year end. The study also considers four important variable, which include financial leverage, firm size, profitability and audit quality. These variables have been rarely examined together by the same study.

LITERATURE REVIEW

This section discusses the conceptual issues, conducts empirical review of literature and presents the theoretical framework.

Environmental Disclosure

Environmental disclosure as a concept connotes the information or data usually of a financial nature, describing the activities of organizations that are engaged in economic activities, in this case oil companies in Nigeria as they relate to their adherence to regulations and best practices as well as portraying the impact of such activities upon the environment, geographical space and or land area. The concept of environmental disclosure reporting gained greater publicity right from the United National conference on environmental and development (UNCED) held in Rio de Janeiro in June 1992. Ishak (2010) defined environmental disclosure as an environmental management strategy to communicate with stakeholders. Environmental disclosure is as well commonly regarded as corporation social responsibility reporting (Degan, 2007). Meanwhile, parker (1986) as cited in Setyorim and Ishak (2010) defined corporate environment disclosure as

the reporting by corporate environment disclosure as the reporting by corporation on the social impact of corporate activities, the effectiveness of corporate social programs, as a way corporation's discharging of its social responsibility and the stewardship of its social resources in all.

Corporate Attributes

Corporate attributes examined by this study are financial leverage, firm size, profitability and audit firm size. These variables are discussed in turns as follows:

Leverage

Investors in companies and lenders depend solely on financial statements for the evaluation of a firm's financial standing and credit rating. Thus, managers are disposed to increase disclosure. Investors in companies and lenders depend solely on financial statements for the evaluation of a firm's financial standing and credit rating. Thus, managers are disposed to increase disclosure to reduce agency costs between insiders and creditor. Cormier and Magnan (2002) and Brammer and Pavelin (2006) demonstrated a negative association between environmental disclosure and leverage. Nevertheless, Roberts (1992) and Naser et al. (2006) reported a positive relationship. Most studies in environmental disclosure determinant investigate companies which operate in polluting sectors. These firms concerned are more likely to be punished. Based on this established facts, the bankers and lenders will pay more attention to these companies' communication about corporate environmental responsibility. As a result, the polluting companies will have a preference to report more environmental information if they have more debt.

Firm size

Several empirical studies have found significant evidence that there is a positive relationship between company size and the level of social and environmental disclosure (Brammer & Pavelin, 2006; Zeng et al. 2012). These studies argued that bigger firms are visible and exposed because of their size and image. Larger firms are, therefore, more willing to disclose environmental information to please their enormous stakeholders. Moreover, they are likely to seek capital externally and so disclose environmental information to alter societal perception. Again bigger firms are more prone to disclose environmental information than smaller firms to avoid punitive measures from regulators and reduce risk of regulation (Burgwal & Vieira, 2014). Using the association between the levels of corporate environmental disclosure in annual reports and type of industry, many studies Ho and Taylor, (2007) and Newson and Deegan, (2002) have established that companies in high environmentally sensitive industries disclose more environmental information in annual reports than companies in low profile industries.

Profitability

Profitability is the result of a company's operation over a period of time. When profitability is high and a firm achieves a high margin of profit, the managerial groups are motivated to disclose more information in order to show off good reputation to the consumers, shareholders, investors and other stakeholders (Ullmann 1985). Indeed, firms would normally only engage in voluntary disclosures when they have made some economic gains. This is because disclosing environmental information entails cost, which firms will only bear when there is sufficient profit beyond fulfilling

shareholders' obligation (Brammer & Pavelin 2006). Studies on relationship between profitability and the extent of environmental disclosure came with mixed findings by using various proxies for measuring profitability such as net profit (NP), return on capital employed (ROCE), dividend per share (DPS), earnings per share (EPS), return on assets (ROA) and return on equity (ROE).

Audit firm size

Auditors endorse contents of annual reports. Though the provision of environmental information is voluntary, auditors have a responsibility to ensure any financial or non-financial information provided in the annual reports fairly represents what it purports to be. Society reposes confidence and trust in the 'big four' accounting firms. Larger firms tend to appoint one of the big four accounting firms to gain international acceptance and recognition. And since the 'big 4' (Pricewaterhouse Coopers (PWC), Klynveld Peat Marwick Goerdeler (KPMG), Deloitte & Touche, Ernst & Young) are interested in protecting their integrity and reputation, they may associate with companies who disclose environmental information (Alsaeed 2006). Thus, where financial statements are audited by them, it suggests an audit of even the voluntary disclosures. Thus companies may employ the big four to alter perception about their corporate disclosure behaviour and enhance their legitimacy.

Empirical Review

Leverage and Environmental Disclosure

Though leverage has been theoretically demonstrated to be instrumental in explaining the financial performance of oil companies, its empirical effect is inconclusive. Dibia and Onwuchekwa (2015); Ahmed Abubakar (2017) documented negative association between leverage and environmental accounting disclosures. Contrarily, Maliah et al (2014) and Patrick et al et al. (2017) reported positive effect of leverage on environmental accounting disclosure.

In a study conducted by Juhmani (2014) found a significant positive relationship between financial leverage and corporate disclosure, that the companies listed on Bahraini with high financial leverage disclose more of social and environmental information on their website than those with low financial leverage. Ohidoa, Omokkhudu, and Oserogho (2016), Dibia and Onwuchekwu (2015), Prastiwi, Subroto and Murkholis (2016), Suleiman, Abdullah and Fatima (2014) they have documented that leverage do not influence the ability of a company to disclose environmental information. While in the work of Juhmani (2014) and Agbdan (2015) put that leverage of a company can positively influence the ability of a company to make available in their annual reports environmental information.

Previously, Aksu and Kosedag (2006) have conducted a study in Turkey regarding the determinants of voluntary disclosure level. They evaluated transparency and disclosure practices of 52 largest and most liquid companies listed on the Istanbul Stock Exchange (currently, the official name of the stock exchange in Turkey is Borsa Istanbul (BIST), it was named as Istanbul Stock Exchange previously) by analyzing 2003 annual reports and web sites. They used five independent variables, namely, free cash flow, accounting performance (return on equity), leverage, size (market capitalization), and market-to-book ratio. They found leverage is not significant in explaining variations in transparency and disclosure score.

Firm Size and Environmental Disclosure

The size of an oil company has a significant role in decision making about the environment in which the company operates. Nawaiseh (2015) documented a positive significant relationship between firm size and environmental disclosure. Jariya studied the determinant of environmental disclosure in annual reports Sri Lankan listed manufacturing companies and found that firm size has positive influence with the level of corporate environmental disclosure. Burgwal and Vieira (2014) studied environmental disclosure determinants in Dutch listed companies and found a positive association between firm size and environmental disclosure. While Dibia and Onwuchekwu (2015) they have documented a negative relationship between firm size and environmental disclosure. However, Gatimbu and Wabwine (2016) also found a negative association between firm size and environmental disclosure.

O'Dwyer (2003) studied the extent of environmental disclosure in annual reports and standalone environmental reports of all listed Irish companies. Employing content analysis within the context of legitimacy theory, he discovered that, even though Irish companies exhibit an increasing trend in environmental disclosure, extensive environmental reporting is practiced only by companies with easily observable environmental impact. He also discovered that environmental reporting was more often internal than external and that the extent of environmental disclosure is positively associated with corporate size and the environmental sensitivity of the company's industry.

Profitability and Environmental Disclosure

Previous research work had been carried out on the effects of corporate attributes on environmental accounting disclosures, EAD where profitability is one of the proxies used among the many other corporate attributes, and the following results were made available; Jariya (2015) maintained that profitability affects environmental disclosure, while Suleiman, Abdullah and Fatima (2014) examined the determinants of environmental reporting quality in Malaysia, regression was used to analyse the data, the result indicated that profitability had no significant relationship with the quality of environmental reporting. The corporate attributes whose effects on mandatory disclosure were investigated are company profitability, company leverage level, company size(firm size), and quality of external audit (audit firm type).

The relationship between firm's specific attributes and environmental disclosure has been investigated in prior studies using various proxies of the firm specific attributes (Hackson & Milne, 1996; Cormier & Gordon, 2001; Magness, 2006; Dibia, 2015). On the relationship between profitability and voluntary environmental disclosure, mixed results were found to exist. Cormier et al. (2005); Ten (2009); Dibia (2015) found that profitability was not significant in explaining the extent of environmental disclosure. On the other hand, Christensen and Hughes (2004); Smith, Khadijah and Ahmad (2007) attest to the contrary. In addition, Hussainey et al. (2011) examine a sample of 111 Egyptian listed firms during 2005-2010. Authors find that 66% of the sample firms disclose 10-50 CSR statements on average. Furthermore, they find that profitability is the main determinant of CSR disclosure. However, they find no correlation between ownership structure, company size, financial leverage, and liquidity and environmental disclosure.

Audit Firm and Environmental Disclosure

The monitoring strength of auditors' influences information disclosure quality. Extant research suggests that name-brand (Big 4) auditors provide superior quality assurance as compared to non-Big 4 auditors (Teoh and Wong, 1993; Watkins et al., 2004). Big 4 auditors' reputation impacts information credibility or how reliable information is perceived to be (Menon and Williams, 1991). In addition, Big 4 auditors tend to demand a corporation disclose more information for the purpose of maintaining its brand name reputation and avoiding costly litigation.

Ahmed and Courtis (1999) point out that when a firm is audited by a more established accounting firm, analysts tend to extend higher recognition to the quality of the corporate disclosure. The more established an accounting firm is, the less susceptible it is to its customers and the more trusted its reputation is among investors. There also exist positive association between audit firm size and social environmental information disclosure according to previous reviewed literature on environmental disclosures and firms attributes, as cited in Olayinka and Oluwamayuwa (2014). In the work of Ohidoa, Omokhudu and Oserogho (2016) on the determinants of environmental disclosure indicated a positive association between audit firm size and environmental disclosure while leverage has no significance effect on the company's decision to disclose environmental information.

A similar work had been carried out by Dibia and Onwuchekwa (2015) examined the determinants of environmental disclosures in Nigeria, the results of the study uncovered a negative impact on firm size, leverage and audit firm to disclose environmental information by the Nigerian quoted companies. The influence of firm size on EAD is significant while that of leverage and audit firm is insignificant. Profit after tax appear to have positive impact on the firm's decision to disclose significant environmental information.

THEORETICAL FRAMEWORK

Two theories namely the stakeholder and legitimacy explain the relationship between corporate attributes and environmental disclosure. The stakeholder theory is a theory of organizational management and business ethics that addresses morals and values in managing an organization. It was originally detailed by Ian Mitroff in his book "Stakeholders of the Organizational Mind", published in 1983 in San Francisco. In fields such as Accounting, Finance, law, management, human resource, and stakeholder theory has succeeded in challenging the usual analysis frameworks, by suggesting to put stakeholders' needs at the beginning of any action taken by companies.

Legitimacy theory posits that organisations continually seek to ensure that they operate within the bounds and norms of their respective societies. In adopting a legitimacy theory perspective, a company would voluntarily report on activities if management perceived that those activities were expected by the communities in which it operates (Deegan 2002; Deegan, Rankin and Voght 2000; Cormier and Gordon 2001). Given the impacts of perceived breaches of the social contract for organisational survival, it is important to examine the remedial actions that organisations might

engage in. To this end, legitimacy theory offers the notions 'legitimacy gap' and 'legitimacy strategies' which are discussed separately below.

METHODOLOGY

This study adopted the correlational and Ex post facto design i.e. retrospective research dwelt on annual reports and accounts of companies to collect data. Ex post facto design is a quasi-experimental study examining how an independent variable, present prior to the study in the participants, affects a dependent variable. A quasi-experimental study simply means participants are not randomly assigned. The population used in this study was randomly selected and concentrates on oil and gas companies quoted on the Nigerian stock exchange as at 31st December 2017, which the researcher selected using non probability criterion, precisely via judgmental sampling technique. The data were collected from secondary source only, which are available on the annual reports and accounts of the sample companies.

Based on the legitimacy theory, which predicts that corporate attributes impact on environmental accounting disclosure and previous studies such as Olayinka and Oluwamayuwa (2014) and Ohidoa, Omokhudu and Oserogho (2016), the model of the study is specified as follows:

$$EAD_{it} = \alpha_0 + \beta_1 LEV_{it} + \beta_2 FS_{it} + \beta_3 PROF_{it} + \beta_4 B4_{it} + \varepsilon_{it}$$

Where EAD= Environmental Accounting Disclosure

Measuring a complex construct like environmental performance requires an organizing structure for the component metrics. The EPI uses a hierarchical framework that groups indicators within issue categories, issue categories within policy objectives, and policy objectives within the overall index. The EPI has long been based upon two policy objectives: Environmental Health, which measures threats to human health, and Ecosystem Vitality, which measures natural resources and ecosystem services. These objectives reflect the dominant policy domains within which policymakers and their constituents generally deal with environmental problems. Many governments have departments or ministries devoted to public health and natural resources, whose portfolios correspond to the EPI policy objectives.

Therefore, the issue categories are organized along the lines most familiar to stakeholders within environmental policy. In the 2018 EPI, 24 indicators are grouped within 10 issue categories including Air Quality, Water & Sanitation, Heavy Metals, Biodiversity & Habitat, Forests, Fisheries, Climate & Energy, Air Pollution, Water Resources, and Agriculture.A country's EPI score can be disaggregated to levels of the policy objectives or the issue categories, allowing performance to be tracked at different levels. Taking cognizance of these aforementioned indicators, Nigeria ranks 100 amongst the first 180 countries studied. Thus, this study uses the judgmental research sampling technique to select seven companies from the oil and gas sector listed on the Nigerian stock exchange.

β = beta factor
LEV. = Financial leverage: Measured as total debts divided by total assets

PROF. = Profitability: Measured as return on assets, which is earnings before interest and tax divided by total assets.
FS = Firm size: Measured as the natural logarithm of total assets
B4 = Big 4 (Audit Type): An indicator variable equal to 1 if a company is audited by the Big 4, zero otherwise.
e=error term

The researcher in order to ensure objectivity had annual financial reports of each of the oil and gas companies so selected, interpreted along a binary logic of zeros and ones, as standards of the environmental disclosure dummy, spanning seven years for each of the companies named, not earlier than, or before year 2010, using an existing template of disclosure index as designed by Moneva and Llena, (2000). Disclosure index are designed with the aim of capturing narrative information using an extensive list of selected items which may be disclosed, so to speak, in the financial reports of companies already selected and targeted by the study (Marston & shrives, 1991).

RESULTS AND DISCUSSION

The results presented includes summary statistics, correlation matrix and the logistic regression. In addition, the normality test regarding all the study variables is also presented and discussed using the Shapiro-Wilk test. These tests are relevant in understanding the nature of the relationship that exists between the independent and dependent variable. Also, the correlation research design, which is usually associated with the positive research paradigm demands the use of all these techniques for comprehensive and insightful data analysis.

Descriptive Statistics

The descriptive statistics explains the basic characteristics of the data but does not lend itself to statistical analysis. The statistics include mean, standard deviation, minimum and maximum.

Table 1 : Descriptive Statistics

Variable	Envdis	Lev	Prof	fsiz	Big4
Mean	0.361	0.626	0.028	7.735	0.625
Std. Dev.	0.484	0.219	0.105	0.865	0.488
Minimum	0.000	0.020	-0.260	5.520	0.000
Maximum	1.000	0.950	0.432	9.020	1.000
Observation	72	72	72	72	72

Source: Computed by Author using Stata 13 (2019)

Table 1 shows that the mean environmental disclosure is 0.361 with a standard deviation of 0.484 indicating that environmental disclosure by the oil and gas companies is low. This is because the average is less than 50% (0.5) of what is needed. There is wide dispersion of the data from the mean as indicated by the high standard deviation above the average. The table also shows that leverage has a mean of 0.626 and standard deviation of 0.219 revealing that the sample companies

are highly levered. This is further supported by a maximum of 0.950. Since the companies employ more debt in the capital structure, it is expected that they will disclose more about the environmental to reduce the cost of capital. However, the lowest leverage for the period is 0.020. In addition, the average profitability is 0.028 with a standard deviation of 0.105. These mean that the companies made profit of 2% of total assets for the period but with wide difference as indicated by standard deviation above the mean. A particular company reported a loss of up to 26% of total assets, while another company made maximum profit of 42% of total assets. The wide variation is expected to reveal the difference in the effect of profitability on environmental disclosure because the data comprises of both profitable and not profitable firms.

Table 1 shows a mean of 7.735, standard deviation of 0.865, minimum of 5.520 and maximum of 9.020. These indicate that the average firm size as measured by natural logarithm of total assets is 7.735 and there is wide dispersion of the data from the mean. The minimum and maximum of 9.020 and 5.520 respectively shows that the data includes both big and small companies in terms of their total assets. In addition, the table shows that most of the companies are audited by the Big 4 audit firm as evidenced by the mean of 0.625 and a lower standard deviation of 0.488.

Normality Test

The study conducts normality test using the Shapiro-Wilk Test. Shapiro-Wilk test is considered superior to other techniques because it is accurate even when dealing with small data. Table 2 shows the result of the test for normality.

Table 2: Normality Test

Variables	W	Z	Prob.
Envdis	0.984	-0.052	0.521
Lev	0.850	4.888	0.000
Prof	0.891	4.199	0.000
Fsiz	0.912	3.719	0.000
Big 4	0.992	-1.631	0.949

Source: Computed by Author using Stata 13 (2019)

The normality test result in Table 4.2 shows that the data from environmental disclosure and big 4 audit firms are normally distributed because their Z probabilities are above 0.05 (0.521 and 0.949 respectively). However, leverage, profitability and firm size do not meet the symmetry assumptions of regression analysis because they have probabilities less than 0.05. It is worth mentioning, however, that although it is desirable non-normality of data does not invalidate the results of regression especially when the dependent variable is not continuous as in the case of this study (Gujarati, 2004). In fact, a normal data is hardly possible in real life situations. The logistic regression is robust to problems that may arise as a result of non-normality of data such as heteroskedasticity. It is on this basis that the study did not transform the data.

Table 3: Correlation Matrix

Variable	Envdis	Lev	Prof	fsiz	Big4
Envdis	1.0000				
Lev	0.2595	1.000			
Prof	0.3222	-0.0071	1.000		
Fsiz	0.3666	0.4474	0.1621	1.000	
Big4	0.3434	0.3137	0.4693	0.4431	1.000

Source: Computed by Author using Stata 13 (2019)

Table 3 is the Pearson correlation matrix table which shows the relationship between the independent and dependent variables and the relationship among the independent variables themselves. The table reveals that all the determinants examined by this study have positive relationship with environmental disclosure. Firm size has strongest correlation with coefficient of 0.366, while leverage has the weakest correlation among the variables. The correlation coefficients of profitability and Big4 audit firms are 0.3222 and 0.3434 respectively. These show that as each of these variables increase, all things remaining equal, environmental disclosure will also increase and vice versa.

Concerning the correlation among the independent variables, profitability has a negative correlation with leverage (-0.0071) indicating that firms that are highly profitable use less of debt in their capital structure. Firm size and Big4 audit firms have a strong positive relationship with leverage with correlation coefficients of 0.4474 and 0.3137 respectively. In addition, profitability positively correlates with Firm size (0.1621) and Big 4 audit firm (0.4693). These mean that profitable firms tend to use the big 4 audit firms and they are also large in terms of their assets base. More so, large firms employ more of the Big4 audit firms as indicated by the positive correlation coefficients of 0.4431.

Post-Estimation Tests

The study conducts post-estimation tests to ascertain the validity of the results. The tests that are relevant for this study are multicollineaity test, heteroskedasticity test and goodness-of-fit. Table 4 shows the result of the multicollinearity test.

Table 4 : Multicollinearity Test

Variable	VIF	TV
Lev	1.32	0.759
Prof	1.33	0.753
FSiz	1.43	0.698
Big4	1.63	0.614
Mean VIF	1.43	

Source: Computed by the Author using Stata 13 (2019)

The study tests for the existence of harmful collinearity among the independent variables using the Variance Inflation Factor (VIF) and the Tolerance Value (TV). The test in Table 4.4 reveals that the highest VIF value is 1.63 and the lowest is 1.32. The mean value is 1.43, which indicates the absence of multicollinearity among the regressors. Gujarati (2003) noted that when VIF values are

below 10.0 and TV of less than 0.10, there is indication of satisfying the assumption of lack of perfect correlation among the independent variables of the study.

Also, the study tests for the assumption of constant variance (homoscedasticity) in the error terms. The test was conducted using the Breusch-Pagan/Cook-Weisberg test. The test shows that the chi-square of 8.23 and probability of 0.004. This indicates that there is violation of the homoscedasticity assumption of the least square regression. Nevertheless, the logistic regression automatically corrects the heteroskedasticity problem. In addition, the goodness of fit test revealed Pearson Chi (6) of 72.73 and probability of 0.295 indicating that the model is well fitted and that the results are valid.

Regression Analysis

The logistic regression analysis is conducted to test the relationship between the dependent and independent variables. Table 5 presents the summary of the regression result.

Table 5: Logistic Regression result

Variable	Coefficients	Standard Error	Z	Prob.
Constant	-16.839	6.473	-2.60	0.009
Lev	5.294	2.524	2.10	0.036
Prof	16.703	6.635	2.62	0.009
FSiz	1.500	0.685	2.19	0.029
Big4	0.024	0.782	0.03	0.975
Pseudo R2	0.2989			
LR Chi(4)	28.15			
Prob.	0.0000			

Source: Computed by Author (2019) using Stata 13

Table 4.5 shows that the Pseudo R2 is 0.2989, which indicates that about 30% of the variation in environmental disclosure is explained by the variables in this study. The remaining 70% are explained by factors not accounted for in this study. Also, the LR Chi (4) of 28.15 and probability of 0.000 indicate that the model is well fitted and that the changes in environmental disclosure is not caused by accident. Hence, the result reveals that the variables jointly and significantly influence environmental disclosure of the oil companies in Nigeria.

Test of Hypotheses

The study tests the four hypotheses using the logistic regression analysis. Five per cent (5%) level of significance (95% confidence level) was used to test the hypotheses. Hair et al. (2012) noted that 5% level of significance is acceptable for testing hypotheses in the social sciences.

H1: Leverage has no significant effect on environmental accounting disclosures by oil companies in Nigeria

The table shows that leverage has a coefficient of 5.29, standard error of 2.52, Z value of 2.10 and probability of 0.036. These show that leverage has the likelihood of positively and significantly influencing environmental disclosure. Based on this, the study rejects the null hypothesis. The

finding of this study is in line with the results of Setyorini and Ishak (2012), Cornier, Ledoux and Magnan (2009), Nawaiseh (2015) and Burgwal and Vieira (2014) who found significant positive effect of leverage on environmental accounting disclosure. However, it contradicts the results of Dibia and Onwuchekwu (2015), and Gatimbu and Wabwine (2016), who reported a significant negative effect of leverage on environmental accounting disclosure. The result is also in line with the legitimacy theory, which suggest that highly levered firms provide more environmental disclosure to show that they are legitimate corporate citizens.

H2: Firm size has no significant effect on environmental accounting disclosures by oil companies in Nigeria.

Firm size has a coefficient of 1.50, standard error of 0.69, Z value of 2.19 and probability of 0.029 indication that firm size has a significant positive effect on environmental disclosure. Since, the probability is less than 0.05, there is substantial evidence to reject the null hypothesis two. The result conforms to the findings of Jariya (2015) and Abdullah and Fatima (2014) who reported a significant positive effect of firm size on environmental disclosure in Thailand and Malaysia respectively. The results supports the stakeholder theory that argues that firms that have large stakeholders are likely to disclose more environmental information that small firms. This is because the large firms are under the scrutiny of both regulators, analysts and other stakeholders.

H3: Profitability has no significant effect on environmental accounting disclosures by oil companies in Nigeria

Profitability has a coefficient of 16.70, standard error of 6.63, Z value of 2.62 and probability of 0.009. These indicate that profitability has a significant positive effect on environmental disclosure of oil and gas companies. It is on this basis that the study rejects the null hypothesis three. The results is in line with the findings of Dibia and Onwuchekwu (2015), Ahmed and Abubakar (2017), Maliah et al. (2014) and Naser et al. (2006) who found a positive significant effect of profitability measures on environmental disclosure. The finding is against the Brammer and Pavelin (2006), Mejda and Hakim (2013), and Toluwa et al. (2016) who found a significant negative effect of financial performance on environmental disclosure. It is also against the findings of Suleiman et al. (2014) who reported and insignificant effect of profitability in environmental disclosure.

H4: Audit firm type has no significant effect on environmental accounting disclosures by oil companies in Nigeria.

The coefficient for Big4 audit firm is 0.024, standard errors of 0.78, Z value of 0.03 and probability of 0.98. The result shows that the companies that engage the Big 4 audit firms have a positive but insignificant effect on environmental disclosure. Since the probability is less than 0.05, the study rejects the null hypothesis four. The study result corresponds with the findings of Jariya (2015) and Abdullah and fatima (2014) who demonstrated that audit firm size has a significant positive effect on environmental accounting disclosure. This supports the notion that big 4 auditors enhance corporate transparency by making firms disclose more information, which help enhance their legitimacy.

The findings of this study indicates that firm size has a significant positive effect on the environmental disclosure of oil firms in Nigeria. This supports the submissions of Schipper (1991)

and Deegan and Gordon (1996) that large companies are usually exposed to greater attention from stakeholders in relation to their environmental performance than smaller firms and, therefore, they face greater pressures to disclose more information than smaller firms. Further, as suggested by Wong and Fryxell (2004), as a result of the increased awareness and concern about environmental issues, large companies are interested in projecting an image of themselves as firms engaged in the protection of the environment and, in this sense, they consider the disclosure of environmental information as a way to enhance the company's public image and reputation. On the other hand, the preparation and disclosure of environmental information is costly and, in comparison to medium and small firms, larger companies can afford to spend the financial and technical resources that are necessary to prepare and disclose environmental information and, consequently, it is more likely that they provide such information. The larger oil companies in Nigeria are therefore not only dictating but leading the pace in environmental disclosure in the annual reports.

Concerning, leverage the study finds that financial leverage has a significant positive effect on environmental disclosure of oil companies in Nigeria. The finding corroborates the argument of Roberts (1992) that firms with higher financial leverage will see their creditors having greater influence on corporate policies stemming from their ability to recall loans or prevent the extension of further credit. As a consequence, managers are more willing to reveal information regarding corporate social activities and environmental disclosure in response to and to accommodate creditors. Also financial leverage has a role to play: a higher degree of dependence on debt encourages a firm to reveal more environmental information. The creditors of a firm with higher financial leverage become more influential, and managers will step up the response to their demands for environmental information.

From the creditors' point of view, when a firm's activities generate a negative impact on the environment, the firm will face penalties or fines, outcomes, which can also undermine the creditors' rights and interests. For this reason, creditors are highly concerned about activities of the firm. They tend to call for more corporate integrity and demand the firm disclose more so as to keep them updated on the latest status and guard against opportunistic behavior. Otherwise, creditors will seek alternatives and may even withdraw from the firm's stakeholder system.

The study also finds that profitability has a significant positive effect on the environmental disclosure of oil companies in Nigeria. The reason for this finding is not far-fetched considering the fact that firms in good financial condition are likely to disclose more environmental information than companies whose level of profitability is lower. Profitable firms can afford to disclose more information because the cost of disclosure is insignificant in comparison to the overall corporate earnings.

CONCLUSION

The study examined the effect of corporate attributes on environmental accounting disclosure by oil companies in Nigeria. The study finds that corporate attributes significantly affect the environmental accounting disclosure by oil companies in Nigeria. Based on the findings, the study concludes financial leverage has a significant positive effect on environmental accounting

disclosure by oil companies in Nigeria. Second, profitability has a significant positive effect on environmental accounting disclosure by oil companies in Nigeria. Third, the study also find that firm size has a significant positive effect on environmental accounting disclosure. Fourth, the study finds a positive but insignificant effect of auditor types on the environmental accounting disclosure by oil companies in Nigeria. The study offers the following recommendations based on the results of the logistic regression.

1. The regulators of the oil companies in Nigeria should encourage the use of more debts in the oil companies' capital structure, which will make them disclose more information about the environment based on the close monitoring and demand by the debt holders.
2. The management of the oil companies should strive to be more profitable so that they can disclose more environmental accounting information disclosure. Also, investors should demand for more disclosure by the profitable firms.
3. The management of the oil companies should expand the total assets base of the companies so that they can be confident of disclosing more environmental information in their financial reports.

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