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FIRMS ATTRIBUTES AND CORPORATE SOCIAL ENVIRONMENTAL DISCLOSURE IN THE LISTED NIGERIAN OIL AND GAS FIRMS

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Abstract

This study examines the influence of Firm Attributes on the corporate social environmental disclosure of listed oil and gas firms engage in onshore operations in Nigeria. Firm Attributes were proxied firm size, profitability, leverage and firm growth. The study used 90 firm-year paneled observations, panel ordinary least square was estimated. The study employed the use of censoring to arrive at the sample size consisting of eight (8) listed oil and gas firms engage in onshore operations. Secondary data extracted from the Audited annual reports and accounts of the sampled firms from 2001–2015. Various robustness tests were conducted in order to improve the reliability and validity of *the statistical inferences. The findings revealed that, all the firm attributes used in this study except firms growth has positive, strong and significant influence on the corporate social environmental disclosure of listed oil and gas firms engage in onshore operations in Nigeria. Therefore it is recommended that the Listed oil and gas firms that are in onshore activities in Nigeria should strive to increase their firm size, by acquiring more assets, their profitability and source for financing from debt holders, while using considerable level of debt to finance the firm activities.*

***Keywords**:* Firms, Attributes, Environmental, Oil and Gas and Disclosure

1.1 Introduction

The environment has become a crucial concern in today‘s ecological, social and economic set up. The Retention and improvement of the quality of environment has become a serious issue of concern for the business world. Business entities and corporation are held responsible for ensuring a sustainable environment as their activities exerts nervousness over the environmental formation. Environmental accounting has emerged during the last two decades in response to these issues. Industrial activity has a huge shock on the environment. Recent concerns about global warming and emerging emissions trading market for greenhouse gases have intensified stakeholder interest in corporate environmental activities and its impact (Anderson, 1989). Response to this increase in interest has varied across corporations and across countries. While for most part of the developed countries of the world, environmental reporting has developed voluntarily (through voluntary standards such as the global reporting initiatives). However, this is not the same in developing countries (Azzone, Manzini and Noci, 1996). Corporate social environmental responsibility has grown to include environmental matters over the years as environmental issues such as environmental smog and environmental litigations have become more prominent economic, social and political problems worldwide. These have put force for corporations to engage into environmental responsibility including environmental accounting and reporting matters. As argued by Margolis & Walsh (2003) many corporate attributes have been believed to be explanatory variables for the status of corporate environmental disclosure provided by corporations. These specific attributes include, and not limited to, size, profitability and leverage.

Firm size is argued to be a significant variable in explaining the disclosure levels by corporate entities Cowen et al. (1987). In addition larger companies tend to have greater information of social responsibility disclosure than smaller firms who are more likely to release inadequate information. The skepticisms of the smaller firms to adequately disclose greater amount of information lies on three main argument. The high cost involve in gathering and disclosing such information, the larck of awareness by the managers about the benefit of adequate disclosure and the assumption that adequate disclosure will threaten their performance and competitive position in the market ((Jensen & Meckling, 1976; Cowen et al., 1987; Singhvi 1971). More so, large firms are more likely to have an economic significance in eyes of different interested groups which is subject to more scrutiny and thus, need to disclose more information including environmental information (Cooke, 1999; Lang & Lundholm, 1993; Andrew, Gul, Guthrie, & Teoh, 1989). Therefore, Firm size may likely have a great impact on environmental reporting practices because the larger the firm the more the tendency to impact on the environment in the pursuit of economic activities. Also the larger the firm in size the more they are likely to have more shareholders who might be concerned with environmental activities undertaken by the corporations and this leads more environmental information disclosure in order to reduce the information asymmetry between the firm and its numerous stakeholders arising from it large size. This study shall use log of total assets as a proxy for firm size.

A corporation management might feel that it has to prove that its profits were not on expense of its social and environmental performance, that is, it did not cause any harm to society or environment while achieving its profits. In addition to this possible explanation, costs expected to be imposed- in case of achieving high levels of profitability- by some external groups such as trade unions (in form of calling for increasing workers' wages for example) might be an impetus for emphasizing the social and environmental role of the firm (employees issues in the case of the example). Self-interest, such as keeping their positions, can be also taken into account by managers in their decisions with respect to social and environmental disclosure, since enhanced social image has increasingly become preferred by information users. In addition, profitability is found to be a reason for disclosing more information pertaining to the effects of corporation's activity on society and environment. Hossain & Hammami (2009) considered political costs, financial performance justification, and self-interest of managers as explanatory factors for profitability being a motive for disclosing more social and environmental information. However, disclosing social information by corporation's desire to be seen as a positive participant in society development (Haniffa and Cooke 2005).

One of the major objectives of corporate environmental reporting is that a firm releases information for decision making to various stakeholders including human right groups. (Hossain, Islam & Andrew 2006; Rouf 2010; Makori & Jogonga, 2013). In practice, the decision to disclose or not to disclose certain information relating to environmental reporting is likely to be influenced by a variety of corporate attributes like firm size, leverage, profitability and firm age (Rouf 2010, Chalaki, Didar &, Lonel-Alim 2012). Studies on the influence of these corporate attributes have remained controversial as a result of differences in socio economic, cultural, awareness and concern towards environmental issues. In addition studies studies in this area of environmental reporting especially in Nigeria remain grossly inadequate despite the fact that our main stay crude oil, the operation of which drastically affect our environment. More so, the measurement of sustainable development standards in firms are developed on a continuous basis by different international organization with the aim of achieving internationally acknowledged uniform standards (Alena, 2011). One of the most widely known international standards for assessing environmental activity of firms is the International Standard Organization disclosure requirements (ISO 14031) of 1997, which provides voluntary standards of reporting. This is because, it provides sustainability standards capable of monitoring long-time corporate growth, efficiency, performance, competiveness by incorporating economic and environmental issues into corporate management. Therefore environmental activities of firms are translated into useful reports to various stakeholders through the use of environmental accounting, by applying ISO 14031 as a standard benchmark. The question to be asked here is, how the firm specific attributes- firm size, profitability, leverages, and growth determine corporate environmental disclosure of oil and gas firms listed in Nigeria?

Therefore, the main objective of this study is to investigate the determinant of corporate social environmental disclosure. Base on this the following specific objectives were proffered:

i. To investigate the impact of firm size on corporate social environmental disclosure.
ii. To determine the association between profitability and corporate social environmental disclosure of oil and gas firms listed in Nigeria
iii. To examine the relationship between leverage and corporate social environmental disclosure of oil and gas firms listed in Nigeria
iv. To investigate the association between firms growth and corporate social environmental disclosure of oil and gas firms listed in Nigeria.

Base on the above objectives the following hypotheses were developed in null form:

Ho1 Firm size has no significant impact on the corporate social environmental disclosure of oil and gas firms listed in Nigeria.

Ho2 Profitability has no significant effect on the corporate social environmental disclosure of oil and gas firms listed in Nigeria

Ho3 leverage has no significant impact on corporate social environmental disclosure of oil and gas firms in Nigeria.

Ho4 Ho5 there is no significant association between firm growth and corporate social environmental disclosure of oil and gas firms listed in Nigeria.

The main theoretical motivation of this study is that, is the first study, to the best of my knowledge, to empirically address corporate environmental disclosure quality assessment in line with the international standard organization (ISO 1997), 14031 disclosure index framework in Nigeria and in Oil and gas industry within this period. The study introduces to the academic literature an extensive framework for assessing environmental disclosure quality. The metric developed by the current study is the first comprehensive aggregate environmental disclosure measure, as far as I am aware, that attempts to capture the entire available disclosure index in the industry. In addition, the findings of this study are expected to have particular positive implications of coming up with policies and measures that will improve the compliance of ISO 14031 for ensuring high quality social environmental disclosure. In addition, the financial analysts, stock market stakeholders, shareholders, standard organization of Nigeria (SON), human right activist, non-governmental organization and management of oil and gas listed in Nigeria stand to benefit immensely from the outcome of this research.

The remaining parts of the paper cover four sections- section two contains theory and evidence where previous literatures are reviewed, section three covers the methodology. In addition, results, policy implications and conclusion are presented in section four and five respectively.

2.1 Empirical Review and Theoretical Framework

Several studies were reviewed for the purpose of this study, some of which includes; Ahmed & Nicholls (1994); Hossain et al., (1994); Wallace et al., (1994); Craig & Diga, 1998) and Stanwick & Stanwick (2006), they indicated that firm corporate characteristics are important determinant of corporate social environmental disclosure. A number of studies over the past decades have tested the influence of firm size on the level of environmental disclosure. Most researchers report a positive relationship between company size and the extent of environmental disclosure in both developing and developed countries (Ahmed & Nicholls 1994; Hossain et al., 1994; Wallace et al., 1994; Craig & Diga, 1998). On the contrary, a number of studies have also tested the influence of firm size on environmental disclosures and found that there is a negative association between the size of a company and environmental disclosure (Garcia-Sanchez 2008; Stanny & Ely 2008; Barako et al., 2006; Hossain et al. 2006)

There are several reasons in the literature in support of this positive association. Firstly, the cost of accumulating and generating certain information is greater for small firms than large firms. Small companies may not be able to afford such costs from their resource base (Owusu-Ansah, 1998). Larger companies might have sufficient resources to afford the cost of producing information for the users of annual reports. Secondly, the agency cost is higher for large firms because shareholders are widespread and in that way, disclosing more environmental information reduce the potential agency cost (Watts & Zimmerman, 1983). Additionally, these firms might publish more information in their reports to supply information relevant to different users. Thirdly, larger companies may tend to disclose more environmental information than smaller companies in their annual reports due to their competitive cost advantage (Lang & Lundholm, 1993; Lobo & Zhou, 2001). Hence, small companies disclose less information than large companies. Fourthly, It is also argued that contrary to the smaller enterprises, large-sized companies need to raise more external funds. In order to attract investors, larger companies are willing to disclose more information to reduce agency costs arising from asymmetric information and to gain public support. Fifthly, (Aripin, Tower, & Taylor, 2008; Watson, Shrives, & Marston, 2002; DaSilva & Wallace, & Naser, 1994; Samir, James, & Fornaro, 2003; Ho & Wong, 2001); Suggested the underlying reasons why larger firms disclose more environmental information. This because the managers of larger companies are more likely to realize the possible benefits of better disclosure and small companies are more likely to feel that full disclosure of environmental information could endanger their competitive position. Thus, the impact of firm size is expected to be positively associated with the extent of corporate environmental disclosures.

A study by Trotman & Bradley (1981) found a positive association between size and voluntary social responsibility disclosures. There are numerous explanations for such association. Firth (1979) suggests that firms, which are more visible in the “public eyes”, are likely to voluntarily disclose environmental information to enhance their corporate reputation. Watts and Zimmerman (1989) suggested that larger firms would have higher political costs because the firms are more politically visible and may attract more resentment due to their perceived market power. Similarly Cowen, Ferreri and Parker, (1987) noted that company size is an important influencing factor on corporate social responsibility disclosure. The larger the company is, the higher the political costs it may have. Leftwich, Watts and Zimmerman (1982) maintained that firm size is a comprehensive variable, which can proxy a number of corporate attributes, such as competitive advantage, information production costs and political costs. These positions are in line with legitimacy theory which posits that larger companies have to respond with more environmental disclosures in order to have a greater impact on expectations from the public because they have more stakeholders than small companies (Cowen *et al*. 1987).

Spicer (1978) surveyed 125 listed manufacturing firms and analyzed the annual reports of these companies for the period. Findings from the study suggested that firms' size as a factor influencing pollution control showed that larger firms had a better record than smaller firms. In line with this result, Ferreri and Parker (1987) found out that larger firms tends to disclose more environmental information because larger firms are highly visible, make greater impact to the society, and have more shareholders who might be concerned with environmental activities undertaken by firms. In addition, findings from other related studies by Mohammed (1999), Romlah, Takiah and Jusoh (2003) and Mohammed et al., (2006) revealed that company's size as measured by total assets provided an explanation on the variability of environmental disclosure among Malaysian companies.

In Greece, Galvani, Graves and Stavropoulos (2011) determined the extent to which Greek companies implemented a set of environmental accounting practices which was analysed using estimated multiple linear regression model, the relationship between various firm characteristics (proxied by firm size, profitability status, quotation on the stock exchange and environmental disclosures). 100 listed firms were selected for the study and a disclosure index was constructed which consisted of 15 items of information in order to identify the factors that may have a significant influence on the disclosure level of environmental information by Greek companies. The results of the study showed that the degree of development of environmental accounting practices was low and there was a positive relationship between only corporate size and the disclosure of environmental information in annual reports of 2009.

Profitability as well as corporate financial performance was used by a number of researchers as an explanatory variable for differences in environmental disclosure level. However, the relationship between corporate financial performance and corporate social and environmental disclosure is arguably one of the most controversial issues yet to be resolved (Choi, 1998). Previous studies have found different results in regard to the relationship between social and environmental disclosure and financial performance. Firstly, some studies have found that social and environmental reporting and financial performance are positively linked (Cohen Davis & Daines, 1997). Cohen et al. (1997) in their study of the determinants of voluntary disclosure of financial information by Brazilian firms, based on a sample of 168 firms which were analyzed using regression analysis found that companies that make social and environmental disclosures may be those able to effectively with financial resources reduce pollution as well as employing more efficient methods of production, and thereby gain competitive advantage. On the other hand, some previous studies found a negative relationship between social and environmental disclosure and financial performance. Mathews, (1997) studied the reason, why firms voluntary disclose bad news. Five years data obtained from a sample of 186 Indonesian firms was analyzed using a regression model. Their results suggested that social and environmental disclosure entails costs to companies and acts to reduce corporate financial performance hence profitable firms engage in environmental disclosure to a large extent. In another dimension, no correlation between environmental disclosure and financial performance was found by Connelly & Limpaphayom (2004), in their study of environmental reporting and firm performance in Thailand. Regression analysis was used to analyse the data obtained from a sample of 120 pollution prone firms for the year 2001. Similarly Stanwick & Stanwick (2006) obtained a sample of 167 listed firms over the period 1992-1998 (seven years) whose data were analysed using ordinary least square regression to test their study of corporate environmental disclosure in a longitudinal study of Japanese firms.

Akerlof, (2007) opined that there are two different conceptions regarding profitability and the tendency to disclose voluntary environmental information. First, more profitable firms are more likely to disclose more environmental information while less profitable firms tend to be more secretive. Secondly profitable firms may be more inclined to disclose more environmental information in order to screen themselves from less profitable firms. A well run company has incentives to distinguish themselves from less profitable company in order to raise capital on the best available terms, one way to do this is through disclosures Inchausti, (1997). Leventis & Weetman (2004) argued that managers of very profitable companies would use external information in order to obtain personal advantages such as continuance of their positions and compensation arrangement and to signal institutional confidence which provides some agency notion of accountability of the environmental to various stakeholders.

In another dimension Lang & Lundhlom (1993) suggested that there is a certain ambiguity in theoretical and empirical studies regarding the issue of profitability in relation to disclosure environmental information and therefore the relationship between disclosure and profitability is non-monotonic. This is because less profitable firms may disclose more information to explain the reasons for the negative performance and reassure the market about future growth. Companies also disclose bad news at an early opportunity in order to mitigate the risk of legal liability, severe devaluation of share capital and loss of reputation (Skinner, 1994). Singhvi & Desai (1971) as cited in Rouf (2010) after statistically analyzing the data covering 3 years of 100 sampled firms in Indian by means of regression model found from their study of determinants of environmental disclosure in India listed firms that there was a positive association between profitability and environmental disclosure. They argued that when profitability is high and the company achieves a high margin of profit, the managerial groups are motivated to disclose more environmental information in order to show off good reputation to the consumers, shareholders, investors and other stakeholders. On the other hand, if the profitability is low or the company suffers losses, they may disclose less environmental information in order to cover the reasons for such losses or declining profits.

Freedman & Jaggi (1988) employed the poor financial performance justification argument to explain why firms with weak financial performance would tend to provide more extensive environmental disclosures than firms with good financial performance. These firms were motivated to justify their weak financial performance by indicating that heavy pollution-related expenditures might have contributed to this result. Their study was based on a content analysis of environmental disclosure in the annual reports of 109 firms from pollution intensive industries.

Freedman and Jaggi (1982) studied the association between environmental disclosures and the financial performance for firms in four highly polluting industries. The results indicated that there is no association between environmental disclosures and financial performance after the data was analysed using a regression model. Wiseman (1982) examined the relationship between the annual reports of 26 firms covering the period 1980-1981 in three industries with their financial and environmental performances using the ISO 14031 environmental reporting guideline. Content analysis was used to measure the extent of disclosures using 18 items and two categories to evaluate the quality and accuracy of environmental disclosures. The financial performance indicators used in the analysis of the level of financial performance of the selected firms included; earnings per share, price-earnings ratio and dividend yield. Regression analysis was used to find out the relationship between the three variables. The findings indicated that the voluntary environmental reports were incomplete, providing inadequate disclosure for most of the environmental performance items included in the content analysis. His findings also demonstrated that no relationship existed between the contents of the firms' environmental disclosures and the firms' financial performance.

Gray et al. (1999) adopted the content analysis technique examined the relationship between firms’ performance and the extent of corporate environmental disclosure using a sample of 200 listed firms for the year 1985. The study found that financial performance is not related to corporate environmental disclosure in the same period, but may be related to lag profits. In contrast, Abbot & Monsen (1979) indicated that there is positive correlation between financial performance and amount of environmental disclosure. This means that companies are more likely to disclose social and environmental responsibility expenditures when their financial statements indicate favorable financial performance.

Sarumpaet (2005) using a sample size of 252 listed companies in Indonesia, investigated the relationship between financial performance and environmental reporting through a regression statitical tool. It concluded that that financial performance had no significant relationship with environmental performance. The impact of environmental accounting and reporting on organization performance of selected oil and gas companies in Niger-Delta region of Nigeria was examined by Bassey, Effiok and Eton (2013). The study was statistically analyzed using Pearson’s Product Moment Correlation Coefficient. The sample of 30 non-listed firms covering the period 2008-2010 was arrived at using random and stratified sampling techniques. Data were gathered from primary and secondary sources. It was found that the level of environmental disclosure had positive association with a firm’s profitability. A major limitation of this study was that it used only one variable (profit) as a proxy for corporate attributes in relation to corporate environmental reporting practices even though different aspects of profit were available for consideration. Makori and Jogonga (2013) established in their study whether there is any significant relationship between environmental accounting and profitability of selected firms listed in India. The data for the study were collected from annual reports and accounts of 14 randomly selected quoted companies in Bombay Stock Exchange in India for the year 2007. The data were analysed using Multiple Regression Models and the findings showed that there was a significant negative relationship between environmental accounting and Return on Capital Employed (ROCE) and Earnings Per Share (EPS) and on the other hand a significant positive relationship was found between environmental accounting and Net Profit Margin (NPM) and Divided Per Share (DPS). A major limitation of this study is that it used only one variable (profit) as a proxy for corporate attributes in relation to corporate environmental reporting practices even though different aspects of profit was considered.

Ingram and Frazier (1980) examined the association between the content of corporate environmental disclosure and corporate financial performance. The study was concerned with a lack of corporate environmental disclosures in annual reports due to their voluntary nature. The authors scored environmental disclosures in 20 pre-selected content items along four dimensions; evidence, time, specificity, and theme for the year 1978. They proxied environmental performance by a performance index devised by the Council on Economic Priorities (CEP), a non-profit organization specialising in the analysis of corporate social activities. Forty firms were selected from the 50 firms that were monitored by the CEP. Regression results indicated no association between environmental disclosure and financial performance which was consistent with authors' prior expectation about an overall poor quality of environmental disclosures in annualreports.

Lorenzo, Sanchez and Alvarez (2012) conducted a study on the effects of shareholdings (active shareholders power, other stake-holders power, strategic position and economic performance (profit)) on corporate social responsibility and environmental reporting in Spain. Using 2009 data extracted from 99 sampled firms, it was found through the analysis of Multiple Linear Regression Model that active shareholders and economic performance (profit) were positively and significantly associated with the level of environmental reporting while other stakeholders and strategic position were statistically insignificant. The major limitations of this study was that it used only one year data as the scope of study which is not enough to provide a sufficient time series trend and also the study was not conducted in Nigeria.

Hannifa and Cooke (2002) studied, profit and corporate governance on environmental disclosure in Malaysian firms. Using a sample of 226 listed firms over the period 1999-2000, the data was analyzed using ordinary least square regression. It was found that there was a significant positive association between the level of environmental disclosure and profitability of the firm. They observed that the economic performance of a firm is considered as an important factor in determining whether environmental issues will be a priority or not. This is because in periods of low economic performance, the firm's economic objectives may be given more attention than environmental concerns. They also asserted that perhaps investors generally perceive that in the absence of voluntary disclosure of environmental information, there is an indication of bad news about the firm. This is in line with signaling theory which suggests that highly profitable firms may have reasons or incentives to differentiate themselves from loss making firms or less successful firms in order to raise capital at the lower costs by making more environmental disclosures.

In China, Fan (2006) carried out a study on the determinants of environmental disclosure among Chinese firms, data covering the period 2000-2004 was extracted from a sample of 226 firms which were analysed using linear regression. He reported that profitability has a significant impact on voluntary disclosure in the Chinese context. Generally profitability is also used widely to predict firm visibility in environmental context (Walden, 1997; Neu, Warsame and Pedwell, 1998; Frost, 1999). On the contrary in a study of accounting guidelines for environmental issues by Smith (2007), the study applied data of 6 years from a sample of 148 firms. The data was analysed using ordinary least square regression analysis and found a significant inverse relationship between disclosure score and the return on assets for environmental disclosure in the Malaysian context.

From the literatures reviewed from various scholars in different countries, it is clear that more profitable firms are likely to disclose more environmental information while less profitable firms tend to be more secretive and secondly profitable firms may be more inclined to disclose more information in order to screen themselves from less profitable firms because a well run company has incentives to distinguish themselves from less profitable company in order to raise capital on the best available terms, one way to do this is through extensive disclosures. Another reason why profitable firms disclose more environmental information is that as the firm makes more profit it does not face pressure of payment of dividends to its shareholders, hence it is likely to allocate more funds to safeguard the environment. This is unlike the loss making firm that is always under pressure to satisfy its shareholders in terms of payment of dividends.

Similar to size, profitability in absolute terms also suffers from inherent weakness, because large firms usually have large amount of profit/loss in absolute terms in order to avoid this problem, many studies used the ratios of profitability measures e.g Return On Assets (ROA), Return On Investments (ROI), Return On

Equity (ROE), Net Profit Margin (NPM) and log of profits) and this study shall adopt ROA.

Jensen and Meckling (1976) have used agency theory to assert that political transfers of wealth, from bondholders to shareholders can take place in highly leveraged firms. Agency theory predicts that restrictive covenant may be written into debt contracts to protect firm's economic interests. Management may also voluntarily disclose information in financial report for monitoring purposes. Thus, agency theory predicts that level of voluntary environmental disclosure increases as the leverage of firm grows. Leftwich (1981) suggested that the proportion of outside capital tends to be higher for larger firms as the potential benefits of voluntary environmental disclosure increase with shareholder, debt holder and manager conflicts. Moreover, companies with high leverage may disclose more environmental information to satisfy the needs of long-term creditors and to remove suspicions of debt holders regarding wealth transfer (Myers, 1982). Agency theory suggests that with the increase of debt proportion in capital structure, the greater is likely to be the conflicts of interest between shareholders, creditors and managers, the higher the agency cost and thus managers have an incentive to disclose more information including environmental information. From the perspective of social and environmental responsibilities, companies with higher financial leverage are more inclined to establish good relations with stakeholders; therefore, they are more likely to disclose more environmental information. In the study by Clarkson, Li, Richardson and Vasvari, (2008) considered that firms that raise financing in debt have a higher propensity for environmental disclosures in voluntary channels. In Malaysia, Trotman and Bradley (1981) using the content analysis technique examined the association between social and environmental sustainability reporting and characteristics of companies. Data was obtained from a sample of 120 manufacturing firms covering 5 years and was analysed using regression analysis. Findings from the study suggested that a positive relationship existed between firms' financial leverage and the extent of voluntary environmental disclosure. However, findings from related literatures by Chow & Wong-Boren (1987) evaluated environmental disclosure by Mexican listed firms with leverage as the independent variable while environmental disclosure was the dependent variable with a sample of 52 manufacturing firms was drawn for the year and analysed using ordinary least square regression model. The study found no statistical relationship between leverage and the level of environmental disclosure.

Uwigbe (2012) in a study of corporate environmental reporting practices: a comparative study of Nigeria and South Africa, a grand total of 900 copies of questionnaires were distributed among members of the selected states/provinces using the Yaro Yamani sample selection formula in determining the sample size of the study. In addition, the content analysis technique was used as a basis for eliciting data of corporate attribute from the annual report and corporate websites of the selected 60 listed companies over the period 2005-2009. The Multiple Regression Method of data analysis was used to investigate the relationship that existed between operating performance (profit), financial leverage, size of firms and the level of corporate environmental disclosure among the sampled listed firms in Nigeria and South Africa. The study found that there is a significant positive relationship between the operating performance (profit), size of firm and the level of corporate environmental disclosure among selected firms in Nigeria. It also found that a significant negative relationship exists between financial leverage of firms (proxied-by-debt-to-equity ratio) and the extent of corporate environmental disclosure. The study concluded that despite the disclosure level noticed among firms, corporate environmental reporting practice in developing countries like Nigeria and South Africa, is still very ad-hoc, general, self-laudatory and voluntary in nature. A major limitation of this study was that it used corporate attributes as determinants of corporate environmental reporting practices without considering board structure, even though more than one variable was used, furthermore, the scopes of study was only five years.

In Bangladesh Hossain, Islam & Andrew (2006) evaluated corporate social and environmental information from annual report's and accounts of the 107 sampled companies listed on the Dhaka Stock Exchange over the period of 2002-2003. Multiple linear regression technique was used to analyse the data obtained. The results showed that corporate environmental disclosure levels are associated with some company attributes in Bangladesh: Nature of the industry, leverage and profitability were found to be positively significant in determining disclosure levels, while size of the firm, subsidiary of multinational companies and auditor type were found to be insignificant in determining the level of corporate environmental disclosure practices. The limitation of this study is the period of data used was just 2 years and it was conducted in another country. Ahmed & Nicholls (1994) conducted a study on the impact of non-financial companies' characteristics on voluntary compliance in developing countries and found no statistical relationship between financial leverage and environmental disclosure. This was arrived at after the data obtained from 88 sampled firms for 1992 were analyzed with ordinary least square regression. Furthermore the study evaluated by Mohamed & Tamoi (2006) using data from 180 sampled Tunisian manufacturing firms for year 2004 which were analysed with linear regression found no statistical relationship between financial leverage and environmental disclosure. A major limitation of these studies was that only leverage was used as a determinant of corporate environmental reporting practices without considering board structure, furthermore, the scope of studies was only a year.

Legitimacy theory proposes a relationship between corporate social disclosure and community concerns so that management must react to community expectations and changes (Deegan, 2002). Organizations seek to operate within the bounds and norms of their respective societies so they attempt to ensure that their activities are perceived as legitimate by outside parties. This is because a corporation is part of a broader social system (Deegan, 2002). O'Donovan (2004) stated that legitimacy theory could explain why firms report environmental disclosures. Firms believe that they must act for society with socially acceptable behavior that can enhance their business success. Based on legitimacy theory, social and environmental disclosures are a means used by the company to influence the public policy process, either directly by addressing public and/or legislative concerns, or indirectly by projecting company's image as socially aware (Patten, 1992). According to Guthrie and Parker (1989), legitimacy theory argues that the corporate disclosures are made as reactions to environmental pressures (economical, social, and political) and to legitimate the company's existence and actions. Hence, legitimacy theory suggests that the corporate environmental reporting is a function of the level of political and social pressure with which companies face concerning their environmental performance (Cho and Patten, 2007). In response to these pressures, firms react by disclosing more environmental information in order to preserve their image of being a legitimate company and to avoid the negative consequences caused by legitimacy crises (De Villiers & Van Staden, 2006). Therefore, this legitimacy theory is the theory that underpins this study.

3.1 Methodology

For this study, correlational research design is used to describe the statistical association between two or more variables. It is therefore most appropriate for this study, because it allows for testing of expected relationships between and among variables and the making of predictions regarding these relationships. The population of the study comprises of all 6 oil and gas firms engage in onshore operations, listed in the Nigerian Stock Exchange as at 31st December, 2015. All the 6 firms were selected as sample of the study using purposeful sampling technique. The period of the study covers fifteen years of 2001 to 2015. The source of data for the study is secondary only, extracted from the audited annual report and accounts of the sampled firms. The study used longitudinal balanced panel data to account for individual heterogeneity of the sampled firms. The results of robustness tests (multicolinearity, normality, heteroskedasticity and cross-sectional dependence) were conducted in order to improve the validity and reliability of all statistical inferences. To determine the impact of firms attributes on corporate social environmental disclosure of oil and gas firms listed in Nigeria, the following model was developed:

$$\mathbf{CSED_{it} + \alpha_{it} + \beta_1 FSZ_{it} + \beta_2 PROF_{it} + \beta_3 LEV_{it} + \beta_4 GRWT_{it} + \mathcal{E}_{it}}$$

Where:
α = Constant term
$_{i}$ = firm
$_{t}$ = time
β_1 to β_4 = coefficient of the parameters
$\mathcal{E}$ = stochastic disturbance

Table 1: Variable definition and measurement

Variable	Measurement
Corporate social environmental disclosure (CSED)	Measured by the summation of element in the ISO 14031 checklist. The summation of which make the corporate social environmental disclosure index.
Firm Size (FSZ)	Measured by the firm natural logarithms of total asset
Profitability (PROF)	Measured by return on asset
Leverage (LEV)	Measured as the ratio of total long-term debt to owners' equity plus total long-term debt.
Growth (GRWT)	Measured by the change in firms total sales

Source: by author

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4.1 Result and Discussion

This section deals with the presentation of result, analysis and interpretation of the data collected for the purpose of testing the hypotheses used in this study. Also, findings were discussed and policy implications from the findings were also drawn.

Table 2: Summary of Regression Result

Variables	Coefficients	Z-values	P-values	VIF	'olerance values
FSZ	1.224134	2.24	0.028	2.94	0.339985
PROF	1.584891	3.92	0.000	2.78	0.359317
LEV	6.591917	3.25	0.002	1.16	0.860549
GRWT	3.244152	0.83	0.408	1.09	0.920922
R^2					0.5468
Wald chi					25.30(0.0000)
Hettest					10.47(0.0012)
Hausman					47.96(0.0000)

Source: Result output from STATA 11

The cumulative R^2 Overall (0.5468) which is the multiple coefficients of determination gives the proportion of the total variation in the dependent variable (corporate environmental social disclosure) explained by the cumulative effort of independent variable jointly. Hence, it signifies that 55% of the total variation in corporate environmental social disclosure of oil and gas firms listed in Nigeria was caused by their firm size, profitability, leverage and growth.

The Wald chi-squared statistics, after normalization, chi-squared is the limiting distribution of the F as the denominator degrees of freedom goes to infinity. Therefore, the Wald chi^2 of 25.30 which is significant at 1% indicate that the corporate environmental social disclosure and Firm attributes model was fit. This indicates that the model is fit and the independent variables are properly selected, combined and used for the study. In addition, the results of robustness tests conducted in order to improve the validity and reliability of all statistical inferences revealed favorable to the data collected and used for the study. These tests include; multicollinearity test, heteroscedasticity test and Hausman specification test as evidenced in table 2 above.

The regression result reveals that firm size of oil and gas firms in Nigeria has a coefficient value of 1.224134 with a z-value of 2.24 which was found to be statistically significant at 5% level of significance. This result shows that firm size has a significant positive influence on the corporate social environmental disclosure of oil and gas firms listed in Nigeria. However, this finding further suggest that a 5% increase in firm size will lead to a significant increase in the disclosure level of corporate social environmental disclosure of listed oil and gas in Nigeria. This implies that the larger the firm in terms of size the greater the level of corporate social environmental disclosure will be in the financial statement of oil and gas firms listed in Nigeria. In addition the findings of this study may be as a result of the argument put forward by Ferreri & Parker (1987) who suggest that larger firms tends to disclose more environmental information because larger firms are highly visible, make greater impact to the society, and have more shareholders who might be concerned with environmental activities undertaken by firms. Moreover, this may be as result of trying to maintain the corporate reputation achieved by the larger firms over the years. In addition larger firms tend to have more political cost because the firms are more politically visible and may attract more resentment due to their perceived market power (Watts & Zimmerman 1989). The result of this study with regards to firm size gives an evidence of rejecting the null hypothesis one of the studies. The finding of this study is in line with the finding of Ahmed & Nicholls (1994); Aripin, Tower, & Taylor, (2008); Watson, Shrives, & Marston, (2002); DaSilva &

Christensen, (2004); Wallace, & Naser,(1994); Samir, James, & Fornaro,(2003); Ho & Wong, (2001) ;Ferreri & Parker (1987); Hossain *et al.,* (1994); Wallace *et al.*, (1994); Craig & Diga, (1998); Watts & Zimmerman (1989) and contradict the finding of Garcia-Sanchez (2008); Stanny & Ely (2008); Barako, (2007); Hossain *et al*. (2006)

In addition, the regression result reveals that profitability has a coefficient value of 1.584891 and a z-value of 3.92 which is statistically significance at all level of significant. This shows that profitability has a positive and statically significance impact on the corporate social environmental disclosure of oil and gas firms in onshore operations listed in Nigeria. This implies that, when profitability of oil and gas firms engage in onshore operations increases the corporate social environmental disclosure of these firms will also improve positively and significantly. This result is not surprising base on two arguments firstly, more profitable firms are more likely to disclose more environmental information while less profitable firms tend to be more secretive. Secondly profitable firms may be more inclined to disclose more environmental information in order to screen themselves from less profitable firms. A well-run company has incentives to distinguish themselves from less profitable company in order to raise capital on the best available terms, one way to do this is through disclosures Inchausti, (1997). Therefore, this result serves as an evidence of rejecting the second null hypothesis of the study which says profitability has no significance impact on the corporate social environmental disclosure of oil and gas firms engage in onshore operations in Nigeria. The finding of this study is in line with the findings of Cohen *et al.* (1997), and also not in line with the results of Mathur & Mathur, (2000), Connelly & Limpaphayom (2004).

Furthermore, Leverage was found to have a coefficient value of 6.591917 and a t-value of 3.25 which is statistically significance at 1% level of significance. This significance relationship between leverage and corporate social environmental disclosure signifies that high levered firms in onshore operations in Nigerian oil and gas firms disclose more environmental information compared to less levered firms. In addition it indicates that the higher the leverage as measured by the ratio of total debt to total asset the greater the corporate social environmental disclosure. Because of the restrictive debt covenant impose on firms willing to source out finance from outside by the debt holders, management of firms may tend to voluntarily disclose information in the financial statement including environmental information for monitoring purpose by the debt holders and soft covenant by the debt holders. Therefore, for the forgoing reason this finding may not be surprising. Another important argument is the arguments put forward by

Jensen and Meckling (1976) and Myers (1977) have used agency theory to assert that political transfers of wealth, from bondholders to shareholders can take place in highly leveraged firms. Agency theory predicts that restrictive covenant may be written into debt contracts to protect firm's economic interests. Therefore firms may have the interest to disclose more information in the financial reporting including environmental information. Hence, the third null hypothesis of this study is hereby rejected base on the above finding. This result is in agreement with the finding of Leftwich (1981), Malone & Jones, (1993), Clarkson, Li, Richardson & Vasvari, (2008) and Trotman & Bradley (1981).

Finally, our regression result reveals that firm growth measured by changes in total assets was found to be positively but insignificant in influencing corporate social environmental disclosure of listed oil and gas firms in Nigeria as it recorded a coefficient value of 3.244152 and t-value of 0.83. This shows that firms' growth has impacted positively on corporate social environmental disclosure. This implies that when there is an increase in total assets of oil and gas firms in onshore operations, it has no significant influence on the corporate social environmental disclosure by oil and gas firms engage in onshore operations in Nigeria. This result may not be surprising as merely increase in firm's asset may not necessarily have a significant impact on the information disclosure in the financial statement especially environmental information. The findings of this variable serve as an evidence of failing to reject the fourth and the last hypothesis of this study.

5.1 Conclusions and Recommendations

Conclusively, the study has provided both statistical as well as empirical evidence on the contribution of four firms attributes proxies; firm size, profitability, leverage and firm growth in explaining and predicting corporate social environmental disclosure of listed oil and gas firms engage in onshore operations. Thus, firm size, profitability and leverage are predicting and explaining corporate social environmental disclosure of Nigerian listed oil and gas firms engage in onshore operations. On the other hand growth is not in any way contributing to corporate social environmental disclosure of the selected firms. It is therefore recommended that all the firms attribute used in this study except growth should be encouraged by the board and management of the studied firms in the Nigerian oil and gas firms engage in onshore operations, because of the role they play in contributing to the corporate social environmental disclosure measured by the ISO 14031 environmental disclosure requirement.

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Appendix

```
. hettest

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
        Ho: Constant variance
        Variables: fitted values of ed

        chi2(1)      =    10.47
        Prob > chi2  =   0.0012
. xtreg ed fsz grwt lev roa,fe

Fixed-effects (within) regression               Number of obs      =        90
Group variable: years                           Number of groups   =        15

R-sq:  within  = 0.5876                         Obs per group: min =         6
       between = 0.5865                                        avg =       6.0
       overall = 0.5468                                        max =         6

                                                F(4,71)            =     25.30
corr(u_i, Xb)  = 0.1517                         Prob > F           =    0.0000

------------------------------------------------------------------------------
          ed |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         fsz |   1.224134   .5453273     2.24   0.028     .1367828    2.311486
        grwt |   3.244152   3.893603     0.83   0.408    -4.519471    11.00778
         lev |   6.591917    2.02633     3.25   0.002     2.551531     10.6323
         roa |   1.584891   .4041348     3.92   0.000     .7790686    2.390713
       _cons |   -14.9887   3.423665    -4.38   0.000    -21.81529   -8.162103
-------------+----------------------------------------------------------------
     sigma_u |  3.1667999
     sigma_e |  4.6727174
         rho |  .31474281   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0:     F(14, 71) =      2.26             Prob > F = 0.0130
```

```
. xtreg ed fsz grwt lev roa,re

Random-effects GLS regression                   Number of obs      =        90
Group variable: years                           Number of groups   =        15

R-sq:  within  = 0.5638                         Obs per group: min =         6
       between = 0.7738                                        avg =       6.0
       overall = 0.5719                                        max =         6

                                                Wald chi2(4)       =    113.56
corr(u_i, X)   = 0 (assumed)                    Prob > chi2        =    0.0000

------------------------------------------------------------------------------
          ed |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         fsz |   2.374753    .533961     4.45   0.000     1.328209    3.421298
        grwt |   2.809512   3.864243     0.73   0.467    -4.764264    10.38329
         lev |   6.136357    2.03798     3.01   0.003     2.141988    10.13072
         roa |   .9923185   .4175755     2.38   0.017     .1738855    1.810751
       _cons |  -19.44538   3.522075    -5.52   0.000    -26.34852   -12.54224
-------------+----------------------------------------------------------------
     sigma_u |          0
     sigma_e |  4.6727174
         rho |          0   (fraction of variance due to u_i)
------------------------------------------------------------------------------
```