ENVIRONMENTAL ACCOUNTING DISCLOSURE PRACTICES IN ANNUAL REPORTS OF LISTED OIL AND GAS COMPANIES IN NIGERIA

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Abstract

This study is an empirical examination of environmental accounting disclosure practices (EADP) in annual reports of listed oil and gas companies in Nigeria. Ex-post facto research design was adopted in the study. The ten (10) oil and gas companies listed on the Nigerian Stock Exchange (NSE) was the population as census sampling technique was used in the study. Secondary sources were the main sources of data for the study. An environmental disclosure index with 40 items in line with Global Reporting Initiative (GRI) (2006/2008/2011/2013) was developed and environmental data from the annual reports of the listed ten oil and gas companies from 2009 – 2018 were captured using content analysis. The data obtained were analysed using descriptive and inferential statistics. Findings revealed that the sampled oil and gas companies were disclosing very inadequate financial and non-financial environmental information in their annual reports at a minimum disclosure practice of 0.0283 and maximum of 0.2727; and that on average the disclosure level of the sampled companies' representing the oil and gas industry EADP stood at about 11.67% as at December 31, 2018. The findings revealed that profitability has significant negative influence on EADP; leverage and liquidity have significant positive influences on EADP while long-term financing contribution has insignificant positive influence on EADP. Thus, it is concluded from the study that companies' financial attributes (profitability, leverage and liquidity) are predicted to be the key determinants of EADP in the industry in Nigeria and that many listed oil and gas companies are disclosing very negligible qualitative environmental accounting information in their annual reports. It was recommended that there is serious need for standardised EADP of the industry in Nigeria through mandatory disclosures and efforts should be tailored by the companies in Nigeria towards preparing environmental financial statements.

Keywords: EADP, Companies financial attributes, Oil and gas companies, GRI, Mandatory disclosures.

Introduction

The need for environmental accounting disclosures by businesses in any industry cannot be overemphasised. This is because environmental accounting disclosures serve as a means through which businesses can bring to the knowledge of stakeholders of their environmental performance to enhance values and corporate image as well as creating a sustainable base for improved earnings and operations in the future since no business can boast of not affecting the environment (Udo, 2018).

Recently, companies are under severe burden to operate in an environmentally responsible manner and to produce information about their environmental performance (Ribeiro & Aibar-Guzman, 2010;

Iwata & Okada, 2011). For instance, there is a hue and cry about the climate change greatly linked with businesses' impacts on the environment which resulted in oceans rising, global warming, deforestation, land degradation, pollution, depletion of natural resources among others (Berdugo & Mefor, 2012). However, the recycling and repackaging of the environmental waste-derived products and pollutants (such as benzene, and so on) by oil and gas companies can generate revenues (Hansen & Mowen, 2003).

In the oil and gas producing states of Nigeria for example, due to crude oil extraction for petroleum products, the environs have experience high pollutions [such as oil spillage, gas flaring, black soot, clay soot, among others; Ojo, 2016] of which today the whole world is clamouring on climatic change agreement. Also, agitators (militants, oil communities and so on) from time to time react for their communities being marginalised and neglected without adequately compensated in spite of the fact that their environment is highly degraded and polluted. Consequently, the operating companies in the Region suffer from sabotages by agitators as well as the government of Nigeria complaining of a drop in oil and gas revenue due to wastage and sabotage of the environmental resources (Udo, 2018).

Tang and Li (2011) and Makori and Jagongo (2013) stated that corporate firms will lose supports of the stakeholders in future due to environmental accounting reports not being part of their mainstream reports. According to KPMG and United Nations Environment Programme (UNEP) (2006), "environmental accounting disclosure is a framework for organizations to publish environmental costs/liabilities and benefits/assets to support management in decision-making, control and for public disclosure". In summary, environmental accounting disclosures relate to the provision of sufficient, adequate, necessary and timely organisation's environmental impacts information to permit informed judgement to users of such information. Environmental accounting disclosure practices are the guidelines/framework/models and activities in line with accounting rules/principles to recognise, measure, present and disclose environmental issues by an entity for the preparation of environmental financial statements.

Although, there is no standard on environmental accounting practices and disclosures under International Financial Reporting Standards (IFRS), IFRS recommended that if environmental issues are within the scope of particular accounting principles, such issues must be dealt with under that relevant standard. For instance, International Accounting Standard (IAS) 1, "Presentation of Financial Statements (Revised)" - requires disclosure of material facts for a proper understanding of financial statements. IAS 37, "Provisions, Contingent Liabilities and Contingent Assets" – requires provisions for environmental damages and benefits to be made in financial reports, and "IFRS 6, Exploration for and Evaluation of Mineral Resources – requires a reporting entity to disclose information that identifies, quantifies and explains the amounts recognised in its financial statements arising from the exploration for and evaluation of mineral resources".

Makori and Jagongo (2013) as well as Dibia and Onwuchekwa (2015) observed that, voluntary disclosure of environmental impacts can be a practice for firm to disclose less impacts on the environment, which so much account for the non-disclosure by many corporate firms with relations to negative externalities. But environmentalists suggested that, eco-efficiency can possibly accrue environmental benefits to corporate entities. Thus, by comparing environmental benefits produced with environmental costs incurred in a given period, environmental financial statement is produced (Hansen & Mowen, 2003).

From the studies in Australia (Eltaib, 2012), India (Malik & Mittal, 2015), Bangladesh (Islam & Miah, 2015) and Kenya (Tanui, Chumba & Bitange, 2015), it has been shown that the oil and gas industry environmental accounting disclosures were significant in benchmarking of national standards on environmental sustainability reporting; and that environmental reporting is a key step in practicing environmental accounting. Nor et al. (2016) added that the demand for company to disclose environmental accounting practices is very high in order to save the world, and that company. In 2014, Nigeria was ranked 134th out 178 countries of the world with environmental performance of 39.2% (Environmental Performance Index, 2014). Thus, it is noted that the pressure groups such as the Friends of the Earth/Environmental Rights Action, International Organisation for Standardisation (ISO), Coalition for Environmental Responsible Economies (CERES), GRI and other pressure groups are requesting the government to introduce mandatory legislation as a result of poor environmental accounting by companies.

Furthermore, Barako (2007), Abdullah and Ismail (2008), Makori and Jagongo (2013) as well as Mohamed and Faouz (2014), argued that, the level and quality of environmental accounting disclosure is influenced or determined by companies financial attributes [such as profitability, leverage, liquidity, long-term financing contribution]. The proponents of environmental accounting disclosures opined that profitable organisations may report adequate environmental performance in their annual reports because they felt that in reporting this information to potential investors, it will increase the firm's worth (Nor et al., 2016) while others disagreed with this opinion, opining that environmental accounting disclosures constitute a cost burden on firms and that environmental disclosures are based on management discretion (Ullah et al., 2013; Sulaimana et al., 2014). For leverage and liquidity, the proponents established that, the more the leverage and liquidity of a firm, the better the environmental information in annual reports (Barako, 2007; Abdullah & Ismail, 2008) but Ohidoa et al. (2016) and Nugroho and Arjowo (2014) opined that neither leverage nor liquidity is significant to environmental information reporting. Also, the proponents of environmental accounting reporting asserted that long-term financing contribution can influence environmental disclosures due to the amount of funds invested in the firms (Zhao, Zhang & Song, 2014) whereas opponents opined that long-term financing contribution has no significant implication on social and environmental disclosures (Mohamed & Faouz, 2014).

More so, many of the studies on the influence of companies' attributes on environmental accounting disclosures were conducted on both companies' financial and non-financial attributes (Barako, 2007; Eltaib, 2012; Mohamed & Faouz, 2014; Umoren et al., 2015) and were mostly based on developed markets, which yield conflicting results and many at times in favour of the non-financial attributes of the companies.

The types and level of environmental accounting disclosures in annual reports and the factors influencing the disclosure practices of the oil and gas companies in Nigeria are yet to be determined. Therefore, it is necessary to examine the types and level of environmental accounting disclosure practices as well as evaluate the factors influencing the environmental accounting disclosure practises of the oil and gas industry in Nigeria.

Statement of the Problem

The current position of environmental accounting disclosures in annual reports and companies' financial attributes influencing the reporting practices of listed oil and gas companies in Nigeria might

best be described as confusing and full of ambiguity. The preliminary examination of the annual reports has shown that environmental information disclosures of the oil sector in Nigeria are not in line with Global Environmental Accounting Disclosures Framework initiated by Global Reporting Initiative (GRI) (2006/2008/2011/2013) while some do not even make attempt to give environmental financial reports. In line with GRI guidelines, firms are expected to disclose their environmental impacts concerning environmental financial accounting, environmental management costs, environmental energy and materials and environmental accounting audit. This is necessary because, corporate information disclosure policies and practices are considered to be one of the significant means by which the management can influence external perceptions about their organisations.

Furthermore, accounting profession globally recognises the importance of financials and the significance of environmental costs and benefits. As such, companies financial attributes otherwise known as key financial performance indices of any industry (such as the profitability, leverage, liquidity and financing contribution) are always debated as being motivational factors for entities' environmental accounting disclosures. Many environmental accounting advocates opined that companies financial attributes significantly influence environmental disclosures (Barako, 2007; Abdullah & Ismail, 2008; Mohamed & Faouz, 2014; Nor et al., 2016), some argued that companies financial attributes do not significantly influence environmental disclosure practices (Eltaib, 2012; Umoren et al., 2015) while others opined that neither financial nor non-financial companies attributes significantly influence environmental disclosures in annual reports but management discretions (Ullah et al., 2013) .

In addition, most studies on the influence of companies attributes on environmental accounting disclosures were conducted in a combination of companies' financial attributes and non-financial attributes and were based on developed markets which yielded mixed results; thus, indicating inconsistent results. Also, these studies were in line with Yale's environmental performance index (EPI, 2014), International Standard Organisations (ISO 14001) [Uwalomwa, 2011], National Ministry of Environment Guidelines (Kokubu & Nashioka, 2001), self-structured questionnaire (Uwalomwa, 2011; Ahmed, 2012; Daferighe & Udih, 2015; Nwobu, 2017) among others.

Thus, from all indications, it seems that none has clarified the environmental accounting disclosures engaged by the companies in Nigeria and what specific companies' financial attributes influence the disclosure practices in the annual reports. These issues have given researchers cause for increasing concern. Against this background, it becomes necessary to examine these issues in the listed oil and gas companies in Nigeria.

Research Questions

To achieve the objectives of this study, these questions are raised:

I. What are the types of environmental accounting disclosures of listed oil and gas companies in Nigeria?
ii. What is the level of environmental accounting disclosure practices in the annual reports of listed oil and gas companies in Nigeria?
iii. How do companies' financial attributes (profitability, leverage, liquidity and long-term financing contribution) influence the environmental accounting disclosure practices of listed oil and gas companies in Nigeria?

Objectives of the Study

The main objective of this study is to examine environmental accounting disclosure practices in annual reports of listed oil and gas companies in Nigeria. Specifically, to:

i. Examine the types of environmental accounting disclosures of the listed oil and gas companies in Nigeria.
ii. Measure the level of environmental accounting disclosure practices in annual reports of the listed oil and gas companies in Nigeria
iii. Evaluate the companies' financial attributes (profitability, leverage, liquidity and long-term financing contribution) influencing the environmental accounting disclosure practices of the listed oil and gas companies in Nigeria.

Hypotheses of the Study

The following Null Hypotheses were framed in line with Objective 3 since objective 1 and Objective 2 cannot be hypothesised but to aid in the achievement of the overall objective:

H_{01}: Profitability does not significantly influence environmental accounting disclosure practices of listed oil and gas companies in Nigeria.

H_{02}: Leverage does not significantly influence environmental accounting disclosure practices of listed oil and gas companies in Nigeria.

H_{03}: Liquidity does not significantly influence environmental accounting disclosure practices of listed oil and gas companies in Nigeria.

H_{04}: Long-term financing contribution does not significantly influence environmental accounting disclosure practices of listed oil and gas companies in Nigeria.

Review of Related Literature

Environmental accounting disclosure practices (EADP) are the guidelines/framework/models and activities in line with accounting rules/principles to recognise, measure, present and disclose environmental issues by an entity for the preparation of environmental financial statements. Environmental accounting disclosures (EAD) is the identification and accounting for past, present and provision for future environmental costs and benefits to support management in decision-making, control and for public disclosure. ACCA (2015) opined that environmental accounting disclosure is the production of financial and non-financial information of an organisation's environmental impact or footprints for a particular accounting period. Gatimbu and Wabwire, (2016), declared that “corporate environmental disclosure entails reporting on the impact of organizations' activities on the natural environment. Such activities include waste management, recycling, repackaging, energy and materials saving and conservations, carbon management, emission, pollution, wetland and wildlife conservation among others”. In line with GRI (2006/2008/2011/2013), the types of environmental accounting disclosure practices at the corporate level consist of: Environmental financial accounting (Envt_Fin); Environmental management costs (Envt_MCost); Environmental energy and materials reporting (Envt_Energ & Mats); and Environmental accounting audit (Envt_Audit). Environmental accounting audits are designed to audit our environment and to achieve the following objectives to: eliminate pollutant and hazardous waste; market environmentally safe products; conserve non-renewable resources, example, preserving trees; provide protection for employees; give the need to have an environmentalist on the board; and prepare for accident and restoration of damaged environment (Wyse, 2014; Udo, 2018).

Environmental Agency, UK (2006) stated that "businesses consider practising environmental accounting as part of their accounting system for the following reasons: possible significant reduction or elimination of environmental costs; environmental costs and benefits may be over looked or hidden in overhead accounts; possible revenue generation may offset environmental costs (examples, transfer of pollution allowances, recycling of wastes) through practicing environmental accounting; improved environmental performance which may have a positive impact on human health and business success; possible competitive advantages as customers may prefer environmentally friendly products and services". United States of America Environmental Protection Agency (1995) highlighted some benefits of practising environmental accounting to include: "provision of better estimates or the standard costs to the firm for producing a product, thus, improves pricing and profitability; allocation of costs to the appropriate product, process, system or facility and thus reveals costs to the responsible managers; assist of managers in targeting cost reduction, improving environmental quality and in reinforcing quality principles; motivates staff to search for creative ways to reduce environmental costs; encourages changes in processes to reduce waste, reduce resources use, recycle waste or identify markets for waste; increase employee awareness of occupational health and safety issues; and Increases the likelihood of the company having a competitive advantage and greater customer acceptance of the firm's product or service".

Some of the challenges of environmental accounting disclosure practices according to Daferighe (2010) and Islam and Miah (2015) include: the costing/valuation of environmental impacts; difficulties in measuring capital depreciation/impairment that made GDP the standard for measuring overall economic performance and growth. Others include: issues no generalised accounting standard method, difficulty of comparison due to different method of accounting for oil and gas among others.

There are two types of environmental reporting practices namely; (i) Mandatory disclosure and (ii) Voluntarily disclosure. Mandatory disclosure is nothing (not a standard) but a minimum prescribed disclosure requirement expected from a reporting entity while voluntary disclosure means that the entity can decide what to disclose and may even decide not to do (Makori & Jagongo, 2013; Dibia & Onwuchekwa, 2015). However, environmental reporting in Nigeria is voluntarily, which implies that companies can choose what to disclose and may even decide not disclose at all (Dibia & Onwuchekwa, 2015).

Prior studies on companies financial attributes and the influence on environmental accounting disclosures are very few in developing markets. Some authors claimed that profitability influences environmental accounting disclosures (Makori & Jagongo, 2013; Gatimbu & Wabwire, 2016; Nor et al., 2016). The argument is that, the managers of profitable companies may report detailed environmental information in the annual reports due to the fact that they felt comfortable relating such information which may improve the firm's valuation; and to attract the investors and to fulfill the demand of stakeholders groups (Nor et al., 2016). Ullah et al. (2013), Hartikayanti, Trisyardi and Saptono (2016) and Umoren et al. (2015) asserted that profitability does not significantly influence the level corporate environmental accounting disclosure practices.

Leverage shows the percentage of the company's assets that have been financed with debts and in effect also measures the degree of protection to unsecured creditors in the event of liquidation (Idekwulim, 2014). Some studies have also identified significant influence of leverage on environmental reporting. The authors found that firms with higher debt are more probable to disclose

environmental information (Mejida & Hakaim 2013; Salaimana, Abdullah & Fatimaa, 2014). As a result, the polluting companies will have a preference to report more environmental information if they have more debt. Suttipun and Stanton (2011), Dibia and Onwuchekwa (2015), Lu and Abeysekera (2014) and Alarussi, Hanefah and Salamat (2016) as well as Ohidoa, Omokhudu and Oserogho (2016) found no significant relationship between financial leverage and voluntary environmental accounting disclosures.

Liquidity measures the level of short term funds available to meet daily obligations as determined by current ratio, quick ratio, cash ratio and cash operating cycle. This study utilised current ratio as a measure of liquidity, because the oil and gas inventories are highly liquid in Nigeria. Current ratio indicates the extent to which assets that will be converted into cash within a year to cover claims of short-term payables or creditors (Idekwulim, 2014). This ratio forms part of the firm specific attribute, which may affect the level of environmental disclosure practices. Barako (2007), Abdullah and Ismail (2008) and Oba and Fodio (2012) maintained that companies with high liquidity are interested in reporting more environmental performance than entity with low liquidity. The argument is that, those entities in a secured and sound financial position will be interested reporting their environmental matters to investors. Nugroho and Arjowo (2014) opined that there is no significant effect of liquidity on environmental reporting. Therefore, in this study it is hypothesised that liquidity will have significant influence on firm's reporting character about environmental issues.

Long-term financing contribution otherwise called “capital structure ratio” or “debt capital to equity capital ratio” or “financing ratio” is the ratio of total non-current liabilities (debts capital) to equity capital (owners' fund). It represents the contribution of the two broad sources of long term finance, that is, owner's equity and debt capital. It measures the degree of influence associated with financing the firms as well as describes the mixture of debt capital (fixed interest loans) and equity capital (owners' funds) in the capital structure of the business. Consequently, a decreased in debt capital to equity capital ratio, explains the negative relationship between long-term financing and firm's environmental disclosures (Mohamed & Faouz, 2014). Therefore, in this study, long-term financing contribution is expected to have negative influence on environmental accounting disclosure practices of the companies in Nigeria. In summary, the variables of companies' financial attributes and environmental accounting disclosures are framed in Figure 1.

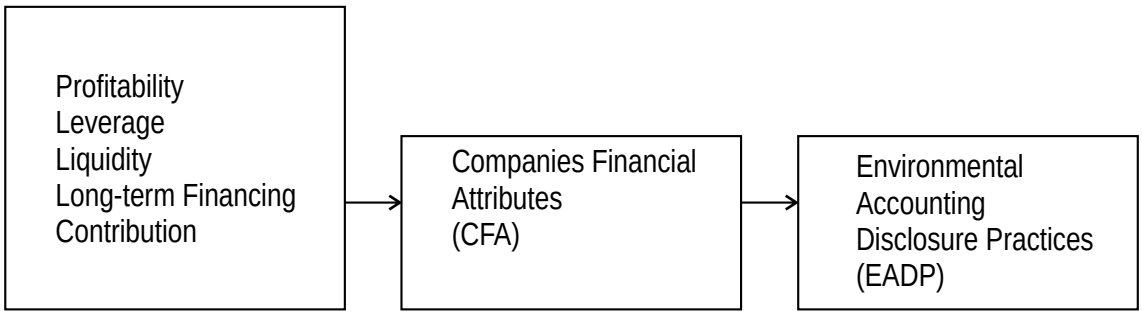

Figure 1: Conceptual Framework, *Developed by Researcher (2019)*

Makori and Jagongo (2013) examined environmental accounting and firm profitability, an empirical analysis of selected firms listed in Bombay Stock Exchange, India. The focus of the study was to examine if there significant relationship between environmental accounting and profitability of selected

firms listed in India. The data were obtained from annual reports and accounts of 14 randomly selected quoted companies in Bombay Stock Exchange in India. Multiple regression models were deployed to analysis the data. The main results showed that there is significant negative relationship between environmental accounting and return on capital employed (ROCE) and earnings per share (EPS) and a significant positive relationship with net profit margin and dividend per share (DPS). It was concluded that the environmental disclosures tend to be more qualitative than quantitative despite the fact that there is a significant relationship between environmental accounting disclosures and firm profitability. Nor et al. (2016) examined the effects of environmental disclosure on financial performance among top 100 companies' with market capitalisation in Malaysia for the year 2011. Data were collected from secondary sources by reviewing the annual reports to gather the information regarding the environmental disclosures. The result indicated that profit margin has a significant negative relationship with environmental disclosures. It was concluded in the study financial performance significantly influences environmental disclosures of companies in Malaysia.

Sulaimana, Abdullah and Fatimaa (2014) investigated the determinants of environmental reporting quality in Malaysia. Specifically, to investigate the relationship between firms' characteristics and the quality of environmental disclosures in the annual reports of 2009. A content analysis of the annual reports of 164 companies in the environmentally sensitive industries (ESI) was used. It was concluded that the higher the leverage of the firm, the better the environmental information reported. These results provide some support for legitimacy theory.

Barako (2007) evaluated the determinants of voluntary disclosures in the 54 Kenyan companies' annual reports using companies' specific attributes from 1992 to 2001. Pooled Ordinary Least Square (OLS) with Panel-Corrected pooled Ordinary Least Square (OLS) with Panel-Corrected Standard Errors (PCSEs) was the method of statistical analysis used. Results indicated that, disclosures of all types of information are influenced by corporate characteristics. In particular, the results suggested that size, leverage and liquidity variables were significant for environmental financial disclosures. It was concluded that all types of information disclosures are influenced by corporate attributes. Abdullah and Ismail (2008) examined the associations between the level of environmental reporting and listed companies' performance. The agency and signalling theories were adopted in the study. Samples of 100 companies were selected from list of top companies in listed as at 2003. Regression test was conducted in order to test the hypotheses. It was found that liquidity have an association with the level of voluntary ratio disclosure. The result supported the argument that those companies in a secured financial position will wish to disclose this fact to investors.

Zhao, Zhang and Song (2014) explored cost of capital in relation to the influence of non-current debt financing on environmental information disclosure for the period, 2008 to 2012 related to thermal power plants in Shanghai and Shenzhen-listed power companies. Thirty-six (36) publicly traded companies were sampled of the 180 in population. Annual reports, CSR reports, sustainability reports and environmental reports from the giant tidal information network were main sources of data collection. It was found that corporate debt financing costs (high gearing) significantly influence environmental information disclosure levels. Mohamed and Faouz (2014) examined the effect of corporate environmental disclosures on the cost of debt- equity capital for a sample of Tunisian firms over the period, 2003 - 2011. The main objective was to examine the relationship between the expected cost of equity capital and the quality of corporate environment disclosures using content

analysis approach based on annual reports. The authors found no significant relationship of debt-capital to equity capital to the environmental disclosure categories under study.

Theoretical Review

Legitimacy theory was first propounded by Max Weber (1947) but was further developed by Lindblom (1994) and Suchman Mark in 1995. Lindblom (1994) stated that "legitimacy is a condition or status which exists when an entity's value system is congruent with the value system of the larger social system of which the entity is a part". Legitimacy theory argued that organisations seek to ensure that they operate within the bounds and norms of society. Legitimacy theory explains how environmental disclosures can be useful in narrowing the gap between company actions and social expectations. It offers a powerful mechanism for understanding voluntary social and environmental disclosures made by corporations, and that this understanding would provide a vehicle for engaging in critical public debate. According to Deegan (2002), legitimacy helps to explain how an entity desiring to sustain its operations must comply with the expectations of the community in which it operates.

Stakeholder theory was developed by Freeman (1984). The theory stated that disclosure of environmental information by organisation is as a result of the pressure from stakeholders and that an organisation will respond to the concerns and expectations of powerful stakeholders and some of the responses will be in the form of strategic disclosures. In the context of a firm, stakeholders are the society, shareholders, creditors, employees, customers, and suppliers, who may be interested in the firm's social and environmental activities. Freeman (1984) identified these groups as "stakeholders." Stakeholders differ in the nature and the level of influence they exercise on a firm's activities. Roberts (1992) stated that "organisations are thus responsible to these stakeholders and rely upon their continued approval to maintain a successful operating environment. Stakeholder theory concentrates upon defining factors influencing the continued existence of corporations".

Institutional theory can be traced to the Sociologist, Selznick (1949). Institutional theory is concerned with examining and explaining how institutionalised norms and pressures affect social changes among organisations. This theory is slowly but steadily emerging as a useful theoretical framework in relation to the environmental implications of an organisation's operations and behaviours. The institutional framework emphasised the importance of regulatory, normative, and cognitive factors that affect firms' decisions to adopt a specific organisation practice. This theory has been the most regulatory pillar on environment management practices.

Accountability theory was originally developed by Tetlock (1983). According to Tetlock and Lerner (1999), accountability is seen as mechanism and as a process in which a person has a potential obligation to explain his or her actions to another party who has the right to pass judgment on the actions as well as to subject the person to potential consequences for his or her actions. According to Gray, Javad, Power and Sinclair (2001), "accountability theory is concerned with the relationship between groups, individuals, organisations and the rights to information that such relationships bring about. Accountability is an act of being responsible or answerable for one's own decisions or actions with the expectation of explaining and justifying them when asked to do so. Simply stated, accountability is the duty to provide an account of the actions for which one is held responsible. The nature of the relationships and the attendant rights to information are contextually determined by the society in which the relationship occurs. It is absolutely true that some sort of relationship will exist between an organisation and each of its stakeholders".

The polluter – pays – principle advocated by United Nations Environmental Program. In Rio Declaration (1992), "it is the commonly accepted practice that those who produce pollution should bear the costs of managing it to prevent damage to human health or the environment. For instance, a factory that produces a potentially poisonous substance as a by-product of its activities is usually held responsible for its safe disposal. This principle underpins most of the regulation of pollution affecting land, water and air. Pollution is defined in UK law as contamination of the land, water or air by harmful or potentially harmful substances".

In summary, legitimacy theory, stakeholder theory, accountability theory and polluter's pays principle are adopted and adapted as the main thrusts of this study because they will help to explain how environmental accounting disclosure practices can be used to narrow the gap between company actions and social expectations as well as postulating the relationship or influence of companies financial attributes on the level of environmental accounting disclosure practices.

Methodology

Ex-post facto research design was adopted in the study as it permits the examination of independent variables in retrospect for their possible influence on the dependent variable. The population consisted of the ten (10) oil and gas companies listed on the Nigerian Stock Exchange (NSE). Census sampling technique was adopted in the study. This technique was adopted because it permits the gathering of data from every sample in the population. Secondary sources of data consisted of the annual reports and accounts of the selected companies were the main sources of data used in this study. Descriptive and inferential statistics were used to analyse the data. In order to determine the type and the level of environmental accounting disclosure practices engaged by the listed oil and gas companies in Nigeria, a disclosure index (checklist) of 40 items in line with Global Reporting Initiative (2006/2008/2011/2013) using content analysis was developed. Each company was scored "1" for full disclosure, "1/2" for partial disclosure and "0" for non-disclosure under content analysis, which is presently the most widely used technique for analysis of accounts in annual reports. Multiple regression was used to test the hypotheses at 5% level of significance. The theoretical and empirical specification of models are summarised in Table 1.

Table 1: Theoretical Specification of Model

Variables	Types	Measurement/Definitions	*Apriori* Expectation	Source
Environmental Accounting Disclosure practices (EADP)	Dependent	1 = Companies that engaged in full environmental accounting disclosures , $^1/_2$ = partial , 0 = Non-disclosure of environmental accounting in their annual reports .		Annual Report
Profitability, Return on Assets (ROA)	Independent	$\frac{\text{Profit before interest \& tax (PBIT)}}{\text{total assets}}$ It is a measure of the overall profitability of the business.	+	Annual Report
Leverage, Debt Ratio (LEV)	Independent	$\frac{\text{total debts}}{\text{total assets}}$ It indicates what percentage (weight) of total funds employed is generated from external funds to financed firm s assets.	-	Annual Report
		$\frac{\text{current assets}}{\text{current liabilities}}$		

Liquidity, Current Ratio (CR)	Independent	It measures the ability of a business to meet its short-term liabilities, as and when they fall due.	+	Annual Report
Long-term Financing Contribution, Debt-capital to Equity-capital Ratio (DER)	Independent	$\frac{\text{total non-current liabilities (debt capital)}}{\text{total equity (Equity capital)}}$ It relates the debt capital to equity capital to know the level of capital investment influence associated with the business.	-	Annual Report

Source: Compiled by Researcher (2019)

The following regression models (functional form and econometrical) were used to test the hypotheses:

EADP= f(CFA) Equation 1

$Y = \beta_0 + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 X_{4it} + \varepsilon_{it}$ Equation 2

where; EADP = environmental accounting disclosure practices = Y) as determined by the summation of: environmental financial accounting disclosures, environmental management cost disclosures, environmental energy reporting (physical environmental accounting) disclosures and environmental accounting audit disclosures. CFA = Companies Financial Attributes = ROA, LEV, CR, DER.

The multiple regression equation was redefined as follows:

$EADP_{it} = \beta_0 + \beta_1 ROA_{it} + \beta_2 LEV_{it} + \beta_3 CR_{it} + \beta_4 DER_{it} + \varepsilon_{it}$ Equation 3

Where: i,t = company i in year t (pooled data)

β_0= Constant term; β_1, β_2, β_3, β_4, = estimated coefficients of the independent variables

ROA = Return on Assets (X_1); LEV = Leverage (X_2); CR = Current Ratio (X_3)

DER = Debt capital-Equity capital Ratio (X_4); ε = error term.

Analysis and Findings

The focus of this section is for answering of the research questions and testing of the hypotheses.

Environmental Accounting Disclosures of the Listed Oil and Gas Companies in Nigeria

This was computed using proportion/probability environmental disclosure index for the period of ten (10) years (2009 - 2018) on the ten oil and gas companies listed on the Nigerian Stock Exchange. The summary of the types of environmental accounting disclosure practices of the listed oil and gas companies in Nigeria is presented in Table 2.

Table 2: Summary of the Types of Environmental Accounting Disclosure Practices

Year	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Total	Mean (%)
Envt_Fin	11.5	9	8.5	8	8.5	8.5	9	11.5	11	12.5	98	4.41
Envt_MCost	6	2.5	5	4	5	8	5	6.5	7.5	8.5	58	2.61
Envt_ Energ&Mats	0	0	0	1	0	0	0	0.5	1	1.5	4	0.18
Envt_Audit	6.5	8.5	10.5	10.5	11	10	10	9	12.5	11	99.5	4.47
Grand Total	24	20	24	23.5	24.5	26.5	24	27.5	32	33.5	259.5	11.67

Source: Developed by Researcher (2019), mean EADP= 11.67%

Table 2 is the presentation of the various types of environmental accounting disclosure practices engaged by the ten (10) listed Oil and Gas Companies in Nigeria as computed by adding the disclosure scores of the different classes for the seven years' period under study. It was found that, the scores of environmental financial accounting items (Envt_Fin) was 98 out of 259.5 possible disclosed scores, representing 4.41%, the scores of environmental management costs (Envt_MCost) was 58 out of 259.5, representing 2.61%; the environmental energy and materials accounting (Envt_ Energ & Mats) was scored of 4 out of the possible scores of 259.5, representing 0.18%; and environmental accounting audit (Envt_Audit) score was 99.5 out of 259.5 possible scores. This signifies that the most environmental accounting disclosed items were environmental accounting audit and mostly environmental certification requirements.

The Level of Environmental Accounting Disclosures in the Annual Reports of the Firms

This was determined based on the environmental disclosure index for ten (10) years, (2009 - 2018) on the ten oil and gas companies listed on the Nigerian Stock Exchange.

Table 3: Summary of the Level of Environmental Accounting Disclosures of the Listed Firms (In %)

Coy/Year	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Level Discl. (%)	COY Ranking
A	4.2	2.5	10.4	10.4	6.1	11.4	10.4	10.3	10.5	10.9	8.71	8th
B	22.9	22.5	20.8	12.8	16.3	11.4	12.5	19.7	22.9	23.1	17.31	1st
C	10.4	5.0	8.3	10.3	4.1	2.3	4.2	6.7	6.8	6.7	6.48	10th
D	12.5	10.0	16.7	21.3	16.3	13.6	16.7	15.1	16.9	16.2	15.53	3rd
E	2.0	5.0	4.2	4.2	4.0	8.2	8.3	9.6	9.9	10.8	6.62	9th
F	6.3	7.5	8.3	8.3	10.2	13.6	12.5	10.2	10.3	10.4	9.76	4th
G	6.3	10.0	6.3	10.6	8.2	9.1	6.3	7.6	8.6	9.6	8.26	6th
H	10.4	7.5	8.3	6.4	10.2	4.6	8.3	8.6	9.2	7.4	8.09	7th
I	12.5	7.5	10.4	10.6	14.3	4.6	4.2	9.4	9.6	10.0	9.31	5th
J	12.5	22.5	6.3	4.3	10.3	11.6	16.7	19.2	25.8	27.2	15.64	2nd

Source: Developed by Researcher (2019)

From the summary of Table 3, it is found that for period under study, the level and ranking of environmental accounting disclosures of the listed oil and gas companies in Nigeria on average are as follows; Japaul Oil & Maritime (8.71%) and is ranked 8th, Oando (17.31%) and is ranked 1st, Beco Petroleum Product (6.48%) ranked 10th, Conoil (15.53%) and is ranked 3rd, Eterna (6.62%) is ranked 9th, Forte Oil (9.76%) ranked 4th, Mobil Oil Nig. (8.26%) and is ranked 6th, Mrs Oil Nig. (8.09%) and is ranked 7th, Total Nig (9.31%) and is ranked 5th and Seplat Petroleum Development Company Plc (15.64%) is ranked 2nd position. On the average, the EADP in the annual reports of the listed oil and gas companies in Nigeria as at December 31, 2018, stood at 11.67% of all the possible disclosures.

Statistical Analyses of Data

In this section, the hypotheses of the study were tested and the results were analysed to achieve objective Three of the study. It was carried out using both descriptive and inferential statistics with the help of Statistical Package for Social Science (SPSS) Version 20.0 at 5% level of significance.

Table 4: Descriptive Statistics for ROA, LEV, CR, DER and EADP

Research Variables	N	Minimum Statistic	Maximum Statistic	Mean Statistic	Std. Deviation Statistic	Skewness Statistic	Skewness Std. Error	Kurtosis Statistic	Kurtosis Std. Error
ROA	100	-0.8784	0.2176	-0.1256	0.3986	-1.269	0.287	-0.170	0.566
LEV	100	0.1125	1.1286	0.6885	0.2603	-0.182	0.287	-1.240	0.566
CR	100	0.6615	3.1871	1.2999	0.6502	1.776	0.287	3.069	0.566
DER	100	0.0962	1.8971	0.4019	0.3792	2.210	0.287	4.283	0.566
EADP	100	0.0208	0.2727	0.1167	0.0590	0.935	0.287	0.506	0.566

Source: Data Processing Using SPSS (2019)

Table 4 is the descriptive statistics for the variables of the study, which are ROA, LEV, CR, DER and EADP. The minimum values of -0.874, 0.1125, 0.6615, 0.0962 were obtained for ROA, LEV, CR, and DER respectively while the minimum EADP was computed to be 0.0208. The maximum values of 0.2176, 1.1286, 3.1871, and 1.8971 were obtained for ROA, LEV, CR, and DER while the maximum EADP was computed to be 0.2727. The mean of -0.1256, 0.6885, 1.2999, 0.4019 were obtained for ROA, LEV, CR and DER respectively while the mean EADP was computed to be 0.1167. The kurtosis which measures the spread of the data (normality of data distribution) for ROA, LEV was less than 0 while that obtained for CR, DER and EADP were greater than 0. In terms of skewness which measures fitness of data distribution, ROA and LEV were found to be skewed to the left (skewness less than 0) while CR, DER and EADP were skewed to the right (skewness greater than 0). The result of skewness and kurtosis is an indication that ROA, LEV, CR, DER and EADP did not follow normal distribution. Kolmogorov-Smirnov and Shapiro-Wilk tests were also used to test the normality of the data. The results show that the variables were non-normally distributed.

Table 5: Summary for the Regression of EADP with ROA, LEV, CR and DER.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	0.423	0.197	0.154	0.04120156	1.97322

Source: Data Processing Using SPSS (2019)

From Table 5, a regression square (R2) of 0.194 was obtained, which means that 19.7% was the overall contribution of all independent variables (ROA, LEV, CR and DER) on the dependent variable (EADP). The adjusted multiple correlation coefficient of 0.154 was obtained which means that 15.4% of the variation in environmental accounting disclosures was accounted for by joint influence of ROA, LEV, CR and DER. The Durbin Watson statistic of 1.97322 was obtained, which indicated the absence of auto-correlation in the regression model [(α = 5%, K=4, n = 70, DU=1.735, DL=1.464; DW>Du (1.97322 >1.735)].

Table 6: ANOVA Result Summary for the Regression of EADP with ROA, LEV, CR and DER

Sources of Variation		Sum of Squares	Df	Mean Square	F-calculated	F-critical	p-value
1	Regression	0.031	4	0.009	2.951	2.467	0.021
	Residual	0.190	95	0.005			
	Total	0.281	99				

Source: Data Processing Using SPSS (2019)

From the ANOVA result presented in Table 6, the F-calculated of 2.951 was obtained with F- critical of 2.467 with p-value of 0.021. The F-calculated is greater than the critical F-values which mean that the independent variables (ROA, LEV, CR and DER) are the companies' financial attributes significantly responsible for the variation in the dependent variable (EADP). This result also signifies that the regression model of EAD with ROA, LEV, CR and DER was statistically adequate to jointly predict the EADP.

Table 7: Coefficients of the Regression of EADP with ROA, LEV, CR and DER

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	t-calc.	p-value.	Tolerance	VIF
1	(Constant)	0.004	0.032		0.120	0.905		
	ROA	-0.078	0.027	-0.531	-2.889	0.001	0.455	2.191
	LEV	0.068	0.029	0.321	2.345	0.032	0.507	1.963
	CR	0.025	0.012	0.259	2.083	0.041	0.806	1.221
	DER	0.009	0.020	0.047	0.451	0.521	0.942	1.082

Source: Data Processing Using SPSS (2019)

In Table 7, the regression coefficient for the model parameters were computed. The result shows that as ROA (β = -0.531, Std. Error = 0.027, t-calc. = -2.889, p = 0.002) increases, EADP (environmental accounting disclosure practices) decreases and verse versa. This implies that as ROA has a negative influence on EADP. But for LEV (β = 0.321, Std. Error = 0.029, t-calc. = 2.345, p = 0.039), CR (β = 0.259, Std. Error = 0.012, t-calc. = 2.083, p = 0.041) and DER (β = 0.047, Std. Error = 0.020, t-calc. = 0.451, p = 0.521) have positive influence with environmental accounting disclosure practices. This implies that as LEV, CR and DER increases, EADP also increases. The result of the standardized beta reveals that if other variables are held constant, for every 1% increase in ROA, EADP will decreases by 0.536% while for every 1% increase in LEV, CR and DER, environmental accounting disclosures will increase by 0.319%, 0.259% and 0.047% respectively. Also, the presence of multicollinearity was checked using Variance Inflation Factor (VIF) and the VIF of 2.191, 1.963, 1.221 and 1.082 were obtained for ROA, LEV, CR and DER respectively indicating that there is no evidence of multicollinearity among the independent variables (VIF less than 10).

From the regression results, for Hypothesis One (HO1), on ROA, the value of t- calculated (2.889) is greater than its t-critical (2.00) and the p-value of 0.001 is less than 0.05. Hence, the Null Hypothesis One is rejected, which means that there is a significant influence of ROA on EADP. For Hypothesis Two (HO2), on LEV, the values of t-calculated of 2.345 with p-value of 0.032 and t-critical of 2.00 were obtained. The t-calculated is greater than its corresponding t-critical (2.00) and p-value is less than 0.05. The Null Hypothesis is rejected. Therefore, there is a significant influence of LEV on EADP. For Hypothesis Three (HO3), on CR, the t-calculated was obtained to be 2.083 with p-value of 0.041 and the t-critical of 2.00. The t-calculated of 2.083 is greater than the t-critical of 2.00 and p-value is less than 0.05(0.041 < 0.05). The Null Hypothesis is rejected. Therefore, there is a significant influence of CR on EADP. For Hypothesis Four (HO4), on DER, the t-calculated was obtained to be 0.451 with p-value of 0.521 and the t-critical of 2.00. The t-calculated of 0.451 is not greater than the t-critical of 2.00 and p-value is greater than 0.05 (0.521 > 0.05). The Null Hypothesis is not rejected. Therefore, there is no significant influence of DER on EADP.

Discussion of the Findings

Hypothesis One was tested and the result from the regression analysis showed that profitability has a significant negative influence on environmental accounting disclosures as shown by the data in Table 6. This is confirmed as the p-value (0.001) for the influence of ROA on EADP is less than 0.05 level of significance. The t-calculated of -2.889 indicated that profitability has negative significant influence on environmental accounting disclosures. The result obtained collaborates with the views of Makori and Jagongo (2013) and Nor et al. (2016). In summary, it means that, the more the firm's profitability increases, the lesser the environmental impact costs are incurred and environmental benefits disclosed and vice versa.

Hypothesis Two was tested and the result showed that there is a significant positive influence of Leverage on environmental accounting disclosure practices (EADP). This is confirmed as the p-value (0.032) for the influence of LEV on EADP is less than 0.05 level of significance. The t-calculated of 2.345 indicated that Leverage has significantly positive influence on environmental accounting disclosures. This is in support of the study of Barako (2007) and Sulaimana, Abdullah and Fatimaa (2014). Hypothesis Three was tested. The result of the empirical analysis also showed that liquidity has a significant positive influence on environmental accounting disclosures. This result is in support of the study of Abdullah and Ismail (2008) and Oba and Fodio (2012). Thus, this demonstrated that firms that have the liquid financial strength can undertake more social and environmental expenses.

Hypothesis Four was tested and the result showed that there is no significant influence of debt-equity ratio (financing involvement) on environmental accounting disclosures. This is confirmed as the p-value (0.521) for the influence of Long-term Financing Contribution (DER) on EADP is greater than 0.05 level of significance. The t-calculated of 0.451 indicated that Long-term Financing Contribution (DER) has positive insignificant influence on environmental accounting disclosures. This result agrees with the view of Mohamed and Faouz (2014). The authors found no significant influence of debt capital to equity for the disclosure categories under study. The authors added that, firms with better environmental disclosure scores are as result cheaper equity financing than debt capital financing.

Conclusion and Recommendations

Based on the findings of this study, it has been revealed that the ten (10) listed oil and gas companies operating in Nigeria were disclosing 4.41% under environmental financial accounting practices

(mostly qualitative statements and positive news regarding environmental matters); 2.61% was disclosed under environmental management costs; environmental energy and materials reporting was 0.18% while environmental accounting audit disclosures stood at 4.47% (mainly certification standards) as at 31 December, 2018. In conclusion, some listed oil and gas companies were not disclosing any while some were disclosing very negligible accounting information regarding environmental aspects which are not in line with GRI (2006/2008/2011/2013) Guidelines but based on the discretion of the management. From the results of the statistical analyses, on average the companies' environmental accounting disclosures as at December 31, 2018 stood at 11.67%. It is clear that EADP practices in the selected companies have been far from satisfactory and hence poor in real sense of the term. It is concluded that the voluntary disclosures alone would not enhance the quality and the level of EADP in the oil and gas industry in Nigeria. Also, from the study the companies' attributes (profitability, leverage and liquidity) are predicted to be the key determinants of environmental accounting disclosure practices in the oil and gas industry in Nigeria.

On the basis of the conclusion, the following recommendations are made;

I. Oil and gas companies in Nigeria should disclose all the four types of the environmental accounting elements/issues namely; environmental financial accounting, environmental management cost, environmental energy and materials as well as environmental accounting audit (both good and bad news, financial and non-financial accounting information) in their annual reports in line the GRI-based guidelines (2006/2008/2011/2013) and environmental financial statement should have a section in the annual report.

ii. Mandatory environmental accounting reporting should be adopted by the oil and gas in Nigeria to eliminate negligence of environmental matters by the companies.

iii. Environmental costs and financial accountants should be employed by the oil and gas companies in Nigeria to report environmental issues in line with GRI guidelines while paying more attention to the companies' financial attributes (profitability, leverage, liquidity as well as long-term financing contribution) influencing EADP. All the oil and gas companies whether highly profitable or not should practice EAD while government should grant the companies some tax incentives for motivation and to salvage the inverse profitability influence on EADP. More debts should be used in financing the assets of the business to encourage EADP while the companies should endeavour to be financial liquid so as to meet due environmental expenses.

iv. Environmental accounting audit should be carried out by the regulating authorities to ensure that the companies eliminate pollutant and hazardous waste; market environmentally safe products; conserve non-renewable resources; provide protection for employees; have an environmentalist on the board; and prepare for accident and restoration of damaged environment as well as disclosing same.

Business Implications of the Study

The major business implications of the study are as follows:

i. The oil and gas companies' management and practicing accountants are expected to have guidelines and motivated from the findings of this study to disclosure their activities regarding environmental matters.

ii. The researchers in environmental accounting reporting practises would make use of the issues raised in this study for more comprehensive studies in environmental accounting reporting and sustainable environment.

iii. The regulatory bodies (NESREA, DPR, NNPC, FRCN and MoPR) are expected to realise the types and the level of environmental issues disclose in the annual reports as well as the factors that influence environmental accounting disclosures of the oil and gas companies. Also, those organisations responsible and advocates for environmental protection are expected to realise the true position of pollution and protection activities of the companies and to formulate guidelines and laws regarding pollution, protection, management and restoration of the environment.

iv. Investors and creditors are expected to realise whether the companies to be invested are environmentally friendly, financially and ethically responsible in meeting the needs of all the stakeholders.

Limitations of the Study

The data for this study were limited to the period between 2009 and 2018. This is due to the fact that before this period, some oil and gas companies used in this study were not quoted on the Nigeria Stock Exchange. This study is industry–specific with focus on the oil and gas sector. Accordingly, the finding would not be generalised to all sectors of the Nigeria economy. This industry is chosen mainly because it belongs to an area of high environmental pollution where environmental accounting disclosures are expected to be high. Data were obtained through pooled data owing to the fact that only ten financial years of the ten (10) listed oil and gas companies under study were used, that is, one hundred (100) observations. The environmental accounting disclosures index was used in the study owing to non-availability of environmental costs of the companies under study. In this study, companies' attributes that are only financial in nature were considered, which include profitability, leverage, liquidity and Long-term financing contribution. These aforementioned limitations were carefully considered in the collection and treatment of the needed data.

Suggestions for Further Study

The researcher suggests that further studies should be made on:

I. Environmental accounting disclosure practices and performance of the listed oil and gas, manufacturing and construction firms in Nigeria.

ii. A comparative study of companies' financial and non-financial attributes influence on environmental accounting disclosures of the oil and gas, manufacturing and construction companies in Nigeria.

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