



Board Characteristics and Sustainability Reporting: Environmental Agencies' Moderating Effects

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ABSTRACT

The Paris "Climate Deal" is an indication of the seriousness at international level, being attached to environmental degradation. The efficiencies of government environmental agencies in the disclosure of environmental information by sensitive firms in Nigeria, is what the study to examine. Covering the periods 2009 to 2014, secondary data was obtained from firms' financial, sustainability and triple bottom line statements selected at random from six sectors of the economy. Through the use of Stata13 analytical tool, regression of the variables was carried out. The result showed an encouraging disclosure index of about 55%. In particular, all the relationships measured had significant relationships and applied the latest version of global reporting initiative (G4). Environmental agencies were also tested for their role in sustainability reporting. The study recommends nonexecutive members of the Board of Directors be educated on environmental matters so as to offset their negative impact on the disclosure of environmental information.

Keywords: Board Characteristics, Environmental Protection Agencies, Sensitive Firms

JEL Classifications: H23, R11

1. INTRODUCTION

1.1. Background of the Study

In December 2015 the French government hosted a summit in Paris where a Climate Deal was struck. Apart from being negotiated by foreign Ministers representing some 195 countries (BBC, 2015), the summit was made up of major environmental players like the United States, China, India, Saudi Arabia and France. Also present were important industrialists like Bill Gate who pledge to double research in green energy investment. The major aims of the summit was to lower carbon emissions, limit global warming and give financial support to poorer nations. The mere fact that the summit hosted such high level delegation shows the extent to which the threat of climate change have pushed the world. Since Racheal Carson's warning in 1962 (Malarvizhi and Yadav, 2009) about man's impact on the environment, there has been several interventions to make environmental issues attain universal recognition (Anyanwu, 2012; Asuquo, 2012). The Paris climate summit is one of the latest such universal recognition.

Commitments and concerns shown by governments around the world on environmental issues have been backed at home by the formulation of environmental policies and the establishment of national Agencies to implement them. At international level non-governmental organizations like Green Peace Movement, Oxfam International and Global Justice Now have all been working towards greater environmental protection. Implementation of environmental policies are in the hands of specialize governmental Agencies. However, very little focus have been given to these agencies who are responsible for administering environmental policies. Researchers have focused more on relationships that compares environmental reporting and corporate financial performance (Cormier, 1999; Ahmad et al., 2003; Yusoff et al., 2006; Matsumura et al., 2014; Uwuigbe, 2014), corporate ownership structure (El-Gazzar et al., 2006; Andrikopoulos and Kriklani, 2013) and industrial type (Ismail and Ibrahim, 2009; Smith et al., 2007; Akbas, 2014); to name but few. Even with developing economies like Nigeria, emphasis have been laid on the effects of environmental impact, disregarding to a large extent

the role of environmental agencies or administrators charged with these responsibilities.

From the corporate perspective, two sets of administrators exist in environmental matters. Those internal to the organization and those external to it. Internal administrators comprised of the management team (Board of Directors – BOD) while external administrators are government agencies responsible for implementing environmental policies. Internal administration with regards to board composition, duality, environmental experts and board size are major determinants of environmental information disclosure. The execution and implementation of major environmental standards and regulations by agencies charged with such responsibility are geared towards minimizing environmental impact. The major motivation of this paper therefore, is the lack of sufficient study into the role of policy formulators and implementations on environmental issues. It is well established that their actions are of greater significance on environmental matters.

Researchers have virtually shun the effects of board characteristics (BC) in conjunction with environmental Agencies on environmental disclosure. This research therefore, targets the effectiveness of the roles of BC and policy administrators on environmental information disclosure. BC in this context being defined in terms of Board composition, duality, environmental expert and board size. Attempt was made here to answer questions that surround the role and effectiveness of these with administrators on sensitive firms in the Nigerian economy. We also hope to test for the assertion that there are no relationship between environmental administrators and environmental information disclosure. Where a relationship exists, what is the degree of it and is it significant or insignificant?

1.2. Scope of the Research

The study will concentrate on sensitive industries in relation to environmental issues in the Nigerian economy for the period 2009-2014. These firms according to Enahoro (2009) generally affect “adversely more on the environment through effluents and emissions” from their day-to-day production activities to cause degradation to the environment. They have a higher environmental pollution propensity (Monteiro and Aibar-Guzman, 2010). For simplicity purpose the work was divided into five portions.

The first part traces the development of environmental issues to present day and looks at attempts so far being made to deal with them. This background gives the rationale behind the investigation. In the literature review, relevant works on environmental disclosure were critically examined with emphasis laid on approach and discoveries. From these a model was developed which establishes the association between the variables of the research on a framework and model. The methodology gives the design and description of how the study was carried out. On the result analysis, an analytical review of the data was made using descriptive statistics, correlation and regression. The final section is a summary of the entire research work followed by major discoveries and recommendations.

2. REVIEW OF RELEVANT LITERATURE AND RESEARCH FRAMEWORK

2.1. Environmental Administration

Administration in general is about the execution and dispensation of activities of officials in the executive branch of government under a particular Chief Executive Officer (CEO). In the business environment the term “management” seem more precise while the public sector carries the phrase “public administration.” No matter the style used to describe it, administration is centered on policy formulation and execution. Administration on environmental issues constitutes mainly policy formulation and execution by government agencies and business managers. In this context the role of Environmental Protection Agencies (EPA) easily comes to mind. In the US the EPA is Federal institution whose principal mission is to protect human and environmental health. For that reason legislations dealing with specific environmental problems are now being passed by Congress for the EPA (Landy et al., 1990). In Nigeria, the government have established EPAs at both Federal and State levels.

Omofofomwan and Osa-Edoh (2008) commented that the interaction of people with the environment have had devastating effects ranging from urbanization, desertification, overpopulation to pollution. In their study Yusuff and Sonibare (2004) discovered that effluents by textile firms in some parts of Nigeria, exceeded the limits on seven of the measured parameters set by the Federal Ministry of Environment. It is in line with operations like this that the Federal EPA (FEPA) was established to control and managed resource exploitation in the environment (Omofofomwan and Osa-Edoh, 2008). Despite efforts by the federal government to alleviate environmental degradation, records have shown that environmental degradation is growing at an alarming rate in Nigeria (Omofofomwan and Osa-Edoh, 2008).

Of major concern is the role of administrators in ensuring compliance with environmental standards and regulations, and the relationship between their roles and environmental information disclosure on degradation. Though so many studies have covered environmental reporting in accounting, hardly any thorough investigation have been conducted on the role jointly played by both government and corporate administrators in alleviating and minimizing environmental degradation. Most of the works done on environmental issues in Nigeria are on its impact and challenges it posed. In this section therefore, a review of the concept together with relevant studies on environmental disclosure was done. Emphasis was laid on the roles of BOD and government institutions at both Federal and State levels in Nigeria. Based on the review a framework was designed and a model formulated to test for the impact of both BOD and government agencies on environmental disclosure by firms operating in environmentally sensitive sectors in Nigeria.

2.2. The Concept of Environmental Disclosure

Othman and Ameer (2009) and Gray et al. (1987) sees environmental disclosure as a process of communicating the social and environmental effects of firms economic actions to particular

interest groups and society at large. It is the disclosure of information regarding companies' interaction with the environment and the immediate community. The issue of environmental disclosure has attained a height to the extent of prosecution of corporate officers in developed economies like the US (McMahon, 1995) for offenses in relation to the environment. In recent years most governments, organizations and individuals have come to realize the significance of environmental information disclosure and this has led to the development and enforcement of standards, guideline, legislation and even treaties. The term voluntary is fast becoming outdated in environmental reporting literature and replaced by mandatory. In fact disclosure on environmental matters should be both quantitative and qualitative (Contrafatto, 2011) as recognized by multinational corporations such as the Global Fortune500. Firms are expected to disclosure information under environmental reports on Environmental Impact Assessment as well as results of operations on social, environmental and economic matters.

The objective of environmental disclosure include the need for society to know about the extent of materials covered, determine an organizations' relationship with stakeholders and attracting foreign direct investment (Pramanic et al., 2008). With these objectives investments will be attracted, corporate officials will be prevented against litigation and other legal actions and proper definition of responsibilities will be made. Through environmental disclosure it will also be possible to determine the area the report should cover. This spells out ethical issues in business. Notwithstanding these benefits Beets and Souther (1999), posit that one of the challenges it faces is the increase in professional fees as a result of scarcity of environmental accounting professionals. It was also observed by Asaolu et al. (2011) that the existence of or lack of a unified standard and guideline for reporting sustainability is a threat to uniformity, objectivity and comparability. Despite these challenges the treatment to our environment as shown by the actions of firms in modern times calls for more actions on environmental disclosure. Reporting on sustainability is therefore, a necessity to stakeholders especially the immediate community.

2.3. Environmental Disclosure Standards

The general acceptance and recognition of environmental reporting has left behind a gap on disclosure standards and guidelines. In their study Othman and Ameer (2009) listed some 9 global sustainability reporting organizations that sprang up between 1985 and 2000, each with its own unique standards and membership. However, the most popular Standards and Guidelines on environmental reporting (Asaolu et al., 2011) are those of the Global Reporting Initiative (GRI), Oil and Gas Industry Guidance on Voluntary Sustainability Reporting, Organization for Economic Cooperation and Development Guidelines, ISO14001, Greenhouse Gas Protocol, Global Compact and United Nations Norms, AA1000 for Auditing and Assurance Process and Social Accountability 8000. Of these the most popular is the GRI framework (Ballou et al., 2006; Creel, 2010).

Established in 2002 by the United Nations Development Program, the GRI is a network based on non-governmental organization whose main aim was sustainability reporting fostering (Othman and Ameer, 2009). Basing its standards on triple bottom line (TBL)

reporting the GRI has been very active in developing voluntary environmental reporting standards and guidelines. It is also the most widely accepted globally with the aim of enhancing quality, rigorous and utility sustainability reporting (Ballou et al., 2006). GRI reporting standards and guidelines are based on five major principles. These are the principles of materiality, stakeholders, inclusiveness, completeness, timeliness and reliability; all geared towards defining the code of conduct of environmental reporting through the framework. Since its inception the GRI have release different versions of reporting standards and guidelines which, include G1 (2000), G2 (2002), G3.0 (2006), G3.1 (2011) and G4 (2013) which is the latest version. The G4 version primarily targets:

- a. The production of reports that matters
- b. Show critical economic, environmental and social issues
- c. Establish a sustainability reporting benchmark.

The contents of the report classified disclosure into specific standard disclosures (SSD) and general standard disclosures (GSD). The SSD contains the strategy and analysis, organizational profile, governance, commitment and engagement. On the other hand, the GSD consists of the identification of material aspect and privileges, stakeholders engagement, report profile and governance and ethics and integrity.

2.4. Corporate Governance Code as it Affects Environmental Reporting in Nigeria

The Code of Corporate Governance for public companies in Nigeria (2011 Securities and Exchange Commission [SEC] Code) stipulates ethical codes applicable to all listed firms in Nigeria. Of specific significance to environmental issues contained in the code are the following provisions:

- a. Ensuring the maintenance of ethical standard and compliance with Nigerian laws (SEC Code 3.1[i] [j])
- b. Membership of the BODs should not be <5 (SEC Code 4.3) and a mix of executive and nonexecutive members (SEC Code 4.3)
- c. Board members should possess (SEC Code 4.4) relevant core competence. This is very important with regards to the inclusion of environmental experts as BOD members
- d. Members of the board should be independent of management (SEC Code 4.5)
- e. Separation between the chairperson and the CEO (SEC Code 5[b]) to cement the independence of members
- f. Part D specifically pointed out the "Relationship with other Stakeholders" (sustainability issues) like host community and the general public (SEC Code 28.1 and 28.3[d]) which states: "Adoption, in the company's operations, of options with the most benefit or least damage to the environment, particularly for companies operating in disadvantaged regions or in regions with delicate ecology in order to minimize environmental impact of the company's operation."

2.5. BCs and Policy Administrators Impact on Environmental Reporting

Administrators in the context of this study refers to the principle policy makers and executors on environmental issues in Nigeria,

as it affects corporate bodies. In this case, two sets of bodies come to mind. BOD and environmental agencies. For the purpose of this study BOD was observed from four dimensions which include:

- Board composition in terms of non-executive to executive membership ratio (SEC Code 4.3)
- Duality as per the positions held by the CEOs (SEC Code 5.1(b))
- Environmental experts (SEC Code 28.3[d])
- Board size (SEC Code 4.2).

Environmental agencies were viewed from the major national environmental bodies that are made up of:

- Department of Petroleum Resources (DPR) for oil and gas sector.
- National Environmental Standards and Regulations Enforcement Agency (NESREA) responsible for the non-oil and gas sector.
- Nigerian Stock Exchange (NSE) in charge of all listed firms in Nigeria.

Board composition is very important for environmental disclosure (Chen and Jaggi, 2000; Eng and Mak, 2003). The more nonexecutive members there are in the board, the higher it is expected that the firm may disclosure on environmental matters. The result of the research of Eng and Mak (2003) showed a significant and negative association between nonexecutive directors and disclosures while Barako et al. (2006) discovered positive relationships. This mixed result needs further confirmation.

Though the Corporate Governance Code provided for separation between chairperson and CEO, some firms still allows a single individual to hold both positions. Separation allows for check and balances in the event of conflict of interest (Chen and Jaggi, 2000). Cormier et al. (2004) found out that duality has an inverse relationship with environmental disclosure. In the study of Li (2004) improper measurement of environmental information lead to non-disclosure. It is also expected that the bigger the board membership the more disclosure is expected. Of these four dimensions, there has been significant research in the areas of board composition and duality. However, environmental experts and board size in relation to environmental disclosure remains a semi virgin area.

With regard to market regulators, Monteiro and Aibar-Guzman (2010) discovered that listed firms' disclose more on environmental issues than non-listed firms. Studies on relationships between the DPR/NESREA and disclosure by firms is however, scarce. The need for a study that merge BC and policy administrators is vital at this stage of environmental reporting development to be able to tell whether or not a combination of the roles of these two may encourage environmental disclosure. It is on the basis of this that the following framework and model were developed based on the institutional theory and the agency theory.

2.6. Framework and Model Development

This work is based on the Institutional theory and the agency theory. The institutional theory according to Bell and Lundblad (2011), is about evaluating the role of outside organizational

pressure on firms' information disclosure. In the Nigerian context the SEC, NSE, Federal Inland Revenue Service, DPR, NESREA and some NGOs; are institutions with powers to influence disclosure by corporate bodies. Such pressures may ignite effective changes in the interest of stakeholders. Studies by Rahman et al. (2004) have shown that the pressure from funding agencies for legitimacy is what makes organizations like Volta River Authority in Ghana introduce environmental reporting. This result is a little bit different from that of Mosene et al. (2013) who discovered that the pressure exerted yield minimal, ineffective and unreliable disclosures. Competition and media pressure coupled with a firm's media image and corporate social responsibility publicity efforts are important determinants of GRI adoption (Nikolaeva and Bicho, 2011).

The agency theory is geared towards a relationship whereby the principal delegates work to his agent who is expected to perform on his/her behalf. The emphasis is on the clash of interest between the principal and agent (Kleiman, 2011). In our context management represented by BOD acts on behalf of stakeholders (shareholders, government, community, investors, etc.). In the dispensation of its functions, the BOD must work towards meeting the interest of stakeholders. Therefore, the framework of this research shows the relationship between BODs as supported by outside institutions (DPR, NESREA and NSE), and environmental information disclosure (Figure 1).

The above relationship is set in the model of this research thus:

$$ER = f(BC)$$

$$ER(Y)_{it} = a + \beta_1 bc_{1it} bc_{5it} + \beta_2 bc_{2it} bc_{5it} + \beta_3 bc_{3it} bc_{5it} + \beta_4 bc_{4it} bc_{5it} + \epsilon_{it} \quad (1)$$

Where,

Y_{it} = Environmental reporting as dependent variable and others given below as independent variables,

BC = Board characteristics,

bc_{1it} = Board composition,

bc_{2it} = Duality of CEO,

bc_{3it} = Environmental expert,

bc_{4it} = Board size,

bc_{5it} = Policy administrators,

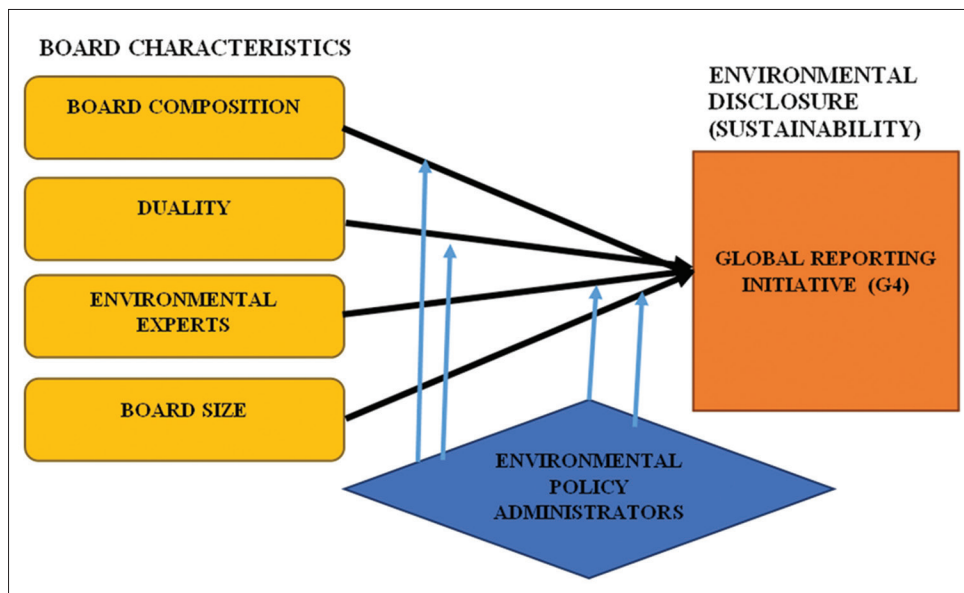
a_0 = Constant term,

ϵ_{it} = Error term,

β_n = Coefficient of the independent variables.

3. METHODOLOGY

The research method and design concentrated on firms found in sectors of substantial direct environmental impact (Kolk et al., 2001) in the Nigerian economy. These companies are found in six sectors of the Nigerian economy: Agriculture, Construction/Real Estate, Healthcare, Industrial Goods, Natural Resources and Oil and Gas. A total of 69 companies from these sectors were listed on the NSE by 2012/2013 fiscal year (NSE Factbook, 2013). Being the highest in terms of social and political sensitivity, 12 more firms from the website were added to the petroleum sector. This is

Figure 1: Framework of the Research

because only 10 companies were quoted in the NSE, thus giving a total of 81 firms.

The sample size using Collins and Schultz (Kantudu, 2006) resulted to a sample of 67 firms which were selected at random on pro-rata basis from each of the six sectors. It should be noted that the period of observation covered 6 years (2009-2014). Data was sourced through secondary means from TBL reporting financial statements and/or sustainability reports of the sampled firms. Data collected were analyzed using three basic instruments: Descriptive statistics, correlation and regression analysis. The aim here was to determine the deviation from the mean outcomes, the existence and types of relationship between our variables and the degree of responsiveness of the relationship and their significance to changes in board composition, duality, environmental experts, board size, and policy administrators.

Three variables were considered for this study. They include BC (independent variable), policy administrators as (moderating variable) and environmental disclosure (dependent variable). The BC constitute four dimensions. These dimensions are board composition, which is a ratio of non-executive to executive BODs. Duality, which defines the double or single role of CEOs. Environmental experts examines the composition or otherwise of experts on environmental issues in the BODs. Finally, the total membership of the board was examined. Policy administrators is a moderating variable that also constitutes two dimensions. Each measured through the three main national environmental agencies in Nigeria – DPR for the oil and gas sector, NESREA for the non-oil and gas sectors and the NSE for all sectors. The dependent variable is environmental disclosure using the GRI G4 standard and guidelines as the benchmark.

For the purpose of this research the various dimensions of the variable were given standard measurements. Environmental reporting was measured with the latest version of GRI (G4). 33 key disclosure items of G4 were grouped into 10 based on

disclosure characteristics. The 10 groups include: Strategy and analysis, organizational profile, governance, economic issues, environmental issues, social issues, labor practices and decent work, human rights issues, product responsibility and ethical policies. For each of the 33 items a score of 1 mark was awarded. The average score then gives the simple average disclosure index (SADI) as applied by Ahmad et al. (2003), Sulaiman and Mokhtar (2012), and Monteiro and Aibar-Guzman (2010). The SADI was the instrument used to measure environmental disclosure. It ranges between 0 and 1 representing lowest and highest disclosure indices respectively. Board composition was measured as a ratio of nonexecutive to executive board members (Eng and Mak, 2003; Barako et al., 2006). Dummies of 0 and 1 were used to measure Duality and environmental experts (Barako et al., 2006; Sulaiman and Mokhtar, 2012). In the case of duality, 0 for double role and 1 for single role (Chairperson and Managing Director). Where an environmental expert is present in the Board 1 point was awarded and 0 point for no environmental expert. The board size was measured based on the total number of board membership. The role of policy administrators was determine using mean value index (MVI) as applied by Hossain et al. (2006), Enahoro (2009) and Sulaiman and Mokhtar (2012). MVI is a ratio of actual agency performance to the expected performance expressed as 5 or as percentage. It measures the effectiveness and efficiency of environmental agencies in implementing environmental policies. The measurement process constituted a Likert scale questionnaire which, is expected to be completed by the agencies with regard to information on registered firms, environmental experts, environmental disclosure, standards compliance, degree of supervision, obstacles confronted, sanctions imposed, effects of policies, future prospects, etc. These were scored based on the firm's record on these factors. The total score obtained was then related to the expected score and expressed to 5 to give the MVI. The result was then measured on a 5-point scale thus: Unacceptable (0.00), very poor (0.01-1.00), poor (1.01-2.00), fair (2.01-3.00), good (3.01-4.00), and very good (4.01-5.00).

4. RESULTS AND DISCUSSIONS

4.1. Descriptive Statistics

The variables employed in this research are environmental disclosure (SADI), Board composition (bc1), CEO's duality (bc2), environmental experts (bc3), board size (bc4) and policy administrators (pa1 and pa2) with the latter serving as a mediator. While pa1 represents the NSE, pa2 stands for DPR/NESREA. An evaluation of the mean disclosure of the dependent and independent variables as well as the deviation from standard disclosure and minimum and maximum values are shown in Table 1.

Disclosure on environmental information is about 55.06% on average with minimum disclosures of 0% and maximum of 100% by firms observed. A look at the records showed that deviation from the mean disclosure was not that great as it is about 0.2761. Average Board composition was 1.9627 (bc1). This ratio which is a relationship between nonexecutive and executive members indicate that for every executive member in the Board, there are approximately two nonexecutive members. The value of 1.1611 did not show a deviation far away from the mean. Moreover, the minimum ratio is 0.50 while the maximum is 6.

Results for duality was given as 71.71% which is very poor. This implies that only about 28% of CEOs are not holding both Chairperson and Managing Director positions at the same time. The standard deviation from this result stood at around 0.4509 with minimum and maximum scores of 0 and 1 respectively. With regard to the presence of environmental experts in the Board, our result showed only 11.31% of firms have experts in their BOD. The minimum and maximum scores were given as 0 and 1 respectively, with a standard deviation of 0.3171. The board size have an average of 9 members with a standard deviation of 2.4663. The minimum and maximum values are 2 and 18 respectively.

With regard to policy administrators average of the NSE shows that there was a mean disclosure of 3.0464 at 0.1027 standard deviation. The minimum MVI was 1.9159 and maximum MVI was 3.3320. On average 2.4712 MVI result was recorded for DPR/NESREA at a standard deviation of 0.4758. Though these deviations were acceptable the descriptive statistics was neither able to explain the relationship between the variables used for this research nor did it indicate the level of significance of the relationship. We therefore evaluate the correlation matrix.

4.2. Correlation Matrix

For any regression to be possible a relationship must exist and this can be best determined through correlation. The correlation matrix (Table 2) for our variables shows that relationships exist between the moderated variables (bc1pa, bc2pa, bc3pa and bc4pa) of the research and the dependent variable (SADI).

These relationships are within acceptable ranges as none of them is up to 80% or 90%. The highest correlation matrix of the dependent variable and independent variable is that between environmental disclosure (SADI) and board composition (bc1pa) which is

21.64%. While there exists an inverse relationship between SADI and board composition and SADI and duality (bc2pa), a direct relationship is the case between SADI and environmental expert and SADI and board size (bc3pa and bc4pa). Except for bc2pa and bc4pa, all the relationships between environmental disclosure and the independent variables are significant. Autocorrelation is also absent as the relationship between the independent variables is not up to 80% or 90%.

Nonetheless, a look at the overall relationship shows that the correlation relationship is weak (Al-Matari, 2013) as even the highest relationship in the matrix is 0.2738 (bc1pa and bc4pa). In terms of correlation significance, while Board composition and environmental experts have correlation matrix that are significant; duality and Board size have matrices that are not significant. The correlation matrix however, does not give any guide on the degree of change between the dependent variable and independent variables and the significance of the relationships.

4.3. Regression Analysis

From the regression analysis on Table 3, it is clear that the moderating relationships of environmental policy administrators between board composition (bc1pa), CEO's duality (bc2pa),

Table 1: Descriptive statistics

Variables	Mean±Standard deviation	Min	Max
SADI	0.5506447±0.2760662	0	1
bc1	1.96271±1.161122	0.5	6
bc2	0.7172237±0.4509286	0	1
bc3	0.1131105±0.3171358	0	1
bc4	9.208226±2.466337	2	18
pa1	3.046435±0.1026895	2.9088	3.2724
pa2	2.471162±0.4785324	1.9159	3.332

Source: Computed using Stata13. SADI: Simple average disclosure index

Table 2: Correlation

Variables	SADI	bc1pa	bc2pa	bc3pa	bc4pa
SADI	1.0000				
bc1pa	-0.2164	1.0000			
bc2pa	-0.0578	0.0031	1.0000		
bc3pa	0.2125	0.0202	0.0509	1.0000	
bc4pa	0.0575	0.2738	0.2090	0.2452	1.0000
	0.2583	0.0000	0.0000	0.0000	

Source: Computed using Stata13. SADI: Simple average disclosure index

Table 3: Regression results

SADI	Coefficient	t	P> t
bc1pa	-0.0074526	-4.89	0.000
bc2pa	-0.0066785	-1.76	0.080
bc3pa	0.0226663	3.99	0.000
bc4pa	0.001039	1.78	0.076
_cons	0.6041141	13.95	0.000
P>F	0.0000		
R ²	0.1059		

Source: Computed using Stata13. SADI: Simple average disclosure index

environmental experts (bc3pa), board size (bc4pa) and environmental disclosure are highly significant.

On individual basis all the observations showed significant relationship with the disclosure of environmental information. Board composition and environmental experts are significant at 1% level of significance, while duality and board size are significance at 10% level of significance. The overall rate of change (R^2) between environmental disclosure and the independent variables is 10.59%. This is in the face of individual variable rate of change of 0.75% for board composition, 0.67% for duality, 2.27% for environmental experts and 0.10% for board size. This record makes environmental experts the observation with the highest impact on environmental information disclosure.

The results on Table 3 also indicate that a negative relationship exists between board composition and disclosure. The same applies to the relationship between duality and disclosure. Environmental experts and board size exhibited positive/direct relationship with environmental information disclosure. The implication is that for every 1 increase in nonexecutive member in the board, disclosure will fall by 0.75%. Also for each separation in the positions of Chairman and Managing Director there will be a fall in disclosure of 0.67%. An increase in environmental expert in the board will increase disclosure by 2.27% while an increase in board membership by one member will lead to an increase of disclosure by 0.10%.

5. CONCLUSION AND RECOMMENDATIONS

5.1. Summary

As conferences aimed at lowering carbon emissions and the protection of our environments continue in earnest in recent times, threat to world climate also continuous unabated. This has gone to the extent that major emitters of greenhouse gases like the United States, China and India have made some of their cities possible targets for environmental disasters like flood. The major objective of this study is centered on the effectiveness of BC coupled with the impact of policy administrators on the disclosure of environmental information by sensitive firms in the Nigerian economy. Taking into consideration all environmentally sensitive firms in Nigeria, our review showed that mixed results have been obtained in the area of the relationship between environmental disclosure and BC. However, attempt to analyze this relationship in conjunction with policy administrators is scarce. A framework was then established using the institutional and agency theories. The results were evaluated through descriptive statistics, correlation and regression using Stata13 analytical tool.

5.2. Findings and Conclusions

Through descriptive statistics, correlation and regression analysis a thorough evaluation has been made with the following as the outcome of our study.

1. The disclosure of environmental information by sensitive firms is 55.60%. Given the voluntary nature of disclosure of

firms in the Nigerian economy, this result is encouraging

2. The ratio of non-executive members to executive members in the BODs is put at approximately 2:1. That is, for every 1 executive member there are almost 2 non-executive members in the BODs. It is expected that the majority of non-executive members in the BOD will influence environmental disclosure positively
3. 71.72% of Directors are acting both as Chairmen and CEOs, a fit that violates Code of Corporate Governance's separation of power (SEC Code 5[b]).
4. Only about 11.31% of environment experts are members of the BODs of environmentally sensitive firms.
5. With regards to board size, there are approximately an average of 9 members in each board.
6. Results with regards to the MVI for NSE was "good" (3.0464) while that of DPR/NESREA was not encouraging and described as "fair" (2.4712).
7. The relationship between the variable is weak with none of the matrices exceeding 29%.
8. There is a negative and significant relationship between environmental disclosure and the attributes of board composition and duality.
9. The relationship that exists between environmental disclosure and environmental experts and board size is an inverse but significant one.

5.3. Recommendations

Based on the above findings the following recommendations were made:

- a. Given the rate of pollution that the planet is currently undergoing the environmental information disclosure rate discovered of 55.06% is too low. It should be targeted at about 80%, which can be easily achieved if policies moves from voluntary to mandatory disclosure.
- b. The SEC should revisit the role of firms CEOs and those in violation of SEC Code 5(b) be sanctioned accordingly as this practice have negatively impacted on disclosure of environmental information.
- c. The percentage of environmental experts in the board should be increase. This could be achieved by specifically stipulating it in the Code of Corporate of Governance since the NSE is now a member of the United Nations Sustainable Stock Exchange Initiative. In addition to this more reporting environmental specialist should be trained just as in the case of internal auditors so that they could be incorporated into the BOD.
- d. DPR and NESREA should be encouraged to improve their performances. As the main environmental agencies in the country, "fair" performance is very disappointing compared to the result of the NSE. They should target an MVI of at least 4.0.
- e. The dominance of nonexecutive members in the BODs should be maintained though this is having a negative effect on disclosure. This should not be the case. Nonexecutive members should therefore, be given environmental friendliness background through education to enable them introduce favorable policies that will encourage environmental disclosure.

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