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Internal corporate governance mechanism and environmental disclosure of listed oil and gas companies in Nigeria

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Abstract
This paper examined internal corporate governance mechanism and environmental disclosure of some listed oil companies in Nigeria. Current corporate governance codes in Nigeria affect corporations in the extractives sectors and isolation from other potential explanations for forest loss beyond oil activities. This study adopted ex-post facto research design and data were generated from the seven (7) selected oil and gas companies that was quoted on the Nigerian exchange group for the period of ten (10) years 2013 to 2022. Internal corporate governance mechanism was measures in board size (BSZ), board independence (BIN), and foreign directors (FRD), while environmental disclosure index was used as measure for environmental disclosure (EVD). The panel regression technique and specifically random effects were used for data analysis with the aid of STATA version 14. The results of the study revealed that board size, board independence and foreign directors have a significant positive impact on environmental disclosure of selected oil and gas companies in Nigeria. The study concludes that internal corporate governance mechanism has significant impact on environmental disclosure of selected oil and gas companies in Nigeria. The study recommended that oil companies want to improve environmental disclosure to enjoy the benefits of adhere to corporate governance codes regulations should pay attention on internal corporate governance mechanism (board independence, board size and foreign directors) for credible information reporting.

Keywords: Board Independence, Board size, Environmental Disclosure, Foreign Directors, Internal Corporate Governance Mechanism

1. Introduction

Internal corporate governance mechanisms are the traditions and methods used by the oil and gas companies which help the management in enhancing the value of shareholders. The elements of internal mechanisms include ownership structure, the board of directors, board size, audit committees, and compensation board. Internal corporate governance mechanisms are a set of controls to monitor activities and take actions to accomplish organizational goals. Corporate governance is an important mechanism for ensuring transparency, accountability and compliance to rules, laws, and regulations by the company. Corporate governance mechanism such as board of directors and audit committee play a crucial role in the disclosure practices of companies. Corporate governance mechanism guarantees sustainability of firm through sound business practices that promote accountability and transparency. Environmental disclosure is affected by corporate governance mechanism to achieve the companies' set goals by managing the relationship among stakeholders (Ogungbade, 2021). Environmental accounting is an inclusive field of accounting providing reports for both internal and external uses. Internal use, generating environmental information to help make management decisions on pricing, controlling overhead and capital budgeting while external use, disclosing environmental information of interest to the public and to the financial community. The current position of environmental accounting reporting and disclosures might best be described as full of uncertainty. Statutory, regulatory, quasi-regulatory agents and standard setters are yet to prioritize the reporting and disclosure of environmental (Obasanho, 2017). Natural environments are increasingly under pressure, amid population growth and economic expansion associated with raising prosperity, the global satellite data on forest loss and geo-coded well -level data on oil exploration with known drilling result in forest.2001-2018.

The oil and gas companies in Nigeria have impacted on the environment through their exploration, refining and transportation of oil and gas activities. However, within the Niger Delta region these had cause serious environmental problems with its attendant reprisal attack on oil facilities in the region by the militants. Oil and gas are critical to Nigeria's economic and social performance. Oil alone accounts for 40 percent of the country GDP, 70 percent of budget revenues and 95 percent of foreign earnings. This has brought to the fore burner the more the issues of not just addressing environmental issues in Nigeria but reporting on them. Environmental disclosure is voluntary in nature, however, companies that engaged in environmental disclosure create a friendly or mutually relationship with the host environment which could be a great asset to the company in the near future. This role could be complemented through the existence of effective corporate governance. Some features of corporate governance have significant role to play in fostering the activities and performance of companies. Oil and gas companies which are identified as companies with high environmental damage are expected to be engaged in voluntary disclosure of environmental information and it could help in achieving corporate objective, (Aluwong, & Fodio, 2021).

In Nigeria environmental accounting disclosure is becoming necessary for the oil and gas companies need to report in conformity with the industry practices. The pressures from environmental activist and advocates, relationship with multi-national corporations, ownership structure of the company, size, and level of profitability. These areas of discipline are particularly critical for the downstream oil sector in Nigeria which impacts heavily on the environment and thus, livelihood in the oil region. Thus, oil companies and industry groups have also recognized that international oil companies operating in Nigeria, with inadequate environmental laws should adopt best practice. Theoretically, the legitimacy theory provides the foundation for examining the relation between corporate governance and variables such as environmental disclosure. The theory explains the role that should be performed by companies in fulfilling their social contract. It is expected that companies should cultivate the habit of disclosing social and environmental information which will act as the medium of informing the stakeholders that they are law abiding corporate citizens. The perception of the stakeholders concerning the firm existence is to create value not to cause damage to the public and the environment (Ika, Nugroho, Achmad, & Widagdo, 2021).

Previous studies on internal corporate governance mechanism are mostly concerned with board characteristics, board structure, audit committee, executive's compensation, ownership structure, and board remuneration, (Yahaya, 2018; Ismail, Rahman, & Hezabr, 2018; Muhamma, Xiaoming, & Rehman, 2017; Dibia & Onwuchekwa, 2015). This study identified the gap and narrows its scope to the board of directors as mechanism of internal corporate governance for environmental disclosure in some selected oil and gas companies. The study filled the gaps of existing literature review on corporate governance conducted in different sectors of the economy. Meanwhile, the committee which are formed out of board of director who after their have carried out the assigned task reports back to the directors for proper decision. This study prerogatives that the decision of the committee on environmental disclosure can also be deliberated during board meeting because the committee is from the board. Therefore, the research is concerned with the board of directors' that is board size, independence, and foreign directors. Thus, research assessed internal corporate governance and environmental disclosure of selected oil and gas companies in Nigeria. The study postulated the following hypotheses:

HO$_1$: Board size has no relationship with environmental disclosure of selected oil and gas companies in Nigeria.

HO$_2$: Board independence has no impact on environmental disclosure of selected oil and gas companies in Nigeria.

HO$_3$: Foreign directors has no significant effect on environmental disclosure of selected oil and gas companies in Nigeria.

2. Literature Review

Concept of Corporate Governance

The origin of the word governance goes back to Ancient Greece, where the word *kubernaein* meant to steer, in relation to a ship. Since then, to govern has been applied to the control of peoples and latterly companies. Corporate governance developed as a subject for academic research, probably mainly in the United States in the years after the second world war, but it came to prominence in the United Kingdom with the publication of the Cadbury report on the financial aspects of corporate governance in 1992. The title indicates the limited focus, which reflects the origins of the exercise which, prompted by recent corporate scandals, were all about protecting city investors from being exploited by rapacious managements who needed to be brought under a measure of control.

Sir Adrian Cadbury's seminal Report (1992) defined corporate governance as the system by which companies are directed and controlled. Boards of directors are responsible for the governance of their companies. The shareholders' role in governance is to appoint the directors and the auditors and to satisfy themselves that an appropriate governance structure is in place. The responsibilities of the board include setting the company's strategic aims, providing the leadership to put them into effect, supervising the management of the business and reporting to shareholders on their stewardship. The board's actions are subject to laws, regulations and the shareholders in general meeting. It involves balancing the interests of the many stakeholders, such as shareholders, management, customers, suppliers, financiers, government and the community.

Organization for Economic Co-operation and Development OECD (2004) defined corporate government as the procedures and processes according to which an organization is directed and controlled. The corporate governance structure specifies the distribution of rights and responsibilities among the different participants in the organisation such as the board, managers, shareholders and other stakeholders, and lays down the rules and procedures for decision making.

Internal Corporate Governance Mechanisms

This can be defined as a set of tools that explain the power, influence management decisions, govern the behaviour and limit discretionary space of manager. Internal corporate governance mechanism arises when business goes off track and requires proper monitoring in internal proceedings and further corrective measures are required to be taken. As part of the monitoring internal governance, reporting lines are properly defined, operations of business work smoothly which further assist in creating a right path for the organization by segregating roles of responsibility, authority, and control in policy development (Sharma, 2017). Internal corporate governance mechanism are the policies, guidelines and control to manage an organization and reduces inefficiencies. They are also meaning or control structures used by principals and agent and to monitor and control agent. Internal Corporate Governance Mechanisms can be defined as a set of tools that explain the power, influence management decisions, govern the behaviour and limit discretionary space of manager. Internal corporate governance mechanism arises when business goes off track and requires proper monitoring in internal proceedings and further corrective measures are required to be taken. As part of the monitoring internal governance, reporting lines are properly defined, operations of business work smoothly which further assist in creating a right path for the organization by segregating roles of responsibility, authority, and control in policy development (Sharma, 2017). Internal corporate governance mechanism are the policies, guidelines and control to manage an organization and reduces inefficiencies. They are also meaning or control structures used by principals and agent and to monitor and control agent.

Board Size

It is the number of persons that made up the board of directors. Nigerian Code of Corporate Governance 2018 stated clearly that the board should be of sufficient size to effectively undertake and fulfil its business to oversee, monitor, direct and control the company activities and be relative to the scale and complexity of its operation. However, contrary to the requirement of Nigerian code of corporate governance, there is an opinion that larger board of directors may likely to be less effective because the larger number of people may tend to disrupt the effectiveness of communication, coordination and decision making, (Aliyu, 2018). Therefore, effective and efficient board will enhance on organizational resources, reputation and performance by decreasing risk and optimism. Thus, board size with active experts may lead to proactive managerial behaviour regarding social and environmental disclosure. Larger board size can compensate for the information asymmetry because there is more exchange of idea, experiences and interaction between directors who support the process of supervision of management of company. Board size indicate the number of directors on the board of a company. The directors work for the benefit of the company and in accordance with the purpose and objectives of the company. Therefore, the larger the size of the company's directors, the more exchange of ideas, experience, support and supervision of the management of the company (Ogungbade, 2021).

Foreign Directors

These are the foreign nationality appointed on the board of directors in a country other than their own home countries. Foreign directors are valuable additions to the board because of their global perspectives and their foreign expertise. The presence of foreign nationals on the board of directors are of great importance to the company because it is believed that the presence of foreigner on the board will make the board to enjoy that is been practice abroad in their company. Hence companies are advised to appoint at least one foreigner to their board of directors. This is because the foreign directors have unique understanding and knowledge of outside market, strategy that a firm want and also, they have broader connection with foreign Stakeholders (Ahmad, A. C., & Nosakhare, O., 2021). A Directors with foreign job or study experience have learnt how foreign organization works and facilitate the adoption of best practices, and they may improve firm performance if they bring different perspectives to the decision-making processes of the company boards, (Okpala, 2019). Furthermore, directors with foreign experience can provide professional advice and counsel to the management with regard to foreign business activities such as foreign acquisition or product expansion. Directors with foreign experience may have stronger incentives to pursue profitability and may be more independent in supervising management. Foreign directors are measured by taking the proportion of foreigners on the board to the total number of directors.

Concept of Environmental Disclosure

This is an information provided for the assessment of company's behaviour towards its environment and the economic consequence of such action it provides financial and non-financial information. Ejoh, Orakand and Salhey (2019), defined environmental disclosure as the set of information that relates to a company's past, current and future environmental activities. Environmental disclosure is a statement that shows the company's environmental efforts including company's objectives, environmental policies and environmental impacts, these are reported and published annually to the general public. Dibia and Onwuchekwu (2021), opined that environmental disclosure helps companies capture public perception toward their operation, environmental disclosure serves as a medium of communication between the company and the shareholders, disclosure is necessary because of the important of environment and the devastating impact of companies' activities on the environment. Setyawan and Kamilla (2019), defined environmental disclosure as disclosure made by the company to the stakeholders in the form of report on environmental activities undertaken by the company. The United Nations Department of Economic and Social Affairs (1992) stated that the disclosure of environmental information involves releasing information on a polluter's environmental performance, including emissions to air, waste water discharge, waste, and compliance with standards in a manner that is clear to large and varied audience.

The study interpreted that environmental disclosure is the strategic publication of information by the management of an organization in order to capture community perception towards their operations by making environmental data available in company's annual report. It is strategic because environmental disclosure in most countries is on voluntary basis, it is the decision of a company to disclose information that relate to environment may be beneficial to a company's reputation than their actual environmentally friendly performance.

Theoretical Review

Legitimacy Theory

The theory was propounded by Edward Freeman (1984). The theory postulates that organisations continually seek to ensure that they operate within the boundaries and norms of their respective societies. In adopting a legitimacy theory perspective, a company would voluntarily report on activities if management perceived that those activities were expected by the communities in which it operates (Deegan 2002; Cormier, & Gordon, Magnan, 2004). Given the impacts of perceived breaches of the social contract for organisational existence, it is important to examine the corrective actions that organisations might participate.

Resource Dependency Theory (RDT)

This theory was propounded by Pfeffer and Salancik (1978). The theory postulates that organization depends on resources that originate from its environment and that organizations' behaviour is shaped by external resources required such as raw material. According to the theorists, the directors perform their function through the use of their skills and experience that connect external stakeholders such as social groups, suppliers, customers and policy makers (Inua & Emeni, 2019). The theory was structured and reviewed around the five perspectives that Pfeffer and Salancik propose firms can formulate to minimize their dependence on the external environment and they are mergers/vertical integration, joint ventures and other interorganizational relationships, boards of directors, political action, and executive succession, The study is in agreement with the resource dependence theory which stated that directors perform their function by skills and experience in reporting environmental disclosure of the oil and gas companies.

Agency Theory

The theory was propounded by Jessen and Meckling (1976). The theory is based on the principal and agent connection. The governance of the company is based on the conflict of interest between the company owners, its managers and major providers of debt financing. The operative agency idea is based on the separation of ownership between the company's management. Typically, agents are used to monitor and regulate typical business activities. Separation of ownership and control, on the other hand, creates conflicts of interest between the agent and the principal. The study is in line with the agency theory which state that increase director's independence would increase the controlling and monitoring of management thereby prompt the environmental disclosure of the oil and gas companies in Nigeria.

Independent directors work on behalf of all stakeholders and for their own reputations, engagement, and acceptance in society, as they attempt to disclose and provide more information about the organization's environmental strategies to reduce costs, both agency and political (El Ghoul et al. 2017).Agency theory suggests that increased environmental disclosure practices reduce the agency problem between managers and foreign shareholders, as they hold a high proportion of shares and possess different values and knowledge (Jensen and Meckling 1976; Khan et al. 2013). The resource dependency theory also posits that foreign shareowners with diversified experience form different cultures to play pivotal roles in nominating board representatives, and thus, require more information disclosure. A situation where foreign investors own a substantial shareholding of a firm, there is a need for company to increase disclosure in order to bridge the geographical gap. Environmental issues are given great attention from different stakeholders in the developed countries (Ayoib & Nosakhare, 2019). Foreign directors are influential group of different shareholders groups, foreign investors also act as company watch dog and maintain relationship with national and international activist group (Masud et al, 2018). The presence of foreign nationals on the board of companies also has impact on their environmental disclosure. Foreign national in this context is assumed to be from developed countries where environmental issues are of a great concern to stakeholders. It is assumed that such interest and knowledge will be transferred to the board of developing countries by the foreigners thereby impact environmental disclosure.

Empirical Review

This section of the study reviewed some relevant previous empirical studies.

Nilam, Gatot, and Sholatia (2023) examined the effect of Good Corporate Governance (GCG), firm size, and dividend policy on firm value in 100 non-financial companies in Asia that are included in the Forbes version of The World's Biggest Public Company in 2017-2020. The results obtained are that the variables of the board of directors, audit committee, and firm size have no effect on firm value. In contrast, the dividend policy variable positively affects firm value. These results align with agency theory which requires company managers to think of the best solution to increase shareholder wealth.

Tahir, Lim, and Zunarni (2023) explored the moderating effect of capital adequacy on the relationship between board characteristics and the firm value of listed banks in Pakistan. The study used firm value as a dependent variable, proxied by Tobin's Q, along with five independent variables, one moderating variable, and two control variables. The results show that low proportions of women and independent directors on board affect firm value. Also, Riduan, Herawati, Fachrozi, and Muhammad (2022) examined the effectiveness of good corporate governance in moderating the impact of the audit committee, the independent commissioner, and the family firm on the value of the company. Quantitative methodology is employed. Multiple regression analysis and moderated regression analysis (MRA) were employed in the data analysis to examine the moderating variables. The study revealed that, good corporate governance boosted rather than mitigated the influence of independent commissioners on company value as opposed to the audit committee and family firm. The work of Aluwong, and Fodio (2021) assessed the influence of corporate attributes on environmental disclosure by oil companies in Nigeria. The study analysed the data using the logistic regression technique. The study revealed that corporate attributes significantly affect the environmental accounting disclosure by oil companies in Nigeria. Firm size has a significant positive effect on environmental accounting disclosure while auditor types have a positive but insignificant effect on environmental accounting disclosure by oil companies in Nigeria. Olayinka, O. M., & Owolabi, S. A., (2021). The study explored the effect of corporate governance dimensions of board size, board independence, chief executive officer (CEO) duality, female directorship and board ownership on environmental sustainability reporting. The findings revealed that corporate governance (CG) had positive and significant effect on environmental sustainability reporting (ENSR) of selected quoted companies in Nigeria.

ThankGod, Emmanuel, and Clifford (2021) investigated the relationship between board characteristics and environmental disclosure of quoted oil and gas firms in Nigeria: The moderating role of firm size with its specific objectives such as to determine the relationship between board independence and environmental disclosure. The study reveals that board independence has a negative relationship with environmental disclosure while firm size significantly moderates the relationship between board characteristics and environmental disclosure. Ludo (2019) analyses the impact of internal corporate governance mechanisms on firm performance of Dutch listed firms. The years 2012 and 2017 have been analysed using OLS regressions. The results show that, Board size is significantly related to firm performance; negatively for accounting-based and positively for market-based/hybrid measure Tobin's Q.

3. Methodology

The research adopted the correlational and Ex post facto design that is surveying research dwelt on annual reports and accounts of companies for data collection. The study examined an independent variable which is internal corporate governance mechanism affect dependent variable that is environmental disclosure. The population of the study consist of thirteen listed oil and gas companies quoted on Nigerian exchange group as at December 2022. The researcher selected sample of the study using non-probability criterion, precisely via judgmental sampling technique. The data were collected from secondary source only, which are available on the annual reports of the sampled oil and gas companies.

Table 1.1: Sample of the Study

S/N	Companies	Year of Establishment	Year Listed
1	Caverton Offshore Support	2008	2009
2	Conoil	1984	1978
3	Eterna oil	1991	1998
4	Japaul Oil and Marine services	1994	2005
5	MRS Oil	1969	1978
6	Oando	1956	1992
7	Total Nigeria	1956	2001

Sources: Generated from NSE fact book, 2023

In line with the legitimacy theory, submission that organisations continually seek to ensure that they function within the boundaries and customs of their own societies. Therefore, predicts that internal corporate governance mechanism impact on environmental disclosure. (Ludo, 2019). The model of the research is specified below:

EVD = *ƒ*(ICG)……………………………………………………………… ….. (i)

EVD = *ƒ*(BDZ, BID, FRD, FSZ)……………………………….…………… (ii)

Econometric model

$EVD_{it} = \alpha_0 + \beta_1 BDZ_{it} + \beta_2 BID_{it} + \beta_3 FRD_{it} + \beta_4 FSZ_{it} + \varepsilon_{it}$

Where;

EVD = Environmental Disclosure

BDZ = Board Size

BID = Board Independence

FRD = Foreign Directors

FIZ = Firm Size

α = alpha

β = beta factor

ε = error term

it = Subscript for Panel Data

Table 1.2: Study Variables and their Measurements

S/N	Variables	Type	Acronym	Measurement	Expected Sign
1	Environmental Disclosure	Dependent	EVD	Environmental Disclosure Index	
2	Board Size	Independent	BDZ	Total number of directors	+
3	Board Independence	Independent	BID	Non-executive directors divided by total numbers of directors	+
4	Foreign Directors	Independent	FRD	Proportion of foreign directors to the total numbers of directors on the board	+
5	Firm Size	Control	FSZ	Natural Logarithm of the firm's year-end total assets	+

Source: Developed 2023

Oil and gas sector have contributed profoundly to the revenue generation in Nigeria within the period of the study. However, the operations of the companies pose serious environmental challenges to their host communities. This has stimulated important issues to whether internal corporate governance mechanism enhance detailed and factual reporting of a firm's environmental disclosure. The research in order to ensure objectivity had annual financial reports of each of the oil and gas companies selected, interpreted along a binary logic of zeros and ones, as standards of the environmental disclosure dummy, spanning ten years for each of the companies named, not earlier than, or before year 2023, using an existing template of disclosure index as designed by Moneva and Llena, (2000).

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

Descriptive Statistics

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

Table 1.3: Descriptive Statistics

Variables	Obs	Mean	Std.D	Min.	Max.
EVD	70	0.282	0.100	0.040	0.610
BDZ	70	1.129	2.286	4	11
BID	70	0.056	0.195	0.050	1.000
FRD	70	0.284	0.261	0.590	0.100
FSZ millions	70	.08612	.02274	.01974	.05890

Source: STATA Output

Table 1.3 above shows that the mean standard deviation, minimum, maximum of the variables. The environmental disclosure (EVD) as dependent variable while board size (BDZ), board independence (BID), foreign directors (FRD) as proxy of internal corporate governance mechanism which is the independent variable of the study. The values of the dependent and independent variables were calculated from the 7 sampled oil and gas companies for the period of ten years (2014-2023), of the study. It revealed environmental disclosure mean of 0.282 with a standard deviation of 0.100 which average is less than 50% (0.5) of what is needed. Meanwhile, there is wide distribution of the data from the mean as indicated by the high standard deviation above average of the sample oil and gas companies. The mean 1.129 of the board size show an average board of directors while minimum and maximum board members are 4 and 11 of the sampled oil and gas companies. The average of board independence (BID) across the sampled listed oil and gas companies in Nigeria within the period of the study is 5.6% and the standard deviation is approximately 19.5%. The minimum and maximum board independence of the listed oil and gas firms in Nigeria within the period covered were 0 and 50% respectively. This implies that some firms are yet to fully comply with corporate code of 2012, which stipulated that public firms should at least have one independent non-executive director. The mean value of foreign directors across the listed sensitive firms is 28.4%, while standard deviation value of 26.1% indicates that there is a moderate deviation of the data from the mean. The maximum and minimum proportion of foreign director of the listed sensitive firms in Nigeria within the period covered were 59.0% and 10% respectively. Finally, with respect to firm size, the size of the firm has minimum asset value of ₦19.7 billion in Nigerian Naira while the maximum value own by firm in terms of size is ₦58.9 billion. This indicates that on average listed oil and gas companies in Nigeria have assets with worth 86 billion Naira value.

Table 1.4: Correlations Matrix

Variables	EVD	BDZ	BID	FRD	FSZ
EVD	1.000				
BDZ	0.195	1.000			
BID	0.367*	-0.205	1.000		
FRD	0.339*	0.328*	0.223	1.000	
FSZ	0.426*	-0.097	0.113	-0.233	1.000

Source: STATA Output ***** p<0.01, ** p<0.05, * p<0.1**

The table 1.4, shows a positive correlation between independent variable internal corporate governance mechanism (BDZ, BID, FRD and FSZ), and dependent variable environmental disclosure. The inference is that the above variables move in the same direction with the environmental disclosure has positive and significant relationship with BDZ with the coefficient 0.195 at 5% significance level. Consequently, EVD has a positive significance relationship with BID with the value 0.367 at 5% significance level. EVD is found to have positive significant relationship with FRD with value of 0.339. EVD has a positive and significance correlation with both FSZ with r=0.426 at 5% level of significant. This implies that all the independent variables and control variable have positive correlation with the dependent variable of the study. However, the correlation matrix evaluates the strength of association between pairs of the independent variables; BDZ, BID, FRD and FSZ (-0.205, -0.097, and -0.233), are negatives at 5% level of significance. Meanwhile correlation between BDZ and FRD (0.328) was positive. FSZ has positive relationship with EVD at 0.426 respectively. BDZ has a negative significant relationship with BID with coefficient value of -0.205. BDZ and FRD has a negative relationship with FSZ at coefficient value of -0.097 and -0.233 which was insignificant at 5% significant level. The correlation coefficient between independent variables are below 0.80 which indicated zero multicollinearity.

Table 1.5: Normality of Residual Test

Variables	Obs	Pr(Skewness)	Pr(Kurtosi)	adj_chi2(2)	Prob>chi2
Residual	70	0.5016	0.0002	11.67	0.0029

Source: STATA Output

The outcome obtained from the joint probability of skewness and kurtosis for the residual shows that the residual is normally distributed at 1% level of significance. This therefore means that the OLS normality assumptions holds and the intercept can be discussed.

Table 1.6: Heteroskedasticity Test

Dependent Variable	Chi2(1)	Prob>Chi2	Null (HO)
EVD	2.95	0.0858	Rejected

Source: STATA Output
Note: HO (Null) = Homoscedasticity;

The p-value of 0.0858 in table 1.6 predicts that there is no heteroskedasticity problem since the p>0.05. this implies that there is constant variance assumption of the OLS estimator.

Table 1.7: Multicollinearity Test

Variables	VIF	1/VIF
BDZ	1.062	.061
BID	1.044	.069
FRD	1.038	.072
FSZ	1.020	.082
Mean VIF	1.041	.

Source: STATA Output

The Study further considered the collinearity issues, it employed Variance Inflation Factor (VIF) test to measure its magnitude in the model, where the variance factors for each variable are estimated. The results of the VIF test ranges from a minimum of 1.020 to a maximum of 1.062 which are all less than 10. The mean VIF 1.041, also confirming the absence of multicollinearity among all the independent variables of the study.

Diagnostic Test
This study conducted diagnostic analysis to maintain the un-biasness of the parameters as argued by Wooldridge (2011). Before the conduct of the final regression, among the test conducted in addition to the multicollinearity test is Hausman test to make a choice between random and fixed effect models. With the P-value of 0.0001 which is statistically significant fixed effect model is therefore considered appropriate for this study.

Table 1.8: Regression Results

Variables	Coefficient	t-value	P-value
BDZ	0.126	1.79	0.078*
BID	0.004	3.00	0.006***
FRD	0.176	2.69	0.009***
FSZ	0.07	3.57	0.001***
R-Square	0.502		
Adjusted R-Square	0.454		
F-Statics	10.572		
Probability	0.0001		
Observation	70		
Groups	7		

Source: STATA Output ***** p<0.01, ** p<0.05, * p<0.1**

The table 1.8 above, shows the OLS pooled regression that the adjusted R-squared value of 0.454 revealed that about 45.4% of the systematic variations in the dependent variable in the sampled oil and gas companies over the period of the study was jointly explained by the independent variables. This implies that the dependent variable (EVD) in sampled companies cannot be 100 percent explained by all the variables used in this study. The unsolved part of the dependent variable can be attributed to omission of other important independent variables that can explain the dependent variable, but are outside the scope of this study. The F-statistic value of 10.57 and its associated P-value of 0.0001 shows that the OLS Pooled regression model on the overall is statistically significant at 1% level, this means that the regression model is valid and can be used for statistical inference.

Thus, the model of the study is.

$$EVD_{it} = \alpha_0 + \beta_1 BDZ_{it} + \beta_2 BID_{it} + \beta_3 FRD_{it} + \beta_4 FSZ_{it} + \varepsilon_{it}$$

The first hypothesis of this study was formulated in order to test relationship between board size on environmental disclosure. BSZ as an independent variable to EVD appears to have a positive and significant effect. The coefficient value of 1.126 suggests that about 112% variation in environmental disclosure was attributed to a unit change in BSZ. Therefore, an increase in the number of directors, is expected to result to a positive effect on environmental disclosure. Hence, the hypothesis which states that Board size has no significant effect on environmental disclosure of listed oil and gas is rejected since the p-value = 0.078<0.1 level of significance. Thus, the study concludes that there is significant effect of Board size on environmental disclosure of selected listed oil and gas companies in Nigeria. The result of the study agrees with prior empirical researches by ThankGod, Emmanuel, and Clifford (2021), Oloniyinka and Owolabi (2021), Aluwong and Fodio (2021), Ludo (2019) and Rabi (2018).

The second hypothesis of the study stated that, Board independence has no significant effect on environmental disclosure of listed oil and gas companies in Nigeria. As it can be seen in table 1.8, the coefficient of determination of BID on EVD is 0.004, which is positive and significant at 5%. It means that about 0.4% variation in EVD was predicted by BID. When a unit of BID is increased or decreased, it is expected EVD will increase or decrease with 0.4% respectively. Since p = 0.006, which less than the accepted significance level of 0.05, the null hypothesis which stated that independence directors have no significant effect on environmental disclosure of listed oil and gas companies in Nigeria, is rejected. Thus, it implies that, alternate hypothesis is accepted and conclude that, Board independence has significant effect on environmental disclosure of listed oil and gas companies in Nigeria. This result concurred with other prior empirical studies found that board independence is a significant factor when making decision on environmental disclosure (Nilam, Sholatia, 2023; Riduan, Herawati, Fachrozi, & Muhammad, 2022; Olaniyinka & Owolabi, 2021; ThankGod, Emmanuel, & Clifford, 2021; Aliyu, 2018).

The third null hypothesis stated that, Foreign directors has no significant effect on environmental disclosure of listed oil and gas companies in Nigeria. Table 1.8 above shows the coefficient of determination of FRD on EVD is 0.176. This implies that about 17.6% variation in EVD is attributed to FRD. Since the value is positive, it means that a percentage increase in FRD is predicted to result in 17.6% change in EVD, since the p-value associated with FRD is 0.009 less than 0.05, the null hypothesis which stated that foreign directors have no significant effect on environmental disclosure of listed oil and gas companies in Nigeria is rejected. However, an alternate hypothesis is accepted and thus conclude that, foreign directors has significant effect on environmental disclosure of listed oil and gas companies in Nigeria. (Ahmad & Nosahare, 2015; Abubakar & Moses, 2020) agreed with the study. However, the empirical studies conclude that foreign directors has no significant effect on environmental disclosure of listed oil and gas companies in Nigeria. (Akbas, 2018; Agyemang, Yusheng, Ayamba, Turum, Changpeng & Shaibu, 2020) disagreed with the result.

These findings support the proposition of legitimacy theory and stakeholder's theory better explain the study's variables. The theory postulates that organisations continually seek to ensure that they operate within the boundaries and norms of their respective societies. Managers can establish socially responsible conduct by paying attention to the interests of all stakeholders in a business, and a socially responsible organization is one in which managers' commitments to stakeholders are prominent in their decision-making. Implication of the study: There is significant effect of board size on environmental disclosure of selected listed oil and gas companies in Nigeria; board independence has significant effect on environmental disclosure of listed oil and gas companies in Nigeria, and foreign directors has significant effect on environmental disclosure of listed oil and gas companies in Nigeria.

5. Conclusion and Recommendations

The research examined internal corporate governance mechanism and environmental disclosures of selected listed oil and gas companies in Nigeria. Environmental information is a key element of corporate disclosure where it attracts stakeholders concern due to worries as well as low quality reporting in Nigeria. The study findings give more understanding on the determinants of environmental disclosure of listed oil and gas companies in Nigeria. The research concludes that there is significant effect of Board size on environmental disclosure of selected listed oil and gas companies in Nigeria. Board independence has significant effect on environmental disclosure of listed oil and gas companies in Nigeria. Foreign directors have significant effect on environmental disclosure of listed oil and gas companies in Nigeria. However, the research has some limitation like other empirical studies. Firstly, the sample of the study only consisted of seven selected listed oil and gas companies in Nigeria. The study suggested for further studies can be conducted in other sectors such as manufacturing or financial service sector. In addition, the study relied solely on content analysis of information presented in annual reports. Further research may explore using alternative ways to collect data such as stand-alone report or corporate website rather than only annual reports. These limitations do not undermine the validity of the results. They function as building blocks for new research. Based on the empirical findings obtained in this study, it recommends that management of oil and gas companies should advise the independent directors to focus on value adding activities of the company especially environmental issues. Because independent directors who are indeed independent from the day to running of the company is believed to do the most that companies should do in which environmental disclosure is not left alone. Governance codes regulators like Security and Exchange Commission should emphasize or increase specific minimum characteristics for independence, board size and foreign director's member as they aid effective monitoring of the board and improves the credibility of information reported to the stakeholders. The management of the oil and gas companies should strive disclose more environmental accounting information and investors should demand for more environmental disclosure.

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