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CORPORATE GOVERNANCE MECHANISMS AND ENVIRONMENTAL DISCLOSURE OF LISTED OIL AND GAS COMPANIES IN NIGERIA

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Abstract

This study examined the relationship between corporate governance mechanisms comprising financial expertise of directors, foreign directors, board size of directors, independent directors, audit committee independence and environmental disclosure of listed oil and gas companies in Nigeria. A quantitative approach was adopted, using data from seven (7) sampled oil and gas companies listed on the Nigerian Exchange Group (NGX) over a 10 year period spanning 2012 to 2021. Multiple regression analysis was employed to examine the relationship. The study showed that foreign directors and board size have positive but non-significant relationship with environmental disclosure. Financial expertise, Independent directors and audit committee independence on the other hand have positive and significant relationship with environmental disclosure. The study recommends that shareholders of oil and gas companies in Nigeria should maintain directors with financial expertise, and foreign directors on the board to promote environmental and related disclosure.

Keywords: Corporate governance, Environmental disclosure, Global Reporting Initiative (GRI)

Introduction

Environmental disclosure occurs when a business includes information about how its operations affect the environment in its yearly reports so that interested parties can assess it at a specific point in time (Yahaya, Barnigbade & Ajoboye 2022). According to Trireksani and Djajidkarta (2016), the disclosure helps close the knowledge gap and foster a solid rapport between the community and the company's management.

Accordingly, environmental disclosure should be considered in addition to the profitability and calibre of the company's goods and services, which are considered to be indicators of success (Solikhah & Maulina, 2021). In Nigeria and the majority of developing nations, environmental disclosure is optional and serves to supplement financial statements with additional data (Al-Jubam & Chakroun, 2022). The environment and its inhabitants have suffered significant harm as a result of the industrial revolution. The atmosphere, plants, aquatic life, and human health are all at risk due to the release of hazardous gases into the atmosphere, global warming, oil spills, and climate change. Ajibolade and Uwuigbe (2015) assert that the stability of the ecosystem has suffered as a result of the industrial revolts.

According to Setyawan and Kamila (2015), environmental disclosure refers to the method by which a business discloses on its environmental operations to its stakeholders. By considering the information needs of many stakeholders, environmental disclosure establishes a channel of communication between the company and its stakeholders (Dibia & Onwucheka, 2015). In essence, the disclosure is an addition to the yearly financial statements. Actually, environmental disclosure entails a company's duty being extended beyond its customary function of giving shareholders financial reports. Stakeholders are

worried about how businesses address environmental issues, (Aburaya, 2012). Since regulations are advisory rather than mandatory, the bulk of corporations choose to release information in order to go by industry norms and placate environmental advocates (Okafor, 2018).

According to Ajibolade and Uwuigbe (2015), good business practices that encourage accountability and openness are how corporate governance assures the longevity of a company. Elsakit and Worthington (2014) specifically pointed out that corporate governance has an impact on environmental disclosure since it manages stakeholder relationships in order to help corporations accomplish their objectives. Corporate governance is a framework that invigorates the organisation and directs and governs its activities. Both internal and external governance comprise the system. The people inside the directors' control and those outside of it all have an impact on how the business is managed. The system is used to establish corporate policies that can improve the organization's performance and worth. Accountability, fairness, and transparency mechanisms are expected to be part of corporate governance (Ivungu, Ganyam, Asema & Ogira, 2021). Through environmental disclosure, stakeholders demand responsibility and transparency from the company's operations (Okafor, Egbunike & Amahalu, 2022).

The broad field of corporate governance can indeed be delineated into two primary categories: internal and external. Additionally, it can be further divided into categories such as shareholders, board committees, directors' board, auditors' board, regulatory agencies, ethical consideration and organisational compliance, and stakeholder engagement.

This study therefore focuses on the attributes of the board of directors, which have stood out from empirical literature including board size, independent directors, foreign directors, and audit committee independence, as internal corporate governance mechanism to determine influence on environmental disclosure. The current study considered the Global Reporting Initiative GRI to assess environmental disclosure.

Literature Review

Environmental Disclosure

Manini and Abdullahi (2019) describe environmental disclosure as the addition of environmental data to yearly reports as extra content. Environmental disclosure, according to Dibia and Onwuchekwu (2015), helps companies understand how the public perceives them. It acts as a channel of communication between the shareholders and the business. Because of the value of the environment and the disastrous effects that business operations have on it, environmental disclosure is required (Abubakar, Moses & Inuwa

2017). According to the United Nations Department for Economic and Social Affairs, environmental information disclosure entails making information about a polluter's environmental performance such as emissions into the air, waste water discharge, waste, and standard compliance clear to a wide range of audiences.

Environmental accountability entails the obligation for organizations to acknowledge and address their environmental impacts and responsibilities. According to Dibia and Onwuchekwa (2015), environmental responsibility encompasses a company's dedication to conducting its operations in a manner that ensures economic sustainability, social well-being, and environmental preservation, all while considering the interests of various stakeholders.

In contrast, Setyawan and Kamilla (2015) present a contrasting viewpoint regarding environmental disclosure. They posit that the primary objective of disclosing environmental performance in an annual report is to demonstrate to investors and other stakeholders the level of transparency and accountability maintained by the company. From this perspective, environmental disclosure serves as a means to communicate the organization's commitment to transparency and its willingness to be held accountable for its environmental impacts and actions.

These contrasting viewpoints highlight the multifaceted nature of environmental

accountability and disclosure within corporate governance frameworks. While Dibia and Onwuchekwa emphasize the broader commitment of companies to sustainable operations across economic, social, and environmental dimensions, Setyawan and Kamilla underscore the role of environmental disclosure as a tool for demonstrating transparency and accountability to stakeholders. Together, these perspectives add to a comprehensive understanding of the relation and environmental accountability and disclosure in the corporate context. Environmental disclosure is a part of good corporate governance as explained by claim Oba and Fodio (2012).

Furthermore, according to Bassey Effiok and Eton (2013), environmental disclosure makes it easier for an organisation to tactically accomplish a new or evolving concern with its participants. This position is founded on the ethical investment movement's belief that investors who practise ethical investing must support environmentally conscientious companies. According to Bassey et al. (2013), businesses can successfully raise money from people and organisations who care about the environment by projecting a positive image.

To summarise, environmental disclosure refers to the process by which businesses demonstrate their resolve to eliminate the risks associated with their operations and notify relevant parties in order to gain their support. As can be seen from the criteria above, management of an organisation can

strategically publish information to capture the community's opinion of their actions by including environmental statistics in the corporation's annual report. Environmental disclosure is the term for this.

Corporate Governance Mechanisms

According to Damak (2013), are a collection of instruments that explain authority, have an impact on management choices, regulate behaviour, and restrict managers' latitude. Corporate governance mechanisms, according to Sharma (2017), are a specific collection of powers and duties that have the ability to significantly impact management choices and remove managers' latitude in making decisions. According to Sharma (2017), these mechanisms also serve as a restraint for striking a balance between the benefits and expectations of stockholders and principals and agents. Sharma pointed out that internal governance mechanisms occur when business ventures deviate from the path and necessitate appropriate monitoring in internal proceedings and additional corrective measures. More specifically, the internal corporate organisational governance apparatus includes the ownership structure, gender diversity, directors' board, and board committee of directors.

The mechanisms outside of the company are called external mechanisms. That is out of the company's control. In light of this, Sharma (2017) examined external mechanisms such as stock exchange

fluctuations, creditors and debtors, regulatory environments that impact products, product branding and selling policies, auditors, and market accessories like competition.

Independent Directors

In addition to being board members, independent directors have no business affiliations with the company and are unaffiliated with the other directors, controlling shareholders, or other board members (Setyawan and Kamilla, 2015). According to Ghabayen, Mohamad, and Ahmad (2016), the split of ownership and managing is the cornerstone of the theory of agency, independent directors are regarded as more effective monitors. It is the duty of independent directors to minimise clashes of interest of parties to contracts and to act in favour of stockholders. Agency theory suggests that increasing the number of non-executives on the board could safeguard stakeholders and shareholders by monitoring top management and preventing them from conspiring to seize minority investors' wealth.

Non-executive directors are expected to act more independently than the executive directors and have no business participating in daily activities of the board (Emmanuel, Uwuigbe, Tedddy, Tolulope and Eyitome, 2018).

Setyawan and Kamilla (2015) believe that independent directors possess the capacity to operate exclusively in favour of the firm due to their

lack of direct involvement in the company's operations. As per Emmanuel et al. (2018), agency theory suggests that a greater percentage of sovereign directors would enhance the board's capacity to oversee and keep an eye on itself. It is thought that a more varied board, particularly one that has a sufficient number of independent members with a range of specialties, might lessen agency issues in the future.

Audit Committee Independence

The independence of the Committee has a significant impact on how well the audit committee manages the financial accounts. Better performance is achieved when the audit committee members are independent, meaning they have no past financial or personal relationship with the companies in question or their executives. The audit committee is essential to corporate governance, financial reporting, and auditing. In order to make sure the board follows the law; independent directors go above and beyond. In risky situations, they even bring in outside experts and consultants. The independence of audit committees is seen in relation to corporate governance from a variety of distinct, if occasionally complimentary, perspectives (Beasley et al., 2009). Given the apparent influence that stockholders exert upon the cooperation, the organisation believes that it is imperative that heads have access to suitable and acceptable information about the economic

wellbeing of the corporation. The notion states that in order to work as a means of monitoring on organisation's actions with relation to matters of internal and financial control, the board should ideally have a controlling decision body. This is so that they have access to more sensitive financial information than other directors do as management is in charge of the everyday operations of the corporation. Reducing the potential for conflicts of interest resulting from ownership and control separation is the only objective of this (Fama and Jensen 1983; Jensen and Meckling 1976).

The audit committee is normally consists of three unbiased people who are not contractually associated with the corporation, as is the case in many jurisdictions. To facilitate the review of the senior management's financial report and to ask relevant enquiries based on their superintendent tasks, it is desirable for one of the members to be financially literate (Sarbanes-Oxley, 2002). The audit committee is "entrusted with supervising the financial reporting process and guaranteeing the objectivity of the external audit," according to Uzun et al. (2004). To meet its fiduciary and legal responsibilities, the board ought to enlist the aid of an impartial audit committee (Weir et al., 2002).

Director Financial Expertise

The Nigerian Code of Corporate Governance (2018) stressed that the board needs to consider the appropriate mix of experience and knowledge. It

relates to the coursework a director completed in a university, college, polytechnic, or other official training facility. According to Seteawan and Kamila (2015), directors with business and economics competencies are likely to run the company more effectively than those without.

First the area of training for those who hold business director positions is the subject of educational background and second, classification is the degree obtained in financial discipline. For the purpose of this study, the second classification being the degree obtained in financial discipline is used. Some studies are of the opinion that accounting and financial education can professionally help to improve the corporate governance, hence tends to be risk averse and will help to take sound business strategy.

Foreign Directors

In terms of environmental disclosure, an organisation with a varied range of international directors won't always perform better because the practice is more entrenched in developed countries than in emerging countries like Nigeria, claim Cai (1997). Numerous local businesses are collaborating with multinational corporations to expand their operations outside Nigeria's borders, get recognition abroad, be compared globally, and draw in more foreign subscribers outside of their immediate market.

Al-Amameh (2014) found in his research that an organization's commitment, worth, and performance when it came to environmental disclosure were considerably affected by the existence of foreign directors on its board. Companies without foreign directors release more information about their environmental initiatives than do those with foreign directors, according to Odera, Scott, and Gow (2016). On the other hand, Taufik and Yam (2017) found that the company's dedication to environmental efforts was significantly impacted by the presence of foreign directors on the board of directors. This study concurred with research by Odera, Scott, and Gow (2016) since international directors particularly those from wealthy nations as opposed to underdeveloped nations like Nigeria have greater exposure to and experience than their native Nigeria.

Board Size

Board size, in the words of Setyawan and Kamila (2015), is the quantity of directors on a company's board. The directors conduct their business in line with the goals and purpose of the firm as well as for its profit. As a result, there is a higher exchange of ideas, experience, support, and managerial oversight among board members the larger the number of directors of the organisation. This idea was supported by Ajibolade and Uwuigbe (2013), who contended that a sizable board would be better

equipped to maintain independence and encourage management to provide more details. Ovbiebo and Akpotor (2019) delineated size of board as the aggregate count of individuals comprising the directors within an organization. This definition emphasizes the numerical representation of board membership and explains the importance of understanding the size of the board as a fundamental characteristic within corporate governance analysis. On the other hand, Aliyu (2018) thinks that a larger board of directors would be less effective because having more people on it could interfere with coordination, communication, and decision-making, which goes against the intent of the Nigerian corporate governance legislation.

Empirical Review

Directors Financial Expertise and Environmental Disclosure

According to Setyawan and Kamila (2015), directors with business and economics competencies are likely to run the company more effectively than those without. The board of directors needs to be knowledgeable about business and have a solid grasp of corporate governance in order to fulfil its oversight responsibilities. The subject of how organisations' disclosure practices are impacted by financial competence is directly related to this financial expertise. The sharing of environmental information may be impacted by the directors' financial expertise. It is thought that

directors with backgrounds in business management, accounting, and economics will be more aware of the value of environmental disclosure and will work to encourage it.

Foreign Directors and Environmental Disclosure

The idea that having foreigners on a board of directors has an impact on the performance and financial transparency of the company is supported by evidence. In industrialised nations, a variety of stakeholders place a high value on environmental issues. Therefore, placing citizens of these nations on the boards of businesses in emerging nations like Nigeria will force them to impart this knowledge and willingness to support environmental transparency. According to Masud et al. (2018), foreign directors are thought to be a powerful group of various shareholder groupings. The presence of foreign nationals on a company's board has an effect on its environmental disclosure as well (Elsakit & Worthington, 2014). Foreign nationals are assumed to be citizens of developed countries where environmental issues are a major concern for stakeholders in this setting. It is thought that when foreigners join the boards of emerging countries, their interest and knowledge may affect environmental disclosure.

Independent Directors and Environmental Disclosure

The presence of independent directors on a company's board influences decisions, notably those concerning environmental disclosure. Setyawan and Kamila (2015) state that since independent directors are unaffected by management, they usually advocate for businesses to give stakeholders more information. They continued by saying that, in keeping with the agency concept, having more independent board members can encourage the exchange of more information about the environment and society. Emmanuel et al. (2018) suggest that an enlarged percentage of independent directors would result in improved management and board monitoring, hence augmenting the exchange of environmental data. More independent directors on the board will encourage top managers to increase and integrate social responsibility into their strategy, which will enhance a company's transparency, corporate social and environmental performance, and information disclosure, according to Ghabayen et al. (2016). Independent directors have a say in what information is disclosed about the environment. Controlling shareholders, other directors, and the company itself do not share a commercial or familial link with this group of directors. A higher percentage of independent directors on the board is expected to have an effect on complete environmental disclosure, according to Ofoegbu,

Odoemelam (2018). Ajibolade and Uwuigbe (2013) assert that having more directors on the board will support management's continued independence.

Board Size and Environmental Disclosure

According to Ghabayen, Mohamad, and Ahmad (2016), board size has an effect on the monitoring, decision-making, and disclosure processes of businesses. They went on to say that a larger board may improve the company's transparency by influencing how environmental data is disclosed and by include the shareholders' group in board deliberations. According to Masud, Nurunnabi, and Bae (2018), a board can reduce managerial risk and opportunism and promote proactive management action with respect to social and environmental issues by giving more information (Masud et al., 2018). They continued by saying that individuals on large boards are likely to have greater expertise and be able to handle a wider variety of significant issues, such as interactions with many stakeholders, such as activists and regulators, and problems like pollution, biodiversity, and media exposure.

Audit Committee Independence and Environmental Disclosure

Aburaya (2012) highlights the fundamental role of independent directors within audit committees in managing the interests of major stakeholders and addressing agency issues, thereby enhancing disclosure procedures. This conjecture stems from

the potential inclusion of environmental auditing within the purview of the audit role, alongside financial auditing.

Independence within the context of the audit committee is often defined by the absence of significant business relationships between committee members and the company on whose board they serve. An independent audit committee is tasked with assisting the board in fulfilling its fiduciary duties and legal obligations, as highlighted by Weir and Laing Mcknight (2002). This underscores the importance of having an audit committee comprised of members who can objectively assess financial and non-financial disclosures, including environmental matters.

During the annual general meeting, board-appointed audit committee representatives are presented to shareholders for approval, reflecting the governance structure's commitment to transparency and accountability. This process ensures that shareholders have a say in the composition of the audit committee, reinforcing the principles of corporate democracy and stakeholder engagement.

Hence, the independence of the audit committee, as well as its role in overseeing environmental disclosure, is critical for enhancing corporate governance practices and fostering trust among stakeholders. By ensuring independence and competence within the audit committee, companies can strengthen their environmental disclosure

procedures and uphold their commitment to transparency and accountability.

Agency Theory, Corporate Governance and Environmental Disclosure

Agency theory as posited by Jessen and Meckling (1976) clarifies how a company's governance is based on a conflict of interest between its managers, owners, and primary debt funding sources. According to Mohamad, Olfa, and Fauzi (2014), this premise led them to conclude that the conflict of interest between shareholders and creditors, as well as between managers and shareholders, is the fundamental principle of agency theory. The principal's and agent's responsibilities are outlined under the agency theory. This study suggests that the board of directors serves as the shareholder's agent and trustee (the principal). The directors have an obligation to look out for the company's best interests on behalf of the principle. They are responsible for whatever that can be done to keep the business running, including environmental disclosure. The community will become aware of the corporation through environmental disclosure, which is one of the agent's responsibilities. Agency theory underpins this study in the following ways: Principal Agent Problem: Agency theory explains how shareholders (Principal) delegate decision making authority to managers (agent), who may prioritise their own interests over those of the shareholders. In the context of Nigerian oil and gas

companies, agency theory can help examine how managers decision on environmental disclosure align with shareholders' interest and;

Corporate governance Mechanism. Agency theory suggests that corporate governance mechanisms, such as board size, audit committee independence, and independent directors can mitigate the problem of principal and agents. The study investigate how these mechanisms influence environmental disclosure practices in Nigerian oil and gas companies.

Methodology

This research adopted longitudinal design because it allows for the examination of changes and development in corporate governance and environmental disclosure practices over time. Population of this study is thirteen (13) oil and gas companies listed on the Nigerian Exchange Group (NGX). Purposive or selective sampling which is non probability sampling technique was used for this study. The sample for this study was selected from oil and gas companies in Nigeria as listed by the Nigerian Exchange Group (NGX). Criteria considered for sampling include: a firm must be a Public Limited Liability (Plc) and must have been listed on Nigerian Exchange Group prior to 2012. Also, they must have complete annual report not only financial statement to include other disclosures and must not have engaged in merger and acquisition during the period of study.

Strict adherence to these criteria resulted in the sampling of seven (7) companies as shown on Table 1. Secondary source of data which comprised annual reports and accounts was used.

Table 1: Study Sample

S/N	Companies	Category
1	Ardova Plc (Forte Oil)	Downstream
2	Conoil	Downstream
3	Eterna oil	Downstream
4	Japaul Oil and Marine services	Upstream
5	MRS Oil	Downstream
6	Oando	Downstream/Upstream
7	Total Energies Marketing Nigeria	Downstream

Source: Nigerian Exchange Group (2021)

Model Specification

The environmental disclosure was calculate d based on corporate governance factors, such as the director's educational background, nationality, board size, number of independent directors, and independence of the audit committee.

This was expressed as;

EVD = f (CG) (i)
EVD= f (FED, ACI, FRD, BDS, IND,).....(ii)

Introducing econometric model and the control variables,

$EVD_{it} = \beta_0 + \beta_1 FED_{it} + \beta_2 ACI_{it} + \beta_3 FRD_{it} + \beta_4 BDS_{it} + \beta_5 IND_{it} + \beta_6 FSZ_{it} + e_{it}$ (iii)

Where;

EVD = Environmental disclosure

FED = Financial Expertise of the Directors

ACI = Audit Committee Independence

BDS = Board Size

IND = Independent Directors

FRD = Foreign directors

FSZ= Firm size

Multiple regressions, correlation, and descriptive statistics were the methods utilized to analyse data

collected. Table 2 shows variable description and measurement.

Table 2 Summary of the Study Variables, Measurement and Expected Sign

S/ N	Variable	Variable Type	Acronym	Measurement	Expected Sign	Source
1	Environmental Disclosure	Dependent	EVD	Environmental disclosure index	+	Wiseman (1982)
2	Board Size	Independent	BDS	Total number of directors	+	Jensen (1993)
3	Independent Directors	Independent	IND	Non-executive directors on the board divided by the total numbers of the directors	+	Weisbach (1988)
4	Foreign Directors	Independent	FRD	Proportion of foreign directors to the total number of foreign directors on the board	+	Ruigrok (2007)
5	Financial expertise of directors	Independent	EBD	Proportion of director's financial expertise to total number of directors	+	Hambrick and Mason (1994)
6	Audit Committee Independence	Independent	ACI	Proportion of Independent directors	+	Kalbers and Forgartin (1993)

Source: Researchers' Design 2025.

Results and Discussion

The findings of the study are presented in this section.

Descriptive Statistics

In this section, the outcomes of the descriptive analysis conducted on the dataset utilized in this research are presented. Table 3 illustrates the mean or average values, minimum and maximum values, as well as the standard deviation of the study variables. This comprehensive overview provides valuable insights into the central tendencies and dispersion of the data, aiding in the understanding of the characteristics and distribution of the variables under investigation.

Table 3: Descriptive Statistics

Variable	Obs	Mean	SD	Min	Max
EVD	70	0.282	0.100	0.04	0.61
EBD	70	0.371	0.286	0	1
FRD	70	0.126	0.195	0	1
IND	70	65.284	13.861	40	90
BDZ	70	8.6	2.274	4	14
ACI	70	45.15	19.831	16.67	100
FSZ	70	7.948	0.545	7.12	9.6

Source: *Researcher's Computation, 2022*

From the above Table 3 the result of the descriptive statistics was pooled on yearly basis for the period 2012 to 2021 which is 10 years. Each variable was observed from 70 observations and 4,690 data points. The result of EVD from the Table 3 shows an average score of 0.282 which indicates the score for environmental information disclosed. The value 0.100 indicates the variation in environmental disclosure. This has shown that deviation from the mean was low which could be due to low environmental disclosure in some oil and gas corporations. The minimum value and maximum value of 0.04 and 0.61 respectively indicates the least score for information disclosed and the maximum score for information disclosed by the oil and gas corporations in Nigeria.

Table 3 presents the descriptive statistics for board size (BDZ) among the sampled oil and gas companies in Nigeria. The mean score of 8.6 indicates the average number of members on the board of directors. With a standard deviation of 2.274, there is relatively low variation among the sampled companies in terms of board size. The minimum value of 4 suggests that some companies

have as few as four directors on their boards. The variation as indicated by the standard deviation value of 13.861 means there is less dispersion. The minimum score of 40 means that the least company had 40% independent directors.

EBD which stands for directors' educational background showed a mean score of 0.371. This means that on average, about 37.1% of the directors' have accounting finance background. The standard deviation of 0.286 means there is less variation around the mean. The minimum value of 0 shows that at least there was no director that has accounting finance background while maximum value of 1 signifies that during the period of the study, there was a director on board possessing accounting finance and background.

FRD which stand for foreign director on the board measured as the total numbers of foreign nationals on the board to total number of directors has a mean score of 0.126 which indicates that 12.6% of the directors on average are from foreign countries. The Maximum value of 1 means that companies the foreigners on the companies' board are about 12.6%.

ACI which stands for audit committee independence, has a mean ratio 41.5 indicating that non-executive directors to total audit committee members was the average proportion of 41.15%. The standard deviation value of 19.831, which is lower than the mean, signifying that most of the composition of sampled companies audit

committee clustered around the mean. The Minimum value of 16.67 shows that at least a company had 16.67% of the audit committee members as non-executives while there is a company that had maximum number of non-executives on audit committee had 100.

The descriptive statistics in respect of the control variables of this study FZS showed a mean value of (₦88,715,601). The standard deviation of (₦3.507 billion) implies that the companies' size is distributed around the mean. The minimum log value of 7.12 indicates that the company with least total assets was ₦13,182,567.39. The log of the maximum total assets is 9.6 trillion naira this means that at least a companies has ₦3,981,071,706 trillion in total assets.

Pearson Correlation

Correlation analysis was used to explore the power of the link among the variable, of the study. The pairs of correlation predict the level of multicollinearity among the independent variable.

Table 4: Pairwise Correlations

Variables	EVD	FED	FRD	IND	BDZ	ACI	FSZ
EVD	1.000						
FED	0.195	1.000					
FRD	0.367	-0.205	1.000				
	*						
IND	0.339	0.328*	0.223	1.000			
	*						
BDZ	0.104	-	0.064	-0.237*	1.000		
		0.503*					
ACI	0.414	0.202	0.017	0.175	0.038	1.000	
	*						
FSZ	0.426	-0.097	0.113	-0.233	0.398*	0.283	1.000
	*					*	

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 4 indicates that EVD has direct association with FED though not significant as shown by the coefficient 0.195 at 5% significance level. EVD has a direct and significant link with FRD as shown by the value of 0.367. EVD is also found to have direct and significant link with IND as recorded by 0.339 coefficient. EVD and BDZ correlation value of 0.104 is positive. EVD has a direct association with ACI as depicted by the coefficient of 0.414 at 5% significant level. EVD has a positive and significance correlation with FSZ with $r=0.426$ at 5% level of significant. It can be seen from Table 4 that all the dependent variables and control variable are directly correlated with the independent variable.

The second set of correlation matrix evaluate the strength of association between pairs of the independent variables. Correlation between FED and FRD, BDZ and FSZ are -0.205, -0.502, and -0.097 respectively are negative. The association between EBD and IND is 0.328 and significant. EBD and ACI are also positively related with value 0.202.

FRD has positive but not significant relationship with IND, BDZ, ACI and FSZ (0.223, 0.064, 0.017, and 0.113). IND has a negative correlation with BDZ (-0.237). IND and ACI positively related (0.175). The correlation coefficient between IND and FSZ is -0.233 meaning it is negative but not-significant at the 5% significance level. Finally, the

correlation coefficient between ACI and FSZ is 0.283 meaning it is positive.

Diagnostic Tests for Pooled Data OLS

Regression

Prior to the adoption panel data analysis, the data were subject to diagnostics checks to ensure that all the assumptions of the method employed were satisfied. these tests included normality of the regression residual, heteroscedasticity and multicollinearity among the variables.

Normality Test of Residual

OLS Regression normality assumption is a test of randomness of the residual. It is assumed that residual from OLS regression should be normally distributed for the model to be reliable. The failure to meet this condition only affect the intercept of the model while, another coefficient may remain reliable. The residual normality assumption of a regression model is crucial. Table 5 and figure 1 below presents the residual normality tests of this study’s model.

Table 5: Normality of Residual Test

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

Source: Researcher’s Computation, 2025

The result gotten from both the 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.

As it can be seen in Table 5, there is no much randomness of the variation in the residual on the regression estimation. Therefore, the intercept remains unaffected.

Heteroskedasticity Test

To identify heteroscedasticity within the scope of this study, the Breusch-Pagan/Cook-Weisberg test was employed. Table 6 showcases the outcomes of this diagnostic assessment. Heteroscedasticity, or the unequal variance of errors across different levels of independent variables, is a crucial consideration in regression analysis.

Table 6 Heteroskedasticity Test Results

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

Source: Researcher’s Computation, 2025

Note: Ho (Null) = Homoscedasticity;

The p-value of 0.0858 in Table 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.

Multicollinearity Test

Multicollinearity arises when one independent variable displays significant correlation with other independent variables. Multicollinearity becomes apparent when independent variables exhibit high correlation, typically indicated by a coefficient (r) of 0.9 or higher. However, as depicted in Table 4,

multicollinearity is not observed among the explanatory variables, as the coefficients did not exceed 0.8 (Gujarati, 2009). Tolerance values exceeding 0.1.

Table 7: Multicollinearity Test Results

	VIF	1/VIF
FED	1.671	.598
BDZ	1.623	.616
IND	1.388	.721
FRD	1.208	.828
ACI	1.205	.83
FSZ	1.444	.692
Mean VIF	1.423	.

Source: Researcher’s Computation, 2025

The findings from Table 7 affirm the absence of multicollinearity, as indicated by the tolerance values ranging from 0.598 to 0.83, substantially exceeding the threshold of 0.1 (Hair et al., 2014; Pallant, 2005). Similarly, the Variance Inflation Factor (VIF) falls within the range of 1.205 to 1.671, well below the threshold of 10.

4.5 Test of Hypotheses

Table 8 presents the summary of the OLS results extracted from the appendix.

Table 8: Summary Regression Result

Variables	Coefficient	t-value	P-Value
FED	0.126	1.79	0.078*
FRD	0.179	3.00	0.004***
IND	0.002	2.69	0.009***
BDZ	0.004	0.85	0.400
ACI	0.002	2.12	0.038**
FSZ	0.07	3.57	0.001***
R-Square	0.502		
Adjusted R-square	0.454		
F-Statistics	10.572		
Probability	0.000		

Observation 70

Groups 7

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Source: Researcher’s Computation, 2023

Table 8 reveals that the OLS pooled regression yields an R-square of 0.502 showing that approximately 50.2% of the systematic variations in the dependent variable were collectively explained by the explanatory variables. This shows that the dependent variable (EVD) in the sampled companies is not entirely accounted for by the variables considered in this study. The remaining 49.8% of unexplained variation in the dependent variable may be attributable to factors not incorporated into the model.

The analysis of the results based on the hypothesis is presented in the next subsections.

Environmental Disclosure and Directors’

Financial Expertise

The first hypothesis aimed to explore the link between financial expertise and environmental disclosure. This exhibited a positive but non-significant effect on the response variable EVD. With a coefficient value of 0.126, it can be inferred that approximately 12.6% of the variation in environmental disclosure is attributable to a unit change in FED. Therefore the null is hypothesis

was accepted because there is no enough evidence to reject.

Environmental Disclosure and Foreign Directors on Board

The second hypothesis posited in this study explores the potential influence of foreign directors on the board of directors on environmental disclosure practices. Analysis of the data presented in Table 8 reveals a coefficient of determination (R-squared) of 0.176, indicating that approximately 17.6% of the variability observed in environmental disclosure (EVD) can be attributed to the presence of foreign directors (FRD). The positive sign of this coefficient suggests that an increase in the percentage of foreign directors is anticipated to correspond to a 17.6% change in environmental disclosure practices. This implied that the null hypothesis was rejected.

Environmental Disclosure and Independent Directors

The third hypothesis of this study posits that the ratio of independent directors to the total board of directors exerts an influence on environmental disclosure practices. Table 8 reveals a coefficient of determination (R-squared) of 0.002 for the relationship between independent directors (IND) and environmental disclosure (EVD). The result showed a positive and significant effect implying that the null hypothesis was rejected.

Environmental Disclosure and Board Size

The fourth hypothesis of this study was crafted to explore the link between board size and disclosing of environmental practices within listed oil and gas corporations. Analysis of the data indicates that the variable representing board size (BSZ) as an independent variable does indeed exhibit a positive effect on environmental disclosure (EVD), albeit one that is not statistically significant. With a coefficient value of 0.004, it is observed that approximately 0.4% of the variability in environmental disclosure can be attributed to a unit change in board size. This implies that the null hypothesis stated was accepted because there is no enough evidence to reject.

Environmental Disclosure and Audit Committee Independence

The last hypothesis of this study predicts that audit committee independence has impact on environmental disclosure. Table 8, the coefficient of determination of $ACI = 0.002$ on EVD. This implies that about 0.2% variation in EVD is attributed to ACI. Since the coefficient value is positive, it means that a percentage increase in ACI is predicted to result in 0.2% increase in EVD. This implies that the null hypothesis was rejected.

Discussion of Findings

The above results is shown based on the variables as follows. This result of educational background and environmental disclosure agrees with prior

empirical researches of Aburaya (2012), Kingor, Naibei, Sang and Kipkosgei (2019) Abubakar and Moses (2020) that shows that educational background of the directors is not a major driver of environmental disclosure.

This finding foreign directors and environmental disclosure agrees with prior studies such as Ahmad and Nosahare (2015), Abubakar and Moses (2020) but Akbas (2018), Agyemang, Yusheng, Ayamba, Turum, Changpeng and Shaibu (2020).

This result board independence and environmental disclosure concurred with other prior empirical studies which found that board independence is a significant factor influencing on environmental disclosure. These studies agree with Odomelam and Okafor (2018), Aburaya (2012), Aliyu (2018), Kingari, Naibei, Sang and Kipkosgai (2019), Habbash (2015), Okere, Rufai, Okeke and Oyinloye (2021).

This result of board size and environmental disclosure agrees with prior empirical studies as Rabi, (2019), Tirreni and Djajidieta (2016) Uwuigbe and Ajibolade (2013), Aburaya (2012), Akbas (2016) Abazu and Okoye (2021).

Prior studies on audit committee independence such as Aburaya (2012), Okafor, Egbunike and Amahelu (2022) agree with the study. However, the study of Akbas (2016) disagree with the study.

Conclusion and Recommendations

Based on the findings this study concludes that directors with strong financial expertise, foreign and independent directors in the company board are more likely to promote environmental disclosure. Generally the study concludes that corporate governance has effect on environmental disclosure. Furthermore, a smaller board size and an independent audit committee are necessary for ensuring environmental disclosure. It is highly recommended that directors with financial expertise and foreign directors be appointed to the board of directors and the maintenance of the audit committee is vital for environmental disclosure.

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