BOARD INDEPENDENCE, BOARD CAPACITY, AUDIT COMMITTEE EXPERTISE, AND SUSTAINABILITY REPORTING OF LISTED OIL AND GAS FIRMS IN NIGERIA

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Abstract
Drawing on agency theory and legitimacy theory perspectives, the purpose of this paper is to investigate theeffectofgovernancefactorsonthe sustainability reporting of Nigerian traded oil and gas firms. The study employed ex-post-factor research design. The population for the study consisted of all ten (10) listedoiland gas firms on the Nigerian Exchange Group (NGX) as at 31 December, 2024. The collected data were analysed using multiple regression analysis. Diagnostic tests such as Multicollinearity, and Heteroskedasticity in order to enhance the reliability of the regression results. The regression model was statistically significant ($F = 3.93$, $p = 0.014$) with an R^2 of 0.2042, indicating that the governance factors explain approximately 20.4% of the variation in sustainability reporting. Board independence ($\beta = 0.3698$, $p = 0.011$) and board capacity ($\beta = 0.0835$, $p = 0.042$) showed positive significant effects, while audit committee expertise ($\beta = -0.6441$, $p = 0.011$) demonstrated a negative significant influence. It is recommended that Nigerian-listed oil and gas companies continue strengthening board independence by adding more independent directors, as their presence improves transparency and positively impacts sustainability reporting.This study contributes to the literature by providing empirical evidence on the governance-sustainability reporting nexus, specifically within Nigeria's oil and gas sector, addressing a significant research gap in emerging market contexts where sustainability practices remain inconsistent and poorly enforced.

Keywords: Audit committee expertise, board capacity, board independence, sustainability reporting.

1.0 Introduction

In recent years, reporting on sustainability has emerged as an essential component of corporate governance and responsibility, particularly in industries that have a considerable impact not just on the environment but also on society. Disclosure of a company's performance in environmental, social, and governance (ESG) components is a practice that is included in this practice (Elkington, 1997). The commitment of the corporation to environmentally responsible development is reflected in this disclosure. It is in agreement with the concept of the triple bottom line, which underlines that companies should not only focus on their financial success but also on the implications they have on the environment and society (Elkington, 1997). Reporting on sustainability is in compliance with this concept. This paradigm shift towards sustainability is being driven by rising concerns all over the globe over the deterioration of the environment, social inequality, and challenges to governance. This is especially true in sectors such as oil and gas, where operations have the potential to have a significant effect on ecosystems and populations.

In Nigeria, the oil and gas sector play a fundamental role in the national economy, accounting for a substantial portion of government revenues and foreign exchange earnings. However, the

industry's operations have been linked to numerous environmental and social issues, including oil spills, gas flaring, deforestation, and conflicts with local communities over resource control (UNDP, 2016). These impacts raise the stakes for Nigerian oil and gas companies to adopt robust sustainability reporting frameworks. Nevertheless, the adoption and quality of sustainability reporting among listed oil and gas firms in Nigeria remain inadequate, inconsistent, and poorly enforced (Ezeagba et a., 2017).

Despite the critical importance of sustainability reporting in the oil and gas sector, the extent to which governance factors influence sustainability disclosure practices among Nigerian listed firms remains unclear. While global oil companies operating in Nigeria adhere to international sustainability standards such as the Global Reporting Initiative (GRI), indigenous firms demonstrate significant inconsistencies in their disclosure quality and extent. This disparity raises fundamental questions about the effectiveness of corporate governance mechanisms in driving sustainability transparency within Nigeria's oil and gas industry. Specifically, there is limited empirical evidence on how board characteristics and audit committee composition affect sustainability reporting practices in this sector.

While global oil giants like Shell and ExxonMobil operating within Nigeria have adopted sustainability reporting practices aligned with international standards such as the Global Reporting Initiative (GRI), indigenous firms significantly lag in both the extent and quality of their disclosures (Amaeshi et al., 2006) The problem is compounded by a lack of uniformity and regulatory clarity. Despite the existence of bodies such as the Nigerian Stock Exchange (NSE) and the Securities and Exchange Commission (SEC), which have issued guidelines on corporate governance and sustainability reporting, enforcement is weak, and compliance among listed firms is inconsistent (Ezeagba et al., 2017). Some studies have been conducted to examine the factors determining the sustainability reporting in Nigeria. Some of the studies include; Eneh and Chinelo (2019); Osinbowale et al. (2024); Oyerogba, Olaide, Kolawole and Adeyemo (2024); who looked at the firm attributes (leverage, profitability, firm size, firm age, industry, auditor type, firm growth and share price) as factors influencing the sustainability reporting in Nigeria.

The results of these previous researchers in Nigeria were mixed and there was no general agreement on the factors influencing the sustainability reporting in Nigeria. These mixed results are associated with among others the methodology deployed by the researcher to conduct the study and the sectors looked at. For instance, while some studies report positive associations between board independence and sustainability disclosure (Githaiga & Kosgei, 2022), others find insignificant or negative relationships (Masud et al., 2018). Similarly, findings on board size effects remain contradictory, with researchers attributing variations to contextual factors, measurement differences, and sectoral characteristics. These inconsistencies underscore the need for sector-specific investigations that account for unique industry dynamics. It was also found that most previous studies in Nigeria on sustainability reporting focused on non-oil sector and failed to look at effects of governance factors on sustainability reporting of listed oil and gas companies in Nigeria. Based on the literature reviewed and best on the knowledge of researcher, there exist scanty empirical works carried out on governance factors influencing the sustainability reporting in oil and gas sector in Nigeria. This study is an attempt to fill the gap for the Nigerian oil and gas firms by assessing the effects of governance factors such as board independence, board capacity and audit committee on sustainability reporting of listed oil and gas companies in Nigeria. Therefore, it extends the very limited research on this issue and adds to a growing body of research.

The focus on the oil and gas sector is particularly justified given its strategic economic importance to Nigeria, accounting for over 80% of government revenue and 90% of foreign exchange earnings, coupled with its disproportionate environmental and social impact. The sector faces intense stakeholder scrutiny over environmental degradation, community conflicts, and

transparency in governance, making it an ideal context for examining how governance mechanisms influence sustainability disclosure practices.

2.0 Literature Review

Concept of Sustainability Reporting

A system that aims to analyse and disclose a corporation's performance in order to satisfy the social, economic, and environmental criterion is known as sustainability reporting or triple bottom-line reporting, as per Elkington (1997). In addition, this approach is referred to as triple bottom-line reporting. In contrast, when considered from a more comprehensive perspective, it encompasses all of the values, issues, and procedures that organisations are obligated to consider in order to mitigate the adverse effects of their operations and, as a result, deliver superior social, economic, and environmental values. This is due to the organization's obligation to address each of these matters attentively. Each line represents one of the three components: society, economy, and environment.

According to Dyllick and Hockerts (2002), corporate sustainability is achieved when a company successfully addresses the interests of both direct and indirect stakeholders. At the same time, the organisation must guarantee that it will be capable of satisfying stakeholders' expectations in the years ahead. Social responsibility (SR) is frequently defined as a reporting framework that prioritizes three critical aspects of a business: the financial well-being of the company, as well as the economic, social, and environmental performance of the firm (Choudhuri & Chakraborty, 2009). At times, this framework is referred to as a framework that emphasises the financial health of the organisation. According to the Global Reporting Initiative (GRI), a renowned sustainability organisation, sustainability reporting (SR) is the process of evaluating, disclosing, and being accountable to the company's stakeholders, both internal and external, for the company's overall performance and well-being. According to this definition, sustainability reporting (SR) is a critical component of the sustainability initiative. According to the Association of Chartered Certified Accountants (ACCA) in 2005, sustainability reporting is the process of evaluating, accounting for, and presenting an organization's economic, environmental, and social performance in relation to sustainability. As a consequence of this procedure, the organization's performance is enhanced, which also stimulates sustainability development. It is feasible to substitute the term social responsibility with other terms, including Corporate Social Responsibility (CSR) and Triple Bottom Line (TBL), a concept that asserts that the value generated by businesses or other organisations is multifaceted, including social, economic, and environmental value (Elkington, 2006). Examples of terms that may be interchanged include both of these.

Board Independence

According to Sandhu and Singh (2019), guaranteeing the efficacy of the board by monitoring both the agent and the internal operations require significant independence on the part of the board. In order to achieve board independence, it is necessary to make certain that the company has a sufficient number of independent non-executive directors in the boardroom. Recent research, on the other hand, has shown findings that are equivocal regarding board independence and sustainability reporting. Vitolla et al. (2020), who conducted research on 134 multinational corporations, found that there is a favourable correlation between the independence of boards of directors and the quality of integrated reporting. The authors of the study, Masud et al. (2018), investigated the influence that CG has on the reporting of environmental sustainability with regard to three South Asian countries: Bangladesh, India, and Pakistan. For the period of 2009-2016, the authors utilised a sample of 88 registered companies. According to the results of this research, the independence of boards of directors has a statistically significant and favourable impact on the reporting of environmental sustainability. Mudiyanselage (2018) presented findings that were comparable by Sri Lankan companies that were publicly traded. Ong and Djajadikerta (2018) conducted an empirical study to investigate the influence that CG qualities have on sustainability

reporting in the Australian resource industry. One hundred thirty-three firms' annual reports and stand-alone sustainability reports for the fiscal year that ended on June 30, 2012 were included in the sample. Based on the findings of the research, there is a significant correlation between the percentage of independent directors and the amount of information disclosed on the economy, the environment, and society. According to Khaireddine et al. (2020), who utilised a sample of 82 businesses listed on the SBF 120 index (companies that are traded on the French stock market) and data for the period of 2012 to 2017, they found that the independence of boards of directors has a favourable and substantial influence on the disclosure of information on governance, environmental, and ethical issues by companies.

Board Capacity

In the context of a corporation, the term board capacity refers to the total number of directors who comprise the board. Larger boards are often characterised by more variety in terms of experience, financial skills, and capacity to handle challenges, which generally results in an improvement in the reputation and image of the company. Two opposing points of view are suggested by the existing body of literature on huge board sizes. Although there are arguments in favour of bigger boards, there are also arguments in favour of smaller boards. According to the first point of view, bigger boards are more likely to have difficulties in coordination and inefficiency, which ultimately results in a reduction in management control and an increase in agency costs (Fama, 1980; Jensen & Meckling, 1976). Big boards are diversified, they represent a variety of interests, and they leverage human and social capital, which ultimately results in judgements that are well-balanced and of high quality (Hillman & Keim, 2001). This is the second viewpoint pertaining to big boards. In addition, Kumar Garg (2008) contends that the chief executive officer (CEO) is able to have more influence over big boards than they can over smaller boards. In conclusion, the author makes the observation that corporate boards need to be big enough to accommodate members who possess the necessary skill and knowledge for the board to effectively carry out its mission, but at the same time that they should be small enough to allow for meaningful debates. According to the same school of thinking, big boards are varied and may include persons who are informed on environmental and social concerns. This may have the effect of persuading the company to participate in activities linked to corporate social responsibility (CSR) and disclose the same.

Previous research has shown a significant correlation between the size of the board of directors and the reporting of sustainability. For example, Masud et al. (2018) took into consideration a sample of 88 companies that were taken from three South Asian countries: Bangladesh, India, and Pakistan. They also evaluated panel data for the years 2009 to 2016. In a similar vein, Mudiyanselage (2018), who investigated the role of directors in corporate sustainability by analysing a sample of one hundred listed Sri Lankan businesses from 2012 to 2016, found that companies that engage in sustainability disclosure policies had bigger boards of directors. Between the years 2011 and 2015, Correa-Garcia et al. (2020) conducted an investigation on the factors that determine the quality of sustainability reporting in non-financial company groups that were recruited from four Latin American countries. According to the findings of the authors, bigger boards have a favourable and substantial impact on the quality of sustainability reporting qualities (SRQ). Beji et al. (2021) conducted research to investigate the influence that board features have on the performance of corporate social responsibility. The selection of the sample was made from the whole Societe des Bourses Francaises 120 Index (SBF120) that was compiled during the years 2003 and. According to the findings of the research, big boards have a favourable association with all aspects of corporate social responsibility performance.

Audit Committee Expertise

Based on the available research, it has been shown that the expertise of the audit committee is influenced by both the competencies of the committee as a whole and the knowledge of each individual member of the committee (Velte, 2018). In addition to the improvements that will be

outlined in the following paragraphs, this would also contribute to the quality of the financial reporting. Beasley et al. (2009) found that there is a positive correlation between the financial competency of the audit committee and the quality of the financial reporting conducted by the audit committee. Similarly, Badolato et al. (2014) found that the activities and duties of the audit committee had a favourable link with the dependability of profits quality at the company level. The beneficial association between audit committee expertise and disclosure has also been shown in other research (Barros et al., 2013; Mangena & Pike, 2005).

Empirical Review

Aprianti, Susetyo, Meutia, and Fuadah (2021) conducted study on the impact that audit committee features such size, independence, committee meetings, and audit committee expertise have on the sustainability report. Forty-seven energy subsector firms that are actively listed on the Indonesian Stock Exchange make up the sample. These companies were selected based on certain criteria, and the sample comprises of these companies. By using secondary data from the annual reports of the Indonesia Stock Exchange in the year 2020, a multiple regression model was used in analysing the data. The findings of the hypothesis testing indicate that the features of the audit committee impact the sustainability report. These characteristics include the size of the audit committee, the frequency of its meetings, and the skill of the audit committee. In the meantime, the independence of the audit committee does not have any impact on the report on corporate sustainability.

Githaiga and Kosgei (2022) study the impact that board features have on sustainability reporting among publicly traded companies in East Africa. This research makes use of data spanning the years 2011 to 2020 and a sample of 79 listed companies that were selected from East African stock markets. Reporting on sustainability is evaluated with the help of the Global Reporting Initiative, and the data is assessed with the use of three-panel data estimate models: the generalised technique of moments, the fixed effect, and the random effect. Based on the findings, it has been determined that there is a positive and substantial association between sustainability reporting and board gender diversity, board financial competence, and board independence. On the other hand, the size of the board has a considerable and detrimental impact on the reporting of sustainable practices.

Meutia, Yaacob, and Kartasari (2023) investigated the impact that audit committee characteristics have on the sustainability reporting (SR) of commercial banks in Indonesia. In the course of the research, a cross-sectional and time-series analysis were carried out on a sample of seventy-four commercial banks between the years 2015 and 2019. The characteristics of the audit committee were investigated in this research. These characteristics included financial competence, size, independence, and the frequency of meetings. Specifically, the idea of legitimacy, stakeholders, and agency served as the foundation for the model that was being investigated. According to the findings, there was a negative correlation between the financial competence of the audit committee and the disclosure of company information. In the meanwhile, there was a favourable correlation between the kind of auditor, the size of the bank, the age of the bank, and the independence of the committee with regard to SR disclosure.

A study conducted by Lewa et al. (2024) investigates the impact that board characteristics have on sustainability reporting. In the research, a multinomial logistic regression model was used to analyse the performance of 110 nonfinancial companies that were listed in ten countries located in Sub-Saharan Africa (SSA) between the years 2016 and 2021. Within the scope of the research, the effect of board characteristics on sustainability reporting was investigated. According to the findings, the size of the board, the number of board meetings, the independence of the board, and the gender diversity of the board all have a favourable impact on the reporting of sustainability.

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Theoretical Framework

This study is underpinned by the theory of legitimacy and agency.

Legitimacy Theory

Legitimacy Theory, established by Dowling and Pfeffer in 1975, is a widely used framework in corporate governance, accounting, and sustainability studies. Since then, Legitimacy Theory has evolved into an extensively used paradigm. The notion posits that for organisations to attain legitimacy, they must operate in accordance with societal norms, values, and expectations. This is the foundation upon which the concept is established. In this topic, "legitimacy" refers to the appropriateness and acceptability of an organization's acts inside its operational social structure. Legitimacy is very important for firms as it allows them to maintain support from many stakeholders, including investors, consumers, employees, and regulators. A range of adverse results may arise from the notion that an organisation is not legitimate. These consequences may include reputational harm, diminished market trust, financial sanctions from regulatory bodies, and perhaps the organization's dissolution.

Legitimacy Theory is intrinsically linked to sustainability reporting, since the latter serves as a primary mechanism via which organisations seek to establish, maintain, or regain their legitimacy. The significance of Legitimacy Theory in sustainability reporting may be ascribed to this specific reason. Stakeholders are demanding an increased level of corporate accountability with environmental, social, and governance (ESG) issues in the current economic situation. This demand is rising rapidly. Customers, investors, and governmental regulators exemplify these stakeholders. Companies often generate sustainability reports to showcase their dedication to ethical business practices, sustainable development, and corporate transparency. When corporations disclose information about carbon emissions, waste management, human rights policy, and social initiatives, they indicate to their stakeholders that they are operating ethically and in alignment with societal expectations.

Agency Theory

In 1976, Jensen and Meckling published their groundbreaking book, "Theory of the Firm: Managerial Behaviour, Agency Costs, and Ownership Structure," which established the conceptual framework that is now commonly known as Agency Theory. This framework was a significant contribution to the discipline of business. The theory investigates the relationship between proprietors (owners or shareholders) and agents (managers or administrators) in the context of a corporate organisation. The proprietors, who are frequently referred to as shareholders, are the owners of the corporation. This aspect of the issue highlights the fact that agents, who are responsible for the administration of the firm, may not always act in the best interest of the principals. Additionally, it is crucial to acknowledge that this attribute underscores the potential conflicts of interest that may arise as a result of the circumstances. The existence of these competing interests results in the emergence of agency problems. Inefficiency, poor administration, or immoral behaviour may result from these agency challenges. The organisation may experience adverse consequences as a result of these outcomes. The objective of corporate governance systems is to more effectively align the interests of shareholders and management through the implementation of legislative frameworks, incentive programs, and monitoring

mechanisms. This is achieved through the implementation of corporate governance systems. The Agency Theory functions as the foundation for the development of these procedures.

The relevance of Agency Theory to the subject of sustainability reporting is derived from its ability to resolve the information divide between management and shareholders. For these reasons, it is crucial to take into account. Information asymmetry is a phenomenon that may arise when management has greater access to the internal data of the company than other shareholders. This is a situation that has the potential to be problematic. Investors are unable to assess the organization's actual performance in terms of its potential to remain sustainable when they are presented with this situation. Sustainability reporting, which has the potential to address this deficit, offers stakeholders precise and verifiable information regarding a company's environmental, social, and governance (ESG) activities. Stakeholders are provided with this information. By disclosing their sustainability initiatives, businesses can persuade investors that the company's actions are consistent with the development of long-term value, rather than the pursuance of short-term management objectives. This is done to ensure that the organization's actions are well-received by its shareholders and other stakeholders.

This study employs ex-post-facto research design because the variables of the study are characterized by observation of events or influences on a phenomenon that have already taken place. The population for this study consists of all listed oil and gas firms on the Nigerian Exchange Group (NXG). As at 31st December, 2024, the total listed oil and gas firms in Nigerian Exchange Group (NXG) is ten (10).The study focuses on oil and gas firms in Nigeria because they are faced with several risks from sustainability related litigation such as; regulatory investigations, social unrest and stakeholder activism. In order to select from a population of ten (10) publicly listed Nigerian oil and gas firms, the researcher employed a judgemental sampling technique based on filter criteria. The filter criteria are as follows: (i) the firm must have been listed at least one year prior to 2020. (ii) The firm must have consistent audited annual reports and accounts from December 2020 to December 2024 (10 years). The ten (10) oil and gas firms that were included on the list were complied with all of the qualifications, as assessed by the criteria that were discussed earlier. Therefore, the whole ten (10) listed oil and gas firms were selected as the sample size. The study employed panel secondary data which were sourced from both company’s website and annual report and accounts of the sample oil and gas firms and publication of the Nigerian Exchange Group (NXG) for the periods of 2020-2024 accounting years. The collected data were analysed using multiple regression analysis. Diagnostic tests such as Multicollinearity, and Heteroskedasticity in order to enhance the reliability of the regression results.

3.0 Methodology

The variables of the study were generally classified into two, namely: the dependent and the independent variables.

Dependent Variable

The dependent variable of the study is sustainability reporting. In line with the study of Kwarteng, Appiah and Addai (2023), sustainability performance is measured using three indicators, economic sustainability, environmental sustainability, and social sustainability. The study employed employ a sustainability index as a proxy for sustainability disclosure. According to the Global Reporting Index (GRI-G4), disclosure of sustainability reporting includes the economic, environmental, and social components (Githaiga & Kosgei, 2022). The following are sustainability disclosures indicators:

i. Environmental Sustainability Disclosures Indicators are: (i) materials (ii) energy (iii) water (iv) biodiversity (v) emissions (vi) liquid and solid waste (vii) products and services (viii) transportation (ix) compliance with environmental laws and regulations (x) total environmental

protection expenditure (xi) environmental assessment of suppliers (xii) environmental complaints mechanisms (Younis, 2023).
ii. Social Sustainability Disclosures Indicators are: (i) labour/work condition (ii) human rights (iii) society (iv) product responsibility (Younis, 2023).
iii. Economic Sustainability Disclosures Indicators are: (i) economic performance (ii) presence in the market (iii) indirect economic effects (iv) purchasing practices (Younis, 2023).
Any of the sampled firms selected could score a maximum of twenty (20) points and a minimum of 0. The formula for calculating the reporting score using the twenty (20) disclosure index items benchmark (GRI-G4 criteria) as adopted from a previous study (Githaiga & Kosgei, 2022) is shown below:

$$\text{Global Reporting Index (GRI-G4)} = \frac{\text{Reported items}}{\text{Number of expected disclosures}}$$

Independent Variables
The independent variables of the study are governance factors (board independence, board capacity, and audit committee expertise).
i. **Board Independence**: It is computed as ratio of independent directors on the board (Githaiga & Kosgei, 2022).
ii. **Board Capacity**: In line with Kwarteng, Appiah and Addai (2023), board capacity will be measured as the total number of directors on the board.
iii. **Audit Committee Expertise**: This is measured as the proportion of committee members with accounting or financial experience (Meutia, Yaacob &Kartasari, 2023).

Table 1:
Variables and Their Measurement

Variable	Type	Measurement	Authority
Sustainability Reporting	Dependent	Ratio of actual score of sustainability reporting score to the maximum score attainable by the firm	Githaiga and Kosgei (2022)
Board Independence	Independent	Proportion of independent directors on the board	Githaiga and Kosgei (2022)
Board Capacity	Independent	Number of directors on the board	Kwarteng, Appiah and Addai (2023)
Audit Committee Expertise	Independent	proportion of committee members with accounting or financial experience	Meutia, Yaacob and Kartasari, (2023)

Source: Authors' Computation, 2025.

Model Specification
This study adopts the model of Deslandes, Fortin and Landry (2020). However, some modifications were made to suit this research work. The model for this study is then stated as follows:

$$SUSTR_{i,t} = \beta_0 + \beta_1 BODINDP_{it} + \beta_2 BODCP_{it} + \beta_3 AUDCXP_{it} + \varepsilon i$$

Where:
$SUSTR_{it}$ = Sustainability reporting for the company in i year t
β_0 = Coefficient of the constant variable
$BODINDP_{it}$ = Board independence in company i during year t.
$BODCP_{it}$ = Board capacity in company i during year t.
$AUDCXP_{it}$ = Audit committee expertise in company i during year t.
β_1, β_2, β_3 = Coefficients of independent variables in the regression.

εi = error term

4.0 Results and Discussion

Descriptive Statistics

The range of values for the dependent and independent variables, as well as their means and standard deviations, are summarised in Table 2.

Table 2:
Summary of Descriptive Statistics

Variables	Mean	Std. Dev.	Maximum	Minimum	No. Obs.
SUSTR	0.5454	0.2138301	0.86	0.15	50
BODINDP	0.5278	0.2096089	0.99	0.21	50
BODCP	6.7	0.9091373	8	5	50
AUDCXP	0.2052	0.1601688	0.62	0.01	50

Source: STATA 13 Output, 2025.

Sustainability reporting (SUSTR) has a mean score of 0.5454, indicating that enterprises disclose 54.5% of sustainability information. However, the relatively high standard deviation (0.2138) and wide range between the minimum (0.15) and maximum (0.86) values indicate that sustainability disclosure practices vary widely across firms, with some showing strong commitments and others lagging. The average board independence (BODINDP) is 0.5278, indicating 52.8% independence. This shows a balanced level of independence in accordance with good governance, but the dispersion (standard deviation of 0.2096) shows significant variances across enterprises, from extremely low (21%) to practically complete independence (99%). The mean board capacity (BODCP) is 6.7 members, with a limited variance (standard deviation of 0.9091) and a range of 5 to 8 members, showing that most businesses have a reasonably steady board size within governance guidelines. The mean value of audit committee expertise (AUDCXP) is 0.2052, indicating that just 20.5% of members have accounting or financial competence. The maximum recorded value (0.62) suggests that some firms have strong audit committee expertise, but the low average and wide disparity (standard deviation of 0.1602; minimum 0.01) suggest that many firms lack sufficient expertise, potentially weakening financial oversight effectiveness.

Correlations Matrix

An examination of the correlation matrix reveals the interrelationships between the independent and dependent variables, as well as the relationships between the independent variables. Analytical errors may be introduced as a consequence of an excessive degree of correlation.

Table 3:
Variables' Correlation Matrix

	SUSTR	BODINDP	BODCP	AUDCXP
SUSTR	1			
BODINDP	0.2857	1		
BODCP	0.0862	0.1539	1	
AUDCXP	-0.1451	0.2724	0.6724	1

Source: STATA 13 Output, 2025.

The correlation matrix reveals that the highest correlation between independent variables audit committee expertises and board capacity is 0.6724. According to a study conducted by Judge, Griffiths, Hill, Luthepohl, and Lee (1985), it is deemed inappropriate to regard the correlation between independent variables as problematic until it is above the threshold of 0.80 or 0.90.

Diagnostic Test

This research conducted multicollinearity and heteroskedasticity tests, since the requirements of regressions about panel data need a model that is both fit and unbiased for meaningful interpretations and findings.

Multicollinearity Test

A multicollinearity diagnosis was employed to assess the presence or absence of multicollinearity among the independent variables.

Table 4:
Results of the Multicollinearity Test

Variables	VIF	Tolerance
AUDCXP	1.93	0.518603
BODCP	1.83	0.546893
BODINDP	1.08	0.924250
Mean VIF	1.61	

Source: STATA 13 Output, 2025.

According to the data shown in Table 4, the tolerance value observed in this research falls within the range of 0.518603 to 0.924250. It is noteworthy that this range exceeds the predetermined threshold value of 0.10. The Variance Inflation Factor (VIF) is a statistical measure that spans from 0 to 10. In this research, the highest observed value of VIF is 1.65, which falls below the minimal threshold of 10 points as stipulated by Gujarati, Damodar, and Dawn (2015). Because no VIF value is more than 10, there is no multicollinearity problem among the variables used in the study.

Heteroskedasticity Test

As a prerequisite for multiple regression, which stipulates that the error variance must be constant, the research conducted a heteroskedasticity test. According to Gujarati and Porter (2009), mistakes are considered heteroskedastic if their variance is not constant. Nevertheless, heteroskedasticity was tested using the Breusch-Pagan\Cook-Weisberg test. According to the data in table 5, the p-value (0.3638) is higher than the 5% significance level. This rules out the possibility of heteroskedasticity.

Table 5:
Breusch-Pagan / Cook-Weisbergtest for Heteroskedasticity

Test	**Chi-square**	**Prob>chi2**
Breusch-Pagan / Cook-Weisberg	0.82	0.3638

Source: STATA 13 Output, 2025

Multiple Regression Results

The results of multiple regression analysis are presented in Table 6 below.

Table 6:
Multiple Regression Models Results

Model Summary			
No. of Observation	50		
F-Statistics	3.93		
Prob > F	0.0140		
R-squared	0.2042		
Adj. R-squared	0.1523		
Variables	**Coefficient**	**t-statistic**	**Sig.**
BODINDP	0.3698138	2.65	0.011

BODCP	0.08345	1.99	0.042
AUDCXP	-0.6440487	-2.64	0.011
(Constant)	-0.0767437	-0.29	0.771

Source: STATA 13 Output, 2025

The regression model, derived from 50 observations, demonstrates statistical significance with an F-statistic of 3.93 and a probability value of 0.014, signifying that the explanatory variables collectively impact sustainability reporting. The R-squared value of 0.2042 indicates that approximately 20.4% of the variation in sustainability reporting is elucidated by board independence, board capacity, and audit committee expertise. Meanwhile, the adjusted R-squared value of 0.1523, which takes into account the number of predictors, verifies a moderate level of explanatory power.

The results reveal that the sustainability reporting of publicly traded oil and gas companies in Nigeria is positively and significantly influenced by board independence (coefficient = 0.3698, t = 2.65, p = 0.011). This suggests that the board will be more inclined to share information on sustainability if it has a greater number of independent directors. Independent directors, as non-executive members, are less susceptible to the influence of management interests and are more likely to promote accountability, transparency, and long-term shareholder value. This conclusion is justified by the fact that independent directors perform a supervisory function that reduces the information asymmetry between management and stakeholders. The substantial positive effect is consistent with agency theory, which posits that independent directors enhance oversight and reduce managerial opportunism. Consequently, firms are compelled to increase sustainability reporting as a sign of responsible governance and compliance with stakeholder expectations.

According to the results, board capacity has a positive and statistically significant impact on the sustainability reporting of publicly traded oil and gas companies in Nigeria (coefficient = 0.0835, t = 1.99, p = 0.042). Larger boards of directors are more likely to participate in greater levels of sustainability disclosure, according to this finding. A bigger board size often brings together people with a wide range of backgrounds, knowledge, viewpoints, and networks. This may lead to improvements in reporting procedures and decision-making. With more directors, firms are better positioned to respond to stakeholder pressures, manage environmental and social risks, and integrate sustainability into strategic decisions.

The outcome indicates that audit committee expertise has a negative and statistically significant influence on the sustainability reporting of publicly listed oil and gas companies in Nigeria (coefficient = -0.6440, t = -2.64, p = 0.011). This means that the more members of the audit committee who are financially skilled or professionally qualified, the less likely they are to be able to disclose information about sustainability. In other words, companies with very knowledgeable audit committees seem to care less about non-financial disclosures, like reports on the environment and society. This finding can be substantiated by the notion that audit committee members possessing robust financial or accounting expertise may prioritise adherence to financial reporting standards and the integrity of financial statements over voluntary sustainability disclosures, which are frequently subject to less stringent regulation. Also, in a sensitive field like oil and gas, audit experts might think that sustainability disclosures could put companies at risk of damaging their reputation or breaking the law, which would make them less likely to report a lot of information on their own.

5.0 Conclusions and Recommendations

The study finds that the sustainability reporting of Nigerian listed oil and gas companies is positively and significantly impacted by board independence, suggesting that the quality and transparency of sustainability disclosures are improved by having more independent directors. Likewise, sustainability reporting is positively and significantly impacted by board capacity, indicating that boards with greater expertise, experience, and knowledge are better equipped to support and manage successful sustainability practices. On the other hand, the study concludes that audit committee expertise significantly and negatively affects sustainability reporting, suggesting that a decrease in sustainability disclosures may be linked to a rise in audit committee expertise. This might be because there is a greater emphasis on risk management and financial controls, which may take precedence over more general sustainability concerns.

According to the study's conclusions, Nigerian listed oil and gas companies should keep strengthening board independence by adding more independent directors since their presence improves transparency and has a positive impact on sustainability reporting. In order to further enhance the calibre of sustainability disclosures, companies should also make investments in expanding the boards' capabilities by offering pertinent training and drawing in members with a range of backgrounds and specialities. Nonetheless, considering the detrimental effect that audit committee expertise has on sustainability reporting, it is recommended that businesses expand the audit committees' membership to include both financial and sustainability-related members. This well-rounded strategy can guarantee that sustainability reporting is given enough consideration and successfully combined with financial supervision.

References

Akhter, F., Hossain, M.R., Elrehail, H., Rehman, S.U. & Almansour, B. (2022). Environmental disclosures and corporate attributes, from the lens of legitimacy theory: a longitudinal analysis on a developing country.*European Journal of Management and Business Economics*. https://doi.org/10.1108/EJMBE-01-2021-0008

Aprianti, S.,Susetyo, D., Meutia, I., & Fuadah, L.L. (2021). Audit committee characteristics and sustainabilityreporting in Indonesia. *Advances in Economics, Business and Management Research*,*210*.

Benjamin, U. D., Okpanachi, J., Nyor, T., & Muhammad, M. L (2017). Effect of firm characteristics on environmental reporting practices of listed manufacturing firms in Nigeria. *Nigerian Journal of Management Sciences 6(1),* 140-148.

Bhatia, A., & Tuli, S. (2017). Corporate attributes affecting sustainability reporting: anIndian perspective. *International Journal of Law and Management*, *59*(3), 322–340.https://doi.org/10.1108/IJLMA-11-2015-0057.

Chih, H. L., Chih, H. H., & Chen, T. Y., (2010). On the determinants of corporate social responsibility. International evidence on the financial industry. *Journal of Business Ethics, 93*(1),115-135.

Correa-Garcia, J. A., Garcia-Benau, M. A., & Garcia-Meca, E. (2020). Corporate governance and its implications for sustainability reporting quality in LatinAmerican business groups. *Journal of Cleaner Production, 260*, 121-139. doi: https://doi.org/10.1016/j.jclepro.2020.121142

Dissanayake, D., Tilt, C., & Qian, W. (2019). Factors influencing sustainability reporting by Sri Lankan companies. *Pacific Accounting Review, 31*(1), 84-109. doi: https://doi.org/10.1108/PAR-10-2017-0085

Dyllick, T., & Hockerts, K. (2002). Beyond the business case for corporate sustainability.*Business strategy and the environment*, *11*(2), 130-141.

Elkington, J. (1997). Cannibals with forks: The triple bottom line of 21st century business. Capstone Publishing.

Eneh, O., &Amakor, I.C. (2019). Firm attributes and sustainability reporting in Nigeria. *International Journal of Academic Accounting, Finance & Management Research,3*(6), 36-44.

Fahad, P., & Nidheesh, K. B. (2020). Determinants of CSR disclosure: evidence from India. *Journal of Indian Business Research*. https://doi.org/10.1108/JIBR-06-2018-0171

Githaiga, N. P., & Kosgei, K. J. (2022). Board characteristics and sustainability reporting. A case of listed firms in East Africa. *Corporate Governance International Journal of Business in Society*.

Global Reporting Index (GRI) (2019). *Global Reporting Initiatives*. Taken fromhttp://www.globalreporting.org

Hillman, A. J., & Keim, G. D. (2001). Shareholder value, stakeholder management, and socialissues: what's the bottom line? *Strategic management journal*, *22*(2), 125-139.

Hyršlová, J., Becková, H. & Kubáňková, M. (2015). Sustainability accounting: Brief history and perspectives. The 9th International Days of Statistics and Economics, Prague.

Islam, M.T., Kokubu, K. & Nishitani, K. (2020), Corporate social reporting in the banking industry of Bangladesh: a test of legitimacy theory. *Social Responsibility Journal*. https://doi.10.1108/SRJ-05-2019-0185.

Kansal, M., Joshi, M., & Batra, G. S. (2014). Determinants of corporate social responsibility disclosures: Evidence from India. *Advances in Accounting, incorporating Advances in International Accounting, 30*, 217–229.

Kilic, M., & Kuzey, C. (2017). Factors influencing sustainability reporting: Evidence from Turkey. Recent Issues in Accounting Finance and Auditing, 139-175 DOI:10.2139/ssrn.3098812

Kuzey, C., & Uyar, A. (2017). Determinants of sustainability reporting and its impact on firm value: Evidence from the emerging market of Turkey. *Journal of Cleaner Production, 143*(1), 27-39.

Masud, M. A. K., Nurunnabi, M., & Bae, S. M. (2018). The effects of corporate governance on environmental sustainability reporting: empirical evidence from South Asian countries. *Asian J. Sustain. Soc. Responsibility, 3*(1). doi:10.1186/s41180-018-0019-x.

Mudiyanselage, N. C. S. R. (2018). Board involvement incorporate sustainability reporting: evidence from Sri Lanka.*Corp. Gov., 18*(6), 1042–1056, doi: 10.1108/CG-10-2017-0252.

Nazaria, M. D., Aris, S.M.Y., Nur, I.I.I., Nurul, S.Z., & Razman, A. (2021). Analysis of firms' characteristics affecting the sustainability reporting disclosure in Malaysia; International *Journal of Academic Research in Business & Social Sciences. 11*(14), 120.

Okoba, D.,& Chukwu, G.J. (2023). Firm characteristics and social sustainability performance disclosures in Nigeria. *Fuoye Journal of Accounting and Management, 6*(1), 111 – 132.

Pravia, A., Ariyani, S.E., &Ak, M. (2018). Analysis of key factors affecting the reporting disclosure indexes of sustainability reporting in Indonesia. *International Journal of Business, Economics and Law, 16*(1), 2289-1552.

Qiu, Y., Shaukat, A., & Tharyan, R. (2016). Environmental and social disclosure Link with corporate financial performance environmental and social disclosure: Link with corporate financial performance. *The British Accounting Review, 48*(1), 102-116.

Rapeepun, S. (2018). The effects of firm characteristics on corporate social responsibility activities in industry sector in eastern of Thailand. *International Journal of Management and Applied Science, 4*(10)*,* 93-98.

Samarah, T., Bayram, P., Aljuhmani, H.Y., &Elrehail, H. (2021). The role of brand interactivity and involvement in driving social media consumer brand engagement and brand loyalty: the mediating effect of brand trust, *Journal of Research in Interactive Marketing*. https://doi.10.1108/JRIM-03-2021- 0072.

Vitolla, F., Raimo, N., Marrone, A., & Rubino, M. (2020). The role of ownership structure in integrated reporting policies. *Business Strategy and the Environment, 29*(6), 2238-2250. doi: https://doi.org/10.1002/bse.2498

Younis, N.M.M. (2023). Sustainability reports and their impact on firm value: Evidence from Saudi Arabia. *International Journal of Management and Sustainability. 12*(2), 70-83.