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# INVESTIGATION OF OVERSIGHT MECHANISMS DRIVING ESG DISCLOSURE OF QUOTED NON-FINANCIAL FIRMS IN AN EMERGING ECONOMY

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## ABSTRACT

**Aim:** This present study evaluates oversight mechanisms and how they drive ESG disclosure. It specifically examines the roles of Audit Committee Effectiveness and Institutional Shareholding on the disclosure of ESG practices of non-financial firms in an emerging economy, Nigeria.

**Background:** Rising forms of challenges in the field of environment, society and governance are leading to calls for adoption and disclosure of sustainable practices across the world. Despite this demand, the disclosure level varies among firms and across countries. The insufficiency of evidence about the reporting of ESG practices in emerging financial markets creates a reassuring setting to assess the influence of oversight mechanisms on crucial decisions of companies, such as ESG disclosure.

**Methodology:** For this research, a longitudinal design using ex-post facto methodology was utilized. Criterion sampling was used to select the firms for the study. The data utilised in this research comprised annual reports and accounts of 39 non-financial firms listed in Nigeria from 2012 to 2021. Descriptive and inferential statistics, particularly panel data regression, were employed to analyse the results. The study involved conducting tests hausman test and redundant fixed effects.

**Findings:** The research indicates that management's oversight mechanisms significantly enhance ESG information disclosure, with audit committee effectiveness and institutional ownership showing a substantial and positive impact on ESG reporting. The size of a firm and profitability were the control variables used and these demonstrated a notable positive effect on ESG disclosure.

**Contribution:** This study is one of the limited investigations into oversight mechanisms driving ESG disclosure in Nigeria, where evidence remains sparse. Additionally, the study incorporates an audit committee effectiveness index, which includes a comprehensive score derived from four key auditor attributes, further divided into seven components, within the setting of ESG reporting studies in Nigeria. This gives a thorough evaluation of audit committee effectiveness, making the study particularly significant.

**Recommendations:**

**Researchers:** The study recommends employing both quantitative and qualitative methods to examine various oversight mechanisms influencing ESG disclosure. It also suggests conducting comparative studies across different sectors to understand the variations.

**Practitioners:** Practitioners are advised to closely monitor oversight mechanisms that enhance ESG reporting and implement robust frameworks that prioritize transparency, accountability, and ethical practices to improve ESG disclosure.

**Regulators:** Clear guidelines and standards for ESG disclosures should be established to help firms understand expectations and compliance requirements. Monitoring and enforcement mechanisms should be implemented to ensure firms adhere to ESG reporting standards.

**Implications for Africa:** Improving the institutional quality in African countries can support better compliance with sustainability reporting standards. Strong regulatory frameworks and increased diversity and expertise within corporate boards are necessary to enhance ESG disclosures in Africa.

***Keywords:*** *Audit committee effectiveness, Environmental, social and governance disclosure, Institutional shareholding, Oversight mechanisms, Sustainability Reporting.*

## 1. Introduction

As the quest for sustainability reporting and Sustainable development continues, global corporations are increasingly urged to broaden their focus beyond mere profit maximization. They are encouraged to actively commit to Environmental, Social, and Governance (ESG) concerns to maintain competitiveness (Rahman & Alsayegh, 2021; Wasiuzzaman & Mohammad, 2020). The pressure from regulatory bodies, investors, and interested parties for firms to reveal their ESG performance has significantly influenced attitudes of organisations toward sustainability (Aldowaish et al., 2022). The concept of traces its roots to the sustainable development idea popularized at the inaugural Earth Summit in 1992. The concept of triple bottom line, as introduced in 1998 by Elkington, encapsulates economic (profit), social (people), and environmental (planet) aspects (Balatbat et al., 2012). Similarly, ESG disclosure has been referred to by various interchangeable terms, including sustainability reporting, non-financial reporting, social, ethical, environmental and governance reporting, all of which are detailed in reports (Alazzani et al., 2021; Jain et al., 2019). These reports serve as communication tools between companies and their investors, customers, and various stakeholder groups, providing integrated information on environmental, social, governance, ethical, and other issues that are not fully captured in traditional financial statements (Nicolò et al., 2022; Rahman & Alsayegh, 2021). Saygili et al. (2021) describe ESG as a comprehensive and dynamic concept encompassing activities linked to corporate social responsibility (CSR), sustainability, and companies' governance. Recently, investors have increasingly sought ESG-related disclosures, prompting firms to include ESG as a key component of their core mandates (Hammami & Zadeh, 2020; Helfaya et al., 2023). Many investors have endorsed the United Nations' Principles of Responsible Investment, reflecting the growing number of shareholder proposals with ESG resolutions (Principles for Responsible Investment, 2021). Institutional investors as well as individual investors now view ESG activity disclosures as crucial; as they highlight the risks and opportunities a firm faces (Helfaya et al., 2023).

Numerous frameworks and guidelines support ESG information disclosure, such as the Organisation for Economic Co-operation and Development (OECD) Principles of Corporate Governance, which provide a global benchmark for investors, corporations, policymakers, and other stakeholders. These principles mandate that information be prepared and disclosed in line with high-quality standards, including ESG matters (OECD, 2004). Another key framework is the Integrated Reporting Framework, developed by the International Integrated Reporting Council (IIRC), which seeks to enhance the information quality available to investors, making allocation of capital more efficient and effective (IIRC, 2013). International efforts to guide companies in incorporating ESG components into their business strategies include the Global Reporting Initiative and the United Nations Global Compact (Lokuwaduge & Heenetigala, 2016). Other frameworks addressing climate-related issues include the Carbon Disclosure Protocol (CDP), Climate Disclosure Standards Board (CDSB), and the Sustainable Development Goals (Bose, 2020; Threlfall et al., 2020). In Nigeria, the Sustainability Disclosure Guidelines and the Nigerian Sustainable Banking Principles (NSBP) 2012, launched by the Central Bank of

Nigeria (CBN), the Nigerian Sustainable Finance Principles (NSFP), Environmental Impact Assessment (EIA) Act, 2004 among others, have been established to reduce information asymmetry and enhance transparency regarding corporate sustainability efforts Increased transparency allows investors to more easily evaluate and steer their investments towards companies that generate positive impacts (Girón et al., 2020). Additionally, this openness can enhance companies' competitiveness, granting them advantages within their market or industry (Milne & Gray, 2013).

Despite the regulatory efforts of various institutions, the factors determining ESG disclosure in Nigeria remain unclear, especially since ESG disclosure is still voluntary. The current literature in Nigeria does not adequately address the influences on a company's ESG disclosure. Various researchers have identified numerous factors driving ESG disclosure (Di Simone et al., 2022; Dicuonzo et al., 2022; Ellili, 2023; Sharma et al., 2020; Wasiuzzaman & Subramaniam, 2023). Among these factors, oversight mechanisms are a significant topic, observed to impact firms' ESG-related disclosures (Bamahros et al., 2022; Khalid et al., 2022; Kumar et al., 2021; Lavin & Montecinos-Pearce, 2021b, 2021a; Nicolò et al., 2022; Nuhu & Alam, 2024; Qasem et al., 2022; Yang & Dong, 2024). Oversight mechanisms, also known as monitoring or governance mechanisms, became prominent in discussions on corporate responsibility following high-profile corporate failures such as WorldCom and Enron. To ensure that the management and board act in the best interests of the company and its shareholders, a good oversight mechanism should provide appropriate incentives and effective monitoring (OECD, 2004). Effective oversight leads to transparency, which includes the disclosure of ESG or other sustainability-related activities (Wise & Ali, 2009). The audit committee and its effectiveness serve as a crucial management control mechanism, overseeing both financial and non-financial reporting practices (i.e. ESG related practices) within an organisation (Karamanou & Vafeas, 2005). Over time, the role of audit committees has expanded beyond merely reporting a company's financial activities (Bédard et al., 2008). Additionally, institutional owners' plays a significant role in ensuring firms adopt sustainable practices (Park & Jang, 2021). They exert greater influence on issues related to disclosure, such as ESG and transparency, and also on companies' ESG performance when making investment decisions (El-Diftar et al., 2017). Based on in depth review of prior studies, in Nigeria, the connection between oversight mechanisms (as Audit Committee Effectiveness and Institutional Shareholding) and ESG disclosure is under-researched. Most empirical studies (Adegboyegun et al., 2020; Adelowotan & Udofia, 2021; Awodiran, 2019; Egbunike & Tarilaye, 2017; Fodio et al., 2021; Olayinka, 2022; Razaq et al., 2023; Umukoro et al., 2019) focus on other oversight mechanisms related to environmental, social, or economic disclosures. Globally, studies using an all-inclusive index (comprising composition, authority, diligence, and authority) to measure Audit Committee Effectiveness are rare, with most existing studies (Appuhami & Tashakor, 2017; Arif et al., 2020; Bamahros et al., 2022; Odoemelam & Okafor, 2018; Tumwebaze et al., 2022; Waseem et al., 2024) examining specific components of the audit committee.

Considering the aforementioned points, this study evaluates the impact of oversight mechanisms on the ESG disclosure of quoted companies in Nigeria's non-financial sector. The study achieved several objectives, which were to:

i. evaluate the influence of Audit Committee Effectiveness on the ESG disclosure of firms listed in the non-financial sector in Nigeria; and
ii. investigate the effect of Institutional Shareholding on the ESG disclosure of firms listed in the non-financial sector in Nigeria.

## 2. Literature review and development of hypotheses

### 2.1 Theoretical framework

This study is underpinned on two theories, which are: Resource Based theory and Stakeholder theory. ***Stakeholder theory*** was put forward by Freeman in 1984 and it posits that enterprises have obligations beyond profit maximization, encompassing the interests of various stakeholders. In addition to Rehnman's contributions, Freeman's 1984 book on the stakeholder approach defines stakeholders as each and every individual or group that has the power to affect or be affected by the company's objectives (Freeman, 2010). Although the way it is defined has sparked considerable discussion over the years, the core idea is that if a group can influence a firm (or is influenced by it), managers should prioritize that group and develop a specific strategy for managing stakeholders (Freeman, 2010). A company's relationship with its stakeholders determines its ability to generate sustainable wealth (Garcia et al., 2017). Ignoring stakeholder expectations can compromise their support (Kolk & Pinkse, 2010). The relevance of this theory is reflected in the fact that, the influence of institutional owners or investors, who are interested in socially responsible investments, is significant in strategic decisions related to ESG within a company.

***Resource-based theory***, introduced by Wernerfelt (1984), is recognized as a fundamental strategic management theory due to its practical relevance in contemporary management practices. Barney's 1991 article, "Firm Resources and Sustained Competitive Advantage," is often regarded as foundational piece that introduced the resource-based view. It emphasises the resources and capabilities within a company that can build sustainable market advantages. These strategic resources must be Valuable, Imperfectly imitable, Rare and Non-substitutable (Barney, 1991). The theory suggests that unique, firm-specific competencies enable organizations to outperform competitors (Prahalad & Hamel, 1990). The literature presents a variety of perspectives on the resource-advantage (resource view) approach, emphasizing that a firm's resources—financial, human, legal, organizational, relational, and informational (both tangible and intangible)—are heterogeneous and crucial for achieving sustainable competitive advantage (Hunt & Derozier, 2004). From this perspective, the audit committee is a valuable internal resource ensuring transparency and credibility in the reporting process, including sustainability activities.

### 2.2 Development of hypotheses

#### 2.2.1 Audit committee effectiveness and ESG disclosure

The Audit Committee serves as a central body responsible for overseeing a company's reporting practices including non-financial, and for reducing asymmetry of information between management and stakeholders. This committee provides crucial oversight to balance stakeholder and managerial objectives (Appuhami & Tashakor, 2017). Additionally, the Audit Committee plays a vital role in monitoring audit performance and resolving conflicts between directors and external auditors (Eniola & Adebiyi, 2023; Karamanou & Vafeas, 2005). Beasley et al. (2009) describe this Committee as responsible for reviewing all information in the organization's reports, including those related to ESG. The Blue Ribbon Committee (BRC, 1999) regarded the Audit Committee to be the "ultimate monitor" in the overall reporting process. Traditionally focused on mandatory financial disclosure, the Audit Committee's role has expanded to include ESG-related disclosures due to increased stakeholder pressure (Beasley et al., 2009; Bédard et al., 2008).

Previous studies have examined the relationship between audit committee attributes and ESG-related disclosures, yielding diverse results. Tumwebaze et al. (2022) found that Audit Committee Effectiveness (ACE) is significantly and positively affected by sustainability reporting in Ugandan financial services firms. Arif et al. (2020) observed that the attributes of the audit committee, such as independence and activism, positively affected the quantity as well as quality of ESG disclosure in Australian energy sector firms. Qaderi et al. (2023) found that the effectiveness of the audit committee enhances the quality of integrated reporting. Erin et al. (2022) also noted a positive influence of audit committee attributes, including size, expertise, and frequency of meetings, on the quality of sustainability reporting. Jibril et al. (2024) identified that audit committee independence, diversity, and meeting frequency significantly impact environmental sustainability. Furthermore, Bamahros et al. (2022) discovered that external members of the audit committee positively influence ESG disclosure in Saudi firms.

However, Hapsari and Arieftiara (2024) found no significant influence on ESG disclosure in Indonesian mining companies. Lavin and Montecinos-Pearce (2021a) also reported an insignificant effect of independent audit committees on ESG disclosure in Chilean firms. Based on the substantial evidence that exist on the strong influence of audit committee effectiveness in enhancing ESG Disclosure, this study therefore hypothesises that:

*$H_0$1: Audit Committee Effectiveness has a significant positive influence on ESG disclosure.*

#### 2.2.2 Institutional shareholding and ESG disclosure

Institutional Shareholding, also known as Institutional Ownership, denotes the portion of a company's shares that are held or controlled by institutional investors (Chung & Zhang, 2011). These shareholders, including pension funds, insurance companies, bank trusts, and mutual funds, invest on behalf of others and manage significant equity (Bushee, 1998). Institutional shareholders, or block holders can stimulate their investee companies' involvement in ESG practices. With large funds at their disposal, institutional shareholders are well-placed to influence sustainability practices in companies (Ogbuka & Fakoya, 2016). When institutional shareholders constitute the majority on a board, governance practices of companies are enhanced, agency issues with other stakeholders are minimized, and the quality of ESG disclosure including information of financial nature is enhanced When institutional shareholders dominate a board, corporate governance practices tend to improve, agency problems with other stakeholders are minimized, and the quality of ESG disclosures and other financial information is enhanced (Adelowotan & Udofia, 2021).

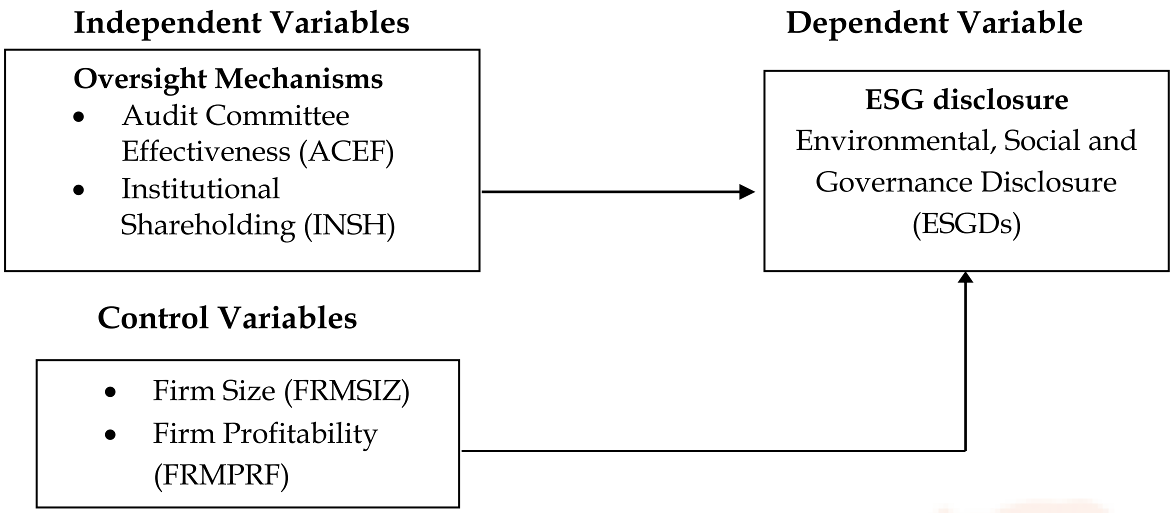
Empirical research on the relationship between institutional shareholding and ESG disclosure yields mixed results. For instance, Wang et al. (2023) found a strong positive impact of independent institutional shareholding on the disclosure of ESG information in Chinese A-share listed firms. Qasem et al. (2022) identified a strong positive influence of institutional ownership on ESG reporting in Saudi-listed firms. Lee et al. (2022) reported a positive influence in Indonesian state-owned enterprises. Giordino et al. (2024) found diverse effects of different categories of institutional shareholders on United Nations sustainable development goals. Conversely, Sharma et al. (2020) observed an insignificant but negative effect of foreign institutional shareholders on ESG disclosure in Indian companies (Adelowotan & Udofia, 2021) found an insignificant but positive impact on integrated reporting in Nigerian listed companies. Lavin and Montecinos-Pearce (2021b) reported varying levels of influence of institutional ownership on ESG reporting. Based on this discussion, it is anticipated that institutional shareholders significantly influence the improvement of ESG disclosure. Consequently, the study hypothesizes that:

*$H_0$2: Institutional Shareholding has a significant positive effect on ESG disclosure.*

**2.3 Conceptual framework**

Figure 1 describes the relationships among the variables considered in this study, depicted diagrammatically.

**Figure 1: Conceptual framework on oversight mechanisms and ESG disclosure**




***Source:*** **Researchers' Conceptualisation (2024)**

## 3. Data and methodology

To examine the effect of oversight mechanisms on ESG Disclosure, an *ex-post facto* longitudinal research design was utilized. Secondary data were gathered from the audited annual reports and accounts of companies over a twelve-year period (2011 to 2021). Criterion sampling was applied to determine the sample size, focusing on firms that were delisted, ceased operations, or lacked sufficient data to represent the study variables during the observation period. From the 103 quoted non-financial firms in Nigeria at the time of data collection, thirty-nine firms were sampled based on data availability. Data on audit committee effectiveness and institutional shareholding were sourced from the firms' annual reports, with measurements based on existing literature. The ESG disclosure index encompassed 38 ESG indicators, including 13 environmental, 8 social, and 17 governance indices.

Descriptive analysis, correlation, and multiple regression statistical methods were employed to analyze the data and achieve the study's objectives. Tests including panel unit root tests, panel data model testing, redundant fixed effects tests, the Hausman test, and diagnostic tests were conducted.

### 3.1 Model Specification

The following model was used to address the objectives of this study:

$$ESGDs_{it} = \alpha_0 + \alpha_1 ACEF_{it} + \alpha_2 INSH_{it} + \alpha_3 FRMSIZ_{it} + \alpha_4 FRMPRF_{it} + U_{it} \ldots\ldots (1)$$

The *a priori* expectations of the parameters are: $\alpha_1 – \alpha_4 > 0$

The interpretation for the symbols used in the models tested in this study is stated below:

ESGDs = Environmental, Social and Governance Disclosure
ACEF = Audit Committee Effectiveness
INSH = Institutional Shareholding
FRMSIZ = Firm Size

FRMPRF = Firm Profitability
$\alpha_0$ = Intercept of the model
$\alpha_1$- $\alpha_4$ = Coefficient of parameters investigated
$u_{it}$ = Error term
The Subscripts, *i* and *t* relate to the cross and time series dimension of the model, which describes the panel attribute of the model.

Control variables, including Firm Size (FRMSIZ) and Firm Profitability (FRMPRF), were incorporated so as to eliminate model specification errors or omitted variable bias. Past studies (Ali et al., 2022; Ali et al., 2024; Kumar et al., 2021) have identified these variables as significantly influencing ESG disclosure. Table 1 details the description and measurement of the variables used within this study i.e. the dependent, independent, and lastly, the control variables.

**Table 1:** ***Operationalisation of variables***

| **Variables (Code)** | **Measurement** | **Reference** |
|---|---|---|
| **Dependent Variables** | | |
| ESG Disclosure (ESGDs) | The combined score from the adapted ESG disclosure index is estimated as the total number of items disclosed /maximum possible disclosures based on the index. | (Cucari et al., 2017; Nicolò et al., 2022) |
| **Independent Variables** | | |
| Audit Committee Effectiveness (ACEF) | Measured as total score obtained from Audit committee effectiveness based on adapted DeZoort et al. (2002); Zaman et al. (2011) index comprising of: **-Composition;** Committee Independence (No of non-executive directors), Committee Expertise (No of members with financial expertise) **-Authority;** Committee Charter (statements relating to charter), Committee Responsibility/Duty (Duties of the Audit committee), **-Resources;** Committee Size **-Diligence;** Committee Meeting, Committee Voluntary Disclosure | (Bedard et al., 2004; Jarboui et al., 2022) |
| Institutional Shareholding (INSH) | Share proportion held by institutional shareholders to overall share ownership | (Aluchna et al. 2022; Qasem et al., 2022) |
| Firm Size (FRMSIZ) | logarithm of total assets | (Ramirez et al., 2022; Sharma et al., 2020) |
| Firm Profitability (FRMPRF) | Percentage of Earnings Before Interest & Taxes to Total Assets | (Arif et al., 2020; Ramirez et al., 2022) |

*Source:* **Researchers' Compilation (2024)**

## 4. Data analysis and discussion of findings

This aspect of the study presents the descriptive analysis results, offering a brief description of each variable and their interactions, and discusses the effect the explanatory variables have on the regressand.

### 4.1 Descriptive analysis

Table 2 presents the descriptive statistics, which summarises key data for both the regressors and regressand, used in this study. This includes the mean, median, minimum, maximum, standard deviation etc.

**Table 2:** *Summary of descriptive statistics*

| Variable | Mean | Med. | Max. | Min. | Std. Dev. | Skewness | Kurtosis | Jarque-Bera | Prob |
|---|---|---|---|---|---|---|---|---|---|
| ACEF | 5.62 | 6.00 | 9.00 | 0.00 | 2.10 | -1.61 | 4.73 | 247.06 | 0.0000 |
| INSH | 49.49 | 55.00 | 95.00 | 0.00 | 22.33 | -0.54 | 2.39 | 26.80 | 0.0000 |
| FRMSIZ | 23.83 | 24.06 | 27.23 | 17.32 | 1.84 | -0.30 | 2.54 | 10.57 | 0.0051 |
| FRMPRF | 0.91 | 0.08 | 258.94 | -0.30 | 13.02 | 18.40 | 355.89 | 2318349.00 | 0.0000 |
| ESGDs | 59.15 | 60.99 | 88.14 | 0.00 | 8.94 | -1.27 | 7.90 | 516.87 | 0.00 |

*Source:* **Researchers' Computation (2024)**

The mean Audit Committee Effectiveness (ACEF) score in Table 2 is approximately 5.62, reflecting the general effectiveness of audit committees based on their collective attributes. A moderate standard deviation of 2.10 indicates noticeable variability in committee effectiveness across observations. The skewness of -1.61 implies a concentration of higher effectiveness scores, while the positive kurtosis of 4.73 suggests frequent occurrence of values deviating from the mean. The extremely low p-value associated with the Jarque-Bera test ($p < 0.001$) confirms significant deviation from a normal distribution. The average Institutional Ownership (INSH) percentage is around 49.49%, with a standard deviation of 22.33 indicating substantial variability in ownership patterns. The slightly negative skewness of -0.54 suggests a slight left skew, while the kurtosis of 2.39 indicates moderately heavy tails. The Jarque-Bera statistic suggests some departure from normality ($p < 0.001$).

The mean value for Firm Size (FRMSIZ) is around 23.83, reflecting the magnitude of firms within the dataset. A moderate standard deviation of 1.84 indicates relatively constrained variability. The skewness of -0.30 indicates a slightly left-skewed distribution, and the kurtosis of 2.54 suggests moderately heavy tails. A Jarque-Bera probability of 0.005 suggests deviations from normality with a level of significance. Firm Profitability (FRMPRF) has an average index of approximately 0.91, capturing financial gains realized by firms measured by their income before interest and taxes in relation to their entire assets. With a standard deviation of 13.02, considerable variability characterizes profitability across the dataset. The extreme positive skewness of 18.40 suggests a heavily skewed distribution towards higher values, possibly indicating outliers. The very high kurtosis of 355.89 supports the existence of heavy tails and significant potential outliers. The Jarque-Bera statistic, with an extremely low probability ($p < 0.001$), attests to non-normal distribution.

Environmental Social and Governance Disclosure (ESGDs) has an average ESG disclosure score of approximately 59.15, indicating varying degrees of commitment to ESG practices among firms. The associated standard deviation of 8.94 highlights the spread of ESG disclosure across the dataset. The skewness of -1.27 underscores a moderately left-skewed distribution, indicating a tendency for higher ESG disclosure values. The elevated kurtosis of 7.90 implies the existence of heavier tails and potential outliers. The significantly low Jarque-Bera p-value ($p < 0.001$) underscores the non-normality of the distribution.

**4.2 Correlation analysis**

The pairwise correlation analysis, showing the associations and degrees of correlation among the explanatory and dependent variables are presented in Table 3.

**Table 3:** ***Correlation analysis of independent variables***

| Probability | ACEF | ESGDs | FRMPRF | FRMSIZ | INSH |
|---|---|---|---|---|---|
| ACEF | 1.000 | | | | |
| | ----- | | | | |
| ESGDs | 0.280 | 1.000 | | | |
| | 0.000 | ----- | | | |
| FRMPRF | 0.039 | -0.019 | 1.000 | | |
| | 0.429 | 0.692 | ----- | | |
| FRMSIZ | 0.237 | 0.321 | -0.177 | 1.000 | |
| | 0.000 | 0.000 | 0.000 | ----- | |
| INSH | 0.115 | 0.073 | 0.063 | 0.289 | 1.0000 |
| | 0.020 | 0.141 | 0.202 | 0.000 | ----- |

*Source:* **Researchers' Computation (2024)**

Audit Committee Effectiveness (ACEF) shows no strong correlations with other variables, with its highest positive correlation being 0.280 with Environmental, Social, and Governance Disclosure (ESGDs), indicating a moderate positive relationship. The probability values confirm that these correlations are statistically significant. ESGDs has a moderate positive correlation of 0.321 with firm size 56yhnn (FRMSIZ), suggesting a potential link between ESG disclosure and firm size, while other correlations remain relatively weak. Firm Profitability (FRMPRF) exhibits a weak positive correlation of 0.070 with firm size (FRMSIZ), with other correlations being notably weak. Firm Size (FRMSIZ) has a moderate positive correlation of 0.321 with ESGDs, implying that larger firms may have higher ESG disclosure. The low probability values indicate significant correlations. Institutional Shareholding (INSH) shows a positive correlation of 0.289 with firm size (FRMSIZ), with weaker correlations to ACEF and FRMPRF.

### 4.3 Panel unit root test

The panel unit root results are detailed in Table 4.

**Table 4:** *Panel unit root test*

| | Levin, Lin & Chu t* | | Im, Pesaran and Shin W-stat | | Remarks |
|---|---|---|---|---|---|
| | Test statistics | p-value | Test statistics | p-value | Stationary |
| ACEF | -21.5204 | 0.0000 | -11.6980 | 0.0000 | Stationary |
| INSH | -13.1054 | 0.0000 | -2.82765 | 0.0023 | Stationary |
| FRMPRF | -7.65703 | 0.0000 | -4.04952 | 0.0000 | Stationary |
| FRMSIZ | -4.34267 | 0.0000 | 0.99051 | 0.0000 | Stationary |
| ESGDs | -13.8832 | 0.0000 | -4.68199 | 0.0000 | Stationary |

*Source:* **Researchers' Computation (2024)**

These tests in Table 4 were conducted to verify the stationarity of the panel data used in this study, ensuring that the parameters are stationary to prevent spurious regression outcomes. The findings show that all variables are stationary. For Audit Committee Effectiveness (ACEF), both tests reject the null hypothesis of a unit root in the ACEF series, with highly negative test statistics and p-values of 0.0000, providing strong evidence against non-stationarity. Similarly, Institutional Shareholding (INSH) is shown to be stationary, supported by negative test statistics and p-values of 0.0000. For Firm Size (FRMSIZ), the results indicate the rejection of unit roots in the FRMSIZ series, with negative test statistics and p-values of 0.0000. Firm Profitability (FRMPRF) also demonstrates stationary characteristics, as evidenced by negative test statistics and p-values of 0.0000. Lastly, for Environmental, Social, and Governance Disclosure (ESGDs), the negative test statistics and low p-values (0.0000) provide strong evidence against non-stationarity.

### 4.4 Effect of Oversight Mechanisms on ESG Disclosure

The results presented in this section relate to the effect of oversight mechanisms on ESG disclosure.

#### 4.4.1 Model Specification Test

Table 5 details the specification and testing of panel data models for various dependent variables, including Lagrange Multiplier (LM) tests, redundant fixed effects tests, and the Hausman test.

**Table 5:** *Specification test*

| **ESGD Model** | **Test statistics** | **P-value** |
|---|---|---|
| Lagrange Multiplier Tests for Random effect | 373.6556 | 0.0000 |
| Redundant Fixed Effects Tests | 270.4622 | 0.0000 |
| Hausman Test | 11.6334 | 0.0000 |

*Source:* **Researchers' Computation (2024)**

The Lagrange Multiplier tests for Random Effect yield a test statistic of 373.6556 and a p-value of 0.0000, supporting the validity of the random effects assumption in the ESGD model. The Redundant Fixed Effects tests provide a test statistic of 270.4622 and a p-value of 0.0000, indicating redundant fixed effects in the ESGD model. The Hausman test, with a test statistic of 11.6334 and a p-value of 0.0000, suggests the preference of the fixed effects model over the random effects model due to the likely violation of the random effects assumption.

### 4.4.2 Model diagnostic test

The Panel Heteroskedasticity LR test and the Arellano-Bond Serial Correlation test of the model residuals were performed, with the results shown in Table 6 for all dependent variables used to meet the study's objectives.

**Table 6:** *Diagnostic test*

| ESGD Model | Test statistics | P-value |
|---|---|---|
| Panel Heteroskedasticity LR Test | 21.31109 | 0.9818 |
| Arellano-Bond Serial Correlation Test | -1.3850 | 0.2996 |

*Source:* **Researchers' Computation (2024)**

The Panel Heteroskedasticity LR test statistic is 21.31109, with a p-value of 0.9818. Given that the p-value is significantly above the 0.05 threshold, we accept the null hypothesis, indicating no significant evidence of panel heteroskedasticity in the ESGD model. Similarly, the Arellano-Bond Serial Correlation test statistic is -1.3850, with a p-value of 0.2996. As this p-value also exceeds 0.05, we accept the null hypothesis, suggesting no significant evidence of serial correlation in the Arellano-Bond framework.

### 4.4.3 Regression Estimate and Interpretation

The regression results regarding oversight mechanisms and their influence on ESG disclosure are presented in Table 7.

**Table 7:** *Regression estimate*

| | ESGD |
|---|---|
| *Eq Name:* | Model |
| *Method:* | LS |
| *Dep. Var:* | ESGD |
| ACEF | 1.0049 |
| | [5.5272]** |
| | (0.0000)** |
| INSH | 0.0947 |
| | [3.0848]** |
| | (0.0022)** |
| FRMSIZ | 2.8405 |
| | [3.7913]** |
| | (0.0002)** |
| FRMPRF | 0.2126 |
| | [2.3642]** |
| | (0.0186) |
| C | -18.6735 |
| | [-1.0593] |
| | (0.2901) |
| *R-squared:* | 0.5677 |
| *F-statistic:* | 11.9826 |
| *Prob(F-stat):* | 0.0000 |

*t-value in bracket [greater than 2 in absolute value = sig] and p-value (in bracket),** sig. at 1%, *sig. at 5%,*
***Source:* Researchers' Computation (2024)**

The coefficient for Audit Committee Effectiveness (ACEF) is 1.0049 and statistically significant (t-value: 5.5272), indicating that an increase in ACEF by one-unit is linked with a 1.0049 unit increase in ESGDs. Institutional Shareholding (INSH) has a coefficient of 0.0947, also statistically significant (t-value: 3.0848), suggesting a rise in INSH by one-unit aligns to a 0.0947 unit increase in ESGDs. Firm Size (FRMSIZ) shows a coefficient of 2.8405 with a t-value of 3.7913, indicating that a one-unit increase in firm size leads to a 2.8405 unit increase in ESGDs. Firm Profitability (FRMPRF) has a coefficient of 0.2126, statistically significant with a t-value of 2.3642, linking a one-unit increase in FRMPRF to a 0.2126 increase by one unit in ESGDs. The model explains approximately 56.77% of the variance in ESGDs (R-squared: 0.5677), and the highly significant F-statistic (11.9826) indicates that the model's predictors collectively influence ESGDs.

**4.4 Results and findings**

These regression results in Table 7, evidenced that oversight mechanisms impact the ESG disclosure of listed non-financial firms in Nigeria significantly. This indicates that management's oversight mechanisms improve ESG information disclosure, aligning with the findings of Baldini et al. (2018) and Bamahros et al. (2022).

For the first hypothesis, the results demonstrated a significant positive impact of Audit Committee Effectiveness (ACEF) on ESG disclosure, suggesting that better audit committee effectiveness enhances ESG activity disclosure. Consequently, the hypothesis was accepted. This finding is consistent with the resource-based theory and supports the conclusions of Arif et al. (2020) and Tumwebaze et al. (2022). This result also agrees with the full disclosure principle that requires that all information considered relevant in a firm's annual reports including ESG reports should be disclosed. An audit committee that is effective would ensure that all relevant ESG information, as well as potential risks, opportunities and potential risks are fully made available to stakeholders. It is also in accordance with the relevance principle such that the ESG information disclosed is relevant and valuable for interested parties, hence influencing their decisions.

For the second hypothesis, the results obtained evidenced the presence of a positive effect of Institutional Shareholding (INSH) on ESG disclosure, indicating that institutional shareholders strongly influence and promote ESG practices and disclosure in their investee firms, supporting stakeholder theory. Based on this, the hypothesis was supported. The results are in consonance with prior studies by Qasem et al. (2022) and Wang et al. (2023). Additionally, firm size and profitability are significant positive factors influencing ESG disclosure, corroborating previous studies (Arif et al., 2020; Hammami & Zadeh, 2020). The outcome of hypothesis two aligns with the principle of materiality. This is so because ESG factors are considered material to institutional investors when making investment decisions. Similarly, it is in accordance with the full disclosure accounting principle because companies are required to provide the totality of stakeholders with relevant information. Institutional investors advocate that transparent and comprehensive ESG information is disclosed.

**5. Conclusion and recommendations**

This study concludes that oversight mechanisms have a significant and positive effect on ESG disclosure in Nigerian listed non-financial firms. The results from the two hypotheses confirm that both audit committee effectiveness and institutional ownership play a crucial role in enhancing ESG disclosure.

Based on these findings, the study recommends that firms adopt robust oversight mechanisms to improve transparency and accountability, which are essential to ESG principles. Companies should consider the audit committee as a vital component in their reporting processes, affecting key decisions, including those related to ESG matters. They should also make efforts to establish audit committee members possess required expertise and resources necessary in overseeing ESG reporting. Moreover, attracting more institutional shareholders can foster ESG practices and disclosure, as these investors' focus on sustainable investments encourages firms to meet their expectations. Companies should also ensure regular communication with their institutional investors so as to understand what they expect and their priorities in relation to ESG. This could help the companies align their ESG reporting with the interests of their stakeholders.

### 5.1 Contributions to knowledge

This research makes significant contributions to the global and Nigerian studies on the factors driving ESG disclosure, particularly on oversight mechanisms that influence ESG disclosure, especially given that limited number of such studies exists in Nigeria. A unique feature of this study is its use of an index in the estimation of audit committee effectiveness, encompassing aspects as authority, composition, resources, and diligence. This index provides a comprehensive assessment of the audit committee's role in monitoring and ensuring transparent ESG disclosure. Overall, this study is notable for addressing these areas and offers unique and significant contribution to the body of knowledge from both Nigerian and global perspectives.

### 5.2 Limitations

The focal point of this current study was on listed firms in the non-financial sector of the Nigerian economy, and this can limit the applicability to firms in the financial sector. Similarly, it doesn't capture several other mechanisms that can drive ESG disclosure of firms.

### 5.3 Suggestion for further studies

Comparative studies can be conducted across different non-financial sectors to identify sector specific results. Additionally, future research could explore how these oversight mechanisms affect individual and total ESG scores, providing a basis for comparison and assessing their impact on individual ESG disclosure elements.

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