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# THE MODERATING EFFECT OF CHIEF EXECUTIVE OFFICER OWNERSHIP ON FIRM ATTRIBUTES AND SUSTAINABILITY DISCLOSURE OF LISTED NON -FINANCIAL FIRMS IN NIGERIA

**Ahmad, Alhaji Zubairu** Department of Accounting, Federal University Duttsin-Ma. Katsina State

**Abu Seini Odudu, PhD** Department of Accounting, Federal University Duttsin-Ma. Katsina State

**Yusuf Mohammed Aliyu, PhD** Department of Accounting, Federal University Duttsin-Ma. Katsina State

## Abstract

*The study investigates the moderating effect of CEO ownership on the relationship between firm's attributes and sustainability reporting of non-financial firms listed on the Nigerian Exchange Group (NGX) between2018-2024. The study population comprised of 117 listed non-financial firms, out of which sample of 65 was selected using purposive sampling techniques, Secondary data was sourced from the audited financial reports of sampled firms. Panel multiple regression was employed for the analysis. The study revealed that PROF has positive insignificant relationships with sustainability disclosure index. While, FLEV has negative insignificant influence on sustainability disclosure index of the sampled firms. On the other hand, CEO has negative significant effect on sustainability disclosure index of listed non-financial firms in Nigeria. Furthermore, CEO has positive moderating role on PROF and sustainability disclosure index of listed non-financial firms in Nigeria. Finally, CEO has no negative insignificant moderating effect on FLEV and sustainability disclosure index of listed non-financial firms in Nigeria. The study recommends that policy makers should provide standards that mandate firms to report sustainability reporting. And also improve their reputation, by formalizing their sustainability reporting processes. The stakeholders of listed non-financial firms should provide a room that encourage the insiders ownership especially CEO ownership, this motivate the firms to meet the sustainability disclosure requirements.*

**Keywords**: Firms Attributes, Profitability, Financial Leverage, CEO Ownership, and Sustainability Disclosure

## 1. Introduction

In recent decades, the concept of corporate accountability has evolved from traditional financial metrics to include a wider range of responsibilities, particularly environmental, social, and governance (ESG) issues. This change has elevated sustainability reporting to the centre of international corporate governance structures. Essentially, sustainability disclosure involves a company's sharing of non-financial data that illustrates its environmental effects, social responsibility, and governance frameworks (Razaq et al., 2023). The Business stakeholders, including regulators, investors, and civil society organizations, calling for enhanced transparency, companies are facing heightened pressure for clearly and credibly communicate their sustainability initiatives (Adekanmi, 2022).

Regardless of the growing worldwide focus on sustainability, transparency, and ethical corporate governance, the extent of Environmental, Social, and Governance (ESG) disclosure among Nigeria's publicly traded non-financial companies is still severely lacking. Although the Global Reporting Initiative (GRI) and associated international standards have become more popular globally, their voluntary implementation in Nigeria has led to variable adoption and reporting frameworks (Adegboyegun et al., 2025). KPMG's 2022 survey revealed that just 55% of Nigeria's top 100 firms incorporated sustainability-related details in their financial reports, down from 85% in 2020 (KPMG, 2022). An analysis by KPMG Nigeria indicated that the

reporting rate fell by 7% from 2020 (85%) to 2022 (78%), whereas nations such as South Africa (90%), Kenya (76%), and the UK (84%) showed improved compliance (KPMG, 2023). This decrease is partly due to an alteration in the roster of the top 100 companies by revenue.

This deficiency is particularly pronounced among non-financial firms, where sustainability disclosures are often minimal, unstructured, or entirely absent. For instance, BUA Cement, Geregu Power Plc, and Dangote Sugar Refinery, despite operating in high-impact sectors like manufacturing, energy, and construction, in 2023 has been repeatedly flagged for failing to release comprehensive or GRI-aligned sustainability reports (Taiwo et al., 2025; Aguguom, 2024). This opacity limits stakeholders' ability to assess environmental and social risks and undermines Nigeria's alignment with global ESG reporting benchmarks, thereby weakening investor confidence and the legitimacy of corporate governance practices in the region (Ubandawaki, 2024).

CEO ownership plays a critical moderating role by either strengthening or weakening the influence of firm attributes on sustainability disclosure depending on governance conditions and managerial incentives. However, Maryana and Carolina (2021) and Kulsum (2025) found insignificant effects, suggesting that firm may increase disclosure capacity but does not automatically guarantee substantive reporting, most prior studies rely on direct-effect models and do not adequately test governance moderation.

This study therefore addresses a clear gap by examining the effect of firm attributes on sustainability disclosure and testing whether chief executive ownership moderates those relationships in Nigeria's current sustainability reporting environment.

This study's main objective is to investigate the moderating effect of CEO ownership on the relationship between firm attributes and sustainability disclosure of Non-Financial listed firms in Nigeria. The following are the specific objectives to be achieved.

i. To determine the impact of profitability and Leverage on sustainability disclosure of listed Non-Financial Firms in Nigeria.
ii. To investigate the influence of CEO ownership on sustainability disclosure of listed Non-Financial Firms in Nigeria.
iii. To examine the moderating role of CEO ownership on relationship between profitability, Leverage and sustainability disclosure of listed Non-Financial Firms in Nigeria.

Based on the above objectives, the following hypotheses were formulated:

**$H_{01}$**: Profitability and Leverage has no significant effect on the sustainability disclosure of listed non-financial firms in Nigeria.
**$H_{02}$**: **$H_{03}$**: CEO ownership has no influence on sustainability reporting of listed Non-Financial Firms in Nigeria.
**$H_{03}$**: CEO ownership has no moderating effect on the relationship of profitability, Leverage and sustainability disclosure of listed non-financial firms in Nigeria.

## 2. Literature Review

### 2.1 Conceptual Review

Sustainability is defined as meeting the needs of today without compromising the ability of future generations to meet their own needs (Pobbi, Anaman & Quarm, 2020). This study adopts the Global Reporting Initiative (GRI) Standards as the underlying framework for understanding and measuring sustainability disclosure. GRI structures disclosure content around three key dimensions:

**Economic sustainability reporting** – covering financial transparency, value creation, anti-corruption practices, and job creation.
**Environmental sustainability reporting** – capturing data on energy consumption, emissions, waste reduction, and environmental compliance.

**Social sustainability reporting** – focusing on human rights, labour practices, diversity, community involvement, and employee welfare.

Together, these three dimensions constitute the conceptual foundation of sustainability disclosure and reflect the firm's holistic performance. This classification, also recognized in the Triple Bottom Line model People (social), Planet (environmental), and Profit (economic) emphasizes that sustainability performance should be evaluated not just in terms of profitability but in how companies impact their broader societal and ecological environment, (KPMG, 2022).

**Concept of Firm Attributes**

Firm characteristics are widely recognized as critical internal and external factors that shape corporate decision-making processes, including financial strategy, risk disclosure, and sustainability practices (Kinyua & Ochieng, 2022). For the purpose of this study the definition given by Kinyua and Ochieng (2022) was adopted because it gives a clear definition of what constitutes a firm attribute. In this study, (Profitability and leverage) will be used as proxies for firm attributes.

**Profitability (ROA)**

Profitability, in this study, refers to a firm's ability to generate earnings efficiently from its assets and operations. It represents one of the core financial attributes that influence corporate behaviour, including decisions related to sustainability disclosure (Farisyi et al., 2022; Benvenuto et al., 2023). A highly profitable firm is more likely to allocate resources toward transparency initiatives, ESG disclosures, and long-term stakeholder engagement, as it has the financial flexibility to do so without compromising short-term performance.

In this study, profitability is measured by return on assets (ROA), computed as profit after tax divided by total assets. ROA is appropriate because it measures how efficiently a firm uses its asset base to generate earnings, making it suitable for listed non-financial firms whose activities are often asset-intensive. Recent sustainability disclosure studies continue to use ROA as a profitability proxy because it allows comparison across firms with different asset structures and operating scales. Razaq et al. (2023), for instance, operationalised profitability as net profit after tax divided by total assets in their study of company size, profitability and sustainability disclosure.

**Leverage**

Leverage refers to the extent to which a firm utilizes borrowed funds to finance its operations and investments. As Enekwe et al. (2014) define it, financial leverage measures how much firms use debt and equity to finance their assets, including operations and new investments. In the context of this study, it is a critical financial attribute that influences corporate behavior regarding risk, governance, and disclosure. The core argument is that highly leveraged firms are more likely to engage in sustainability disclosure, particularly environmental and social reporting, as a strategic response to the demands of creditors, regulators, and socially conscious investors.

According to the agency theory, high leverage increases the potential for conflict between shareholders and debt holders, as debt financing raises concerns over asset misuse and default risk. To reduce these agency costs, firms may voluntarily disclose more sustainability-related information as a form of reputational assurance. This is particularly true in environmentally sensitive industries like manufacturing and energy, where corporate responsibility disclosures can impact access to credit and investor perception. Thus, leverage is expected to influence the degree to which non-financial firms in Nigeria engage in sustainability disclosure, particularly when external financing plays a dominant role in business strategy.

**CEO Ownership**

CEO ownership is the proportion of shares held by the CEO of the firm out of the total outstanding shares of the firm representing their ownership stake and control

over the company (Jensen & Meckling, 2019). The CEO's personal investment in the company and is often seen as sign of the CEO's commitment and confidence in the business of the organization (Eisenberg et al., 1998). According to Upper Echelon theory managers' characteristics may affect how managers make strategic decisions (Hambrick & Mason, 1984) These attributes, such as age, education, ownership and tenure, may reflect in their psychological orientation and capabilities thereby affecting the performance of the company (Griffith et al., 2002; Xie, 2014). This means higher CEO ownership levels are frequently linked to more responsibility, greater commitment to shareholder value, and fewer agency conflicts (Jameson et al., 2014).

On the one hand, Lin et al. (2012) posits that an increase in CEO ownership should enable better alignment of management and shareholder interests, thereby improving firm performance. On the other hand, a significant increase in CEO ownership may cause CEOs increasing their private benefits to the disadvantage of the company's overall performance (Meier & Schier, 2017).

### 2.2 Empirical Review

#### Profitability and Corporate Sustainability Disclosure

Dzugwahi and Ola (2024) examined the effect of sustainability reporting on financial performance (proxied by ROA) for 82 non-financial firms in Nigeria over the period 2012–2021. The study used multiple regression analysis via STATA 16 to assess how economic and social sustainability reporting affects firm profitability. The study findings confirmed that both economic and social sustainability reports exert a positive significant impact on ROA, indicating that transparent sustainability practices can improve investor confidence, enhance corporate image, and drive profitability. This reinforces the justification for this study's inclusion of board composition as a moderator, which aims to unpack governance-related mechanisms influencing the profitability-disclosure link.

Emeka et al. (2021) assessed how non-financial disclosures affect firm performance (using ROE as the metric) among Nigerian non-financial firms over 2011–2018. The study focused on Intellectual Capital, Risk Management, and Corporate Governance Disclosures, and employed a panel regression model with an ex-post facto design. Findings showed that all three non-financial disclosure dimensions had a significant positive influence on firm performance, implying that the broader scope of disclosures beyond pure financial metrics can shape performance outcomes.

Nyereugwu and Ugonma (2020) examined the effect of sustainability reporting, comprising social, environmental, and economic disclosures, on the profitability of listed consumer goods manufacturing firms in Nigeria. Drawing data from 15 firms over a ten-year period (2009–2018), the study utilized content analysis and regression modelling to test the hypotheses. The findings revealed that environmental disclosures had a significant positive effect on earnings per share (EPS), while economic and social disclosures also positively influenced profitability, though with varying levels of statistical significance.

In addition, Ajide and Abdul-Azeez (2014) investigated the nexus between corporate sustainability disclosure and firm profitability among 45 Nigerian listed companies across diverse sectors using a dataset spanning 2012–2019. Employing dynamic panel models and generalized method of moments (GMM) estimation, and observed bidirectional causality between sustainability disclosure and profitability, with ROA and ROE both significantly affected by economic and social disclosure indices.

#### Leverage and Corporate Sustainability Disclosure

In an attempt to determine the effect of leverage on sustainability reporting, a study conducted on listed companies in Indonesian for the period from 2015 to 2019, by Nurdin and Riyadi (2021). The study used

multiple linear regression to analyze the influence of financial performance, leverage, corporate governance mechanisms, and firm size on the quality of sustainability reporting. The authors found that leverage had a positive and statistically significant effect on the extent of sustainability disclosures made by the firms.

A similar finding is posited by Rahman and Alsayegh (2021), on a study conducted in Asian firms across 20 countries from 2005 to 2017. The study examined the determinants of ESG disclosure using cross-sectional models. Among various firm-specific variables assessed, leverage was found to be a key predictor of increased ESG reporting. The authors interpret this finding through the lens of legitimacy theory, arguing that firms with high debt ratios may voluntarily disclose more comprehensive ESG information to justify their ongoing operations to creditors, investors, and regulators.

Furthermore, Lavin and Montecinos-Pearce (2021) explored ESG disclosure behaviors among 124 listed Chilean firms over the period 2015 to 2017. Though, leverage was not the central variable in their study, but statistically found that firms carry significant debt was negatively associated with the probability of ESG disclosure.

In contrast to firm-specific empirical designs, Brogi and Lagasio (2025) conducted a meta-analysis study covering 34 peer-reviewed studies and more than 60,000 firm observations, to examine the overarching effects of corporate governance frameworks on ESG disclosure and profitability. But the analysis primarily focused on governance variables such as board size, independence, and gender diversity, leverage was notably not found to have a direct or statistically significant effect on sustainability disclosure.

**CEO Ownership and Corporate Sustainability Reporting**

While there is an extensive body of research investigating the impact of CEO ownership on various aspects of company conduct and performance, there appears to be a limited studies directly investigating the relationship between CEO ownership and sustainability reporting. Many studies have emphasized managerial power as a significant determinant of the level of sustainability disclosure (Ernawan et al., 2019; Malik et al., 2020; Meier & Schier, 2017).

Globally, Elsayih et al., (2020) used Upper echelon theory to investigate whether the characteristics of CEOs are associated with carbon performance. The study used sample of 128 firm-year observations from Australian companies that participated in the carbon disclosure project from 2011 to 2014. The result reveals that CEO executive experience and CEO duality are positively related with carbon. While, CEO tenure, CEO functional background experience and CEO industry experience are negatively related to carbon performance. Additionally, the results shows that CEO ownership is not related to carbon performance. This indicates that CEOs who are also shareholders of the company, do not feel that corporate sustainability reporting is an important information to consider in decision making. Therefore, their emphasis is more on financial performance than sustainability performance of the company.

Odia and Ken-Otokiti (2021) Using data from 70 Nigerian non-financial firms between 2013 and 2017, examined CEO characteristics and sustainability disclosures. The findings revealed that CEO shareholding had a significant positive effect on sustainability disclosure, indicating that CEOs with ownership stakes were more inclined to support transparent sustainability reporting. However, board size did not significantly moderate the relationship between CEO characteristics and sustainability disclosure.

**Moderating Variable CEO Ownership**

This research work unlike previous one is anchored to further advance the adoption of moderating approach in ascertaining the effect of Firms Attributes on the Sustainability disclosure. The justification for this approach is largely because despite the enormous

interest in the study of Sustainability disclosure, the researchers observed that there is no available data indicating that previously, studies have been conducted indicating that relationship existed between firms attributes and sustainability disclosure is moderated by chief Executive officer ownership.

But, the few ones indicated that CEO ownership is used align the agency issues (Razali, et al., 2019; Hassan, et al., 2020). Based on this, CEO ownership is seen as the best factor that can moderate the association between firm attributes and corporate sustainability disclosure.

### 2.3 Theoretical Review

Agency Theory, developed by Jensen and Meckling (1976), conceptualizes the relationship between a principal (e.g., shareholder) and an agent (e.g., manager), in which the agent is entrusted to make decisions on behalf of the principal (Jensen et al., 1976). However, due to divergent interests and information asymmetry, agents may prioritize personal utility over shareholder wealth maximization, resulting in agency costs. In this context, sustainability disclosure (SD) is positioned as a mechanism for reducing information asymmetry and enhancing managerial accountability, especially in the absence of strong external enforcement mechanisms.

Stakeholder Theory, originally developed by Freeman (1984), asserts that the responsibility of corporations extends beyond shareholders to encompass a broader network of stakeholders such as employees, customers, regulators, communities, and investors whose interests can be directly or indirectly affected by the firm's actions (Freeman, 1984). This theory is especially pertinent in the context of sustainability disclosure (SD), as it frames non-financial reporting not just as a regulatory requirement, but as an ethical and strategic response to diverse stakeholder expectations. In Nigeria and other emerging economies, stakeholder theory has gained traction in ESG research due to heightened attention to corporate legitimacy, environmental harm, and social responsibility (Yahaya et al., 2024).

Legitimacy Theory, as developed by Dowling and Pfeffer (1975), serves as the central theoretical anchor of this study. It posits that firms operate within a broader social contract in which their continued existence depends on societal approval. This approval is contingent upon an organizations ability to conform to the prevailing norms, values, and expectations of the society in which it operates. One of the most prominent strategic tools used in this regard is sustainability disclosure, which allows firms to publicly demonstrate their commitment to environmental stewardship, social responsibility, and ethical governance practices, as affirmed by Yahaya (2024) and Orajekwe and Ogbodo (2023).

## 3. Methodology

**3.1 Research Design:** This study employed a quantitative approach and adopt the descriptive and correlational research designs to examine the relationship between sustainability disclosures, Firm attributes for Non-Financial listed firms in Nigeria.

**3.2 Population and Samples of the Study:** The study apply two filters on the population, namely delisting and technical suspension by the NGX, which results in the elimination of some firms from the population to obtain (65) sample firms, Therefore, it implies that for a firm to be part of the sampling frame, it must have been listed and remained in operation and disclose complete data on all variables of the study from 1st January 2018 to 31st December 2024.

**3.2 Method and Sources of Data Collection:** This study uses secondary data sources and population of the study includes (117) Non-Financial firms listed on the floor of the Nigerian Exchange Group (NGX) as at 1st January, 2018 to 31st December, 2024. This population will be assembled based on the object of the all firms as captured on the Nigerian Exchange Group (NGX).

### 3.3 Variable Definition and Measurement

The dependent variable of the study (Sustainability Disclosure), proxied by Environmental Disclosure Index (EVDI), Economic Disclosure Index (ECDI), and

Social Disclosure Index (SRDI), was measured using the extent of sustainability reporting disclosure, first the checklist will be prepared based on GRI Standards (2016). Second, the coding using disclosure index used by Cheung et al., (2010) was adopted. Under this method, 0, 1 and 2 were assigned to non-disclosure, partial disclosure and full disclosure respectively. This means two points were assigned to companies that fully disclosed an item of disclosure, one point for partial disclosure, while zero was given to companies that did not disclose an item of disclosure in their annual report and accounts. (Ezhilarasi & Kabra, 2017; Sandhu & Singh, 2019)

SDRI=Proportion of the points scored to the total points essential to meet the disclosure requirement as stated in the formula below:

**SRDIj =** $\Sigma Tj/M$

Where:

SRDI = Sustainability reporting disclosure Index.

T = Total number of points scored.

j = Company under study.

M = Total points essential to meet the disclosure requirements.

Independent Variables of the study includes; Profitability is measured by Return on Assets Measured by Ratio of net income to total assets. Juhmani (2021), Tri and Ishak (2022), Jafar (2021) Orshi (2023), while Leverage is measured by Total Liabilities to Total Assets by Asaolu, et al., (2023).

Moderating variable is; CEO Ownership is measured by percentage of shares own by CEO, Garcia-Blandon, et al. (2019), Liu and Nguyen (2020), Martino, etal. (2020).

Control Variables are; Industrial type Measured by Dummy variable with the value of '1' for Non -financial listed firm and '0' otherwise, (salavoutas, 2011; Welbeck et al., 2018) while institutional ownership is measured using percentage of shares held by institutional investors relative to the total number of outstanding shares (Al-matari, 2013; Matta, 2017; Rusyda, 2018)

### 3.4 Model Specification

This study adapted the model of Ezejiofor and Emeneka (2022), by modifying the model to suit the variables of the study:

$$SRDI_{it} = \beta 0 + \beta 1PROF_{it} + \beta 2FLEV_{it} + \beta 3CEOO_{it} + \beta 4INDT_{it} + \beta 5ISNO_{it} + \mu_{it} \text{ .....(1)}$$

$$SRDI_{it} = \beta 0 + \beta 1PROF_{it} + \beta 2FLEV_{it} + \beta 3CEOO_{it} + \beta 4PROF*CEOO_{it} + \beta 5FLEV*CEOO_{it} + \beta 6INDT_{it} + \beta 7ISNO_{it} + \mu_{it} \text{ .....(2)}$$

**Where:**

$SRDI_{it}$ = Sustainability Reporting Disclosure Index of firm *i* in period *t*

$PROF_{it}$ = Profitability of firm *i* in period *t*, $FLEV_{it}$ = Leverage of firm *i* in period *t*

$CEOO_{it}$ = Chief Executive Ownership of firm *i* in period *t*,$INDT_{it}$ = *I*ndustrial type of firm *i* in period *t*, *ISNOit* = Institutional ownership of firm *i in period t*,

$\mu i_t$= component of unobserved error term of firm *i* in period *t*

β0= constant term, β1, and β2 = are slopes to be estimated of firm *i* in period *t*.

í= firm identifier (65 firms), t= time variable (Seven Years)

**3.5 Method of Data Analysis** Pearson Correlation Analysis and Regression analysis were used to test the hypothesis.

### 4. Results and Discussion

**Table 1: Descriptive statistics**

| | Min | Max | Mean | Std. Deviation |
|---|---|---|---|---|
| **SRDI** | 0.07 | 0.46 | 0.257 | 0.100 |
| **PROF** | -1.14 | 0.68 | 0.031 | 0.140 |
| **FLEV** | 0.13 | 0.75 | 0.559 | 2.609 |
| **CEOO** | 0.33 | 0.75 | 0.400 | 0.171 |
| **INDT** | 0.00 | 1.00 | 0.598 | 0.491 |
| **INSO** | 0.07 | 0.67 | 0.280 | 0.119 |

**Source: STATA 13 Compiled by Researcher 2026**

Table 1 presents a summary of descriptive statistical test results for the data of the variables used in the study. The descriptive statistics table presents, sustainability disclosure which serve as a dependent variable, has an average of 0.257 which is relatively 26% items disclosed, indicating a moderate level of disclosure, with substantial variation among firms (Std. Dev. = 0.100). The lowest and highest disclosures are 0.07 and 0.46 respectively. This indicates that Non-financial firms are gradually complying with sustainability disclosure. Meanwhile, profitability has minimum of -1.14 and maximum of 0.68, indicating that some companies have loss during the period of the study, while other companies makes that have 68% gain. Leverage has maximum of 0.75 and minimum of 0.13, suggesting that some companies within the study period are having high debt to the rate of 75%. In addition, industry type and institutional ownership are control variables. The average of industry type and institutional ownership are 0.598 and 0.280 respectively.

**Table 2: Correlation matrix**

| | SRDI | PROF | FSIZ | FLEV | INDT | INSO |
|---|---|---|---|---|---|---|
| **SRDI** | 1.0000 | | | | | |
| **PROF** | 0.0333 | 1.0000 | | | | |
| **FLEV** | -0.0814 | -0.0290 | 1.0000 | | | |
| **CEOO** | -0.1041 | 0.0006 | 0.0276 | 1.0000 | | |
| **INDT** | 0.1131 | 0.0969 | -0.1276 | -0.0366 | 1.000 | |
| **INSO** | 0.1284 | 0.0449 | 0.0233 | 0.0070 | -0.0200 | 1.000 |

**Source: STATA 13 Compiled by Researcher 2026**

Table 2 shows Pearson's correlation matrix for all variables used in this study to test the presence of multicollinearity. The results indicate that all the coefficient values are less than 80%. According to Farrar and Glauber (1967), multicollinearity level will be when the coefficient of correlation matrix reaches 80%. In support of this, we have evaluated the potential multicollinearity among the variables also using a variance inflator factor (VIF) analysis. VIFs vary between low values of 1.02 to a high value of 1.06.

**Table 3: Variable Inflation Factor**

| Variables | VIF | 1/VIF |
|---|---|---|
| PROF | 1.01 | 0.988088 |
| FLEV | 1.02 | 0.982450 |
| INDT | 1.03 | 0.973478 |
| INSO | 1.00 | 0.996880 |
| Mean VIF | 1.01 | |

**Source: STATA 13 Compiled by Researcher 2026**

VIFs vary between low values of 1.01 to a high value of 1.03The effect of multicollinearity is not significant if all VIFs are less than 10 (Myers, 1990). Therefore, multicollinearity does not represent a problem in the interpretation of our findings. The Mean VIF of 1.01 indicates that no perfect multicollinearity among the predictors in the model, and Coefficient estimates are stable.

**Table 4. Summary of Diagnostics Test**

| | Model 1 without Moderator | | Model 2 with moderator | |
|---|---|---|---|---|
| **Test** | **$Ch^2$** | **Pro $Ch^2$** | **$Ch^2$** | **Pro $Ch^2$** |
| Hetrocedesticity | 668.02 | 0.0000 | 745.69 | 0.0000 |
| Hausman | 9.32 | 0.2763 | 9.09 | 0.2465 |
| Langrangian Multiplier LM | 2.42 | 0.0600 | 3.27 | 0.0353 |

From table 4 above, heteroscedasticity test results for both models show $Ch^2$ values of 668.02 and 745.69 with corresponding p-values of 0.0000. These results are statistically significant at the 5% level, indicating the presence of heteroscedasticity in the models.

The presence of heteroscedasticity suggests that ordinary least squares (OLS) estimates would produce inefficient standard errors, potentially leading to biased statistical inference. Consequently, the use of robust standard errors is necessary to ensure reliable parameter estimates.

The Hausman test results for Model 1 ($Ch^2 = 9.32$, $p = 0.2763$) and Model 2 ($Ch^2 = 9.09$, $p = 0.2465$) are both statistically insignificant at the 5% level. This indicates that there is no systematic difference between the fixed effects and random effects estimators. Therefore, the null hypothesis of the Hausman test is not rejected, suggesting that the random effects model is more appropriate and efficient for estimating the relationships in both models. The implication is that individual firm-specific effects are uncorrelated with the explanatory variables, justifying the use of the random effects estimator.

The LM test results for panel effects show mixed evidence. For Model 1, the $Ch^2$ value of 2.42 with a p-value of 0.0600 is statistically insignificant at the 5% level, although marginal at the 10% level. This suggests weak evidence of panel effects, implying that pooled OLS may not be significantly different from the random effects model in this specification.

However, for Model 2, the $Ch^2$ value of 3.27 with a p-value of 0.0353 is statistically significant at the 5% level. This indicates the presence of significant panel effects, confirming that the random effects model is more appropriate than pooled OLS. Overall, the LM test suggests that panel structure is relevant in at least one of the models, supporting the use of panel estimation techniques.

The regression analysis is used to evaluation the impacts of variables, using the sustainability disclosure as the dependent variables. Table 3 presents the main results.

**Table 5: Random Effect (RE) Regression Results of Models**

| | Model I without Moderator | | | Model II with moderator | | |
|---|---|---|---|---|---|---|
| **Variables** | **Coeff (Beta)** | **z-value** | **p-value** | **Coeff (Beta)** | **z-value** | **p-value** |
| **Constant** | 0.2402 | 13.72 | 0.000 | 0.2306 | 12.61 | 0.000 |
| **PROF** | 0.0068 | 0.20 | 0.844 | -0.1568 | -2.04 | 0.041 |
| **FLEV** | -0. 0025 | -1.36 | 0.173 | 0. .0017 | 0.31 | 0.756 |
| **CEOO** | -0. 0568 | -2.14 | 0.032 | -0.0298 | -1.01 | 0.315 |
| **PROF*CEOO** | | | | 0.3961 | 2.19 | 0.028 |
| **FLEV*CEOO** | | | | -0.0090 | -0.83 | 0.408 |
| **INDT** | 0. 0209 | 1.95 | 0.051 | 0.0200 | 1.84 | 0.066 |
| **INSO** | 0.1010 | 2.57 | 0.010 | 0.2306 | 2.53 | 0.012 |
| **$R^2$ between = 0.1487** | | | | **$R^2$ between = 0.1816** | | |
| **Wald chi2 = 17.84** | | | | **Wald chi2 = 22.69** | | |
| **Prob > chi2 = 0.0032** | | | | **Prob > chi2 = 0.0019** | | |

*Note: the bench mark is 5% significant level (*)*

Source: STATA 13 Complied by researcher 2026

Table 5 presents the regression result of the dependent variable (SRDI) and (PROF and FLEV) including control variables (INDT and INSO). The regression results reveal the cumulative $R^2$ within (0.1487) which is the coefficient of determination gives the proportion or percentage of the total variation in the dependent variable as explained by the explanatory. The Wald $chi^2$ is 17.84 which is statistically significant at 5%, indicating that the model used in the study is well fitted with the variables of the study.

On the contribution of each variable, PROF has a positive insignificant effect on SRDI. PROF has coefficient of 0.0068 and z-value of 0.20 (p-value = 0.844) which is not significant at any level, indicating that a unit increase in ROA leads to 0.0068 increase in sustainability disclosure of sampled firms. Hence, the study fails to reject the hypothesis one ($H_{o1}$). This result is inconsistent with findings by Nyereugwu and Ugonma (2020) Ajide and Abdul-Azeez (2014) Razaq et al. (2023), who discovered a statistically significant correlated between Profitability and sustainability disclosure.

While, FLEV has coefficient of - 0.0025 and z-value of 1.36 (p-value = 0.173) which is not significant at any level. The result indicates insignificant effect on the relation between FLEV and SRDI. This indicates that leverage has no statistically significant effect on sustainability disclosure. Hence, an increase of debt leads to 0.0025 increase in sustainability report disclosure. Creditors in this context may not be pressuring firms for ESG information. Therefore, the finding provided evidence not to reject hypothesis two ($H_{o2}$), this is in line with finding of Nurdin and Riyadi (2021), Rahman and Alsayegh (2021) Lavin and Montecinos-Pearce (2021) Brogi and Lagasio (2025). Who found that leverage has no statistically significant effect on sustainability disclosure.

In addition, the direct relationship between CEO and SRDI of the sampled firms, posited a coefficient of -0. 0568 and z-value = -2.14 (p-value = 0.032), which is statistically negative significant at 5%, indicating that an increase of CEO ownership leads to a decrease of SRDI by approximately 6%. Therefore, the result provided evidence for accepting hypothesis three ($H_{o3}$). The finding contradict the study's findings of Razali, et al. (2019) and Hassan, et al. (2020). Who found that relationship between CEO and SRDI is not statistically significant.

In the Table 4 the moderated regression result of the dependent variable (SRDI) and independent variables (PROF and FLEV) including control variables (INDT and INSO) with make use of CEO as moderating variable. The regression results reveal the cumulative $R^2$ within (0.1816) which is the coefficient of

determination gives the proportion or percentage of the total variation in the dependent variable as explained by the explanatory. The Wald chi$^2$ is 22.69 which is statistically significant at 5%, indicating that the model used in the study is also well fitted with the variables of the study.

To determine the contribution of CEO as moderator on PROF, the coefficient and z-value of the moderating of CEO are 0.3961 and z-value of 2.19 (p-value = 0.028) which is significant at 5%, indicating that CEO has positive moderating effect on the relationship between PROF and SRDI. This implies that an increase of ROA as a result of the intervention of CEO leads to an increase of SRDI by approximately 40%. Thus, the finding statistically rejected the hypothesis four ($H_{o4}$).

Furthermore, the moderating roles of CEO on the relationship between FLEV and SRDI has coefficient of - 0.0090 and z-value of 0.83 (p-value = 0.408) which is not significant at any level. The result indicates the intervention of CEO provided negative insignificant effect on the relation between FLEV and SRDI. This implies that CEO has no moderating capacity to moderate the relationship between FLEV and SRDI of the sampled firms. Hence, an increase of the ownership of CEO of the sampled firms does not affect the level of SRDI. Thus, the finding provided evidence for not to reject hypothesis five ($H_{o5}$).

## 5. Conclusion and Recommendations

In a nutshell, the main focus of the study is the moderating effect of chief executives officers on the relationship between firm's attributes and sustainability reporting disclosure index of the listed non- financial firms in Nigeria. The study concludes that both PROF and FLEV are seen to have a positive insignificant association with the level of SRDI. While, CEO has a negative significant effect on SRDI of the listed non-financial firms in Nigeria. On the other hand, CEO is only able to moderate a relationship between PROF and SRDI. Investors and creditors should also pay closer attention to the quality of sustainability disclosure rather than relying only on firm size, profitability or leverage as signals of transparency. The insignificant effects of profitability and leverage show that financially stronger or more indebted firms do not necessarily provide better sustainability information.

Institutional investors, analysts and lenders should therefore incorporate sustainability disclosure quality into investment appraisal, credit assessment and corporate engagement processes. This would increase pressure on firms to provide clearer, more comparable and decision-useful sustainability information

Following the findings and conclusions, the study suggest that sustainability disclosure is not uniformly adopted. Mandatory reporting standards, especially for large firms and sensitive industries, could enhance transparency. Therefore, the study recommended that:

**i**. Policy makers, including the Financial Reporting Council of Nigeria, the Securities and Exchange Commission and the Nigerian Exchange Group, should strengthen enforcement and monitoring of sustainability disclosure among listed non-financial firms and should provide standards that mandate firms to report sustainability reporting. And also improve their reputation, by formalizing their sustainability reporting processes.

**ii**. The stakeholders of listed non-financial firms should provide a room that encourage the insiders ownership especially CEO ownership, this motivate the Sustainability disclosure to meet the sustainability requirements.

**iii**. Regulators should therefore move beyond encouraging disclosure and develop clearer compliance expectations, sector-sensitive reporting guidance and periodic reviews of sustainability reports. This is particularly important as Nigeria moves toward the adoption of IFRS Sustainability Disclosure Standards and as investors increasingly demand reliable non-financial information (Financial Reporting Council of Nigeria, 2024; Krueger et al., 2024).

The study is only limiting on the extent of disclosure index of sustainability not the quality or credibility of the disclosure. Therefore, further studies should go for

the quality or credibility of the sustainability reporting, also include other governance mechanisms in their investigation.

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