Impact of Corporate Governance Mechanisms on Social and Environmental Disclosure Quality of Listed Non-Service Companies in Nigeria

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Abstract
In the contemporary corporate landscape of Nigeria, social and environmental disclosure quality has emerged as a prominent concern within the realm of corporate disclosure. This study examined the impact of corporate governance mechanisms on the social and environmental disclosure quality of listed non-service companies in Nigeria. Utilising secondary data extracted from the annual reports of 51 non-service companies (out of 74) over a five-year period from 2018 to 2022, sourced from the Nigerian Exchange Group and companies websites, the study employs generalised least square analysis to achieve its objectives. The findings reveal a significant positive relationship between board gender, board size, board meetings, audit firm choice, and social and environmental disclosure quality. In practical terms, the study has profound implications for promoting board gender diversity, regulatory reforms, aligning with stakeholder expectations, enhancing governance practices, improving information management, fostering strategic decision-making, building stakeholders' trust, and fortifying crisis response mechanisms. Theoretical implications involve integrating stakeholder, legitimacy, and agency theories, while methodologically, the research recommends that the Financial Reporting Council of Nigeria should consider improving Principle 21, addressing Social and Environmental Disclosure issues, aligning it with international best practices. Ultimately, this study contributes valuable insights for stakeholders committed to advancing corporate governance and fostering improved social and environmental disclosure practices within Nigerian non-service companies.

Keywords: *Social and environmental disclosure quality, Corporate governance mechanisms, Global reporting initiatives*

INTRODUCTION

In the complex landscape of corporate governance, striking a balance between stakeholder interests and shareholder profitability presents a significant challenge for companies. The need to transcend a focus solely on shareholder returns is underscored by the concept of Social and Environmental Disclosure Quality (SEDQ), recognised globally across industries. As governments and regulatory bodies enforce stringent reporting requirements, companies are compelled to enhance transparency in revealing their social and environmental impacts. The adoption of international sustainability reporting frameworks, such as the Global Reporting Initiative (GRI) and the Sustainability Accounting Standards Board (SASB), has gained momentum, reflecting a standardised approach to SEDQ globally.

Amidst increasing awareness among investors and consumers about environmental and social practices, there is a growing demand for responsible and sustainable investments. Companies worldwide are recognising the business advantages associated with SEDQ, including enhanced reputation, reduced risk, and improved access to capital. The evolution of SEDQ from a theoretical framework introduced by Edward Freeman in 1984 to a practical imperative transcends geographical boundaries, making it a central concern for organisations globally.

However, despite the global recognition of SEDQ, disparities persist in disclosure practices across different locations, with varying regulatory frameworks. Additionally, the legal perspective of SEDQ disclosure varies, being mandatory in some settings (China, South Africa, United Kingdom), and voluntary in others (Nigeria, Brazil, Vietnam).

Social and Environmental Disclosure Quality (SEDQ) serves as a crucial mechanism for companies to cultivate positive relationships with their immediate environments. This entails disclosing information on various aspects such as security practices, human rights assessments, waste management, pollution control, carbon management, employee welfare, and wildlife conservation. These disclosures play a pivotal role in fostering sustainable growth and development for companies, contributing to their ethical reputation and product patronage. However, the laudable objectives of SEDQ are overshadowed by concerns about its inadequacy, particularly among non-service companies. The failure to provide comprehensive SEDQ may lead to immediate consequences, impacting operational stability and potentially causing production redundancies.

Customers, both locally and internationally, are increasingly expressing concerns about the environmental impact of corporate activities, particularly in the context of pollution, climate change, and global warming. This heightened awareness prompts customers to withhold support from companies that exhibit inadequate SEDQ, driven by personal beliefs and moral considerations. Inadequate disclosure quality is revealed to have potential detrimental effects on organisational profitability, resulting in decreased revenues due to weakened business-customer relationships. This situation poses threats to ongoing operations and raises questions about the ethical reputation and overall economic prosperity of companies.

Another issue of concern is the methodology employed by the previous studies conducted in the area. Most of the works did not measure the disclosure quality using GRI index which is considered as the best index in terms of comprehensiveness and determination of quality value. For instance, Hassan et al., 2020 focused on modified word account which is some how subjective, Eriabie & Odia (2016) focused on Corporate Social Responsibility (CSR), donations and employment while the maximum disclosure using GRI index by Yunusa (2017) is 29. Other works have not considered robustness tests and their implications in coefficient determination and hypotheses testing; these may potentially lead to outcomes that are not in tandem with actual reality and therefore triggers the need to empirically investigate the situation

In this context, Corporate Governance Mechanisms (CGMs) play an important role in ensuring adequate SEDQ. Factors such as board committees, board gender, board size, board meetings and audit firm choice contribute to building robust corporate governance. Although there are challenges in implementing Corporate Governance Mechanisms (CGMs) in Nigerian companies, particularly among non-service operating firms, persist despite the existence of principle number twenty-six in the Nigerian Code of Corporate Governance (NCCG) emphasising sustainability development. Complaints about CGM compliance encompass various areas such as board committees, board gender, board size, board meetings and audit firm choice. Inadequate board committees are highlighted as a potential cause for insufficient Social and Environmental Disclosure Quality (SEDQ), especially in areas like corporate social responsibility and sustainability where dedicated oversight may be lacking. Attempts to address this issue, such as those by Yunusa (2017), have faced challenges due to the lack of comprehensive consideration for specific topics.

Gender diversity's impact on SEDQ presents a complex challenge, requiring appropriate measurement tools and evaluation frameworks. Integration into organisational culture faces hurdles, with leadership attitudes resisting initiatives for greater representation. Practical problems affecting SEDQ are identified concerning board structure, where the responsibility falls on the board leadership team to establish adequate SEDQ levels. Challenges include scarce knowledge resources, varying beliefs among members, and time constraints impacting the quality of reporting. The influence of board meetings on SEDQ is crucial, and practical problems hindering their effectiveness can lead businesses under financial pressures to prioritise economic outcomes over environmental and social aspects. Research indicates the importance of frequent board meetings in shaping sustainable business practices through SEDQ.

Other challenges include the influence of audit firms, especially the Big Four, is noted as a benchmark for companies choosing accounting procedures like SEDQ. While these firms are associated with audit quality, concerns arise about their prioritisation of SEDQ improvement, given the absence of standards from the International Sustainability Standards Board (ISSB). Addressing these challenges requires further research efforts to better understand the complex dynamics involved.

This study addresses the critical relationship between CGMs and SEDQ, focusing specifically on listed non-service companies in Nigeria from 2018 to 2022. It aims to explore the impact of specific CGMs, including board committees, board gender, board size, board meetings and audit firm choice on SEDQ. The research questions and hypotheses formulated guide the investigation, aiming to fill gaps in existing literature and contribute to a better understanding of this important relationship. The study's significance extends to various stakeholders, including companies, investors, regulatory bodies, professional organisations, researchers, and the government, fostering responsible business practices, sustainability, and transparency in the corporate sector.

LITERATURE REVIEW AND THEORETICAL FRAMEWORK

The study examines the theoretical foundations linking Corporate Governance Mechanisms (CGMs) to Social and Environmental Disclosure Quality (SEDQ), focusing on three key theories: agency, stakeholder, and legitimacy. Agency theory, from 1976, suggests that selecting the right audit firms can reduce conflicts between owners and managers, enhancing SEDQ. Stakeholder theory, introduced by Freeman in 1984, argues that considering diverse stakeholder interests through board committees, board gender and board size improves SEDQ. Legitimacy theory, from 1975, posits that organisations enhance their credibility and transparency through frequent board meetings, thereby positively impacting SEDQ.

Growing concerns about societal and environmental quality have pushed businesses towards eco-friendly practices, influenced by stakeholder pressures. Corporate governance mechanisms are claimed to affect SEDQ, as argued by Abubakar and Moses (2020) and Yunusa (2017). Ajibolade and Uwuigbe (2013) suggest that effective governance is demonstrated through social and environmental quality. Agency theory also links CGMs to SEDQ, viewing both as control mechanisms. Successful board members significantly impact decisions on social and environmental compliance, enhancing performance. Consequently, the study reviews the relationship between CGM and SEDQ.

Board Committees and Social and Environmental Disclosure Quality.

To maximise efficiency and effectiveness, boards delegate various duties to well-structured committees, ensuring each is composed of directors with the necessary skills (FRCN, 2018). These committees, which may cover areas like audit, risk management, and social and environmental issues, reflect the board's commitment to corporate responsibility (Yunusa, 2017). Committees balance stakeholder interests, set standards and policies, monitor compliance with regulations, and manage non-financial risks. Despite limited empirical research on the impact of board committees on Social and Environmental Disclosure Quality (SEDQ), study conducted by Yunusa (2017) suggest that board committees may positively influence this relationship. Additionally, Chams and García-Blandón (2019) found a positive relationship between board committees and SEDQ, supporting the idea that a well-functioning board can effectively manage stakeholder interests and enhance SEDQ. Thus, it is hypothesized:

H_{01}: There is no significant relationship between board committees and social and environmental disclosure quality among listed non-service companies in Nigeria

Board Gender and Social and Environmental Disclosure Quality

Board gender is one factor that contributes to board diversity, it plays a key role in boosting the reputation of the firm by dealing with social and environmental issues (Majumder et al., 2017). Board gender has recently been a point of discussion in the corporation. Anazonwu et al. (2018) investigate influence of board gender among other variables on social as well as environmental disclosure of publicly traded manufacturing companies in Nigeria. It was found that board gender significantly enhances a company's commitment to social and environmental responsibility. Moreover, despite the global trend of disclosure practices, social as well as environmental disclosure is still in its early stages in Nigeria (Moruff et al., 2021). Moruff et al. (2021) investigated the relationship between board gender and social and environmental disclosure (SED) within the Nigerian setting. Among the various variables analysed, the research identified a positive and significant relationship between board gender and SED. According to the evidence, there is a relationship between the effectiveness of a board and the extent of gender diversity within its members. It is worth highlighting that gender diversity on corporate boards is often regarded as a critical aspect of corporate governance in various publicly recognised companies and studies involving board members. Some studies suggest that gender diversity exhibit a greater awareness of environmental issues as well as social issues and a strong commitment to mitigating perceived risks. The existing literature on board gender suggests that gender diversity could enhance an organisation SEDQ. Consequently, the study anticipates that board gender will yield a significantly positive impact on SEDQ. Thus this hypothesis below was developed

H_{02}: There is no significant relationship between board gender and social and environmental disclosure quality among listed non-service companies in Nigeria

Board Size and Social and Environmental Disclosure Quality

Board size and corporate reporting have a mutually reinforcing relationship. A company's large board of directors tends to reveal more reporting actions. However, although a larger board of directors is more efficient than a smaller one, an excessively large board is ineffectual at supervising corporate operations (Majumder et al, 2017). It is thought that board size demonstrates management capacity and decreases the managers and stakeholders knowledge asymmetry (Abdu et al., 2020). Abdu et al. (2020) contend that an increased number of directors on the board leads to a broader range of expertise within the board, attributed to their accumulated experience, implying that both the quality as well as quality of disclosure will be increased (Majumder et al., 2017). The available research establishes a contentious relationship between board size and SEDQ. Board size is negatively significant on the SEDQ based on the result of (Eriabie & Odia, 2016). They look at how corporate governance traits in Nigeria affect the SEDQ. However, board size does not appear to have an impact on SEDQ, Orazalin (2019) investigate extent of SEDQ in the banking industry of Kazakhstan, as well as the influence of board characteristics on SEDQ in this emerging market. In contrast, Moruff et al. (2021) conducted a study regarding relationship between board attributes and social-environmental disclosure in Nigeria. It explored how board size affects social and environmental disclosure and they employed a mixed theoretical approach to establish this relationship. The results of the research indicated a positive significant relationship between board size and various aspects of social and environmental disclosure. This suggests that larger boards are linked to higher levels of social and environmental disclosure. In summary, most of the aforementioned research findings indicate that an expansion in board size may SEDQ. Consequently, this study will investigate the effect of board size on SEDQ, with the expectation that this influence will be both positive and substantial. Thus this hypothesis below was developed

H_3: There is no significant relationship between board size and social and environmental disclosure quality among listed non-service companies in Nigeria

Board Meetings and Social and Environmental Disclosure Quality

Board meetings frequency reflects the overall number of meetings held by the board, which serve as a proxy for how the board is able to deal with the organisation challenges (Majumder et al., 2017). SEDQ is a critical issue for stakeholders today. As a result, it is anticipated that social and environmental related subjects will be considered at board meetings for the sake of safeguarding stakeholders' interests. This section reviews research conducted in relation to board meetings and SEDQ. According to Yunusa (2017) there is a negative significant relationship between board meetings and SEDQ among publicly traded Nigerian firms. His study added non-executive director ownership as a moderator in order to resolve the contradictory associations seen. However, when examining the factors influencing the SEDQ, Issa (2017) found that the board meetings has insignificant impact on SEDQ. Based on the above review, this research expects that board meetings may have positive impact on SEDQ.

H_4: There is no significant relationship between board meetings and social and environmental disclosure quality among listed non-service companies in Nigeria

Audit Firm Choice and Social and Environmental Disclosure Quality

According to agency theory, the auditor is a useful monitoring tool when agent-principal relationships are in conflict and audit firms, as shown by their recommendations, acceptance of selected accounting policies, as well as explanations of critical concerns, has an effect on how a business views reporting and disclosure practices (Majumder et al., 2017). The audit quality of any business is determined by its auditors' credibility. It is projected that the audit firms would perform their auditing operations honestly (Majumder et al., 2017) and will strengthen the credibility of their audit work in their yearly reports (Eriabie & Odia, 2016). According to Welbeck et al. (2017), accounting firms are held in high regard by society to acquire worldwide acceptance and reputation, large companies frequently select an accounting firm that is one of the top four. Furthermore, "big four" (EY, Deloitte, KPMG and PWC) may partner with companies that reveal SEDQ with the purpose of preserving their integrity and reputation (Welbeck et al., 2017) . To change the publicly image of their corporate disclosure practices and to boost their credibility, firms might use the big four audit firms (Welbeck et al., 2017). Below are the findings of current research.

Eriabie and Odia (2016) study corporate governance influence on SEDQ in Nigeria where audit firm choice has a positive significant impacts SEDQ. In contrast, Audit firm choice has insignificant impact on SEDQ in the study conducted by Orazalin (2019). However, there is a positive significant relationship between audit firm choice and SEDQ in a research carried out by Jamil and Mardawi (2021) in which they determined how board characteristics among other variables impact SEDQ among companies listed on the Palestine Exchange (PEX). As a result, audit firm choice play a critical role in the distribution of reliable as well as credible company disclosures, such as SEDQ. Audit firm choice may likely lead to publication of more extensive SEDQ in order to reduce market knowledge asymmetry. This is based on the idea of "agency theory," as well as what was discussed above. Hence, it is expected that audit firm choice will have impact on SEDQ.

H_5: There is no significant relationship between audit firm choice and social and environmental disclosure quality among listed non-service companies in Nigeria

METHODOLOGY

This research assessed the influence of corporate governance mechanisms on the quality of social and environmental disclosure. To achieve this, a correlational research design was employed. The study encompasses all 74 non-service companies listed on the Nigerian their annual reports and relevant data spanning from 2018 to 2022. Consequently, the adjusted population for analysis consisted of 51 firms. Exchange Group as of December 31, 2023. The census technique was utilised to gather information on all entities within the population. However, 23 firms were excluded due to the unavailability of

The dependent variable, namely social and environmental disclosure quality, was measured through a three-step process. Firstly, a structured checklist based on the GRI sustainability disclosure guidelines was employed to construct quality indicators. Secondly, a coding system using '0' and '1' was applied. Lastly, the disclosure quality of social and environmental information was calculated through content analysis using a simple unweighted average formula. This resulted in an index, in accordance with the GRI guidelines, using annual financial reports for listed companies in Nigeria. As a result, the SEDQ index of a company was determined using the equation adapted from. Yunusa (2017) as shown below:

$$\boldsymbol{SEDQ = \sum \frac{SEI}{HPDQ}}$$

Where-

SEDQ = Social and Environmental Disclosure Quality

SEI = Social and Environmental Indicators.

HPDQ = Highest possible disclosure quality score

This study includes five corporate governance mechanisms as explanatory variables.

Board Committees was measured as total number of board sub-committees in an accounting period of a company(Chams & García-Blandón, 2019; Yunusa, 2017). Board Gender was measured as proportion of women on the board of directors of a company (Emmanuel et al., 2018). Board Size was measured number of directors in a corporation who served in a particular accounting period, excluding the company secretary (Chams & García-Blandón, 2019; Hu & Loh, 2018). Board Meetings was measured Number of times board of directors meets throughout the course of an accounting period (Jizi & Dah, 2018; Younas et al., 2021). Audit Firm Choice was measured as a dummy, with "1" allocated to companies that utilise "Big 4" audit firms EY, Deloitte, KPMG and PWC as external auditors, and "0" if not (Bani-khalid et al., 2017; Ramadhini et al., 2020). Firm Leverage was used as the control variable which is calculated by dividing total liabilities by total assets (Chams & García-Blandón, 2019; Shuaibu, 2020). Return On Asset was also used as control variable which was measured as profit after tax divided by total assets (Abu Qa'dan & Suwaidan, 2019).

In light of these variables, the ensuing regression model which was adapted from (Yunusa, 2017) serves as the foundation for extracting empirical findings.

Social and Environmental Disclosure Quality Model

$$\boldsymbol{SEDQ_{it} = \beta_0 + \beta_1 BC_{it} + \beta_2 BG_{it} + \beta_3 BS_{it} + \beta_4 BM_{it} + \beta_5 AFC_{it} + \beta_6 FL_{it} + \beta_7 ROA_{it} + \varepsilon_{it}}$$

Source: The Researcher Adapted the Model from the work of Yunusa, 2017.

Where:

SEDQ = Social and Environmental Disclosure Quality;

it = Longitudinal data indicator;

β_0 = Intercept;

β_1 to β_5 = Coefficient of independent variables;

β_6 and β_7 = Coefficient of control variables;

ε = Error terms;

BC = Board Committees;

BG = Board Gender;

BS = Board Size;

BM = Board Meetings;

AFC = Audit Firm Choice;

FL = Firm Leverage;

ROA = Return on Assets.

RESULT AND DISCUSSION

This section extends the study approach established in the previous section, focusing on the impact of Corporate Governance Mechanisms (CGMs) on Socio and Environmental Disclosure Quality (SEDQ). It involves presenting descriptive statistics (minimum, mean, maximum, and standard deviation) and correlation, conducting tests for multicollinearity, normality, heteroskedasticity and performing regression analysis by the application of Generalised Least Squares. All these steps contributed to estimating the study's evaluation of the influence of CGM on SEDQ.

Descriptive Statistics

Descriptive statistics in Table 4.1 present standard deviation, mean, minimum, and maximum values for both the dependent and independent variables, aimed to analysing data behavior in terms of variance and deviation from the mean. This assessment helps in comparing the acquired data with the legal and policy requirements of companies.

Table 4.1: Descriptive Statistics

Variables	Obs	Mean	Std. Dev.	Min	Max
SEDQ	255	0.19	0.20	0	0.86
BC	255	3.33	1.18	1	8
BG	255	0.19	0.14	0	0.67
BS	255	9.08	3.03	3	18
BM	255	4.96	1.77	1	13
AFC	255	0.60	0.49	0	1
FL	255	0.63	0.34	0.07	2.43
ROA	255	2.79	0.14	-0.78	76.58

Source: Author’s computation using STATA 15, 2024.

Examining Social and Environmental Disclosure Quality (SEDQ), the study analysed 255 observations from the annual reports of 52 companies over a five-year period. The average SEDQ is approximately 0.19, indicating an average disclosure quality of around 19%. There is considerable variation in SEDQ values, ranging from zero to 0.86, highlighting the need for improvement in some companies. The study also introduced Board Committees (BC), Board Gender (BG), Board Size (BS), Board Meetings (BM) and Audit Firm Choice (AFC) as variables influencing SEDQ.

Regarding BC, the study observes a range in the number of committees on company boards, with an average of around three committees. The Board Gender analysis reveals an average representation of women at approximately 19% on non-service company boards, with notable variation. The Board Size analysis indicates an average of nine members per board, with a range from three to 18 members. The frequency of Board Meetings averages around five per accounting period, with some companies attributing deviations to the disruptions caused by the global COVID-19 pandemic in 2020.

Audit Firm Choice indicates that, on average, 60% of non-service companies in Nigeria are audited by big four firms.

In conclusion, the study indicates that SEDQ in Nigeria is not regulated, and factors such as inconsistent Board Gender representation, variability in board structures and meetings, and choice of audit firms can impact disclosure practices and overall company performance.

Correlation between Social and Environmental Disclosure Quality and Independent Variables

The correlation matrix in Table 4.2 is presented to provide insights into the examined associationss.

Table 4.2: Correlation Matrix

	SEDQ	BC	BG	BS	BM	AFC	FL	ROA
SEDQ	1.0000							
BC	0.2369	1.0000						
BG	0.2390	0.2459	1.0000					
BS	0.3988	0.4143	0.1194	1.0000				
BM	0.3649	0.5076	0.3239	0.4145	1.0000			
AFC	0.3350	0.3038	0.3791	0.3903	0.4070	1.0000		
FL	-0.1642	-0.0107	-0.0529	-0.2016	-0.1449	-0.2752	1.0000	
ROA	0.2507	0.1404	0.0720	0.1287	0.0240	0.1633	-0.1872	1.0000

Source: Author's computation using STATA 15, 2024.

In Table 4.2, the diagonal values indicate perfect correlations of 1, reflecting the variables' correlations with themselves. Notably, Social and Environmental Disclosure Quality (SEDQ) exhibits a weak positive correlation of approximately 0.24 with Board Committees (BC) and positive correlations with other Corporate Governance Mechanisms (CGMs) such as Board Gender (BG), Board Size (BS), Board Meetings (BM) and Audit Firm Choice (AFC). However, the strength of association varies, with weak correlations observed for BG and moderate relationships found with BS, BM, and AFC. Despite these correlations, the study acknowledges the expectation of a causal relationship between CGMs and SEDQ. For BC, a weak negative correlation of approximately -0.011 is noted, along with varying strengths of positive correlations with BG, BS, BM and AFC. Similar patterns of correlations are identified for BG, BS, and BM, with each demonstrating associations with other CGMs while maintaining weak or moderate strengths of relationship. These indicates interdependencies among the variables, and the study concludes by noting that none of the associations surpass a value of 0.7, reducing concerns about potential multicollinearity.

In conclusion, the correlation analysis reveals detailed associations among the variables. SEDQ displays positive associations with various CGMs, each with different strengths, supporting the study's expectation of a causal link. BC, BG, BS, and BM also exhibit interconnections with other variables, with strengths ranging from weak to moderate. Despite the observed correlations, the absence of associations exceeding a value of 0.7 suggests a low likelihood of multicollinearity, providing a comprehensive understanding of the interplay between the examined factors.

Normality Distribution of the Data

The Jarque-Bera test for normality was presented in Table 4.3, which determined whether the data conforms to a normal distribution.

Table 4.3: Jarque-Bera Test

Jarque-Bera normality test:	147.8 Chi (2) 0.0062
Test for Ho: Normality	

Source: Author's computation using STATA 15, 2024.

In Table 4.3, the Jarque-Bera normality test was employed where it assessed the distributional characteristics of the residuals in the statistical analysis. The calculated test statistic is 10.18, with a p-value of 0.0062. The null hypothesis (Ho) posits that the data follows a normal distribution, with the test statistic being derived from skewness and kurtosis. The p-value provided an evidence which warrant failure to reject the null hypothesis. This suggests that the residuals follows a normal distribution.

Multicollinearity Analysis

The multicollinearity result is presented in Table 4.4.

Table 4.4: Multicollinearity Result

Variable	VIF	1/VIF
BM	1.62	0.6178
BC	1.52	0.6600

AFC	1.50	0.6652
BS	1.42	0.7030
BG	1.24	0.8037
FL	1.15	0.8588
ROA	1.08	0.8593
Mean VIF	1.36	

Source: Author's computation using STATA 15, 2024.

As discussed in the correlation section, there are no correlation coefficients equal to or exceeding 0.7, suggesting the possible absence of multicollinearity. Table 4.4 reinforces this observation, indicating that no VIF value is equal to, let alone surpass, five. A more detailed examination of the table provides further insights. The VIF and reciprocal values for each independent variable are presented. For instance, Board Meetings (BM) has a VIF of 1.62 and an inverse VIF of 0.62, confirming the absence of multicollinearity. Board Committees (BC) and Audit Firm Choice (AFC) also exhibit VIF values below five, supported by their respective inverse VIF values. Similarly, Board Size (BS) and Board Gender (BG), both reported VIF values below five, along with corresponding inverse VIF values exceeding 0.01, reinforcing the conclusion of the absence of multicollinearity. Control variables, Firm Leverage (FL), and Return on Asset (ROA) show VIF values and inverse VIF values consistent with the absence of multicollinearity.

In conclusion, the mean VIF across all variables is 1.36, comfortably below the threshold of five. The study concludes that there is no evidence of multicollinearity among the examined variables, providing confidence in the reliability of the regression analysis results.

Heteroskedasticity

The results of the heteroskedasticity test is presented in Table 4.5, offering a comprehensive evaluation of the homoscedasticity assumption in the regression model under consideration.

Table 4.5: Heteroskedasticity Test

Modified Wald test for groupwise heteroskedasticity in a fixed effect regression model
Ho: sigma (i) ^ 2= sigma^2 for all i
Chi2(51) = 3.0e+08
Prob > chi2 = 0.0000

Source: Author's computation using STATA 15, 2024.

The chi-square value resulting from the Modified Wald test for groupwise heteroskedasticity in the fixed effect regression model is 3.0e+08, equivalent to 300,000,000, with an associated probability of 0.0000, as indicated in Table 4.5. Employing a significance level of less than 1% for hypothesis testing, the rejection of the null hypothesis becomes apparent. This research provides compelling evidence against the null hypothesis, which suggests homoscedastic residuals, indicating that the residuals exhibit heteroskedasticity. The low probability value strengthens the conclusion, emphasising the presence of substantial evidence supporting the rejection of the null hypothesis in favour of the presence of heteroskedastic residuals in the fixed effect regression model.

Hausman
The results of the Hausman test can be found in Table 4.6.

Table 4.6: Hausman Test

Hausman		
Test Ho: difference in coefficient not systematic		
Chi2(9)	= (b-B) ‘[(V_b-V_B) ^ (-1)] (b-B)	
	=	11.84
Prob>chi2	=	0.1059
(V_b-V_B is not positive definite)		

Source: Author’s computation using STATA 15, 2024.

The p-value (Prob>chi2) of 0.1059 is high, indicating a lack of substantial evidence to reject the null hypothesis, which posited that the "difference in coefficient is not systematic." Consequently, based on the Hausman test results, the study does not possess enough evidence to assert that the discrepancies in coefficients between the fixed effects and random effects models are systematic. As presented in Table 4.6, the elevated p-value, exceeding any standard significance level, implies that the random effects model is preferable, assuming that the differences in coefficients stem from random effects (unobserved heterogeneity) rather than systematic differences among individuals or groups. Nonetheless, a Lagrangian Multiplier Test was also conducted to determine whether to employ the Random Effect model or switch to Ordinary Least Squares (OLS).

Lagragian Multiplier Test
The results of the LM test is presented in Table 4.7 below.

Table 4.7: Breuch and Pagan Lagrangian Multiplier Test Random Effect

Breuch and Pagan Lagrangian multiplier test random effect
Chibar2(01) = 341.63
Prob > chibar2 = 0.0000

Source: Author's computation using STATA 15, 2024.

Based on the findings in Table 4.7, the p-value (Prob > chibar2) shows that the null hypothesis, which suggests that the variance of random effects is zero, should be rejected. In simpler terms, there is strong statistical evidence indicating the presence of significant individual-specific random effects within the study's random effects model. This result highlights the importance of these random effects, as they capture unexplained variation at the individual level that cannot be explained by fixed effects or observed covariates. Therefore, a random effects model is more appropriate for the data than an OLS model, which assumes no individual-specific random effects.

Additionally, the Breusch and Pagan Lagrangian multiplier test confirms that random effects are present and significantly contribute to explaining the variation in the study's dependent variable (SEDQ), even after considering fixed effects and the error term.

Data Criteria

Given the confirmation of heteroskedasticity in the data presented in Table 4.5, it is important to carefully assess the data criteria before drawing conclusions about the appropriate regression method. As per the data criteria, if the number of cross-sectional observations exceeds the number of time series observations, Generalised Least Squares (GLS) should be used; otherwise, consider Feasible Generalised Least Squares (FGLS). In this case, there are 51 companies and five years of data, with 51 being greater than five, indicating that GLS is the suitable regression method.

Regression Result

The result of the GLS have been presented in Table 4.8 below.

Table 4.8: Generalised Least Square Regression

SEDQ	Coefficients	Std. Error	Z-statistics	P-values
BC	-0.0034	0.0051	-0.68	0.499
BG	0.1982	0.0397	4.99	0.000
BS	0.0160	0.0023	6.93	0.000
BM	0.0151	0.0045	3.40	0.001
AFC	0.0352	0.0123	2.86	0.004
FL	-0.0186	0.0126	-1.48	0.138
ROA	0.0016	0.0004	3.84	0.000
CONSTANT	-0.0913	0.0225	-4.05	0.000

Wald chi2 (7)	= 349.34
Prob>chi2	= 0.0000
R-Squared	= 0.2770
Adjusted R-Squared	= 0.2504
Number of Observations	= 255

Source: Author's computation using STATA 15, 2024.

The study, as presented in Table 4.8, undertook an analysis of a dataset comprising 255 observations over a five-year period, focusing on 51 non-service companies. This organisational structure allowed for an exploration of the influence of independent variables on the dependent variable, SEDQ, considering potential variations between entities and over time. The Wald chi-squared test, a critical statistical measure employed in the analysis, yielded a highly significant result with a p-value of 0.0000, indicating that the entire model, encompassing independent variables, significantly influences SEDQ. The R-square, standing at approximately 0.27, signifies that seven specific variables collectively account for 27% of the variance in SEDQ, while 73% remains unexplained within the study's scope. The coefficients and associated standard errors elucidate the magnitude, direction, and precision of the relationships between each independent variable and SEDQ. Notably, all independent variables, except BC, are statistically significant at a 1% significance level.

In conclusion, the study underscores the overall statistical significance of the model, offering detailed insights into the impact of individual independent variables on SEDQ. This information proves valuable in comprehending the factors contributing to variations in SEDQ within the researched context, providing a detailed understanding of the dynamics at play.

Hypotheses Testing, Discussion of findings and Implication of findings

The study evaluates the impact of board committees on the Social and Environmental Disclosure Quality (SEDQ) of listed non-service companies in Nigeria. Hypothesis one (H_{01}) posits that board committees have no significant impact on SEDQ. The analysis, reflected in Table 4.8, reveals that the coefficient for Board Committees (BC) is 0.0006, indicating a minimal 0.06 percent rise in SEDQ with a unit increase. However, the p-value for BC is 0.904, surpassing the 5% significance level, rendering the impact statistically insignificant. Consequently, the study fails to reject the null hypothesis, suggesting no substantial impact of board committees on SEDQ for listed non-service companies in Nigeria. Despite initial expectations and the contrasting findings of a prior study, the data underscores the complexity of real-world research, emphasising the importance of acknowledging that research outcomes may not always align with initial assumptions.

The finding implies that there may be a shift in focus from simply increasing the number of board committees to enhancing the quality, structure, and composition of existing committees. It suggests that the number of committees alone does not significantly affect SEDQ, emphasising the need for a more detailed approach. The quality of committee members, their expertise, and their ability to oversee social and environmental matters should be prioritised over quantity. The suggestion is to customize committee structures based on the specific needs of companies, potentially establishing committees dedicated to sustainability and social responsibility for more effective oversight in these critical areas. This highlights the importance of tailoring corporate governance practices to address the unique challenges and requirements of each company.

The second hypothesis (H_{02}) in the study examines the impact of board gender on the Social and Environmental Disclosure Quality (SEDQ) of listed non-service companies in Nigeria. According to Table 4.8, the coefficient for Board Gender (BG) is 0.2215, suggesting that an increase in BG corresponds to approximately a 22.15 percent increase in SEDQ. Notably, the p-value for BG is 0.000, falling below both the 1% significance level. Consequently, the hypothesis positing that board gender has a significant impact on SEDQ is supported, leading to the rejection of the null hypothesis. This finding challenges traditional gender dynamics in corporate boards, indicating that gender diversity play important role, particularly in decisions related to social and environmental matters. The study aligns with stakeholder theory and references prior research, reinforcing the credibility of its conclusion. Moreover, the connection to the Financial Reporting Council of Nigeria (FRCN) underscores the potential regulatory implications, suggesting that policymakers may consider promoting gender diversity on corporate boards to enhance SEDQ and overall corporate governance.

The study's broader implication is the positive relationship between board gender diversity and SEDQ, emphasizing the strategic significance of promoting gender diversity in corporate boards of non-service companies in Nigeria. The findings suggest that encouraging gender diversity in decision-making processes fosters inclusivity and brings diverse perspectives, particularly crucial for addressing sustainability and social issues. Policymakers and regulatory bodies may contemplate implementing measures that mandate or promote gender diversity on corporate boards to improve SEDQ. This could potentially lead to regulatory changes requiring certain proportion of gender diversity on board. The study advises companies to recognize heightened expectations from various stakeholders, including investors, customers, and employees, regarding gender diversity on boards. Such recognition is deemed vital for both corporate reputation and SEDQ.

The study examines Hypothesis three (H_{03}), which posits that "Board size has no significant impact on the Social and Environmental Disclosure Quality (SEDQ) of listed non-service companies in Nigeria." Despite this assertion, the analysis in Table 4.8 reveals that board size (BS) exhibits a coefficient of 0.0170, indicating that an increase in BS may lead to an approximately 1.7 percent increase in SEDQ. Importantly, the p-value for BS is 0.000, falling below both the 1% significance level, indicating a significant relationship with SEDQ. Consequently, the null hypothesis is rejected, underscoring that board size indeed has a significant impact on SEDQ. This finding is attributed to the ability of a larger board to effectively manage the flow of information, leveraging the diverse expertise of its directors, particularly in the aspects of SEDQ. The study aligns with the Nigerian Code of Corporate Governance (NCCG) recommendation for an appropriate number of directors, reflecting the size and complexity of company operations, crucial for effective business management, activity oversight, and maintaining corporate governance.

The research emphasises the strategic significance of board composition and its relationship with sustainability practices. The implications include a recommendation for companies to assess and potentially optimize their board size based on the complexity of their operations and the need for expertise in managing sustainability issues. The study underscores the importance of effective information management systems, suggesting that companies may need to invest in technology and processes to facilitate information flow and decision-making. A larger board is seen as capable of making more comprehensive and informed decisions regarding SEDQ, highlighting the strategic role of board composition in influencing sustainability practices within companies. This finding contradicts previous research and reinforces the positive association between an increase in the number of board members and an improvement in SEDQ.

In the study's fourth hypothesis (H_{04}), it was asserted that "Board meetings have no significant impact on the Social and Environmental Disclosure Quality (SEDQ) of listed non-service companies in Nigeria." However, contrary to this assertion, the examination of the relationship between board meetings and SEDQ reveals a positive significant impact. The study calculates a BM coefficient of 0.0161, signifying that an increase in board meetings may lead to a 1.61 percent increase in SEDQ. The associated p-value is 0.000, falling below 1% significance level, indicating a positive and statistically significant relationship. Consequently, the null hypothesis is rejected, affirming that board meetings do indeed have a positive and significant impact on SEDQ. This underscores the important role of board meetings as a key component of Corporate Governance Mechanisms (CGMs), serving as a means of overseeing and ensuring transparency and the quality of disclosure, as supported by prior research and the Nigerian Code of Corporate Governance (NCCG).

The study highlights the broader implications of this finding, emphasising the importance of board meetings in addressing social and environmental concerns, particularly in the Nigerian context where these issues have gained significant prominence. The positive relationship established between the frequency of board meetings and SEDQ aligns with agency theory, suggesting that regular meetings reflect the board's vigilance and determination in fulfilling its monitoring role effectively. Notably, the study observes that, despite the statutory requirement of four meetings annually, the COVID-19 pandemic led to most non-service companies in Nigeria holding only one meeting in 2020. The study suggests that, in light of the established positive impact of frequent board meetings on SEDQ, board members could focus on addressing social and environmental issues during these meetings. The findings also contradict previous research, highlighting the important nature of these relationships. Frequent board meetings are seen as essential in building trust among stakeholders, signaling commitment to addressing social and environmental concerns and maintaining a positive corporate reputation. Additionally, the study emphasises the importance of prompt and regular board meetings in responding to sustainability-related crises.

Hypothesis five (H_{05}) posits that "Audit firm choice has no significant impact on the Social and Environmental Disclosure Quality (SEDQ) of listed non-service companies in Nigeria." The study's statistical analysis reveals a contrary outcome, with the coefficient associated with audit firm choice (AFC) at 0.0444, suggesting that when a company chooses an audit firm that is inclined to Social and environmental matters may lead to 4.44 percent increase in SEDQ. Importantly, the corresponding p-value is 0.000, well below 5% level of significance, leading to the rejection of the null hypothesis. This indicates an evidence suggesting that audit firm choice has a positive and significant impact on SEDQ in the context of non-service companies in Nigeria. The findings imply that companies can actively influence the depth and quality of their social and environmental reporting by carefully selecting audit firms with a track record of emphasising responsibility beyond traditional financial auditing. This aligns with stakeholder theory, emphasising companies' responsibilities to a broader set of stakeholders, including shareholders, and challenges traditional agency theory assumptions about the role of audit firms as mere monitors.

The research findings hold significant implications across various dimensions. Practically, the study underscores the importance for companies to recognize and incorporate the influence of audit firm choice in their governance structures, urging boards to reassess criteria for selecting audit firms based on their impact on SEDQ. From a policy perspective, the research suggests potential reconsideration of regulations related to audit firm selection to emphasise transparency and disclosure practices. Theoretical implications challenge traditional views and prompt a re-evaluation of how established theories, such as legitimacy theory, stakeholder theory, and agency theory, account for the active contribution of audit firm choice to social and environmental disclosure practices. Socially, companies opting for audit firms with a positive impact on SEDQ contribute to transparency and ethical disclosure practices, reflecting responsible business conduct. Ethically, there is a call for companies to consider the implications of audit firm choice and ensure alignment with social and environmental responsibility commitments. In education, the findings underscore the need to integrate the role of audit firm choice in influencing SEDQ into accounting and auditing educational programs, preparing future professionals to navigate complex decision-making processes and ethical considerations. Overall, the study provides valuable insights for companies and policymakers to enhance SEDQ and align corporate practices with sustainability concerns.

Conclusion and Recommendations

The study assessed the impact of Corporate Governance Mechanisms (CGMs) on Social and Environmental Disclosure Quality (SEDQ) within non-service companies listed in Nigeria. This inquiry was motivated by the lack of attention to social and environmental issues, coupled with challenges such as inadequate measurement of SEDQ and a scarcity of research in Nigeria. Tangible concerns, including stakeholder protests and government apprehensions regarding environmental issues, prompted the research to address these challenges by examining the relationship between CGMs and SEDQ. The study considered various factors in evaluating SEDQ, such as human resources, community engagement, employee training, and environmental impact, drawing on stakeholder theory, legitimacy theory, and agency theory to underpin the identified variables.

The research formulated five hypotheses, with four indicating a significant relationship between CGMs and SEDQ, and one showing an insignificant relationship. The study suggests re-evaluating board criteria, prioritising audit firms with a history of enhancing SEDQ, expanding board size, integrating female and male directors and increasing board meetings to improve SEDQ. The study's implications extend to various entities, including regulatory bodies, professional institutes, and the government, emphasising the need for a comprehensive approach to corporate governance and social and environmental disclosure practices in Nigerian non-service companies. The study recommends adopting the Global Reporting Initiative (GRI) checklist as a tool for assessing

SEDQ. Overall, the research provides valuable insights for stakeholders involved in enhancing corporate governance and sustainability practices in the Nigerian business landscape

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