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Firm-Specific Attributes and Governance Sustainability Reporting: Evidence from Listed Non-financial Firms in Nigeria

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Abstract:
The issue of whether firm-specific attributes drive the disclosure of governance sustainability still remains a puzzle among scholars. Governance Sustainability Reporting (GSR) in Nigeria, as affected by firm-specific attributes, was investigated. To understudy the effect, *ex-post facto research design, non-probability (purposive) sampling technique, and Panel regression estimation were employed with reliance on the annual report (secondary data) of listed 112 Non-Financial Firms (NFF) from 2012-2021, out of which 82 firms were selected. Also, Hausman test (fixed effect) was conducted using E-views. The findings of the study show that board diligence and board independence have positive significant effects on the governance disclosure index, while profitability has a negative insignificant effect on the governance disclosure index of NFF in Nigeria. According to the findings, the Governance sustainability reporting of listed NFF in Nigeria is significantly influenced by firm-specific attributes. Therefore, the study recommends that board diligence and independence in terms of board meeting frequency and independent directors be encouraged because it positively affects the governance sustainability reporting of NFF listed in Nigeria Exchange Group.*

Keywords: *Board diligence, board independence, governance sustainability reporting, profitability, non-financial firms*

1. Introduction

The achievement of sustainable development remains the greatest challenge facing the human race. In recent years the need for Environmental, Social, and Governance (ESG) responsibility has become a crucial factor for businesses to thrive. There have also been increased concerns about an organisation's regard for its stakeholders and the way the organisation is being governed (culture and policies). More so, organisations have become more sensitive to social issues and stakeholder concerns and are striving to become better corporate citizens. Whether the motivation is a concern for society and the environment, government regulation, stakeholder pressures, or economic profit, the result is that the management of firms must make significant changes to effectively manage their social, economic, environmental, and governance impacts. Since stakeholders (both investors and customers alike) are increasingly making business decisions based on ESG information of an organisation, Sustainability Reporting (SR), therefore, is a necessary practice for the survival of modern business firms. In other words, the ability of firms to succeed in their operations and also last or continue to exist in perpetuity is dependent on their ability to compete sustainably (Green, 2021). It is, therefore, expedient that a firm brands itself as sustainable because sustainability in grand strategic terms is about realising business resilience and an opportunity to enhance transparency and partnership. According to Roshana (2009), meeting stakeholders' expectations is a key condition for long-term success (longevity), and companies have understood that SR is a critical instrument for achieving planned business objectives. Johnston *et al.* (2021) posited that unless companies' activities are properly managed, it can result in irreversible harm to communities.

The society and business community share a mutual interdependence and businesses are established to deliver services or produce goods to earn profit (Bhatia & Tuli, 2017). However, financial reporting and profitability alone are not sufficient for long-term survival, as seen in the case of Exxon Valdez oil spill in 1989 but also include the externality side of reporting (social and environmental), good governance and policy implementation. Also, reporting, according to Moorthy and Yacob (2013), goes beyond the bottom line of economic profit and includes 'ESG.' With the growing green consumer awareness, companies are expected to align their business strategies with the environment (Moorthy & Yacob, 2013). That is, balancing economic responsibilities with social, environmental, good governance, and policy implementation (Bhatia & Tuli, 2017; Lambe *et al.*, 2022). Issues such as the increasing depletion and price of natural resources as well as the increasing importance of human rights in the business world, caused companies to be more sensitive to sustainability practices. In parallel, after the United Nations developed the notion of sustainable development, leading companies started to report their work and performance concerning sustainability starting from 1990s. Basically, including data on the consumption of resources such as power and water as well as emissions, these reports also provide information on employee rights, social responsibility projects and good governance. Therefore, an ESG report is published by a firm about environmental, social and governance impacts (Thistlethwaite & Menzies, 2016).

According to Bowen *et al*. (2017), governance for the Sustainable Development Goals (SDGs) needs to foster an enabling environment for collective action, ensure that the actors involved are held accountable and deal with emerging complex trade-offs between the goals. In this circumstance, governance has been referred to as the 'fourth pillar' of sustainable development (Kanie *et al*., 2014). Developing criteria to define the governance practices that support effective reporting is a critical step to informing discussions among stakeholders (Thistlethwaite & Menzies, 2016). Governance practice for sustainability reporting demonstrates a multiplicity of practices with the use of different report presentations, diverse classes of enforcement and various types of disclosure regulation. In SR, there is a mix of both mandatory and voluntary standards for reporting (Scholtz *et al*., 2014; GRI, 2013). Sustainability reporting also adopts a range of different guidance principles that reporting organisations use to identify information that should be measured and communicated. However, it remains unclear which specific dimensions or modes of governance are most conducive to the achievement of sustainable development. Effective and good governance can give an advantage to organisations to align and take advantage of the stakeholder's value. The practice of SR has been inspired by various factors, including the recent threat of climate change, the financial crisis, and evolving governance models (Oprean-Stan *et al*., 2020). There is a global debate on what the best guiding principle is for SR. Also, many different policies are being used around the world to implement SR (Carolina *et al*., 2020). Some of these policies are mandatory and government-regulated, with specific requirements and various compliance mechanisms. While others are voluntary, allowing the company to choose whether they report or not and what content to include in the report. Consequently, this has led to a gap between actual performance and disclosed performance (Scholtz *et al*., 2014).

The research gap stems from different indexes used to proxy GSR, the theory used to underpin GSR, the sector of the economy, geographical location and period of study, and also the mixed results generated from previous studies on profitability, board diligence, and board independence in relation to GSR. For instance, studies such as Tiamiyu *et al*. (2021), Chebbi *et al*. (2021), Arshad and Vakhidulla (2011), and Bhattacharyya (2014) have used the triple bottom line (economic, social, and environmental sustainability) to proxy Sustainability Reporting. Whereas this study seeks to investigate firms' specific attributes (profitability, board diligence, and board independence) with a specific interest in the 'fourth pillar' of SR (governance sustainability reporting). Also, the studies of Ahmad *et al*. (2017) used resource dependency theory to underpin GSR, while this study used stakeholders' theory. Again, the studies of Aris *et al*. (2021), Lucia and Panggabean (2018), Killic and Kuzey (2018), Filsaraei and Azarberahman (2016), Rafique *et al*. (2017) and Giannarakis (2014), were conducted outside Nigeria's geographical location. Additionally, the studies conducted by Fodio *et al*.(2021), Azman and Rashid (2020), Ahmad *et al*. (2017), and Baba and Abdul-manaf (2017) found that board diligence has an insignificant effect on SR. This is different from the studies of Modozie and Amahalu (2022) and Jizi *et al*. (2014), whose studies found a significant positive effect. In the same vein, Aris *et al*. (2021), Martínez-Ferrero *et al*. (2015), Nazari *et al*. (2015), and Ong *et al*. (2014) documented a positive effect between profitability and sustainability reporting. These findings, however, differ from those of Ntui *et al*. (2021), Wahyuni *et al*. (2019), and Karaman *et al*. (2018), which stated that profitability has an insignificant effect on sustainability reporting. Again, Chau and Gray (2010) found evidence that independent boards and strong governance enhance business performance. On the other hand, Faisal *et al*. (2012) observed and reported that board independence is not a significant predictor for sustainability communication.

It is, therefore, imperative to ascertain how profitability, board diligence, and board independence drives the disclosure of Governance Sustainability Reporting, given that profitability is a critical performance indicator in relation to firm performance. Likewise, board diligence (board meetings frequency) and board independence are significant in enhancing the effectiveness of board functions. This study is motivated by the need to provide current investigation on the twin concept of firm-specific attributes and governance sustainability reporting by isolating the GRI Governance indicator index from an emerging nation like Nigeria. For this reason, the following hypotheses were tested:

- HO_1: Profitability has no significant effect on governance disclosure index of listed non-financial Firms (NFF) in Nigeria.
- HO_2: Board diligence has no significant effect on governance disclosure index of listed NFF in Nigeria.
- HO_3: Board independence has no significant effect on governance disclosure index of listed NFF in Nigeria.

2. Literature Review

2.1. Conceptual Framework

2.1.1. Firm-Specific Attributes

Firm-specific attributes were described by Ali and Isa (2018) as the distinctive qualities that set one firm apart from another. Based on the pertinent information provided on the company's financial statements for a specific accounting period, it is possible to determine the firm's specific attributes (Stainer, 2006). These attributes include corporate governance (monitoring) and business performance attributes (Shehu, 2012; Shehu & Ahmad, 2013; Sahboun *et al*., 2017; Mao-Chang, 2017; Adewale *et al*., 2019). The specific attributes of the firm also refer to the much information it includes in its financial statements for a given accounting period that might send signals to the company's various stakeholders about its performance (Alfraih & Almutawa, 2014; Abullahi, 2016). In other words, these are the distinctive features that firms possess and can be recognized and viewed from various angles. These variables are seen to be mostly under management's direct control and frequently account for variances in financial performance between organisations (Kazeem, 2015).

Sahboun *et al.* (2017) and Lambe *et al.* (2022) detailed that there are several firm-specific attributes that differ systematically across firms. These attributes, according to them, include performance attributes represented by firm size, profitability, and monitoring attributes with surrogates such as board size, board diversity, and board diligence. Firm attributes can be classified into:

- Market-related parameters (company size, audit company status and industry type),
- Performance parameters (earnings margin, asset or equity return, and liquidity);
- Ownership parameters (high-and low-dispersed ownership) and Gearing structure (Naser *et al*., 2002)

The firm-specific attributes adopted in this study are profitability, board diligence, board independence and firm size as a control variable.

2.1.2. Profitability

Profitability refers to the potential of a venture to be financially successful. In other words, it is the ability of a business to earn a profit. According to Trivedi (2010), profit refers to the total income earned by the enterprise during a specified period of time, while profitability refers to the operating efficiency of the enterprise. It is the ability of the enterprise to make a profit on sales and get a sufficient return on the capital and employees used in the business operation (Adeniran & Lukman, 2018). Profitability is commonly measured using the following ratios:

- Gross Margin,
- Operating Margin,
- Return on Assets (ROA),
- Return on Equity (ROE) and
- Return on Capital Employed (ROCE)

The profitability ratio ROA is adopted for the measurement of profitability. This is because it is more encompassing than other profitability variables, and the figure of ROA gives investors an idea of how effectively the company is converting the money it invests into a net gain. Therefore, the profitability of firms is a factor that could determine the engagement of firms in sustainability reporting. This is because, ceteris paribus, highly profitable firms would have the ability to retain earnings for future growth without affecting their capacity to pay dividends (Nguyen *et al*., 2021).

2.1.3. Board Diligence

The frequency of board meetings demonstrates the diligence and watchfulness of the corporate board in carrying out its monitoring responsibilities. A key proxy for assessing the efficacy and severity of board oversight and discipline is the frequency of board meetings (Vafeas, 2006). Scholars have argued that the frequency of board meetings reflects board effectiveness, as well as facilitating better oversight of a company's operations and encouraging increased transparency (AlHares *et al*., 2018). Whereas others believe that the frequency of board meetings represents the directors' inefficacy, which inhibits their ability to function effectively in monitoring management (Vafeas, 1999; Eluyela *et al.,* 2018). Consequently, the integration of social, environmental, and governance concerns into a company's business operations indicates that sustainability reporting is now at the centre of the company's board meetings. Correspondingly, various studies have looked into the impact of board meetings on company sustainability reporting. In Nigeria, Section 12.1 of the SEC Corporate Governance Law, revised in 2018, enunciates the importance and value of board meetings in proliferating the effectiveness of the board of directors. Consequently, the Law stipulates that the Board of Directors of the company shall meet at least once a quarter. The Board of Directors should disclose the number of Board meetings held in the year and the details of each director's attendance at the meetings. The Law specifically requires companies to hold at least four board meetings per year, one every quarter.

2.1.4. Board Independence

The board of directors' independence is one of the important aspects of board effectiveness (Rashid, 2018). Several studies have found evidence that independent boards and strong governance enhance business performance. (Fuzi *et al.,* 2016). Also, the influence of non-executive directors (with reference to numbers) could provide them with more power to compel management to enhance the degree and level of firm disclosure. Prior empirical studies tend to indicate that companies are more likely to report on sustainability as the proportion of independent directors increases.

2.1.5. Governance Sustainability Reporting

There is a growing recognition that there is a close relationship between corporate governance and sustainability reporting (SR). Governance deals with a company's leadership, executive pay, audits, internal controls, and shareholder rights. Investors may want to know that a company uses accurate and transparent accounting methods and that stockholders are allowed to vote on important issues. They may also want assurances that companies avoid conflicts of interest in their choice of board members (Bevir, 2011). Governance Sustainability Reporting (GSR) refers to the practice of disclosing information about a company's governance practices and policies related to sustainability issues (Alsayegh *et al*., 2023). This type of reporting is typically included in a company's sustainability or corporate social responsibility report, which provides stakeholders with information about the company's environmental, social and governance (ESG) performance (Erin *et al*., 2022). GSR can include a wide range of information, such as the company's board structure and composition, executive compensation practices, policies related to ethical conduct and compliance, and stakeholder engagement practices. It can also include information about the company's sustainability strategy, goals, and performance related to issues such as climate change, resource use, and human rights. The purpose of GSR is to give stakeholders a transparent and thorough perspective of a company's sustainability strategies and performance (Delubac, 2023). Consequently, informed decisions can be made by stakeholders with the requisite knowledge about a company's social and environmental implications. GSR can also help companies identify areas to improve their sustainability practices. According to Meadowcroft (2007), sustainable governance means that policy formulation and implementation involve complex state-society interactions aimed at achieving a more sustainable future. However, it is still unclear which specific dimensions or governance models are most favourable for sustainable development.

2.1.6. Governance Disclosure Index

Governance Disclosure Index (GDI) is used to measure Governance Sustainability Reporting (GSR) activities, and this index is developed based on Global Reporting Initiatives (GRI) G4 framework. GRI index is the most widely used framework around the world in determining sustainability reporting activities in various dimensions (Killic & Kuzey, 2018). It is also regarded as the world's most popular sustainability reporting standard. The indicators are used to calculate the overall governance sustainability score (actual disclosures divided by expected disclosure).

2.2. Empirical Review

Aris *et al*. (2021) analysed Firms' Characteristics Affecting the Sustainability Reporting Disclosure in Bursa Malaysia using multiple regression analysis. A sample of 60 companies' annual reports and sustainability reports were analyzed from 2014 to 2016. The results revealed that the company's size, profitability and achievements are significantly related to sustainability reporting disclosure. However, the type of firm has a negative relationship. They recommend that awards or incentives should be put in place to motivate voluntary disclosure. The study covered only three years period (2014-2016). Also, the study used Sustainable Reporting Index (SRI), which provides a gap in the study. This particular study covered a duration of ten years and employed the Global Reporting Initiative (GRI) Governance Disclosure Index.

Lucia and Panggabean (2018) studied the effect of a company's characteristics using profitability (ROA), company size, board of directors and audit committee as proxies, among others, to determine the disclosure of sustainability reports. 105 samples of manufacturing companies listed in Indonesia Stock Exchange and 262 manufacturing companies listed on Malaysia Exchange were samples used in the study from the year 2013-2015. The logistic regression and hypothesis testing results show that ROA and size have a significant influence on SR. They recommended that more samples from various sectors and other firms' characteristics, such as industry type and enterprise activity, could be researched. Furthermore, the study was conducted in a country with a legal framework that is not the same as Nigeria and also concentrated on only two years (2013-2015). Apparently, only manufacturing companies were sampled and the period of study is not wide enough to produce a robust result. Also, an identical study conducted in Nigeria may yield a different result.

Sahboun *et al*. (2017) studied the influence of profitability, leverage and the type of industry on sustainability reporting. Using a purposive sampling method, a sample of 61 companies was drawn from the population of all the companies listed in Indonesia stock exchange that report sustainability reporting. The result obtained from the Linear Regression with classical assumption showed that:

- Profitability has no influence on Sustainability reporting,
- Profitability has an influence on value of the firm,
- Leverage has no influence on sustainability reporting,
- Leverage has no effect on value of the firm,
- High profile industry has an influence on sustainability reporting,
- High profile industry has no influence on value of the firm,
- Company size has an influence on sustainability reporting,
- Company size has no influence on value of the firm,
- Sustainability reporting has no influence on value of the firm

The study recommended that disclosure should be mandatory and a requirement for companies listing. The findings of the study may not be the same if conducted in Nigeria due to the difference in the environment and the nature of the companies' activities in Nigeria.

Baba and Abdul-manaf (2017) investigated the determinants of sustainability disclosure practice in Nigeria for the period of 2010 to 2015. The factors that were taken into consideration as determinants of sustainability disclosure include:

- Board meeting frequency,
- Board independence,
- Board diversity, and
- Board size

In order to estimate the regression analysis, sustainability disclosure index and board governance metrics were generated. A multiple regression analysis was used to test the relationships specified in the study. According to the regression study, board diversity, independence, and size all improve and enhance the release of sustainability information. However, it was discovered that the frequency of board meetings has an insignificant effect on the disclosure of sustainability information. To improve sustainability reporting practices in Nigeria, the study recommends that corporate management rethink and re-strategise their sustainability reporting policies. The OLS procedure of data analysis employed by the study is limited on the basis of the fact that it does not allow heteroscedasticity tests, fixed and random effect and related robustness tests.

Ahmad *et al*. (2017) investigated the effectiveness of board meeting frequency on Sustainability Responsibility by publicly listed companies in India from 2008 to 2013. Using content analysis, corporate social reporting index and Ordinary Least Square (OLS) regression, the study found that the frequency of board meetings is not associated with SR. The study recommended that regulators and policymakers should be more stringent in monitoring a company's conformance to regulations. This study is considered not current due to the passage of time and is based on resource dependency theory, which is not part of the theories underpinning sustainability reporting.

Rafique *et al*. (2017) studied the link between corporate governance characteristics and the sustainability disclosure of listed companies in Pakistan. Using a sample of 179 financial and non-financial sectors for the duration of 2009 to 2015 with the use of Binary logistic regression, the results reveal that board size, board diligence, and board independence are significant corporate governance characteristics to establish the link with sustainability disclosure. The study recommends that the company's board must be diligent and encourage a bigger board in because a larger board improves the performance of the firm and promotes the disclosure of financial as well as non-financial information in the annual reports. The study also recommends that firms should be encouraged to produce climate change policy and environmental reports on a regular basis to manifest their commitment to sustainable development. The technique employed in analyzing the data is deficient in terms of reflecting the time ordering of events and fixed and random effects of the model used in the study.

In Malaysia's non-financial sector, Jizi *et al.* (2014) investigated the relationship between governance structure and sustainability disclosure performance based on a sample of 330 companies from 2008 to 2011. The results demonstrated a favorable and significant impact of board meetings on the performance of sustainability disclosure using panel regression approaches. According to the study, holding board meetings frequently will promote openness and show how effective the board is. Economic activity in Malaysia and Nigeria are different, making it impossible to generalise the results.

Nasir *et al*. (2014) studied the interaction between profitability and sustainability reporting in Malaysia, using a sample of 426 non-financial-firms for the period between 2009-2013. Using regression analysis and content analysis, the study established a significant relationship between profitability and sustainability reporting. It was suggested that future researchers could relate all the variables and the financial performance to see more in-depth relationships between them. The study recommended that incentives should be put in place by regulatory authorities in order to encourage sustainability reporting practices. The study's findings might have been influenced by current events, and the mismatch between the surroundings is another factor that could reduce the study's external validity.

Herda *et al.* (2012) employed binary logistic regression to examine the likelihood of voluntarily disclosing sustainability reporting decisions of 500 largest firms in the United States from 2007 to 2009. The findings revealed, among others, that firms with a greater proportion of independent board members are more likely to publish higher-quality sustainability reports. The study recommended that organisations should encourage voluntary stand-alone reports and consider a worthy proportion of independent directors. However, the downside of this study is the binary regression employed, which is considered not as encompassing as multiple regression analysis.

2.3. Theoretical Framework

2.3.1. Stakeholder Theory

Edward Freeman proposed the stakeholder theory in 1984 in his first work, 'Assessing the Role of Actors in the Firm's Environment.' His work suggested that other internal and external actors influenced firm behavior in addition to shareholders, as the economic model suggests. According to Susan (1999), the theory is an attempt to explain the firm's behavior in relation to its external environment. Stakeholders are all the various individuals and groups that have an impact on or are affected by a company's actions. According to stakeholder theory, businesses have a responsibility that calls for them to take into account the needs of all parties whose interests they serve. This gives managers more responsibility for ensuring that no stakeholder is dissatisfied, either now or in the future. The proponent of this theory suggested that businesses should consider multiple groups of stakeholders in addition to the community when making decisions and acting. Companies must cautiously respond to these distinct stakeholders' information needs in various ways.

According to this theory, managers can develop socially responsible behaviour by paying attention to the interests of all business stakeholders, and a socially responsible organisation is one in which managers' responsibilities to stakeholders play a significant role in decision-making (Clarkson, 1995). The link between the corporate governing body, financial performance sustainability, and eco-friendly performance has been studied using stakeholder theory (Donaldson & Preston, 1995; Hussain, 2018). According to stakeholder theory, it is a necessary cost for businesses to meet the needs of multiple stakeholders. This can be done in a number of different ways, from minimising costs to improving society. Ruf *et al.* (2001) claim that businesses can reduce the transaction costs associated with contracts and monitoring between them and their stakeholders by meeting the needs of those stakeholders or by demonstrating a willingness to work with them. A strategic investment can also be seen in meeting the needs of stakeholders. From a resource-based point of view, businesses can gain a competitive advantage by having resources in their operations that stakeholders value as valuable, replicable, and difficult to replace.

The stakeholders' theory serves as the foundation for this investigation because it explains the connection that exists between the company and the various stakeholders that its operations affect. Furthermore, without quality stakeholder engagement, corporate performance cannot be fully disclosed (Accountability Principle, 2011). More so, the purpose of GSR is to provide stakeholders with a transparent and comprehensive view of a company's sustainability practices and performance. As a result, stakeholders' expectations and engagement must be taken into account by businesses.

3. Methodology

Based on the secondary data source, the study evaluates the effect of firm-specific attributes on the governance sustainability reporting of NFF in Nigeria. For measuring the Governance Disclosure Index (GDI), the study uses the fifteen (15) GRI governance sustainability reporting indicators which include corporate governance committee, governance structure, delegating authority, composition of the highest governance body, Chair of the highest governance body, Executive level responsible for economic, environmental, and social topics, Nominating and selecting the highest governance body, conflicts of interest, the role of the highest governance body in setting purpose, value, and strategy, the collective knowledge of highest governance body, evaluating the highest governance body's performance, highest governance body's role in sustainability reporting, remuneration policies, the process for determining remuneration, and Annual total compensation ratio. The indicators are used to constitute the overall sustainability score. From a population of 112 companies listed on the Nigerian Exchange Group from 2012 to 2021, a sample size of 82 firms was drawn and a panel data regression model was used to establish the link between firm-specific attributes and GDI. The model used to empirically test the hypotheses adapted from Khafid *et al.* (2020) and the functional relationship between the variables is represented below:

$$GDI_{it} = \beta 0_{it} + \beta_1 Prof_{it} + \beta_2 BDil_{it} + \beta_3 BI_{it} + \beta_4 FSZ_i + e_{it}$$

Where:

GDI = Governance Disclosure Index

PROF = Profitability

BDIL = Board Diligence

BI = Board Independent

FSZ = Firm Size

i = firm

t = year

Ɛ = Error Margin

β_0 = Intercept

β_1 to β_8 = Regression Coefficients

3.1. A' priori Expectation

The a priori expectation of this study is that profitability, board diligence, and board independence will have a significant effect on the governance disclosure index.

Variable	Variable Measurement	Source
Governance Disclosure Index	GRI G4 governance disclosure criteria for scoring thus, where any of the criteria is disclosed by a company, a score of 1 is assigned and a score of 0 if otherwise. Therefore, the average of the aggregate disclosure is obtained by dividing the Actual governance disclosure by the expected disclosure.	Kiliç and Kuzey (2018); Welbeck *et al*. (2017)
	Independent Variables	
Profitability (ROA)	Net income/total asset	Aris *et al*. 2021; Abdul *et al.* (2017)
Board Diligence	Number of meetings held by the board a year	Baba and Abdul-manaf, 2017); Muhammad *et al*. (2017)
Board Independence		Mohammad (2016);
	The percentage of independent non-executive directors on the board	
	Control Variable	
Firm Size	Company listing age at the NGX	Ozigi *et al*. (2017); Alkaeli and Rashid (2015)

Table 1: Variable Definition and Measurement
Source: Author's Compilation (2022)

4. Results and Discussion

	GDI	PROF	BDIL	BI	FSZ
Mean	0.503415	0.081806	0.613301	0.617142	0.674422
Median	0.533333	0.035280	0.625000	0.625000	0.098714
Maximum	0.933333	8.095575	1.166667	3.889439	90.66343
Minimum	0.133333	-1.799173	0.000000	0.000000	-21.13674
Std. Dev.	0.163180	0.464609	0.175300	0.209273	4.164235
Skewness	0.048021	8.888123	-0.324989	4.440978	12.41618
Kurtosis	2.511781	126.9341	2.732516	74.44223	270.9304
Jarque-Bera	8.459047	535584.6	16.87898	177081.8	2473780.
Probability	0.014559	0.000000	0.000216	0.000000	0.000000
Sum	412.8000	67.08091	502.9071	506.0565	553.0261
Sum Sq. Dev.	21.80822	176.7908	25.16796	35.86809	14202.16
Observations	820	820	820	820	820

Table 2: Descriptive Statistics Result
E-view Output (2023)

The descriptive statistics of the governance disclosure index, profitability, board diligence, board independence and firm size as a control variable of LNFC from 2012 to 2021 are presented in table 2. The GDI, which is a measure of GSR, has a mean of 0.50341, with a standard deviation of 0.16318. This implies that the GDI of the companies in this research, on average, has a disclosure index of 50%. Standard deviation (SD) is 0.163180, which is lower than the mean. So it can be said that the data has some level of variation. The minimum value of 0.133333 and maximum value of 0.93333 indicates that non-financial firms disclose their governance activities with a minimum of 13% and a maximum of 93%. This also implies that at least 13% of the items are disclosed by the companies. Furthermore, given that the range between the minimum and maximum is not quite wide, it implies stable governance sustainability reporting as the standard deviation indicates that there is not a wide dispersion of the data from the mean value. The probability of Jarque-Bera is less than 5% which signifies the non-normality of governance disclosure.

The descriptive statistics further reveal the independent variable (profitability, board independence and board diligence). This shows an average value of 0.08180, 0.61330, and 0.617142 with standard deviations of 0.46460, 0.17530, and 0.209273. This implies that the average return on assets, frequency of meetings, and independent directors by companies in this study are 8%, 61%, and 62%. Also, the deviations from the mean are 46%, 17%, and 20%, respectively. This implies that the standard deviation of profitability is relatively large compared to the mean. Furthermore, the minimum values are -1.79917, 0.00000, and 0.000000, while the maximum values are 8.09557, 1.16666, and 3.889439, respectively. Suggesting that some companies have negative ROA during the study period, the frequency of meetings, on the other hand, ranges from 0 to 8, and the number of the board of directors also ranges between 0 and 20. This implies that the frequency of meetings and proportion of independent directors in some companies in this study are null. Similarly, firm size as the control variable has an average of 0.674422 with minimum and maximum values of -21.13674 and 90.66343, respectively. The probability of Jarque-Bera is less than 5% which signifies non-normality of profitability, board diligence, and board independence.

Correlation					
Probability	**GDI**	**PROF**	**BDIL**	**BI**	**FSZ**
GDI	1.000000				

PROF	-0.010628	1.000000			
	0.7612	-----			
BDIL	0.117341	-0.004437	1.000000		
	0.0008	0.8990	-----		
BI	0.096435	0.015400	0.527149	1.000000	
	0.0057	0.6597	0.0000	-----	
FS	0.070138	0.212919	-0.013204	0.060451	1.000000
	0.0447	0.0000	0.7058	0.0836	-----

Table 3: Correlation Matrix
E-View Output (2023)

The result shows that a GDI of -0.010628 is inversely associated with profitability. This negative relationship signifies that an increase in ROA will result in a decrease in the level of governance disclosure. Also, from the correlation of

0.0008, the result shows that there is a positive relationship between GDI and board diligence. This implies that the higher the number of meetings held by the board, the higher the level of governance disclosure by the companies. Again, the correlation of 0.00057 indicates a positive relationship between DGI board independence. This implies that the higher the number of independent directors, the higher the governance disclosure. Furthermore, the result also shows the correlation coefficient between FSZ and GDI of 0.0447. This positive correlation indicates that the larger the size of the firm, the higher the level of governance disclosure by listed NFF in Nigeria.

	Coefficient	**Uncentred**	**Centred**
Variable	Variance	VIF	VIF
C	0.000479	14.97940	NA
PROF	0.000155	1.080023	1.047508
BDIL	0.001446	18.40805	1.388762
BI	0.001018	13.52806	1.393618
FSZ	1.94E-06	1.081522	1.053846

Table 4: Multicollinearity Test (VIF)
E-View Output (2023)

Where the centred VIF is less than 10, there is the absence of multicollinearity. On the other hand, a centred VIF of more than 10 indicates the presence of multicollinearity.

The multicollinearity test from the table above showed that all the centered VIF values for the independent variable (PROF, BDIL, BI, and FSZ) are less than 10 and the tolerance values are not less than 0.1. The result depicted that there is no evidence of multicollinearity among the explanatory variables.

All of the VIF values are below 10 according to the multicollinearity test from the table above, and the reliability coefficients are greater than or equal to 0.1. The outcome showed that the explaining factors do not exhibit any signs of multicollinearity.

Specification: GDI C PROF BDIL BI FSZ			
	Value	**df**	**Probability**
Likelihood ratio	173.3551	82	0.0000
LR Test Summary			
	Value	df	
Restricted LogL	332.1754	815	
Unrestricted LogL	418.8529	815	

Table 5: Heteroskedasticity Test
Source: E-View 10 Output (2023)

The panel cross-section heteroskedasticity test's findings are presented in table 5. The following is the statement of the verdict guideline for the panel cross-section heteroskedasticity test:

*Verdict Guideline: Relevant at 5%

- H_0: No provisional Heteroskedasticity at the 5% level of significance (Residuals are
- homoskedastic)
- H_1: Conditional heteroskedasticity exit

The null hypothesis asserts that heteroskedasticity does not exist, whereas the alternate hypothesis asserts that heteroskedasticity does exist. The null hypothesis will be accepted if the prob. value is greater than 0.05 level of relevance; otherwise, the alternative hypothesis will be accepted. The alternative hypothesis, which asserts the presence of conditional heteroskedasticity, is accepted due to the ratio value of 173.3551 and the prob. value of 0.0000, which is less than 5%. As a result, the null hypothesis is refuted. There is provisional heteroskedasticity, which indicates that the remaining is homoskedastic and that the sample does not accurately reflect the population. In order to achieve residual homoskedasticity, the study's heteroscedasticity was eliminated by transforming the dependent variable into an independent variable using a logarithmic transformation.

4.1. Fixed Effect Likelihood Ratio Test

The investigation basically checks for a correlation between the regression and error terms. As a result, the following is the decision rule for specifying the fixed effect probability ratio: at a significance level of 5%

- H_0: Panel Regression analysis Should Use Pooled effect Instead
- H_1: Panel Regression analysis should not use Fixed Effect

Effects Test	**Statistic**	**d.f.**	**Prob.**
Cross-section F	5.562185	(81,734)	0.0000
Cross-section Chi-square	392.450548	81	0.0000

Table 6: Fixed Effect Likelihood Ratio Table
E-View Output (2023)

Given the two options described above, the outcome proves that the fixed effect is more apt for the data examined because the prob. value is not greater or equal to 5%.

Test	Statistic	d.f.	Prob.
Breusch-Pagan LM	4959.917	3321	0.0000
Pesaran scaled LM	20.10980		0.0000
Pesaran CD	5.900416		0.0000

Table 7: Breusch-Pagan Langranger Multiplier Test
Source: E-View 10 Output (2023)
**Verdict: At 5% level of Appropriateness*

- H_0: Pooled Effect is more suitable
- H_1: Random Effect is more suitable

Based on the probability value of the Breusch-Pagan Langranger Multiplier Test at 0.0000, the zero hypothesis is refuted. Thus, the random effect is more suitable for the analysis.

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	10.656466	4	0.0307

Table 8: Hausman Test
Source: E-View 10 Output (2023)

- Decision Rule: The fixed-effect is applicable if the P-value is 5%; else, the Random model is more suitable.

The Hausman test's outcome indicates a chi-square statistic value of 10.656466. This suggests adequate justification to refute the zero proposition, which showed that the random influence hypothesis, as depicted by the chi-squared prob. 0.0307 is best for the analysis because they are not perfectly correlated with the regressors and are justified at less than 5%.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.818427	0.007395	110.6702	0.0000
PROF	-0.003955	0.003394	-1.165144	0.2443
BDIL	0.004302	0.009994	0.430469	0.0370
BI	0.002690	0.007196	0.373844	0.0486
FS	0.000357	0.000319	1.121267	0.2625
LOGGDI	0.422928	0.004087	103.4728	0.0000
	Effects Specification			
Cross-Section Fixed (Dummy Variables)				
R-squared	0.961122	Mean dependent var		0.503415
Adjusted R-squared	0.956561	S.D. dependent var		0.163180
S.E. of regression	0.034010	Akaike info criterion		-3.824280
Sum squared resid	0.847853	Schwarz criterion		-3.324634
Log-likelihood	1654.955	Hannan-Quinn criteria.		-3.632562
F-statistic	210.7092	Durbin-Watson stat		1.676234
Prob(F-statistic)	0.000000			

Table 9: Panel Regression Result (Fixed Effect)
E-View Output (2023)

The measurement of the coefficient determinations (R^2) is 0.9611, as shown in the above table. The analysis specifies that the series of values between adjusted R^2 and R^2 is 96%, and 95%, respectively. This indicates that about 96% of the total variations in the governance disclosure index (GDI) are explained by Prof, Bdil and BI, while the 4% outstanding is captured by the error term in the model, indicating a closely fitting line. The panel regression result for the sampled NFF in the table also showed that there is an affirmative and adverse relationship between profitability, board diligence, board independence and governance disclosure index with a conforming prob. value of 0.2443, 0.0370 and 0.0486. Nonetheless, the respective prob. value for board diligence and board independence is statistically significant, given that the prob. values are 0.0370 and 0.0486, which is less than 5%, while that of profitability is insignificant because the prob. value is 0.2443, which is greater than 5%. On the other hand, when taken jointly, the value of the F-statistic is 210.7092 while the probability indicates 0.00000 for F-statistic, and when regressors (Prof, Bdil, and BI) against the regressed GDI, this finding suggests that the collective outcome is both statistically relevant at 5% and positive.

5. Discussion of Findings

The assessment of profitability and governance sustainability reporting (proxy with governance disclosure index) showed a negative insignificant effect on listed non-financial firms (NFF) in Nigeria. The findings of this study do not agree with the findings of Aris *et al*. (2021) and Nasir *et al*. (2014), who documented evidence of a positive association between profitability and governance sustainability reporting of a firm. This is not consistent with the study's a' priori expectation. Furthermore, investigation of the effect of board diligence on the governance disclosure index has a positive effect on listed NFC in Nigeria. The result agrees with the findings of Modozie and Amahalu (2022) and Jizi *et al.* (2014), who found a positive association between board Diligence and governance sustainability of the firms. This result is consistent with a' priori expectation of this study, which states that board diligence has a significant positive effect on GDI. Moreso, the examination of the effect of board independence on the governance disclosure index has a positive effect on listed NFC in Nigeria. The result agrees with the findings of Chau and Gray (2010), who found evidence that independent boards and strong governance enhance sustainability communication. On the other hand, the study is inconsistent with that of Faisal *et al*. (2012), who observed and reported that board independence is not a significant predictor for sustainability communication.

The implication of board diligence and board independence having a positive effect on GDI implies that an increase in the frequency of board meetings and an increase in the number of independent directors will result in an increase in the governance sustainability reporting of listed non-financial companies in Nigeria. On the other hand, profitability has a negative impact and does not improve the governance sustainability reporting of listed NFFs in Nigeria.

6. Conclusion and Recommendations

From 2012 to 2021, the study looks at firm-specific attributes and governance sustainability reporting of listed non-financial companies in Nigeria. On the one hand, GDI is positively impacted by board diligence and board independence. On the other hand, profitability revealed an insignificant negative effect. However, when taken collectively, the overall result has a significant effect on the governance disclosure index. As a result, the study comes to the conclusion that governance sustainability reporting of listed NFFs in Nigeria is significantly influenced by firm-specific attributes. Based on the findings of this study, the following recommendations are provided:

- Management of NFF should disregard profitability as a booster of governance sustainability reporting of NFF because of its negative influence.
- Board diligence in terms of board meeting frequency should be increased because it positively affects the governance sustainability reporting of the firm.
- To enhance governance sustainability reporting, non-financial firms in Nigeria should encourage more independent directors in the companies.

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