FIRM-SPECIFIC CHARACTERISTICS AND SUSTAINABILITY REPORTING PRACTICE OF LISTED MANUFACTURING FIRMS IN NIGERIA

Abubakar Abdullahi
Department of Economics, Faculty of Social Science
Kaduna State University, Kaduna State.

Ahmed Mohammed
Department of Accountancy, School of Financial Studies,
Federal Polytechnic Bida, Niger State
ahmedmohammed@fedpolybida.edu.org

Fashagba Olamide Ifeoluwa
Department of Business Administration, School of Management Studies,
Federal Polytechnic Bida, Niger State

Ahmed Balarabe Musa
Department of Economics, Faculty of Social Science
Kaduna State University, Kaduna State.

Abstract

Sustainability accounting is essential for corporate responsibility and transparency, but little is known and lack of institutional policy about how its mandatory and relates to business characteristics in Nigerian firms is poorly understood. Therefore, the study investigates firm-specific characteristics and sustainability reporting practice of listed manufacturing firms in Nigeria Exchange Group. The research seeks to reveal how firm specific characteristics such as financial literacy, leverage, profitability Firm profitability, size and age influence sustainability reporting practice. Using a content analysis method based on indicators, we compute the sustainability reporting index, the study extracts data from the annual reports and sustainability reports. The study employs quantitative research design and utilizes a panel data from the annual reports of thirty-one (31) listed manufacturing firms on the floor of Nigerian Exchange Group for the years 2015 to 2024. The data analyses using Random-Effect regression model to analyse the firm specific characteristic and their variation. Findings shows that the two most important firm specific factor that significantly impact the disclosure of environmental sustainability are profitability and financial literacy. Nevertheless, there was no proof of a meaningful correlation between leverage and sustainability disclosure found in the current investigation. Therefore, this study concludes that financial literacy and profitability are significant to sustainability disclosure. This study contributes to the existing literature on corporate governance and environmental sustainability reporting and offered a valuable recommendation to companies' management, stakeholder and policy makers aim to improve sustainability reporting.

Keywords: Firms specific characteristics, Sustainability reporting, Disclosure, financial literacy, Leverage, manufacturing firms.

Introduction

A notable consequence of the widespread public and political discourse surrounding global warming is the heightened awareness among stakeholders regarding corporate environmental management. This shift has motivated numerous developed country companies to reevaluate their investment strategies and progressively implement enhanced environmentally sustainable practices (Rees, 2021). Corporate-level disclosures regarding their involvement in and advancements related to Environmental and Social Performance (ESP) convey important messages to stakeholders about the company's attentiveness to its societal relationships (Banerjee et al., 2019).

However, firms have flexibility in determining whether and how to account for the social, economic, and environmental costs and benefits associated with their business operations due to the voluntary social sustainability disclosure. Findings from empirical research have been obtained about the relationship between sustainability reporting and firm-specific characteristics (Lozano, 2020; Zamil et al., 2023). They indicate that there is an increase in global consciousness regarding sustainability reporting. Among these standards are the guidelines set forth by ISO 14000 and the Worldwide Reporting Initiative (GRI, 2018). Based on available data, businesses that report on sustainability may benefit from a sustained competitive edge, enhanced employee motivation, legitimacy and profitability (Nwobu, 2017; Kwakye et al., 2018; Erhinyoja, 2019). Reporting sustainability, however, might also help the business achieve other objectives, such as enhancing its reputation, which could boost its competitive advantage, boost profit margins, draw in investors, and open up new sales markets (Ikpor et al., 2022).

The study of Denicolai et al. (2021) posit that financial literacy, leverage, and profitability are factors that affect sustainability reporting. Perhaps numerous studies have looked into the findings on those attributes and have produced a mixed outcome (Eneh & Amakor, 2019; Situmorang, 2019; Grigorescu et al., 2021; Puni & Anlesinya, 2020; Yondrichs et al., 2021; Yahaya, 2024). On the other hand, Oluwatayo et al. (2019), Guo & Hu (2020); Tanjung, (2021). and Zamil et al. (2023) reveals that firm attributes and sustainability disclosure have a positive and significant association. The management of a company will usually determine what information to release and how much information about these characteristics to disclose. Hence, it will ultimately affect the disclosure of sustainability reporting. The legitimacy and agency theories state that a company's size affects its overall performance and structure (Jensen & Meckling, 1976).

Firm specifics refer to the distinct attributes and assets that each company possesses that set them apart from its competitors. Although larger companies may have more money to spend on sustainability projects, they may also find it more difficult to make changes. These firm-specific elements have a big impact on a business's sustainability results and practices. Accordingly, corporate sustainability practices include a variety of tactics and activities meant to maximise benefits by putting policies in place that support strategies to cut down on waste production, reduce resource consumption, and lessen environmental hazards (Farhan et al., 2023).

To ensure that these social activities are maintained across business strata, managers of corporate entities acting in trust should behave in the shareholders' best interests, as supported

by the agency theory. The stakeholder theory, on the other hand, refutes this claim by emphasizing the significance of different stakeholders, including creditors, suppliers, consumers, and the general public, all of whom should be taken into account because firms cannot operate in a vacuum. Despite the growing interest in corporate social and environmental disclosure, there is disagreement over whether or not corporate entities respond to the level of awareness that the stakeholders create through the extent of information disclosed on the firm's operations, both financial and nonfinancial companies.

Meanwhile, sustainability reporting improves businesses in developing nations like Nigeria, but a corporate governance code, guideline and procedure should be adopted in gathering information, producing content, and getting approval from the top executive of organisations. As a result, the majority of the firms do not disclose sustainability, and has not complied with the Financial Reporting Council of Nigeria (FRCN). Furthermore, to foster economic growth and progress, the Institute of Chartered Accountants of Nigeria, which hosted its 52nd Annual Accountants' Conference in Abuja in 2023, advocates for sustainable practices. Additionally, public sector organisations in Nigeria Exchange Group should incorporate sustainability disclosure into their annual financial reports. Given that the sustainability goals address problems that confront developing countries, including poverty, financial circuits, inclusion, access to clean water, and climate change, among other things. Even though efforts to improve the impact of social and environmental sustainability seem to be increasing, and the greater goal of these sustainability initiatives, which is to improve performance and sustainability reporting (Sonjaya & Yenni, 2021; Lambe et al., 2023). Determining how business internal firms' mechanisms influence sustainability reporting disclosure is crucial and is being driven primarily by the following areas: strict environmental degradation (unsustainable usage) and depletion of natural resources, and the perceived inadequacy of conventional reporting framework (Oluwatayo et al., 2019; Usman, 2020). Due to the aforementioned issues that have particularly irritated attention in this field of study. In addition, not many studies have been done in Nigeria that gauge social sustainability disclosures using firm-specific characteristics of manufacturing company. The lack of consensus and mixed outcomes serve as another driving force for this study. As a result, research on the disclosure of sustainability reporting in Nigeria that has been conducted up to this point has been done independently for each sector, and none has brought together all manufacturing companies in a single.

Hence, the necessity to expand on the scant empirical research done in Nigeria also drove this decision to investigate whether firm-specific characteristics influence social sustainability disclosure in nonfinancial firms in Nigeria with specific reference to manufacturing companies, whose activities have a great impact on the environment. Due to the low level and the perceived of social sustainability disclosure as a mere social responsibility in Nigeria led to the question that, to what extent firm specific characteristics influences social sustainability disclosure in Nigerian nonfinancial firms? As a means of providing and achieving the stated objective, the study will examine the following formulated hypothesis:

H_1: Financial literacy has no significant effect on social sustainability disclosure

H_2: Leverage has no significant effect on social sustainability disclosure

H_3: Profitability has no significant effect on social sustainability disclosure

H_4: Firm size has no significant effect on social sustainability disclosure

H_5: Firm age has no significant effect on social sustainability disclosure

H_6: Return on asset has no significant effect on social sustainability disclosure

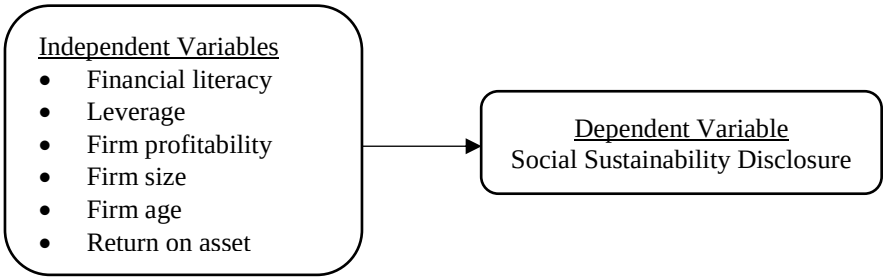
The literature review and hypothesis development on firm-specific characteristics and SSD are covered in section two, and research methodology is explained in detail in the third section, while. The fourth section covered data analysis, and fifth is conclusion, and recommendations respectively.

Literature Review

Conceptual Review

The conceptualization of firm specifics characteristics and social sustainability disclosure (SSD), of environmental, social, and governance (ESG) issues; while firm specific characteristics are firm literacy, leverage, profitability; company size, age and return on asset respectively.

Figure 1: Conceptual Framework



Source: Author(s) Design (2025).

Concept of Social Sustainability Disclosure

Sustainability accounting is the process of assessing, reporting, and taking responsibility for an organization's governance, social, and environmental performance. It entails gathering and disclosing substantiated information about the organization's societal and environmental impacts and dependencies ((de Villiers et al., 2022). The growing popularity of sustainability accounting reflects the growing societal demands for corporate transparency and accountability regarding environmental and social concerns. Sustainability accounting includes various forms of non-financial reporting, such as environmental, social, and integrated reporting, which give stakeholders insights into environmental and social externalities that are not captured by traditional financial accounting. It shows how effectively a business informs stakeholders about its sustainability practices, risks, and effects. A high SRQ increases confidence among all parties involved, including the public, regulators, and investors. It provides stakeholders with reliable and actionable information for informed decision-making. Good reporting shows business responsibility and guarantees compliance with rules. Businesses with strong SRQ are frequently seen as sustainability leaders, which improves their standing in the marketplace.

Concept of Firm Specific Characteristics

Financial literacy refers to "the capacity to understand fundamental economic and financial principles, along with the knowledge and skills necessary to manage financial resources for sustained financial health" (Lusardi, 2019; Goyal & Kumar, 2021). Meanwhile, Stolper & Walter (2017) defines financial literacy as "the understanding of basic financial concepts that enables individuals to make informed short-term financial choices and develop long-term strategies, while considering their living circumstances and fluctuating economic conditions." Two key components are essential to financial literacy. The first is that individuals possess the knowledge and skills to effectively utilize financial resources to secure and uphold their financial well-being. The second is that individuals exhibit the self-assurance and motivation to assess their own knowledge and skills (Obi-Anike et al., 2023).

Leverage is the percentage of debt in a company's capital structure, usually expressed as the ratio of total liabilities to total assets. Excessive leverage can limit resources, making it more difficult to adopt and report on sustainability practices. It can also encourage better reporting because of creditor scrutiny or low er reporting quality because of resource constraints. High leverage may cause firms to prioritize debt servicing over investments in sustainability initiatives.

Firm profitability, which is commonly expressed as return on equity (ROE) or return on assets (ROA), is the capacity of an organization to produce profits in relation to its costs. Reporting systems and sustainability initiatives are more likely to be funded by profitable businesses. Stronger sustainability disclosures are encouraged by higher profitability, which raises the firm's stakes in preserving its reputation. When combined with high-quality sustainability reporting, profitability communicates financial health, which in turn increases stakeholder trust. Profitability is generally favorably associated with SRQ as financially solid organizations may afford the costs of complete and credible reporting.

The term "company size" describes the scope of an organization's activities and is frequently expressed as market capitalization, total assets, or total income. Stakeholders are more interested in larger companies, which raises the demand for superior sustainability disclosures. They often have more resources to invest in sustainability efforts and sophisticated reporting methods. Stricter reporting requirements are more likely to apply to larger companies. Because they have more resources and are subject to stricter regulations, larger companies frequently create sustainability reports of higher quality.

Company firm as the corporations that are observed in real-world scenarios. Consequently, our metrics of age pertain to the age of these legal entities. It could be argued that legal entities do not always align with the conventional definition of firms from an economic perspective. We recognize this issue; however, our findings are relevant to firms as they are generally defined and studied in existing literature. Chen et al. (2022) asserts that the most significant economic indicator of a firm's age is the duration of time since its initial public offering.

Return on Assets (ROA) serves as a financial performance measurement tool that focuses on profitability. It is calculated as the ratio of profit generated during a specific period to the total assets held by the company that contribute to profit generation. ROA indicates how effectively a company utilizes its assets to generate earnings. It is important to note that having substantial assets does not automatically equate to high profits. Strong profitability is characterized by the ability to produce profits, whether through significant assets that yield proportionate profits or

through smaller assets that can still generate substantial earnings. The ROA ratio is instrumental in evaluating this aspect of performance (Kusuma, 2020).

Theoretical Review

Numerous ideas, models, and classifications have been extensively employed over time to examine the relationship between a firm's unique characteristics and voluntary environmental disclosure. Several theories provide a robust foundation to explain how firm characteristics influence SSD. These theories are legitimacy theory (Villiers & Staden, 2006), stakeholders' theory (Jensen, 2004), and informational asymmetry theory (Healy & Palepu, 2001).

Legitimacy Theory and Stakeholder Theory

According to earlier research on legitimacy theory, businesses would take any action they deem necessary to maintain their reputation as respectable enterprises in a community (Villiers & Staden, 2006). One of the ideas that is most frequently applied in the context of social and environmental issues is legitimacy theory. The process of legitimisation is how businesses align their beliefs with those of society at large to get acceptance from the community or stay out of trouble. Highly successful businesses proactively report on ESG activities as a legitimization strategy to verify their financial results to external parties, portraying themselves as responsible corporate citizens, according to stakeholder and legitimacy theories. (Reverte, 2009). However, other critical viewpoints contend that if less successful businesses with weaker financials are unable to achieve superior economic performance, they may also turn to sustainability accounting as a strategic means of enhancing their reputation, brand image, and perceived social legitimacy (Uyar et al., 2013).

Empirical Review

The study of Wang and Aenis (2019) used GMM in their analysis to examine stakeholders on sustainable management research using the stakeholder theory. The association between company characteristics and the disclosure of sustainability reporting for the Taiwan 50 Index-listed companies is investigated in this study using a multi-regression model. Their analyses used include logistic regression, panel data regression, and least-squares regression, and discovered a positive correlation between the disclosure of sustainability reporting and seven corporate governance and business characteristics, including the size of the board of directors, ratio of independent directors, audit committee, ratio of export income, percentage of foreign shareholders' holdings, fixed asset staleness, and firm growth. The study of Eccles et al. (2014) observed that high sustainability companies in the United States outperformed low sustainability firms in stock market and accounting performance, controlling for size, sector, and country factors. Previous academic studies have examined the impact of various firm characteristics, such as size, industry, and profitability, on sustainability accounting practices across various global contexts. For instance, Knight et al. (2019) found that larger, firm are more leverage in Australian firms and had higher levels of sustainability disclosure, which was interpreted through resource-based and legitimacy perspectives.

Similarly, Girón et al. (2021) determines the variables the variables that affect external assurance and the acceptance of new sustainability reporting standards. Their study examines the connection between reporting activities and the financial success of businesses. They extract combined data from the Bureau van Dijk and the Sustainability Disclosure Database from the Global Reporting Initiative (GRI), and a regression model and two logit models based on a sample of 366 major Asian and African businesses that addressed the SDGs in their 2017

sustainability reports. They found that having female directors, and SR impact positively on the management structure of the organisation. Additionally, businesses that operate in the manufacturing sector perform more profitably. In contrast to earlier research, the use of sustainability reporting is unaffected by the age of the company's board of directors.

Meanwhile, Bahadori et al. (2021) determine whether firm-level financial performance and ESG scores are positively correlated. They adopted a multi-industry sample of businesses situated in 24 of the top emerging markets with panel data from over 600 enterprises taken from the Thompson Reuters Eikon database between 2014 and 2018 and used linear regression for the analysis. Their findings imply that companies with higher ESG scores are more profitable after adjusting for company size and leverage.

However, investors worldwide who have a stake in something are worried about the environmental devastation caused by corporations and how it may affect their lives. An investigation was conducted by Lambe et al. (2023) on how social sustainability reporting in Nigeria is affected by business performance factors. Their study utilised panel regression estimation with 112 nonfinancial companies listed between 2012 and 2021. Of those 112 companies, 82 were chosen to participate in the study. Their results show that firm size positively affects Nigeria's social disclosure index of nonfinancial enterprises. However, firm age has a negligible effect on these companies' social disclosure index. Hence, company performance qualities highly influence the social SR of listed nonfinancial companies in Nigeria. Using Panel Least Square regression analysis, which assessed the yearly accounts, it was determined that social sustainability reporting was highly impacted by profitability.

Global investors, on the other hand, are concerned about how corporate environmental destruction may impact their own lives and the environment as a whole. Lambe et al. (2023) investigated the effects of corporate success indicators on social sustainability reporting in Nigeria. Panel regression estimation was used in their analysis, which included 112 nonfinancial companies listed between 2012 and 2021. Eighty-two of those 112 businesses were selected to take part in the research. According to their findings, Nigeria's nonfinancial firms' social disclosure index is positively impacted by firm size. Firm age, however, barely affects these companies' social disclosure index. Therefore, the social sustainability reporting of listed nonfinancial companies in Nigeria is significantly influenced by the performance attributes of the company.

Methodology

The research employs quantitative research design to examine the relationship between firm specific characteristics on social sustainability disclosure of listed manufacturing firms. This is due to the industrial sector's substantial contribution to social sustainability disclosure and its massive contribution, which includes financial literacy, leverage, profitability, company size, age, and return on asset of which as disclosed in their annual report. This study is cross sectional in nature and obtained secondary data from the annual financial reports of thirty-one (31) listed manufacturing firms in the Nigeria Exchange Group (NGX) from 2015 – 2024 that are impacting on the environment due to their activities. A Random and Fixed Effects regression model was used in the data analysis to account for firm-specific heterogeneity. However, some listed manufacturing companies were delisted and closed as a result of missing data, there were thirty-eight (38) manufacturing companies: conglomerate (5), consumer goods

(20), and industrial goods (13) while seven (7) were eliminated if not listed on the NGX; financial services firms are excluded due to their various regulatory requirements. The study variable operationalization is depicted in table 1.

Table 1: Definition and measurement of the variables

Variable	Acronym	Descriptive	Authors
Dependent variable			
Social Sustainability Disclosure	SSD	Analysis of the content based on the Global Reporting Initiative (GRI, 2018) Checklist.	Testa et al. (2018)
Independent variable			
Financial Literacy	FINL	The ratio of professional members on the board.	Tanko et al. (2021)
Leverage	LEV	Total Debts/ Total Assets	Ezejiofor & Emenek a (2022)
Firm Profitability	PROF	Net income divided by net sales	Ikpor et al. (2022)
Company Size	FSIZ	The natural log of total sales	Luska (2019).
Company Age	FAGE	The number of years incorporated firms have been on the NGX.	Isa (2014)
Return on Asset	ROA	Net Profit after Tax/ Total Assets	Testa et al. (2018)

Source: Compiled by Researcher (2025).

Model Specification

The study utilizes a panel data regression model with random effects to account for individual specific effects are uncorrelated with the independent variables and the true effect size varies randomly across data. The research presented a model created by Hongming et al. (2020) as $ROA_{it} = \beta_0 + \beta_1 ENI_{it} + \beta_2 HSI_{it} + \beta_3 SOI_{it} + \beta_4 FS_{it} + \beta_5 FL_{it} + e_{it}$. Hence, the study econometric modified the following model:

$$SSD_{it} = \beta_0 + \beta_1 FINL_{it} + \beta_2 LEV_{it} + \beta_3 PROF_{it} + \beta_4 FSIZ_{it} + \beta_5 FAGE_{it} + \beta_6 ROA_{it} + \varepsilon_{it}$$

Whereas;

SSD = Social sustainability disclosure
FINL = Financial literacy
LEV = Leverage
PROF = Profitability
FSIZ = Firm size
FAGE = Firm Age
ROA = Return on Asset
i = Firm;

t = year
β0 = The Intercept
Ɛ = the error term
β1-5 = the coefficients

Results and Discussion

This section begins with descriptive statistics correlation matrix, data analysis and discussion to describe the firm specific characteristics on social sustainability disclosure among manufacturing firms' activities impacting on environmental listed in NGX.

Descriptive Statistics

The descriptive statistics consist of independent and dependent variables are examined in this section. Every variable is reviewed using the mean, maximum, and minimum values displayed in Table 2.

Table 2: Descriptive Statistics Result

Variable	Mean	Std. Dev.	Min	Maxi	N	JB
SSD	0.52	0.501	0	1	310	0.676 (0.000)
FINL	0.78	0.406	0	1	310	0.000 (0.601)
LEV	87.52	18.35	68.92	54.8	310	0.000 (0.000)
PROF	31.3	25.71	1.02	43.1	310	0.000 (0.000)
FSIZ	8.94	0.434	8.03	9.75	310	0.251 (0.003)
FAGE	22.9	15.62	2	50	310	0.083 (0.000)
ROA	1.36	2.962	- 0.23	9.54	310	0.000 (0.000)

Source: STATA 15 Output (2025).

Table 2 describes a statistical summary of the study variables for 310 observations, and analysis displays of the distribution, central tendency and variability. The mean SSD value is 0.52 which means that on average, firm have a moderate level of reporting SSD. Std. Devi. = 0.501which has a moderate variation across companies. Minimum and maximum of 0 and 1 indicates that some firms didn't disclosed SSD while others achieve some level of reporting. There is a room to improve on SSD, because all firms complied with SSD, hence, policy makers should target those firm for effective compliance on SSD. The Jacque-Bera statistics p-value of 0.000 validates the series' normality and the improbable existence of outlier values. Financial literacy (FINL) with a mean value of 0.78 reveals that 78% of firm management are literate on financial matter. Std. Devi. of 0.406 indicating is averagely high with minimum and maximum of 0 and 1 which shows that some company has no financial member that is literate, while some have a reasonable literate member of 1%. Leverage with a mean value of 87.52 indicating a high leverage, showing a significant variation in leverage across companies. Min and max of 68.92 and 54.8 reveals an outlier with a very high leverage this implies that there is presence of a very high leverage companies, which may encounter a financial pressure and lack of SSD. Firm profitability (FPROF) mean value of 31.3 which reveal close to break-even level with a Std. Dev. of 25.71indicating a significant variation on profitability. The min and

max of 1.02 and 43.1 suggesting a low profitability for some companies, which some are with high profit performance, this indicates a substantial difference of financial performance, and profitability will influence the decision of allocating resources to environmental sustainability and firms with losses could benefit from the program. The Jacque Bera statistics p-value (0.000) validates the series' normality and the improbable existence of outlier values. Table 1 on the control variables, company size (FSIZ) and older firms (FAGE) however, should show capacity to drive SSD and setting a standard for a smaller and new age companies. In addition, a company with a significant return on asset (ROA) will drive SSD, which also set standard for smaller firm low ROA. Hence, a policymaker could in sensitize a smaller company to adopt a social sustainability disclosure model.

Correlation Matrix

The Pearson correlation matrix was utilized to investigate the relationship among the variables, and the result is displayed in Table 3 below:

Table 3: Pearson Correlation Matrix Result.

Variable	SSD	FINL	LEV	PROF	FSIZ	FAGE	ROA	VIF(1/VIF)
SSD	1.000							
FINL	0.169	1.000						1.29(0.773580)
LEV	-0.133	-0.226	1.000					1.25(0.800522)
PROF	-0.231	-0.095	0.032	1.000				1.23(0.812044)
FSIZ	0.424	0.087	-0.133	-0.282	1.000			1.20(0.830215)
FAGE	0.177	0.122	0.093	-0.216	0.323	1.000		1.14(0.876716)
ROA	0.158	0.275	-0.375	-0.091	0.179	-0.129	1.000	1.12(0.896391)

Source: STATA 15 Output (2025).

The correlation matrix was used to assess whether there is a nexus among the variables of the study, which are sustainability disclosure, and financial literacy, leverage and profitability with a control variable of company size, age and return on asset. For SSD is positively correlated with FINL (0.169), A positive and statically significant relationship exist between SSD and FINL, which shows that a greater percentage of management of manufacturing companies are financial literate which improve the reporting of sustainability disclosure. Therefore, firm should set financial literate of member of the board as a priority to SSD. The leverage (LEV) of -0.133 is negatively correlated with SSD, high leverage may translate to poor SSD which may trigger companies on short term financial performance over long time practice of sustainability. Profitability (PROF) = -0.231 is negatively and insignificant with SSD. A negative correlation may affect companies with a low SSD which may likely hinder their participation on SSD. This implies that financially sound companies have the capacity to engage on SSD. Company size (FSIZ) of 0.424 shows a positive and statistically significant

against SSD. This indicates that larger companies are more likely to produce high quality SSD. Because a financially sound companies have the incentive to invest on SSD. Also, company age (FAGE) of 0.177 also shows that an older company have the requisite experience on SSD and reporting quality. Return on asset (ROA) posit 0.158 which is positive and statistically significant. This indicate that a firm higher financial performance acquires more asset to engage in quality of SSD reporting than those smaller firms. The correlation analysis emphasizes on the importance of firm specific characteristics in enhancing sustainability reporting.

The variance inflation factor (VIF) explains how much of the variance of a coefficient estimate of a regressor has been inflated, as a result of collinearity with the other regressors. The VIF scores for all independent and control variables are less than 2, much below the cut-off value of 10, indicating that there are no collinearity issues between the research variables as depicted in Table 3. Consequently, the model used in this work establishes the absence of the multicollinearity issue.

Binary Logistic Regression (Social Sustainability Disclosure Model)

Binary logistic regression was utilized to assess the study's hypotheses. Table 4 shows an adjusted R-squared value approximately 39.80 of the variability on social sustainability disclosure (SSD). This shows a moderate explanatory power suggesting other factor within 60.20 will influence SSD. The model fitness of P-value of 0.000 reveals a significant effect at 5% level confirming the importance of independent variables jointly in explaining the dependent variable. The multi multicollinearity with a mean VIF value of 1.21, which is lower than the benchmark value not exceeding 4 (Yu et al., 2015).

Table 4: Binary Logistic Regression Result (SSD - Random Effect).

Variable	Coeff	Std. Error	t	P>t
C	-5.798724	.4157454	3.50	0.000
FINL	.1649304	.0471178	-1.20	0.228
LEVG	-.0097161	.0008067	0.22	0.823
PROF	.0001261	.0005664	15.13	0.000
FSIZ	.7095436	.0468821	-1.79	0.073
FAGE	-.0029675	.0016542	0.422	0.422
ROA	-.0041214	.005134	-13.95	0.000
LR Chi	5(0.000)	5(0.006)		
Pseudo R-Squared	0.3980			
VIF Test	1.21			
Heteroscedasticity	253.42 (0.327)	-		
Adj. R. Square	0.3980			
Panel Effect	44.88 (0.000)			
Hausman	0.013			

Observation (N)	310

Notes: SSD: social sustainability disclosure score; FL is financial literacy, LEV is leverage, PROF is profitability; FSIZ is company size; FAGE: age of incorporation period to date: ROA is Return on Asset. Note: p-values **, ***, implies statistical significance at 5% and 1% levels respectively Note: * is 1% level of significance, ** is 5%. NGX: Nigeria Exchange Group.

The result of panel logistic regression in Table 4 shows that FINL (Logit = .1649304; P.value = 0.228) the P.value which significant at 1% revealing a significant impact on SSD. The coefficient reveals an increase of 1 unit of FLIT is associated with 16.49% increase in SSD. Therefore, result, though positive and statistically insignificant, the decision to use FINL raises the likelihood that businesses will provide environmental SSD. This conclusion is consistent with previous empirical findings, which indicate that FINL is not a reliable measure of sustainability disclosure and did not corroborate the earlier findings of Baloch et al. (2019) but in accordance with Li et al. (2021) that financial literacy is an essential factor to consider when making decisions on SSD. Leverage (LEVG) with a negative coefficient of -.009716 shows a unit increase of SSD at 9.72%. and another factor remain constant. The P.value of 0.823 is statistically significance at 10% which shows that the degree is relatively small. This indicates that a firm's likelihood of disclosing sustainability is reduced when LEVG is selected. This outcome is consistent with previous research of Khan et al., 2021). Profitability coefficient of .0012612 with a P.value 0.000 has a positive and significant increase of SSD. This indicates that adopting PROF raises the likelihood that businesses will practice SSD. This outcome is consistent with previous empirical findings of Maj (2018) and Kurniawan et al. (2020). FSIZ with a coefficient of .7095436 shows that a 1 unit increase on FSIZ lead an increase of 70.95% of SSD, holding another factor constant. The P.value of 0.073 is statistically significance at 1% which signify the important role of larger companies on SSD. FAGE with a coefficient of -.0029675 which negative and insignificant, a decrease of 1 of FAGE led to a decrease of SSD by 29.68%, and a P.value of 0.422 which at is statistically insignificant. The implication is that, the age of company does not really matter on SSD. The return on asset (ROA) coefficient of -.0041214 and show that a decrees of 1% will lead a decrease of 41.21% of SSD. While P.value of 0.000, is significant at 5%, and suggests that return on asset will impact SSD in the context of this study.

Conclusion and Recommendation

This study used data from Nigerian-listed manufacturing companies to investigate the firm specific characteristics on social sustainability reporting of some listed manufacturing companies in Nigeria. The firm characteristics considered in this study are financial literacy, leverage, profitability, company size, company age and return on asset against social sustainability disclosure. Some of the firm characteristic lie financial literacy, profitability, company size and return on asset exhibit high the importance in shaping SSD. Therefore, this study concludes that:

i. Financial literacy is positive and statistically significant which shows that the board of directors is literate.

ii. There is a negative and statistically insignificant association between leverage and social sustainability disclosure. This implies that nonfinancial firms in Nigeria are complying with the code of corporate governance on sustainability reporting.

iii. A profitability shows a strong relationship with SSD which indicate that financially sound companies report SSD.

iv. Firm size is positive and statistically significant indicating that a larger firm commits to SSD due to high level of their resource base, which can set a standard for a smaller firm.

v. Firm age is negative and statistically significant which shows that age of the firm does not matter when deciding on SSD.

vi. Finally, return on asset negative and though significant and that firm with financial performance base engages more on SSD which serves as a model for a smaller company.

The findings make it evident how economically significant it is to include sustainability reporting in business strategy. Developing a culture of sustainability reporting is a step toward resource conservation, sustainable development, and legitimizing corporate operations by benefiting stakeholders. Therefor the following recommendation is put forward: Policymakers and regulatory bodies in Nigeria can benefit from the study's conclusions and results;

i. The results demonstrate that firm literacy influences and significant on social sustainability disclosure. As a result, policymakers should make it mandatory for manufacturing whose activities impacting on environment should have certain number of members on the management with financial literacy.

ii. On leverage, in order to better focus on the long-term sustainability goal, the company should try to eliminate excessive leverage.

iii. The larger companies are stronger with capacity building on SSD, therefore, to guarantee consistency and enhance overall corporate transparency, programs and more stringent regulatory enforcement should target companies with low SSD.

iv. Larger organizations should share best practices and success stories to drive industry-wide improvements. Environmental sustainability practice drives larger enterprises to join in sustainability indexes or public disclosure platforms

v. The older firm have the capacity to disclose a higher SSD which also serve as a model. Therefore, the policy maker should make it mandatory for smaller firms to adopt best practice in discharging SSD.

vi. In summary, the findings highlight the significance of governance reforms and resource allocation in driving sustainability reporting quality. Regulatory bodies should concentrate on developing frameworks that require companies to incorporate sustainability practices into their strategic goals, using research insights to improve decision-making.

These recommendations offer a road map for policymakers, company executives, and researchers to increase effectiveness and transparency on social sustainability disclosure practice.

Reference

Bahadori, N., Kaymak, T., & Seraj, M. (2021). Environmental, social, and governance factors in emerging markets: The impact on firm performance. *Business Strategy & Development*, *4*(4), 411-422.

Banerjee, R., Gupta, K., & McIver, R. (2019). What matters most to firm-level environmentally sustainable practices: firm–specific or country–level factors? *Journal of Cleaner Production*, *218*, 225-240.

Chen, L. Y., Lai, J. H., & Chang, S. C. (2022). Strategic networks, certification, and initial public offerings. *International Review of Financial Analysis*, *83*, 102288.

Denicolai, S., Zucchella, A., & Magnani, G. (2021). Internationalisation, digitalisation, and sustainability: Are SMEs ready? A survey on synergies and substituting effects among growth paths, *Technological Forecasting and Social Change*, *166*, pp.120650.

Eccles, R. G., Lee, L. E., & Stroehle, J. C. (2020). The social origins of ESG: An analysis of Innovest and KLD. *Organization & Environment*, *33*(4), 575-596.

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

Ezejiofor, R.A., & Emeneka, O.L. (2022). leverage and social sustainability reporting on listed oil and gas firms in Nigeria, *International Journal of Advanced Academic Research*, *8*(3), 1-14.

Farhan, N. H., Almaqtari, F. A., Hazaea, S. A., & Al-Ahdal, W. M. (2023). The moderating effect of liquidity on relationship amid sustainability and firms' specifics: Empirical evidence from Indian manufacturing sector, *Heliyon*, 9(4), 88-99.

Girón, A., Kazemikhasragh, A., Cicchiello, A. F., & Panetti, E. (2021). Sustainability reporting and firms' economic performance: Evidence from Asia and Africa. *Journal of the Knowledge Economy*, *12*(4), 1741-1759.

Goyal, K., & Kumar, S. (2021). Financial literacy: A systematic review and bibliometric analysis. *International Journal of Consumer Studies*, *45*(1), 80-105.

Grigorescu, A., Ion, A.E., Lincaru, C., & Pirciog, S. (2021). Synergy analysis of knowledge transfer for the energy sector within the framework of sustainable development of the European countries. *Energies*, *15*(1), 276.

Guo, M., & Hu, Y. (2020). The impact of financial development on carbon emission: evidence from China, *Sustainability*, 12(17), pp. 6959.

Healy, P.M., & Palepu, K.G (2001), "Information Asymmetry, Corporate Disclosure and the Capital Markets: A Review of the Empirical Disclosure Literature", *Journal of Accounting and Economics*, 31(3), 405-440.

Hongming, X., Ahmed, B., Hussain, A., Rehman, A., Ullah, I., & Khan, F.U., (2020). Sustainability reporting and firm performance: The demonstration of Pakistani firms. *SAGE Open*, *10*(3), 1-12.

Ihimekpen, A.F. (2021). *Sustainability Reporting and Financial Performance of Listed Non-Fianacial Companies in Nigeria* (Doctoral dissertation, Doctoral Thesis, Igbinedion University Okada, Edo State, Nigeria).

Ike, G. N., Jaff, Y. D., & Aghazadeh, S. (2022). An empirical analysis of the global environmental impact of press freedom: The role of internet access and industry size in 153 countries, *Journal of Cleaner Production*, *339*, pp. 2 -13.

Ikpor, I.M., Bracci, E., Kanu, C.I., Ievoli, R., Okezie, B., Mlanga, S. & Ogbaekirigwe, C. (2022). Drivers of Sustainability Accounting and Reporting in Emerging Economies: Evidence from Nigeria, *Sustainability*, 14(7), 3780.

Jensen, M., & Meckling. W. (1976). Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure, *Journal of Financial Economics* 3, 305 - 360.

Kalash, I. (2023). Corporate sustainability performance in the emerging market of Turkey: the role of accounting information quality and firm risk, *Journal of Economic and Administrative Sciences*, *39*(1), 78-99.

Knight, H., Megicks, P., Agarwal, S., & Leenders, M. A. A. M. (2019). Firm resources and the development of environmental sustainability among small and medium-sized enterprises: Evidence from the Australian wine industry. *Business Strategy and the Environment*, *28*(1), 25-39.

Kurniawan, T.A., Singh, D., Xue, W., Avtar, R., Othman, M.H.D., Hwang, G.H., Setiadi, T., Albadarin, A.B., & Shirazian, S. (2021). Resource recovery toward sustainability through nutrient removal from landfill leachate, *Journal of Environmental Management*, *287*, pp. 1-11.

Kwakye, T.O., Welbeck, E.E., Owusu, G.M.Y., & Anokye, F.K. (2018). Determinants of intention to engage in Sustainability Accounting & Reporting (SAR): the perspective of professional accountants, *International Journal of Corporate Social Responsibility*, *3*, pp.1-13.

Lambe, I., Arumona, O., & Okoli, T. (2023). Firm performance attributes and social sustainability reporting. A case of listed nonfinancial companies in Nigeria. *International Journal of Business Management and Economics Review*, *6*(2), 1-21.

Lozano, R. (2020). Analysing the use of tools, initiatives, and approaches to promote sustainability in corporations, *Corporate Social Responsibility and Environmental Management*, *27*(2), 982-998.

Lusardi, A. (2019). Financial literacy and the need for financial education: evidence and implications. *Swiss journal of economics and statistics*, *155*(1), 1-8.

Maj, J. (2018). Embedding diversity in sustainability reporting. *Sustainability*, *10*(7), 2487.

Mahmood, Z., Kouser, R., Ali, W., Ahmad, Z., & Salman, T. (2018). Does corporate governance affect sustainability disclosure? A mixed methods study. *Sustainability*, *10*(1), 207.

Norouzi, N., & Fani, M. (2021). Environmental sustainability and coal: The role of financial development and globalisation in South Africa, *Iranian Journal of Energy & Environment*, *12*(1), 68-80.

Obi-Anike, H. O., Daniel, O. C., Onodugo, I. J., Attamah, I. J., & Imhanrenialena, B. O. (2023). The role of financial information literacy in strategic decision-making effectiveness and sustainable performance among agribusiness entrepreneurs in Nigeria. *Sustainability*, *15*(13), 10416

Oluwatayo, A.A., Amole, D., & Alagbe, O. (2019). Firm attributes and performance: a study of architectural firms in Nigeria, *Journal of Construction Business and Management*, *3*(1), 1- 7.

Onoja, A.A., Okoye, E.I., & Nwoye, U.J. (2021). Global reporting initiative and sustainability reporting practices: A study of Nigeria and South Africa oil and gas firms. *Research Journal of Management Practice| ISSN*, 1(12), 2782-7674.

Orazalin, N., & Mahmood, M. (2020). Determinants of GRI-based sustainability reporting: evidence from an emerging economy. *Journal of Accounting in Emerging Economies*, 10(1), 140-164.

Ozili, P.K. (2022). Sustainability and sustainable development research around the world, *Managing Global Transitions*. 20 (3), 1-29.

Puni, A., & Anlesinya, A. (2020). Corporate governance mechanisms and firm performance in a developing country. *International Journal of Law and Management*, *62*(2), 147-169.

Ratmono, D. (2021). Effect of carbon performance, company characteristics and environmental performance on carbon emission disclosure: Evidence from Indonesia. *International Journal of Energy Economics and Policy*, *International Journal of Energy Economics and Policy*, 11(1), 101-109.

Rees, W. E. (2021). Achieving sustainability: reform or transformation? In *The Earthscan reader in sustainable cities* (pp. 22-52). Routledge.

Sanjaya, A., Goenawan, H., Setiawan, I., Gunadi, J.W., Limyati, Y., & Lesmana, R., (2021). Elaborating the physiological role of YAP as a glucose metabolism regulator: a systematic review. *Cell Physiol Biochem*, *55*(2), 193-205.

Saud, S., Chen, S., & Danish, H. A. (2019). Impact of financial development and economic growth on environmental quality: an empirical analysis from Belt and Road Initiative (BRI) countries. *Environmental Science and Pollution Research*, *26*, pp.2253-2269.

Situmorang, H.E., 2019. *Health Worker Perceptions about Factors that Contribute to Infant Mortality in Indonesia* (Doctoral dissertation, Flinders University, College of Nursing and Health Sciences).

Stolper, O. A., & Walter, A. (2017). Financial literacy, financial advice, and financial behavior. *Journal of business economics*, *87*, 581-643.

Tanko, U. M., Siyanbola, A. A., Bako, P. M., & Dotun, O. V. (2021). Capital structure and firm financial performance: The moderating effect of board financial literacy in Nigerian listed non-financial companies. *Journal of Accounting Research, Organization and Economics*, *4*(1), 48-66.

Tanjung, M. (2021). Can we expect contribution from environmental, social, governance performance to sustainable development? *Business Strategy & Development*, *4*(4), 386- 398.

Testa, F., Boiral, O., & Iraldo, F. (2018). Internalisation of environmental practices and institutional complexity: Can stakeholders' pressures encourage greenwashing? *Journal of Business Ethics*, *147*, pp. 287-307.

Usman, B. (2020). CSR reports, CSR disclosure quality, and corporate reputations: A systematic literature review, *Indonesian Journal of Sustainability Accounting and Management*, 4(1) 28-55.

Vitolla, F., L'Abate, V., Petruzzella, F., Raimo, N., & Salvi, A. (2023). Circular economy disclosure in sustainability reporting: The effect of firm characteristics. *Sustainability*, *15*(3), 2-15.

Wahyuningrum, I. F. S., Humaira, N. G., Budihardjo, M. A., Arumdani, I. S., Puspita, A. S., Annisa, A. N. & Djajadikerta, H. G. (2023). Environmental sustainability disclosure in Asian countries: Bibliometric and content analysis. *Journal of Cleaner Production*, *411*, 137195.

Wang, J., & Aenis, T. (2019). Stakeholder analysis in support of sustainable land management: Experiences from southwest China. *Journal of Environmental Management*, *243*, 1-11.

Yahaya, P. D. O. A. (2025). Sustainability reporting quality in the face of the board of directors. *Available at SSRN 5094168*.

Yondrichs, M., Laupe, S., Mayapada, A. G., & Jurana, R. (2021). The effect of fundamental factors, sustainability reporting, and corporate governance on firm value. *Universal Journal of Accounting and Finance*, *9*(6), 1503-1509.

Yu, H., Jiang, S., & Land, K. C. (2015). Multicollinearity in hierarchical linear models. *Social science research*, *53*, 118-136.

Yu, E. P. Y., Van-Luu, B., & Chen, C. H. (2020). Greenwashing in environmental, social and governance disclosures. *Research in International Business and Finance*, *52*, pp. 3-12.

Zamil, I. A., Ramakrishnan, S., Jamal, N. M., Hatif, M. A., & Khatib, S. F. (2023). Drivers of corporate voluntary disclosure: a systematic review, *Journal of Financial Reporting and Accounting*, *21*(2), 232-267.