



Firm Specific Characteristics and Sustainability Performance in Emerging Economies: Evidence from Nigeria

Ahmed Mohammed ¹; Kpanga Collins Kpanga ²; Ahmed Balarabe Musa ³; Abubakar Abdullahi ⁴

^{1 & 2} *Department of Accountancy,*

School of Financial Studies,

Federal Polytechnic Bida, Niger State, Nigeria.

^{3 & 4} *Department of Economics,*

Faculty of Social Science,

Kaduna State University, Kaduna State, Nigeria.

ahmedmohammed@fedpolybida.edu.org

Abstract

Research Purpose: In an era marked by growing global concern over the environmental impact of businesses, understanding the factors driving sustainability reporting in emerging economies like Nigeria is paramount. This study investigates the relationship between firm-specific characteristics and sustainability reporting practices, focusing on listed manufacturing firms in Nigeria, a sector known for its environmental sensitivity.

Methodology: Employing an ex-post causal research design, this study analyses secondary data from the Nigerian Stock Exchange (NSE) and MachameRatios database for 31 listed manufacturing firms from 2013 to 2022. Panel data regression is utilised to assess the impact of firm-specific characteristics on sustainability disclosure.

Findings: The study reveals a significant positive association between financial literacy and profitability, and environmental sustainability disclosure. However, no substantial relationship was found between leverage and environmental disclosure.

Conclusion: This study, one of the first to explore the influence of firm-specific characteristics on sustainability reporting in Nigerian manufacturing companies, highlights the crucial role of financial literacy and profitability in driving environmental disclosure.



Recommendations: The findings provide valuable insights for regulators, practitioners, and investors in assessing the impact of corporate governance reforms on sustainability reporting practices in Nigeria. Further research is recommended to explore the link between leverage and environmental disclosure, and to investigate the broader implications of these findings for promoting sustainable business practices in emerging economies.

Key words: *Firms Specific Characteristics, Sustainability Reporting, Financial Literacy, Leverage, Manufacturing Firms in Emerging Economies..*

I. Introduction

Within the context of the entire world, the distribution of sustainability reporting has not been uniformed across different industries. Unsurprisingly, there appeared to be a disproportionate presence of sectors that are often regarded as having the ability to have the most considerable repercussions on society and the environment among those that were the first to adopt the practice. The voluntary and unregulated character of sustainability reporting, on the other hand, gives businesses a great deal of leeway in deciding whether or not and how they will choose to account for the social, economic, and environmental costs and benefits connected with their business practices. Empirical studies have produced results on the connection between firm specific characteristics and sustainability reporting (Lozano, 2020, Zamil et al., 2023). While others show evidence of a rise in worldwide awareness of sustainability reporting. These standards include the principles established by the Worldwide Reporting Initiative (GRI, 2018) and ISO 14000. The information suggests that companies reporting on sustainability have a long-term competitive advantage, improve employee motivation, increase profitability and legitimacy, and reduce costs (Nwobu, 2017; Kwakye et al., 2018; Erhinyoja, 2019). However, reporting sustainability may also contribute to the company's other goals, such as improving its reputation, which can enhance its competitive edge, increase profit margins, attract investors, and expand potential sales markets (Ikpor et al., 2022).

This increase in economic activity, in conjunction with favourable reforms to the developing market, helps stimulate market activities and ensures the success of this process (Denicolai et al., 2021). Therefore, several studies have examined the importance of firms' specific attributes of financial development, leverage, and profitability that they are factors that affect organisational sustainability which have produced mix findings (Truant et al., 2017; Maj, 2018; Udeh & Ezejiofor, 2018; Eneh & Amakor, 2019; Situmorang,



2019; Grigorescu et al., 2020; Puni & Anlesinya, 2020; Ihimekpen, 2021; Yondrichs et al., 2021; Ezejiofor and Emeneka, 2022). Also, According to Oluwatayo et al. (2019); Kurniawan et al., (2020); and Zamil et al. (2023) a negative and neutral association (Guo & Hu, 2020; Tanjung, 2021) sustainability reporting is affected by firm attributes due to the systematic and distinct nature of sustainability reporting among firms. A company's management will typically decide how much information regarding these traits to reveal and what information to release, which will eventually influence sustainability reporting disclosure. According to the legitimacy and agency theories developed by Jensen & Meckling (1976), the size of a company impacts the firm's structure, and overall performance.

Concerning the state of businesses in developing countries such as Nigeria, sustainability reporting is a time-consuming and challenging process that requires collecting data, creating content, and gaining clearance from the highest levels of firms. As a result, the Financial Reporting Council of Nigeria (FRCN) has expressed worry about the lack of sustainability reporting in most of the economy's sectors. In addition, the Institute of Chartered Accountants of Nigeria, which held its 52nd Annual Accountants' Conference in Abuja, 2023 promotes sustainable practices to propel economic growth and development. It also urges organisations in Nigeria's public sector to follow the example set by organisations in the private sector and include sustainability-related activities in their annual reports. The report argues that this inclusion is essential given that the sustainability goals focus on resolving issues that developing nations face, such as poverty, financial circuits, inclusion, access to clean water, inequality, and climate change, among other topics. Ironically, while there appears to be an increase in the number of efforts being made to boost the impact on social and environmental sustainability, there also seems to be a lack of a link between the day-to-day operations of businesses, and the larger objective of these sustainability activities are working towards performance and sustainability reporting (Sonjaya & Yenni, 2021; Lambe et al., 2023). It is, therefore, imperative to determine how firm internalisation affects the disclosure of sustainability Reporting. Specifically, it is essential to ascertain how financial development, leverage, and profitability drive the exposure of Sustainability Reporting.

The major areas that have sparked an interest in researching this topic are specifically the perceived inadequacy of conventional reporting framework in informing the capital market about an organisation true value-creation potential, stringent environmental degradation (unsustainable usage) and depletion of natural resources, current financial



crises in the country, company's labour, and community relations practices, and increased sharp business practices. These problem areas are what have specifically sparked an interest in researching this topic. Hence, there haven't been many studies conducted in the Nigerian setting that use firm specific attributes of manufacturing firms to measure sustainability disclosures. This study was also motivated by the absence of previous and current research in Nigeria focusing on specific characteristics of companies examining sustainability reporting. As a result, there is a gap in that research. Therefore, studies that have been done up to this point are done separately from one sector to another, and no single study has held all the manufacturing firms together (Oluwatayo et al., 2019; Usman, 2020) on the disclosure of sustainability reporting in Nigeria. To ensure that these social activities are maintained, business organisations need to make certain that they continue to generate profits. Recently, the global world and particularly Nigeria has been confronted with a challenge of high rate of inflation. Over the course of each day, this inflation poses a threat to manufacturing firms which affect the overall objective firms. However, corporate entities should give adequate accounting and disclosure in addition to making donations and contributions towards addressing environmental and social issues. This information could be used to evaluate the company's future performance and determine whether or not it is able to satisfy its shareholders.

The agency theory provides support for the argument that managers of corporate entities acting in trust are obligated to act in the best interest of the shareholders. However, the stakeholder theory contradicts this argument by highlighting the fact that other stakeholders, such as customers, suppliers, creditors, and the general public, are equally important and should be taken into consideration because businesses cannot function in isolation. Regarding whether or not the performance of corporate entities reacts to the level of awareness that is being created to the stakeholders through the extent of information disclosed on the operations of the firm, both financial and nonfinancial in nature, there is a contention that exists despite the growing level of interest in corporate social environmental disclosure.

The research did not consider the financial sector, insurance companies, and other financial firms because these institutions have various specific reporting needs, are subject to different regulations, and are governed by distinct market rules. In addition to this, the estimation of their wealth and the organisational structures of their businesses are very different from one another. Because of the fundamental differences in their business model, it is implausible that many of the environmental, social, and governance rules will be applicable or significant to them. They are not included in the population to



prevent any systematic bias. The research focuses solely on panel data from company-specific disclosures concerning financial literacy, leverage and profitability, and disclosure elements of sustainability reporting. The study used the sixteen (16) GRI social sustainability indicators to measure the SDI. The sustainability score as a whole is made up of the indicators.

Hence, the purpose of this study was to investigate the effect of firm specific characteristics on sustainability disclosure on the performance of manufacturing businesses that are listed on the Nigerian Stock Exchange. Following the discussion the review of the literature was covered in section two, the methods and materials that were used were reviewed in section three, the results and discussion of the findings were documented in section four, and the summary and the conclusion were explained in section five. In light of these considerations, it is of the utmost importance to investigate how the leverage of a company influences the disclosure of sustainability reporting. The choice was also motivated by the need to build on the few empirical studies conducted in Nigeria.

2. Empirical Review

The study of Ahmad and Anifoweshe (2017) investigated how different aspects of a company's makeup influenced the sustainability disclosure practices of Nigerian breweries publicly traded between 2012 and 2016. The data were analysed by employing a methodology known as multiple regression. Proxies such as profitability, firm size, leverage, and board size were utilised to determine the corporation's characteristics. At the same time, the level of sustainability disclosure was evaluated based on the content analysis results. According to the study, leverage did not have a substantial impact in any way on the disclosure of sustainability. Meanwhile, based on the survey, brewers might benefit financially from exchanging more information concerning the surrounding environment.

On the other hand, Kilic and Kuzey (2018) examined the factors that influenced sustainability reporting in Turkey from 2004 to 2015. Their research covered the period from 2004 to 2015. The findings of the panel logistic regression method and the binary coding methodology indicate that an increasing number of companies create various sustainability reports; the number of information produced by firms has increased from a single account in 2004 to 2015. Despite this, many companies still have not developed their sustainability plan. According to the data, the Global Reporting Initiative (GRI) posits a reporting framework on sustainability that most organisations utilised.



Therefore, characteristics listed on the Corporate Governance Index (CGI), having a sustainability committee, industry, firm size, and profitability do not substantially impact leverage. These criteria do have a significant effect on stand-alone sustainability reporting. The research advises that regulatory authorities and policymakers address the absence of clearly defined standards and requirements for the assurance of sustainability reports to foster nonfinancial practice.

Also, the influence of internalisation on environmental management systems is outlined in ISO 14001 and the European Management and Auditing Scheme (EMAS). This assertion was investigated by Testa et al. (2018) from various stakeholders by using 232 valid questionnaires from organisations that were registered with EMAS. They found that institutional forces usually help to increase the internalisation of proactive environmental practices, and the impact of stakeholders can either assist the integration of these practices or encourage their superficial acceptance of them; hence, stakeholders have a stake in the outcome of environmental policy.

Similarly, Ozcan (2019) found that leverage positively and significantly impacts SR disclosure. The study indicates that enterprises have better resource availability, which in turn leads to a higher number of activities to declare. Under this assertion, Yu & Liang's (2020) research also discovered that leverage significantly positively influences SR disclosure. On the other hand, Fahad and Nidheesh's (2021) research indicated that leverage has a favourable impact on environmental and social exposure of SR but a negative impact on SR disclosure. Both of these findings are in keeping with the previous assertion.

Contrarily, Saud et al. (2019) determined the impact of financial development and economic growth on environmental quality in the selected BRI nations from 1990–2016 using the EKC model. The nations chosen to participate in the BRI comprise a significant portion of the global population and are responsible for a considerable proportion of the world's carbon emissions, foreign direct investments, financial development, economic growth, power consumption, and trade openness. They discovered that a rise in financial development contributes to improving environmental quality.

On the other hand, Rustam et al. (2020) posit that sustainability reporting leads to increased sustainability awareness, behaviour, and decision-making among businesses. According to the findings of several studies (Mahmood et al., 2018; Buallay & Al-Ajmi, 2020; Ratmono et al., 2021), different fundamental indicators of organisational practices, such as corporate governance, the role of the board of structure, firm size, capital



expenditures, firm profitability, and audit committee, are associated with the level and quality of environmental disclosure reports. Also, Orazalin & Mahmood (2020) found that the model used in reporting, the language used in reporting, and the status of the home nation as either a developed or developing country all impacted the extent and substance of environmental sustainability reporting.

Furthermore, Hongming et al. (2020) investigated the relationship between sustainability reporting and business performance in Pakistani companies. This research aimed to explore not only the quantity and character of sustainable financial reporting for nonfinancial enterprises in Pakistan but also the influence that such reporting has on the success of operational activities. To generate data for 2013 to 2017, we used the sustainability reports and annual reports of fifty public limited firms not in the financial sector and listed on the Pakistan Stock Exchange. The content analysis method was utilised to create the 42-indicator sustainability reporting index. They created an index with social, environmental, health, and safety standards as their foundation and revealed that the composite version of the sustainability reporting index and each of the three component indicators favour businesses' performance.

Following the Global Reporting Initiative (GRI), Onoja et al. (2021) investigated the factors that could impact the sustainability reporting practices of publicly traded oil and gas firms in Nigeria and South Africa. The independent variable (Determinant) was replaced with ownership structure and profitability, which are determinant variables; social sustainability reporting was utilised to quantify sustainability reporting (the dependent variable). The method of content analysis was employed. For this study, the sample size included fourteen (14) publicly traded oil and gas firms for 2010 and 2020 and seven publicly traded oil and gas companies in Nigeria and South Africa. Secondary data were collected from the sampled companies' annual reports and financial statements. Panel Least Square (PLS) regression analysis evaluated excerpts from the annual accounts and concluded that profitability significantly affected social sustainability reporting.

The corporate size disclosure in sustainability reports is determined by Sicard et al. (2022) on the businesses that participated in the Indonesia Sustainability Report Award (ISRA) was carried out between 2015 and 2019. This study aimed to determine whether or not excellent corporate governance, profitability, and company size all impact whether or not sustainability reports were disclosed. The study's outcomes indicate that the disclosure made in the sustainability report is unaffected by either the firms' profitability or size. Similarly, Ike et al. (2022) evaluates whether Japanese manufacturing multinational corporations (MNEs) can preserve local legitimacy in the countries in



which they operate by providing appropriate information to the relevant local stakeholders through targeted corporate sustainability (CS) reporting. Their study reveals that the majority of multinational corporations in the sample failed to adequately report matters of particular importance to stakeholders in the local host country, which may have damaged the image of multinational corporations.

Meanwhile, 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 the social disclosure index of these companies. Hence, company performance qualities highly influence the social sustainability reporting of listed non-financial companies in Nigeria.

The awareness of stakeholders of corporate social responsibility has expanded, increasing the amount of attention paid by governments, firms, investors, and consumers to disclosures regarding environmental sustainability. Therefore, using bibliometric and content analysis, this study aims to find recent information for the disclosure of environmental sustainability in an Asian context by Wahyuningrum et al. (2023) from 2009 to 2021. They discovered that research on environmental sustainability disclosures in Asian countries could be categorised into five primary themes: environmental disclosure, sustainable accounting and finance, corporate characteristics, sustainability governance, and sustainability reporting and performance. The focus of the research has switched from the evaluation techniques for the disclosures to the incorporation of the many aspects of sustainability into the reporting system.

Meanwhile, another area of research investigates the connection between the characteristics of a corporation and its reporting on its sustainability efforts. This line of inquiry provides evidence that the likelihood of a firm publishing sustainability reporting is positively associated with the company's size, international listing, and sector type. Nevertheless, the most of the studies are conducted in developed economies, and only a handful of the studies that focused on the developing market economy addressed the issue of sustainability. Therefore, in order to fill this research void, we are concentrating our efforts on the backdrop of Nigeria. A number of initiatives have been taken by Nigeria in order to promote the use of sustainability reporting methods. Examples that are



particularly noteworthy include the Nigerian Stock Exchange becoming a member of the Global Reporting Initiative (GRI) in the year 2015, the voluntary GRI membership of some Nigerians, and the voluntary creation of reports by some Nigerian enterprises based on the principles established by the GRI. The fact that Nigeria is making headway in terms of delivering SEER is demonstrated by these efforts. In the first place, Nigeria is confronted with a number of social and environmental issues. These issues include poor labour practices and decent work, violations of human rights, bribery and corruption, inadequate customer health and safety, and a lack of respect for privacy. In terms of environmental issues, Nigeria is experiencing land degradation, pollution, poor management of water resources, loss of biodiversity, coastal erosion, and poor management of industrial waste.

Due to the substantial dangers that are posed by the actions of firms, these difficulties indicate that more efforts should be made to shape policies for sustainability disclosure. Hence, this quest into investigation to determine the criteria that explain why different companies in Nigeria issue different sustainability reports as a means of achieving this objective.

3. Research Methodology

The research design of the study is ex-post facto and used secondary data compiled from the annual financial reports of selected listed manufacturing firms in the Nigeria Stock Exchange (NSE). The study utilised a technique known as purposeful sampling to choose thirty-eight (38) manufacturing companies (conglomerate (5), consumer goods (20), and industrial goods (13) while seven (7) were eliminated for missing data, and the final sample size is thirty-one (31). During the course of this research, panel data were utilised, and data were collected from the annual reports and accounts of sample companies for the years 2013 through 2023. The study utilised nonfinancial listed firms because their operations and activities are essential and took note of the significant contributions these companies make to the expansion of the Nigerian economy.

3.1 Model Specification

The research outlined three different econometric models to analyse the influence firm's internalisation has on sustainability reporting on the overall effectiveness of companies that are traded on the Nigerian Stock Exchange. The model developed by Hongming et al. (2020), which was changed by this study, is as follows:



SSR = f(Financial Literacy, leverage, profitability, firm size, firm age, return on asset) (1)

Furthermore, we specified econometric models to test our stated hypotheses as shown:

$$\text{SUSD} = \beta_0 + \beta_1 \text{FINLIT}_{it} + \beta_2 \text{LEVG}_{it} + \beta_3 \text{PROF}_{it} + \beta_4 \text{FSIZE}_{it} + \beta_5 \text{FAGE}_{it} + \beta_6 \text{ROA}_{it} + \varepsilon_{it} \quad (2)$$

Whereas:

SUSD = Sustainability reporting disclosure

FINLIT = Financial literacy

LEVG = Leverage

PROF = Profitability

FSIZE = Firm size

FAGE = Firm Age

ROA = Return on Asset

i = Firm;

t = year

β_0 = the intercept

ε = the errors term

β_{1-5} = the coefficients

Table 2: Definition and measurement of the variable

Variable	Acronym	Descriptive	Authors
<i>Dependent variable</i>			
Social Sustainability disclosure	SUSD	Analysis of the content based on the Global Reporting Initiative (GRI, 2018) Checklist.	Cabrita et al. (2017)
<i>Independent variable</i>			
Financial Literacy	FINLIT	The ratio of professional members on the board.	Tanko et al. (2021)
Firm Leverage	LEVG	Total Debts/ Total Assets	Adekanmi (2022)



Firm Profitability	PROF	Net income divided by net sales	Ikpor et al. (2022)
<i>Control variable</i>			
Firm Size	FSIZE	The natural log of total sales	Luska (2019).
Firm Age	FAGE	The number of years incorporated firms to date on the NSE.	Isa (2014)
Return on Asset	ROA	Net Profit after Tax/ Total Assets	Adekanmi (2022)

Source: Generated from past literatures (2023).

4. Results and discussions

This study tested the series in the distribution for multicollinearity problems, and the regression analysis was conducted to test the formulated hypotheses. The results and discussions are presented in Table 1, 2, 3 and 4 respectively.

4.1 Descriptive Statistics

This section examines the descriptive statistics for the independent and dependent variables of interest. Each variable is reviewed based on the mean, maximum and minimum which is displayed in Table 1.

Table 1: Univariate Descriptive Statistics

Variable	Mean	St.Dev.	Maxi	Min	N	JB
SUSD	0.52	0.501	1	0	760	0.676 (0.000)
FDEVP	0.78	0.406	1	0	760	0.000 (0.601)
FLEVG	87.5	18.35	54.8	68.92	760	0.000 (0.000)
PROF	31.3	25.71	43.1	1.02	760	0.000 (0.000)



FSIZE	8.936	0.434	9.75	8.03	760	0.251 (0.005)
FAGE	22.9	15.62	50	2	760	0.083 (0.000)
ROA	1.36	2.962	9.54	-20.23	760	0.000 (0.000)

4.2 Correlation Matrix

In examining the association among the variables, we employed the Pearson correlation coefficient (correlation matrix), and the results are presented in Table 2.

Table 2: Correlation analysis

Variable	SUSD	FDEVP	FLEVG	PROF	FSIZE	FAGE	ROA
SUSD	1.000						
FINLIT	0.169	1.000					
FLEVG	-0.133	-0.226	1.000				
PROF	-0.231	-0.095	0.032	1.000			
FSIZE	0.424	0.087	-0.133	-0.282	1.000		
FAGE	0.177	0.122	0.093	-0.216	0.323	1.000	
ROA	0.158	0.275	-0.375	-0.091	0.179	-0.129	1.000

The correlation matrix to determine the presence of multicollinearity among the explanatory variables, the results with the least value of 0.33 and the highest value of 0.72 which are less than the benchmark of 0.8 (Baltagi, 2021) revealed that the multicollinearity problem does not exist amongst the explanatory variables. Also, the VIF (Variance Inflation Factor) results supported that of the correlation matrix, as VIF showed a mean of 1.21 which is relatively lower than the threshold of 5 or 10 (James et al., 2017); therefore, this study concluded that multicollinearity problem does not exist among the explanatory variables.



4.3 Multicollinearity

The results in Table 3 do not show any collinearity problems between the study variables, as the VIF scores for all independent and control variables are lower than 2, far below the cut-off value of 10. Therefore, this study's model proves that the multicollinearity problem does not exist.

Table 3: Results of the VIF Test

Variable	VIF	1/VIF
ROA	1.29	0.773580
FSIZE	1.25	0.800522
FAGE	1.23	0.812044
FLEVG	1.20	0.830215
FINLIT	1.14	0.876716
PROF	1.12	0.896391
Mean VIF	1.21	

4.4 Binary Logistic Regression (Dependent Variable =Binary Choice)

In testing the hypotheses for this study, we used Pooled OLS regression and binary logistic regression. The model focuses on estimating the effect of firm specific characteristics on sustainability reporting. Therefore, firms specific our independent variable, while sustainability reporting (test for environmental disclosure, sustainability disclosure) is our dependent variable as depicted in Table 4. In Table 4, the study observed from the OLS pooled regression in model 1 that the adjusted R-squared value of 0.564 shows that about 56% of the systematic variations in the dependent variable of the manufacturing firms over the period of interest were jointly explained by the independent variables which implies cannot be 100 per cent explained by all the variables used in this study. The unexplained part of the dependent variable can be attributed to excluding significant independent variables but are outside the scope of this study. The F-statistic value of 2.58 and its associated P-value of 0.026 show that the overall OLS Pooled regression model is statistically significant at 5%. This means the regression



model is valid and can be used for statistical inference. Table 4 also shows a mean VIF value of 1.15, less than the benchmark value of 10, indicating the absence of multicollinearity. Also, from the table above, it can be observed that the OLS results had no heteroscedasticity problem [0.279 (1.17)], which means that the variations between the dependent and independent variables are homoscedastic.

In Table 4, The panel effect model of binary logistic regression showed that the Pseudo R-squared value was 0.077 and 0.097, meaning that the independent variables jointly explained about 77% and 97% of the systematic variations in the dependent variable. This implies that firm internalisation in Nigeria cannot be 100 per cent defined by environmental disclosure. The unexplained part of the dependent variable can be attributed to excluding significant independent variables that can explain the dependent variable but are outside the scope of this study. The LR CHI2 value of 8.86 and its associated P-value of 0.06 show that the binary logistic regression model is statistically significant at a 10% level. This means the regression model is valid and can be used for statistical inference. In testing our hypotheses, we provide the below specific analysis for each independent variable.

Table 4: Binary Logistic Regression Result (Panel Data)

Variable	Pooled Logistic Regression	Fixed Effect Result	Random Effect Result
C	0.607 (0.017)	-72.28 (0.001)	-72.28 (0.001)
FINLIT	0.106 (0.309)	0.960 (0.350)	0.899 (0.247)
FLEVG	-0.002 (0.346)	-0.063 (0.113)	-0.062 (0.084)
PROF	-0.004 (0.029)	0.024 (0.027)	0.024 (0.023)
FSIZE	0.456 (0.000)	12.333 (0.000)	8.995 (0.001)



FAGE	0.005 (0.074)	0.093 (0.005)	0.063 (0.012)
ROA	0.019 (0.216)	-0.000 (0.997)	0.041 (0.718)
LR Chi	Yes	5(0.000)	5(0.006)
Pseudo R-Squared	Yes	0.097	0.097
VIF Test	Yes	0.15	0.15
Heteroscedasticity	5(0.001)	0.002 (10.01)	-
Ramsey RESET*	0.211	44.88 (0.000)	44.88 (0.000)
Observation (N)	1.15	760	760

*Notes: SP: overall sustainability disclosure score; FDEVP: score of the financial development, FLEVG firm capital structure; PROF: profitability of firms; FAGE: incorporation period to date; ROA: return on Asset; ROE: return on equity. Note: (1) bracket [] are p-values (2) **,***, implies statistical significance at 5% and 1% levels respectively Note: * is 1% level of significance, ** is 5%. NSE: Nigeria Stock Exchange.*

The pooled OLS regression result in Table 4 observed that the OLS results had a heteroscedasticity problem [0.461 (0.54)] that was statistically significant and that was corrected using standard error (SE) robust regression. In testing our hypothesis, we provide the analysis below for each independent variable using the SE robust regression. FINLIT (OLS = 0.106 (0.309) to SUSD looks positive and insignificant at the 1% level. Therefore, we should accept hypothesis 1 (H1: financial literacy significantly impacts sustainability disclosure). It means that an increase in FINLIT by manufacturing firms is valuable and significant for environmental sustainability. This result agrees with prior empirical results, which show that financial literacy can drive sustainability (Ratmono et al., 2021). The financial leverage of (OLS = -0.002 (0.346) to SUSD is negative and insignificant at 1%. This shows that hypothesis 2 is rejected, which posits a significant difference between FLEVG and SUSD. Besides, profitability (-0.004 (0.029) shows a negative and insignificant influence on SUSD at 1%.



Table 4 reveals the result of the control variables' effects (FSIZE, FAGE, PROF). The FSIZE of 0.456 (0.000) posits a positive and statistically significant effect on the SUSD 0.5% significance level. This means the choice of FSIZE significantly impacts the sustainability reporting of nonfinancial firms. The FAGE result of 0.084 (0.008), displays a positive and statistically significant effect on SUSD 1% significance level, which demonstrates that the age of nonfinancial firms matters in determining the environmental sensitivity. Finally, the ROA result is significant at 1% of 0.019 (0.216) which is positive and significant. The choice of ROA appears to be an essential factor when sustainability disclosure is considered in nonfinancial firms.

The result of panel logistic regression in Table 4 shows that FINLIT (F. Eff. LOGIT= 1.310 (0.213) In the study, hypothesis 1 (H1: FINLIT does significantly influence the likelihood of sustainability disclosure). This means the choice of FINLIT increases the probability of firms engaging in environmental disclosure but is insignificant. This result agrees with prior empirical results, which show that FINLIT is not a significant indicator of sustainability disclosure and didn't support the previous findings of Baloch et al. (2019) and Li et al. (2021). This result reveals that financial literacy is an essential factor to consider when making decisions on environmental sustainability disclosure.

Also, FLEVG (F. Eff. LOGIT= -0.063 (0.113) shows a negative and statically insignificant relationship with SUSD. Therefore, hypothesis 1 (H: FLEVG does not have a significant influence in increasing the likelihood of sustainability disclosure). This means the choice of FLEVG decreases firms' probability of sustainability disclosure. This result agrees with previous findings of various studies that reported that FLEVG insignificantly impacts SUSD (Khan et al., 2021; Ntow-Gyamfi et al., 2020). In addition, findings show that PROF on SUSD [F. Eff. LOGIT = 0.024 (0.027)]. Hence, hypothesis 3 (H3: PROF does have a significant influence in increasing the likelihood of sustainability disclosure). This means the choice of PROF increases the probability of firms engaging in environmental sustainability. The outcome agrees with prior empirical results of Truant et al. (2017); Maj (2018), and Kurniawan et al. (2020).

Table 5 also reveals the control variables' results (FSIZE, FAGE, PROF). The FSIZE of the model of 12.333 (0.000) has a positive and statistically significant effect on SUSD 0.5% significance level. This means the choice of FSIZE significantly impacts sustainability reporting. The FAGE result is 0.093 (0.005), which shows a positive and significant effect on SUSD 0.5% significance level. Finally, the ROA result with -0.000 (0.997), which is negative and statically significant at 10%, implying that return on asset is not a factor to consider in this study context.



5. Conclusion and Recommendation

The findings of this study provided support for the assumptions that are made within agency theory. These assumptions state that when an information imbalance is decreased through sustainability disclosures, some agency costs will be lowered. This reduction in agency costs will translate to an increase in a company's sustainability disclosure. This led to the conclusion that financial literacy is positive and statistically significant with sustainability disclosure being offset by having a board member with knowledge on financial matters (professional), which is being achieved by assisting the principal in obtaining specifics regarding all of the activities carried out by the agents. Therefore, findings of the analysis demonstrate that the leverage, profitability positively and significantly contributes to explaining Social Sustainability Reporting (SSR) in Nigeria. This implies that Nigerian multinational corporations' voluntary interest in the adherence to environmental and sustainability disclosure revolves more around a persistent desire to sustain praise-worthy returns on their equities annually. This study's findings lend credence to the study of Norouzi & Fani (2021) who found that a corporation's level of leverage, whether high or low, had no bearing on the extent to which it disclosed its commitment to social and environmental responsibility.

The findings of this study have policy consequences for the government, managers and shareholders, accountancy regulatory authorities, and other stakeholders. The financial literacy indicated that members of the board's financial literacy exerted its total influence on firms' environmental and sustainability disclosure. Given the significant yet unfavourable relationships between leverage and sustainability reporting, businesses should direct their efforts toward better understanding the significance of environmentally responsible practices and disclosures in reducing debt costs. Finally, the positive correlation between profitability and sustainability reporting level results shows that firms with high performance engage more in social sustainability reporting.

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