
Sustainability Reporting and Market Value of Manufacturing Firms in Nigeria

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Abstract

This study examines the effect of sustainability reporting on market value of listed manufacturing companies in Nigeria, specifically focusing on Environmental Sustainability Reporting (ESR), Social Sustainability Reporting (SSR) and Governance Sustainability Reporting (GSR). This research is justified by increasing world concerns and pressure for companies to disclose their environment, social and governance (ESG) activities due to stakeholders pressure to enhance transparency and accountability. The study makes use of ex-post facto research design; the investigation of the annual report for the listed 46 listed manufacturing companies on Nigeria Exchange Group for 10 years period. Data for the study are obtained from the annual reports of 46 listed manufacturing companies on Nigeria Exchange Group (NGX) covering the 10 years from 2015-2024. The analysis involves descriptive statistics, correlation Analysis, Variance Inflation Factor(VIF), Brusch pagan Lagrangian multiplier test , Hausman specification test and fixed effects regression. The findings from result confirm that Environmental Sustainability Reporting have a negative but statistical insignificant effect on the market value, Social sustainability Reporting have positive but not statically significance effect on firm value, Governance Sustainability Reporting have negative but statistically insignificant effect on market value. The finding from the regression results also confirmed that sustainability reporting aggregate have no statistical significance on the market value of listed manufacturing Companies in Nigerian within the study periods The study concludes that sustainability disclosure did not provide a basis for materiality to investors during investment decisions process among listed manufacturing Companies. It shows that over the period sustainability reporting have no financial implication on stock valuation among firm that has disclosure sustainability. In view of these findings, the research recommends increased practice for sustainability disclosures, increased regulatory compliance, and higher stakeholder perception or awareness towards the information embedded within sustainability reporting practice among companies.

Keywords: Environmental Sustainability Reporting; Social Sustainability Reporting; Governance Sustainability Reporting. Market Value

1. Introduction

Sustainability reporting has evolved from a peripheral corporate exercise into a central pillar of business practice globally, and this shift is increasingly evident in a growing country like Nigeria. As firms recognize the strategic importance of conducting business sustainably, the disclosure of environmental, social, and governance (ESG) performance has become a critical component of corporate accountability and transparency (KPMG, 2020). Beyond serving as a compliance mechanism, sustainability reporting functions as a communicative tool through which firms respond to growing stakeholder demands for greater disclosure, while simultaneously aligning their operations with global sustainability agendas and frameworks such as those advanced by the Global Reporting Initiative (GRI, 2021) and the World Economic Forum (2020). This global shift has been reinforced by the growing influence of institutional investors and asset managers who increasingly factor ESG performance into their investment decisions, thereby compelling firms across both developed and emerging markets to treat sustainability disclosure as a strategic imperative rather than a discretionary undertaking (Morgan Stanley, 2021).

The theoretical underpinning of sustainability reporting can be traced to stakeholder theory, which posits that firms are accountable not only to their shareholders but to a broader range of stakeholders, including employees, customers, communities, and regulators, whose interests must be considered in corporate decision-making (Freeman, 2020). This theoretical perspective has continued to gain traction in contemporary corporate governance discourse, with scholars arguing that firms which proactively engage and report to their diverse stakeholders are better positioned to build trust, legitimacy, and long-term value (Harrison, Bosse, & Phillips, 2019; Van Oosterhout & Heugens, 2023). Consequently, sustainability reporting is increasingly viewed not merely as a regulatory or ethical obligation, but as a mechanism through which firms can manage stakeholder relationships and secure a sustainable competitive advantage (Scherer & Palazzo, 2023).

Within the Nigerian context, the relevance of sustainability reporting is further underscored by the country's peculiar socio-economic realities, including persistent poverty, environmental degradation, and weak governance structures that continue to characterize several sectors of the economy (Adeleke et al., 2021). These conditions have intensified the pressure on Nigerian businesses from regulators, investors, and increasingly discerning customers to account for the environmental and social impact of their operations (Ijeoma & Nwogugu, 2020). This is particularly significant given that Nigeria's major economic sectors, including oil and gas, manufacturing, and banking, operate in environments where the consequences of poor sustainability practices ranging from environmental pollution to community unrest are highly visible and consequential (Abdulraman & Abubakar, 2020; Okolie, Ewiwile, & Okunola, 2022). Consequently, the relationship between sustainability reporting and financial performance has attracted growing scholarly and practitioner interest, as stakeholders seek empirical evidence of whether sustainability disclosures translate into tangible corporate value (Owolabi & Makinde, 2018).

Extant literature from developed economies suggests that robust sustainability reporting practices contribute to improved financial performance by strengthening risk management systems, fostering innovation, and building sustainable brand reputation and competitive advantage (Porter & Kramer, 2006). Similarly, studies have shown that enhanced disclosure reduces information asymmetry between firms and their stakeholders, thereby lowering the cost of capital and improving investor confidence (Healy & Palepu, 2020; Botosan, 2022). Firms that consistently and transparently report on their sustainability performance are also better able to attract socially conscious investors and customers, further reinforcing the business case for sustainability disclosure (Aguinis & Glavas, 2022; Coelho, Jayantilal, & Ferreira, 2023). However, despite these established findings in advanced economies, the nature, strength, and direction of this relationship remain insufficiently interrogated within the Nigerian corporate environment, where institutional, regulatory, and market conditions differ markedly from those of developed nations (Nwankwo et al., 2019). In particular, questions remain as to whether the benefits of sustainability reporting documented in developed markets hold true in a context characterized by weaker regulatory enforcement, limited investor sophistication, and inconsistent disclosure standards (Ofoegbu & Asogwa, 2020).

It is against this backdrop that the present study seeks to examine the effect of sustainability reporting practices on the financial performance of firms in Nigeria. By doing so, the study aims to contribute to the growing body of empirical literature on sustainability accounting in emerging markets, while also offering practical insights for policymakers, investors, regulators, and corporate managers committed to advancing the sustainable development agenda in Nigeria.

1.1.2 Statement of Problem

While sustainability reporting has been recognized as an important driver of corporate transparency and accountability, it continues to be marred by significant challenges in implementation among companies in Nigeria. The lack of established sustainability reporting frameworks and guidelines leads to inconsistent practices among firms, resulting in a lack of comprehensive data on the effect of sustainability reporting on financial performance (Owolabi & Makinde, 2018).

Furthermore, there is widespread skepticism about the tangible benefits of sustainability reporting, with many companies viewing it as a cost center rather than a strategic investment (Adeleke et al., 2021). This perception is exacerbated by inadequate regulatory enforcement and a lack of awareness among stakeholders about the advantages of sustainable business practices (Ijeoma & Nwogugu, 2020).

Consequently, the nexus between sustainability reporting and financial performance (market value) remains underdeveloped in Nigeria, with a lack of empirically based evidence to support claims of effectiveness (Nwankwo et al., 2019). This knowledge gap poses a challenge to policymakers, investors, and corporations seeking to promote sustainable development while maintaining financial viability. Addressing these challenges will allow for the establishment of

an effective framework for sustainability reporting that takes into account Nigeria's specific socio-economic circumstances.

Beyond these implementation and enforcement challenges, a closer examination of the extant literature reveals a more fundamental empirical gap. Despite numerous studies on sustainability reporting, there is still no clear consensus on its effect on market value, especially in emerging economies like Nigeria. Most prior studies have focused on accounting-based performance measures such as profitability, with limited attention given to market-based measures of firm value. In addition, many studies adopted aggregate sustainability disclosure measures, thereby ignoring the individual contributions of environmental, social, and governance reporting dimensions. It is this combination of practical implementation challenges and empirical gaps in the literature that the present study seeks to address.

1.1.3 Objectives of the Study

Based on the above problem statement, the broad objective of this study is to examine the effect of sustainability reporting on the market value of listed manufacturing firms in Nigeria. To achieve this overarching goal, the specific objectives are to:

- i). examine the effect of environmental sustainability reporting on the market value of manufacturing firms in Nigeria;
- ii). determine the effect of social sustainability reporting on the market value of manufacturing firms in Nigeria; and
- iii). determine the effect of Governance Sustainability Reporting on the market value of manufacturing firms in Nigeria.

1.1.4 Scope of the study

This study examines the effect of sustainability reporting on the market value of listed manufacturing firms in Nigeria. Sustainability reporting, as the independent variable, is disaggregated into three key dimensions: environmental sustainability reporting, social sustainability reporting, and governance sustainability reporting. This disaggregated approach allows the study to assess the distinct contribution of each dimension of sustainability disclosure, rather than relying on an aggregate measure that may mask important differences in how environmental, social, and governance disclosures individually relate to firm value.

The dependent variable is market value, which represents the aggregate value of a firm's outstanding shares and reflects investors' perceptions of the firm's potential for future profitability and growth. Market value is adopted as the outcome measure because, unlike accounting-based performance indicators, it captures the forward-looking assessment of the firm by the investing public, thereby offering a more direct reflection of how sustainability disclosures influence investor confidence and stakeholder perception of firm prospects.

The study focuses on listed manufacturing firms in Nigeria, a sector selected for its significant environmental footprint, high resource consumption, and direct interaction with host

communities and the broader public, all of which make sustainability disclosure particularly relevant and consequential in this context (Okolie, Ewiwile, & Okunola, 2022). As a major contributor to Nigeria's industrial output and Gross Domestic Product, the manufacturing sector provides a instructive setting for evaluating how environmental, social, and governance reporting practices relate to how firms are valued in the capital market.

The study is conduct over the span of 10 years, i.e. from 2015 -2024. Ten years is enough to capture meaningful trends and fluctuations in the reporting behaviours of Nigerian manufacturing companies and market valuation.

The time is apt for consideration as United Nations (UN) sustainability development Goals (SDGs) was officially adopted in 2015, increased regulatory pressure in regards to environmental, social and Governance Disclosure (ESG) by Nigeria Exchange Group (NGX) and the Nigerian Securities Exchange commission (SEC), major economic disasters such as Oil price shocks, currencies depreciated and COVID-19 etc, which all might have impacted firms' reporting pattern and their evaluation by investors.

The study population is composed of all the manufacturing in the Nigerian Exchange Group that were listed by 2024. Firm which do not have a consistent annual reports, sustainability disclosure reports, as well as their market value for 10 years are to be omitted due to unreliability and incomparable natures of these parameters. By concentrating on environmental social and Governance and its relation with market value using Nigerian listed manufacturing companies in this timeframe, specific, market focused and time determined insights would be obtained for consideration by researchers, industry operators and Policy makers alike.

1.2 Review of Literature

1.2.1 Concept of Sustainability Reporting

Sustainability reporting refers to the practice by which organizations disclose information about their economic, environmental, and social performance, as well as their governance practices, to a broad range of stakeholders beyond shareholders alone. It has emerged as a formal extension of corporate reporting, moving beyond the traditional focus on financial statements to capture the wider impact of business activities on the environment, society, and the economy (GRI, 2021). At its core, sustainability reporting is anchored on the triple bottom line concept, which holds that firms should account for their performance not solely in terms of profit, but also in terms of their environmental and social impact, often summarized as the "people, planet, and profit" dimensions of corporate accountability.

Sustainability reporting has grown from a voluntary, largely symbolic exercise undertaken by a handful of multinational corporations into an increasingly institutionalized and, in some jurisdictions, mandatory component of corporate disclosure (KPMG, 2020). This growth has been driven by mounting pressure from regulators, investors, and civil society for greater corporate transparency, as well as a growing recognition among firms that sustainability

performance can materially affect long-term value creation and risk exposure (McKinsey & Company, 2019). In many climates, including Nigeria's, sustainability reporting continues to be guided largely by voluntary frameworks such as the Global Reporting Initiative (GRI) Standards, which provide firms with a structured basis for disclosing their environmental, social, and governance performance (GRI, 2021).

1.2.2 Environmental Sustainability Reporting (ESR)

Environmental dimension is referred to as one that concerns all aspect of life; an organization's disclosure of its environment may create a positive impact on profit performance (Restuningdiah, 2010); and an organization reporting on its environment intensity may raise stakeholders' interest, attention and environmental concern. Companies must maintain sustainability regarding primary stakeholders interests, i.e. Investors. Disclosure of performance and environmental issues are associated with the rise and fall of stock price and investors are highly sensitive about emerging issues concerning the firms in which they invest, thus showing more care in selecting company shares to invest in. Environmental performance has a positive influence on the financial performance of companies which may increase the market value of the company, supported by Setiawan, H, & Pranaditya, (2018); and Djuitaningsih & Ristiawati (2015) findings which suggest that environmental performance of a foreign-owned enterprise. positively affect the financial performance on profitability measures;-financial: Return on Assets (ROA), companies with environmentally better performance would gain positive reactions from the stakeholders and also benefit in terms of long-term corporate revenues. Corporate activities may cause environmental damage due to the focus only on profit performance. In Indonesia sustainability reporting remains voluntarily without any legal requirement to do so like transparency in the influence on the environment by the company. The environment part of sustainability deals with the impact an organization has on natural systems, both alive and dead, which include land, water and air as well as ecosystems. Energy and water usage, output of biodiversity, usage of goods and services, product and service impact and expenses/compliance of the environment should be reported under this aspect (GRI, 2015).

1.2.3 Social Sustainability Reporting (SSR)

Social Sustainability Reporting (SSR) is a significant area of sustainability reporting that concerns the social impacts resulting from an organization's operations. It focuses on reporting of labour practices, community engagement, variety and comprehensiveness and, from a moral standpoint: Human Rights and employee well-being, and aims to make the impact a company has on society evident to its stakeholders (Coelho et al., 2023).

SSR has become an important tool for corporate accountability and societal progress and organizations must consider data accuracy, standardization and cost challenges in order to report efficiently and effectively. SSR concerns the social dimensions of corporate responsibility, such as how organizations strive to create equitable and inclusive working environments and how they contribute positively to the community in areas like labour practices, diversity inclusion and community engagement. Labour practices reporting can encompass disclosures on employee

wages, working conditions, safety and rights. Diversity and Inclusion aspects may entail reporting on the representation of various groups in the organization's workforce and the application of non-discriminatory work practices. The community engagement aspect focuses on the company's efforts to improve the well-being of the communities in which it operates. SSR also enhances corporate transparency, allows stakeholders such as employees, customers, and investors to place their trust in organizations more readily (Francesco et al., 2020), enables companies to remain in compliance with regulatory requirements in jurisdictions where these disclosures are mandated (Rahman et al., 2020). Issues regarding data quality and availability, lack of accepted reporting standards, and cost of SSR implementation are some of the challenges many organizations face (Rahman et al., 2020).

1.2.4 Governance sustainability reporting (GSR)

Governance Sustainability Reporting (GSR) relates to how companies manage corporate governance, ethics, and policies, to ensure a system of accountability and transparency that results in effective and responsible decision making among stakeholders. Corporate Governance reporting increases stakeholders trust in any given organizations such as investors, employees, regulators, stakeholders and the general public (Coelho et al., 2023).

Governance sustainability reporting involve the reporting and disclosure of how the company's corporate governance processes (like board of directors, remuneration, risks management and ethics policies compliance) meet sustainability objectives.

Governance Social Responsibility promotes the transparency of the corporate through the comprehensive information provided to stakeholders (Francesco et al., 2020); Companies that have good corporate governance are more appealing to social responsible investors who value and respect ethics in decision making (Rahman et al., 2020). Many organizations are obligated by law to disclose on their governance structures making it a legal requirement for certain types of industries and industries such as, effective GSR will enhance the corporate brand value and good public image (Coelho et al., 2023).

1.2.5 Concept of Market Value

Market value refers to the aggregate value of a firm's outstanding shares, as determined by the trading activity of investors in the capital market. It represents the price that the market is willing to pay for ownership of the firm and is widely regarded as a forward-looking measure of firm performance, since it reflects investors' collective expectations of the firm's future profitability, growth prospects, and overall risk profile, rather than merely its historical financial performance (Botosan, 2022). Unlike accounting-based performance measures, such as return on assets or return on equity, which are backward-looking and derived from historical financial statements, market value is inherently forward-looking and sensitive to the information available to investors at any given point in time, including non-financial information such as sustainability disclosures (Healy & Palepu, 2020).

Market value is particularly relevant in assessing the outcome of sustainability reporting because it captures how the market interprets and prices sustainability-related information in its valuation of firms. To the extent that investors perceive sustainability disclosures as indicative of reduced risk, improved operational efficiency, stronger stakeholder relationships, or long-term competitive advantage, such perceptions may be reflected in the market value of the reporting firm (López, Ruiz, & Gutiérrez, 2023).

1.2.6 Sustainability Reporting and Market Value

The conceptual link between sustainability reporting and market value rests on the premise that sustainability disclosures reduce information asymmetry between firms and the investing public, thereby enabling investors to make more informed judgments about a firm's risk exposure and future prospects (Healy & Palepu, 2020). By disclosing environmental, social, and governance performance, firms provide the market with additional, non-financial information that can be incorporated into investors' valuation models, potentially influencing share price and, by extension, the firm's overall market value. Firms that report comprehensively and credibly on their sustainability performance may be perceived as better managed, less risky, and more attuned to emerging regulatory and stakeholder demands, all of which can enhance investor confidence and translate into a higher market valuation (Cohen & Roper, 2021).

In contrast, weak or erratic sustainability disclosure is likely to create doubt in the investor mind in respect of firms susceptibility to environment, social or governance associated risk, and to depress market value; especially in a business climate like Nigerian where regulation of practice of sustainability reporting is not well enforced and disclosure practices seem inconsistent across different firms, it is largely voluntary (Ijeoma & Nwogugu, 2020). It is from this conceptual understanding that manifests itself in varying ways through environment, social and governance dimensions of sustainability reporting that the conceptual basis of empirical study in this thesis is constructed. Vast amounts of evidence established through empirical research on impact of sustainability reporting and other non-financial disclosures on firm financial performance and value generally suggest positive association, however, the extent of influence varies with industry and various types of disclosures.

Several empirical evidence on linkages of sustainability reporting with firm financial performance can be found in Nigeria.

Okolie and Igaga (2020), for instance, examined the connection between sustainability reporting and the financial performance of deposit money banks listed in Nigerian stock market using a regression analysis on data extracted from annual reports. The regression analyses performed, indicates that sustainability reporting significantly influences firm financial performance as indicated by effect on Return on Assets (ROA) and Return on Equity (ROE). This implication means that reporting effectively on economic, environmental and social activities will enhance firm performance. Similarly, Akpan and Emenyi (2020) studied the impact of triple bottom line reporting on the financial and operating performances of listed oil and gas companies in Nigerian with ex post facto research design approach and a disclosure index derived from Global

Reporting Initiative. Results of these studies demonstrate that sustainability reporting significantly results in improved Return on Assets (ROA), ROE and Earnings per Share (EPS). Furthermore, Ofoegbu and Asogwa (2020) examined the relationship between sustainability reporting and firm profitability on quoted consumer goods companies. They reported that economic disclosures had a statistically insignificant positive effect, while social disclosures also individually had an insignificant positive effect, the composite sustainability disclosure index enhanced the profitability of firms.

All these results imply that firms with greater sustainability reports tend to perform better in their respective industries. Nevertheless, they do have some limitations in their narrow focus on industries such as banking, oil and gas, consumer goods. Beyond financial performance, more recently, authors have moved towards analysing the relationship between sustainability disclosures and firm value or investor valuation.

Jeroh (2020) used Structural Equation Modelling to study interrelationships among firm attribute, corporate social disclosure and financial performance in the context of financial services firms listed in Nigeria and noted that firm value and capital structure had a significant influence on CSR disclosures but did not lead to improved firm performance in the form of financial indicators. Nwachukwu and Eze (2022) found that extensive sustainability reporting greatly attracted investors and enhanced firm values of listed oil and gas companies in Nigeria. More recently, Terkuma Soomiyol et al. (2024) used a broader sample of consumer goods companies to establish that both economic and social disclosures were significantly positively related to firm value while environmental disclosure had no significant effect.

These suggest investors tend to value social and economic components more than the environmental part; but more empirical investigation is required regarding the impacts of environmental reporting as previous results are conflicting.

As part of these newer broader studies, Atube and Okolie (2024) studied the connection between non-financial reporting and the performance of non-financial services firms, using content analysis of firms' annual reports, as well as regression analyses to assess its impacts on Return on Assets and firm's market share. They find a strong positive relationship, confirming that robust disclosures of non-financial information promote the stakeholder confidence in firm and improve organizational competitiveness. Furthermore, Joshua and Akintoye (2022) explored the relation between sustainability disclosures and real earnings management, finding that firms with greater levels of sustainability disclosure were less likely to engage in earnings management. This result supports the argument that sustainability reporting not only aids firm performance, but may also improve the credibility and quality of financial statements.

Despite numerous studies on sustainability reporting, there is still no clear consensus on its effect on market value, especially in emerging economies like Nigeria. Most prior studies focused on accounting-based performance measures such as profitability, with limited attention given to market-based measures of firm value. In addition, many studies adopted aggregate sustainability

disclosure measures, thereby ignoring the individual contributions of environmental, social, and governance reporting dimensions.

1.2.7 Theoretical Framework

Based on Stakeholder Theory by Freeman (1984), stakeholders extend beyond merely shareholders to including employees, customers, investors, the government, suppliers, host communities, and the environment. As per this theory, an organization's capacity to identify and address the interests of its stakeholders can result in impact for its long term value. In terms of its effect on sustainability disclosure and market value, according to stakeholder theory, disclosure on firms' economic social and environmental performance enhances Transparency and stakeholder confidence on firms.

Investors gaining a positive perception towards a firms' commitment towards responsibility initiatives can increase investor trust, thus impacting the firm's long term sustainability value. This is shown through research done by scholars such as Aguinis and Glavas (2019), Harrison and Wicks (2013), as well as Umoren and Ukpong (2022). Through the justification that Stakeholder Theory provides for linking corporate sustainability reporting to corporate financial value.

2. Materials and Methods

This study used the *ex-post-facto* design, which allows for investigating sample units over a set length of time. Its analysis enables the researcher to investigate the dynamics of change, effects and behaviour over a period of time.

The population of this study was made up of a total 46 listed companies in the manufacturing industry in the Nigerian Exchange Group (NGX) Limited as at December, 2024.

2.1 Model Specifications

The model for this study is stated in econometrics terms below as;

$$\begin{aligned} \text{Model I} \quad & \text{SR} = f(\text{CSR}, \text{FINLEV}) \\ \text{MAKVAL} \quad & = f(\text{ESID}, \text{CSR}, \text{CGDI}, \text{FINLEV}) \quad \text{eq.1} \\ \text{MARKAL}_{it} \quad & = \alpha_0 + \beta_1 \text{ESID}_{it} + \beta_2 \text{CSR}_{it} + \beta_3 \text{CGDI}_{it} + \beta_4 \text{FINLEV}_{it} + \varepsilon_t \quad \text{eq.2} \end{aligned}$$

Where;

f = Stochastic error term capturing other unexplanatory variables
 ε_t = error term
 i = firm identifier
 t = time variable (10 Years)

α_0 is the intercept of the regression.

$\beta_1, \beta_2, \beta_3$ and β_4 are the co-efficient of the regression equation.

The Apriori expectation: $\beta_1, \beta_2, \beta_3$ and β_4 is less or greater than 0.

3. Analysis and Results

3.1 Descriptive Statistics Analysis and Discussion

Table 1: Summary of Descriptive for MAKVAL ESID CSRD CGDI, FINLEV

VARIABLES	OBS	MEAN	STD. DEV	MIN	MAX
MAKVAL	460	.6920588	55.57853	-1176.19	75.57
ESID	460	.0922391	.2038678	0	1
CSRD	460	.3175	.1660356	0	.86
CGDI	460	.3982609	.197881	0	.83
FINLEV	460	61.48985	26.7961	3.55	222.97

Source: Regression Output, 2025.

To begin, Table 1 provides descriptive statistics for all of the variables of interest (MAKVAL, ESID, CSRD, CGDI, FINLEV) using 460 observations. For MAKVAL the mean is 0.69 and the standard deviation is very high (55.58), with a wide range from -1176.19 to 75.57, indicating the likely presence of outliers or very diverse firm valuations. It could be inferred from the negative minimal value that some firms face financial distress or suffer valuation loss, and the variables might warrant further outlier treatment or division. The average ESID (environmental sustainability index disclosure) is small at 0.092, and the relatively small standard deviation (0.204) indicates very little variation between companies on this measure of disclosure. The CSRD (corporate social responsibility disclosure) and CGDI (corporate governance disclosure index) both display very little disclosure, evidenced by their relatively small means of 0.3175 and 0.3983, respectively. However, both CSRD and CGDI possess moderate standard deviations indicating that the extent of adoption among firms varies. The FINLEV (financial leverage) possesses a moderate mean of 61.49 but with a very wide dispersion (3.55 to 222.97), which indicates substantial differences between firms concerning capital structure, this high dispersion may indicate risks for financial stability and that certain firms heavily rely on debt which may require the firm to pursue a balanced approach toward capital structure to alleviate financial risks.

3.2 Correlation Analysis

Table 2: Summary of Correlation analysis for MAKVAL, ESID, CSRD, CGDI, FINLEV

	MAKVAL	ESID	CSRD	CGDI	FINLEV
MAKVAL	1.0000				
ESID	-0.1376	1.000			
CSRD	-0.0727	0.5101	1.000		
CGDI	-0.0967	0.3941	0.6884	1.000	
FINLEV	-0.0571	0.0021	-	-	1.000
			0.0093	0.0130	

Source: Regression Output, 2025.

Table 2 represents the correlation between the variables in this study: MAKVAL, ESID, CSRD, CGDI, and FINLEV. Generally, all of the variables have a weak negative correlation with MAKVAL. There is a weak negative correlation between ESID and MAKVAL (-0.1376) indicating that greater environmental disclosure does not necessitate greater market value; possibly a reason for this is the cost of maintaining environmentally responsible activities or an insignificant valuation perception from investors in Nigeria. The other two disclosure indices also display weak negative correlation with MAKVAL: CSRD (-0.0727) and CGDI (-0.0967), which might represent a lag in market reaction to governance/CSR disclosure. FINLEV displays the smallest negative correlation with MAKVAL (-0.0571) which indicates the smallest potential disincentive for firm value, this may be due to increased concern among investors for financial risk. The positive correlation between ESID and CSRD (0.5101) and CGDI (0.3941) means that those firms that practice environmental disclosure also tend to have greater CSR and governance disclosure, respectively. There is a large positive correlation between CSRD and CGDI (0.6884) indicating a positive relationship between these variables possibly because firms have integrated the reporting. With reference to this relationship firms should seek to combine CSRD and CGDI within integrated ESG reporting structures to harness their inherent synergies and that the government may need to offer some incentives (e.g., tax credits or tax incentives) in addition to the market appreciation the integration of disclosure can provide in Nigeria.

3.3 Multicollinearity Test

Table 3: VIF Test Result

VARIABLE	VIF	1/VIF
CSRD	2.18	0.458599
CGDI	1.91	0.523568
ESID	1.36	0.736239
FINLEV	1.00	0.999758
Mean VIF	1.61	

Source: Regression Output, 2025.

Table 3 provides the Variance Inflation Factor (VIF) test for the detection of multicollinearity among the independent variables (CSR, CGDI, ESID, FINLEV). All VIF values are substantially below the common cut-off value of 10, and the largest VIF was the CSR (2.18). The Mean VIF is 1.61, which is significantly lower than the recommended value. The results indicate that there is no serious issue of multicollinearity. Independent variables are not highly correlated and they can be reliably used in regression analysis, and as a result the standard errors are not likely to be inflated by multicollinearity. It is worth noting that CSR and CGDI (1.91) have relatively high VIFs; which can be attributed to their relatively high correlation (0.6884 as observed in Table 2) due to conceptual similarities between CSR and Governance disclosures. Regardless, this is not a concern as the values are relatively low. Hence, corrective action is not warranted since multicollinearity is not an issue.

3.4 Other Diagnostic Tests

Table 4: Panel Model Selection Tests

Test	Test Statistic	p-value	Decision	Model Implication
Breusch-Pagan LM Test	$\chi^2(1) = 0.00$	1.0000	Do not reject H_0	Random-effects model is not preferred to pooled OLS
Hausman Specification Test	$\chi^2(3) = 13.57$	0.0088	Reject H_0	Fixed-effects model is preferred to random effects

Decision criterion: A p-value below the 5% significance level indicates rejection of the null hypothesis.

Source: Regression Output, 2025

Table 4 lists two Specification tests. The Breusch and Pagan LM test statistic results in a p-value of 1.0000, indicating that the null hypothesis is accepted, thus pooled OLS and random effects are not significantly different and thus random effects will not be the one selected. Fixed Effects Model was used for the regression analysis and this study should take this model into consideration:

The Hausman Test compares Fixed effect and random effect models. The test statistic returns a significant p-value of 0.0088, and therefore we reject the null hypothesis and favour the alternative hypothesis that the Fixed Effects Model is a preferred specification than random effects model, because firm specific effects are present and should be accounted for.

3.5 Hypotheses Testing

Table 5: Summary of Fixed Effect Result

FINANCIAL LEVERAGE	Coef.	Std. Err.	t	P> t
ESID	-8.605067	18.57717	-0.46	0.643
CSRD	10.3191	30.91202	0.33	0.739
CGDI	-13.35563	23.42941	-0.57	0.569
FINLEV	.1620621	.1387398	1.17	0.243
_cons	-6.436679	12.45208	-0.52	0.605
N				460
F(4,410)				0.50
Prob > F				0.7324

Source: Regression Output, 2025.

Table 5 summarizes the fixed effects regression results for relationship between firm-specific factors (Environmental Sustainability Disclosure Index [ESDI], Social Sustainability disclosure Index [SSDI], Governance Sustainability Disclosure Index [GSDI], and Financial Leverage [FINLEV]) and financial leverage for 460 firm-year observations. Overall the model is poor performing with the F statistic of 0.50 and p-value of 0.7324 indicating that the independent variables as a group do not have a statistically significant impact on financial leverage. None of the individual coefficients were significant (all p-values were > 0.05), suggesting a weak relation of the independent variables with financial leverage. The environmental sustainability disclosure index had a negative coefficient (-8.61), but it was statistically insignificant (p=0.643), indicating environmental sustainability disclosure has no impact on the market value of the firm on short term or investors are not valuing this information. The corporate social responsibility disclosures has a positive relationship (coef = 10.32), however the relation is statistically insignificant (p=0.739). It means either CSR are not adequately disclosed or investors are not rewarding firm's corporate social responsibility disclosure activities. Also, Corporate Governance Disclosure index shows insignificant negative relationship (coef = -13.36, p=0.569), suggesting that different levels of corporate governance disclosures do not seem to drive the financial leverage of the firm. Financial leverage shows positive correlation but not statistically significant (coef=0.16, p=0.243) although close to be significant.

4. Discussion

4.1 Summary

- (i) Based on a dataset comprising 46 firm-years, this research analyzed the linkage between firm specific variables, disclosures about the company's sustainability (Environmental Sustainability Disclosure Index - ESDI, Social Sustainability Disclosure Index– (SSDI) and Corporate Governance Sustainability Disclosure Index – (GSDI) and financial leverage. The results of the analysis were:

- (ii) Environmental Sustainability Disclosure Index (ESDI) had a negative coefficient of -8.61 but it was not statistically significant ($p = 0.643$), suggesting that environmental sustainability disclosure may not have relationship with market value of firms in the short run or financial leverage of firms in Nigeria.
- (iii) Social Sustainability Disclosure (SSDI) had a positive coefficient of 10.32 but it was not statistically significant ($p = 0.739$), indicating that there may not be much value assigned to CSR disclosures by investors in Nigeria or there is low reporting of CSR issues by listed firms in Nigeria.
- (iv) Governance Sustainability Disclosure Index (GSDI) had a negative coefficient of -13.36 but it was not statistically significant ($p=0.569$), implying that disclosure of Corporate Governance doesn't have any significant relationship with firm leverage in Nigeria.

4.2 Conclusion

In conclusion, this analysis revealed that Sustainability reporting in Nigerian listed manufacturing firms had neither meaningful effect on its market value and there is inadequate evidence to justify the belief of meaningful relationship with financial Leverage in the short term in Nigerian listed manufacturing firms of listed Nigeria Security Exchange Commission market. The observed weak association between the reported disclosures and firm leverage is likely due to the inadequacy and lack of iappropriate and adequate value assignment to the disclosures, and also other firm specific determinants of the level of reporting, such as size and profitability. Despite these results, stakeholder theory and voluntary disclosure theory suggest the importance of disclosure transparency on sustainability in corporate strategy. The study also found that although it might not be directly linked to financial leverage in the short term, sustainability reporting may yield other advantages to the firms such as increase in market valuation, obtain access to the capital markets and improve reputation. From the findings, further study should be conducted on the long-term relationship between the disclosed sustainability information and firm performance and financial leverage of firms listed in Nigeria.

4.3 Recommendations

The following recommendations are thus put forth:

- i. firms should endeavour to carryout out quality, transparent and detail sustainability reports by focusing on ESG information, disclose information using international reporting standard (e.g GRI) that it is relevant, comparable and can contribute to better informed investment decision.
- ii. regulatory bodies and government should take serious consideration on making it a mandatory disclosure for listed companies in Nigeria. They should enforce the implementation and disclosure of information on ESG and Corporate Governance by the companies listed on Nigeria Stock Exchange in alignment with global best practices and to enable investors make comparative decisions of firm.
- iii. Future researchers should investigate the long-term impact of disclosure on financial leverage of firm and performance across different sector and country so as to achieve comprehensive and meaningful findings.

4.4 Contribution to knowledge

- (i) The research adds to empirical literature on the effect of sustainability disclosures on the value of listed companies in Nigeria, thus adding to the very little information from developing countries on this relationship.
- (ii) This research adds to theory on the application of both stakeholder theory and signaling theory in elucidating the place of sustainability disclosures in companies financing activities.
- (iii) The finding is relevant to corporate managers, investors, regulators, and policy makers, on how to reinforce corporate reporting mechanisms and transparency on the reporting of sustainability issues.

Conflict of Interest

The authors declare no conflict of interest with respect to the research, authorship, or publication of this article.

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