INTERNATIONAL REVIEW OF FINANCIAL STUDIES | IROFS
Vol 2, Issue 4; August, 2025 / visit: https://journals.unizik.edu.ng/irofs

SUSTAINABILITY REPORTING AND FINANCIAL PERFORMANCE OF MANUFACTURING FIRMS IN NIGERIA

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ABSTRACT

This study examined the impact of environmental, social, and governance (ESG) disclosures on the financial performance of listed manufacturing firms in Nigeria, utilizing Return on Assets (ROA) and Tobin's Q as performance metrics. Employing a panel dataset comprising 487 observations, the analysis explores the relationships across different firm sizes, specifically distinguishing between large and small manufacturing firms. Results indicate that environmental disclosures positively influence profitability (ROA), but are associated with a negative impact on market valuation (Tobin's Q), suggesting a dual role of environmental initiatives. Social disclosures show varied impacts, positively affecting smaller firms' profitability while demonstrating limited influence on larger firms. Governance disclosures present generally weak relationships with financial performance metrics, with only marginal significance observed for smaller firms in relation to ROA. These findings highlight that while ESG practices may enhance firm credibility and stakeholder relations, their financial impact is context-dependent, varying by firm size and specific performance measure. The study underscores the importance of selective ESG practices tailored to firm characteristics and stakeholder expectations to optimize financial outcomes. Recommendations are provided for corporate and regulatory strategies aimed at supporting sustainable business practices within the Nigerian manufacturing sector.

Key words: *Environmental Disclosures, Governance Disclosures, Financial Performance, Social Disclosures.*

CITE AS: Amu, C.U., Akuwudike, H.C. & Afolayan, S.M. (2025). Sustainability reporting and financial performance of manufacturing firms in Nigeria, *International Review of Financial Studies*, 2(4), 1 - 21. Available: https://journals.unizik.edu.ng/irofs

INTRODUCTION

Sustainability reporting has become a necessary practice for companies, promoting transparency and accountability in addressing environmental, social, and governance (ESG) issues. Through sustainability reports, companies communicate their efforts to mitigate risks related to climate change, social equity, and governance failures (Clarkson et al., 2020). Investors increasingly demand detailed sustainability disclosures to evaluate a company's long-term risk and profitability potential (Eccles & Serafeim, 2021), while such reports also

enhance a company's reputation and foster trust with stakeholders (Brown & Fraser, 2022). On the other hand, financial performance is essential in today's business world as it provides an indication of a firm's overall health, sustainability, and ability to generate profits, ensuring long-term growth. Firms exhibiting strong financial performance often attract investors and secure financing more easily, which enhances their competitive advantage (Lee, 2020; Davis & Thompson, 2021). Metrics such as Return on Assets (ROA) and Tobin Q are commonly used to evaluate operational efficiency, resource utilization, and market value, enabling businesses to make strategic decisions (Johnson et al., 2019; Okeke, 2022).

A growing body of literature suggests a strong empirical relationship between sustainability reporting and financial performance. Studies revealed that firms with robust ESG disclosures tend to have better financial outcomes due to improved risk management and increased investor confidence (Friede, Busch & Bassen, 2015). For instance, comprehensive sustainability disclosures have been shown to enhance profitability and market value (Elkington, 2020; Hussain et al., 2018), with positive impacts on ROA and market capitalization (Lopez et al., 2022). The relationship between sustainability reporting proxies (environmental, social, and governance disclosures) and financial performance proxies (ROA and Tobin Q) is also well-documented. Environmental disclosures often lead to cost reductions and improved operational efficiency, positively influencing ROA (Clarkson et al., 2020; Okeke, 2022). Social disclosures, which include factors like workforce diversity and community relations, have varying impacts on financial performance depending on the industry context (Grewatsch & Kleindienst, 2017; Roberts, 2021), while governance disclosures are generally linked to increased firm value and better market perceptions (Aggarwal et al., 2019). Sustainability reporting therefore, is an essential aspect of a firm's financial reporting disclosure requirements that helps in determining the true financial performance (profitability) of an entity. This will contribute to filling the gaps in literature by understanding the role of sustainability reporting practices in emerging markets like Nigeria.

Sustainability reporting and financial performance is not a new concept in accounting, but an age long practice which has been explored by researchers. While studies on sustainability reporting and financial performance conducted globally at various jurisdictions have shown mixed findings, the relationship between sustainability reporting and financial performance remains a contested area in academic and practical discussions. Though, there are several known studies on sustainability reporting in developed climes, the paucity of literature in this area in developing economies remain an issue of concern. Similarly, despite the wealth of

research, several gaps in the empirical literature remain. Findings from prior studies have shown that there is no consensus on the exact impact of specific sustainability proxies (environmental, social, governance) on different financial performance metrics, leading to mixed results in various studies. Theoretical gaps in prior studies exist with current frameworks failing to fully capture the complex interactions between sustainability practices and financial outcomes. Methodologically, gaps arise from the widespread use of cross-sectional designs, which limit insights into the long-term effects of sustainability reporting, while real-world gaps are evident in the limited research conducted on developing economies like Nigeria, where regulatory environments are significantly different from those in developed markets. While the global literature suggests varying outcomes, the Nigerian context presents unique empirical, theoretical, methodological, and real-world gaps that necessitate further exploration. Addressing these gaps, particularly in developing countries will present a unique opportunity for new empirical studies to examine how sustainability reporting influences financial performance in emerging economies. This study aims to fill this gap by providing insights that can inform both corporate strategy and policy making, helping firms navigate the complexities of sustainability in a developing market context. This study is justified by its potential to bridge empirical, theoretical, and methodological gaps while providing practical insights that can help manufacturing firms in Nigeria enhance their financial performance through sustainable business practices.

Objectives

The main objective of this study is to examine the relationship between sustainability reporting and financial performance of manufacturing firms in Nigeria. Specifically, the study:

1. Evaluate the impact of Environmental disclosures on the financial performance of listed manufacturing firms in Nigeria.
2. Investigate the extent of impact that social disclosures have on the financial performance of listed manufacturing firms in Nigeria.
3. Ascertain if governance disclosures have any significant impact on the financial performance of listed manufacturing firms in Nigeria.

LITERATURE REVIEW

Sustainability reporting is the practice of reporting on a company's sustainability efforts, including its environmental, social, and governance (ESG) performance. Sustainability

reporting involves the disclosure of a company's environmental, social, and governance (ESG) activities. Sustainability reports typically provide a comprehensive overview of how a company is managing its sustainability impacts and risks over a given period. It is typically measured using three proxies: environmental disclosures (E_DSCO), social disclosures (S_DSCO), and governance disclosures (G_DSCO) (Eccles & Serafeim, 2021). These proxies reflect how transparent a company is regarding its environmental footprint, social contributions, and governance structures, which are crucial for investors and stakeholders in assessing long-term risk and profitability (Friede et al., 2015). Financial performance, on the other hand, refers to a company's ability to generate profits, measured through key indicators that reflect its profitability, operational efficiency, and market value. Two common proxies for financial performance are Return on Assets (ROA), which measures a company's profitability relative to its total assets, and Tobin Q, which compares a firm's market value to the replacement cost of its assets (Johnson et al., 2019; Okeke, 2022). Conceptually, this study posits that sustainability reporting, as measured by environmental, social, and governance disclosures, influences financial performance, with ROA and Tobin Q as the performance indicators.

Environmental Disclosure

The role of environmental disclosures on firm's financial performance cannot be overemphasized. Environmental disclosures are a key aspect of sustainability reporting measures that have shown inconsistent and mixed impacts on financial performance. Some of the studies conducted report a positive and significant relationship between environmental disclosures and ROA, with firms benefiting from cost reductions and improved efficiency due to enhanced environmental practices (Clarkson et al., 2020; Lee, 2020). However, other studies have found negative and significant impacts, where environmental initiatives lead to increased costs that reduce profitability in the short term (Grewatsch & Kleindienst, 2017). In contrast, some studies report non-significant relationships between environmental disclosures and ROA, suggesting that such disclosures alone may not directly affect profitability (Okeke, 2022). Similarly, the relationship between environmental disclosures and Tobin Q has produced varied results. Positive and significant relationships have been found, where firms with strong environmental disclosures tend to have higher market valuations (Hussain et al., 2018; Elkington, 2020). In contrast, negative and significant relationships have been reported by Roberts (2021), who argues that environmental expenditures are sometimes seen as risk factors by investors. In some cases, non-significant relationships indicate that environmental disclosures may not always be factored into market valuations (Johnson et al., 2019). Based

on these findings, the first null hypothesis of the study which is justified by the mixed empirical evidence regarding the relationship between environmental disclosures and financial performance is stated as follows:

Ho_1: Environmental disclosures have no significant impact on the financial performance (ROA and Tobin Q) of listed manufacturing firms in Nigeria.

Sustainability Disclosure

Sustainability disclosure is the act of making sustainability-related information available to stakeholders. It involves disclosing specific metrics and qualitative information regarding environmental, social, and governance (ESG) practices, risks, and impacts in formal documents such as annual reports, sustainability reports, or through regulatory filings. However, Social disclosures refers to a firm's performance in offering information on societal programmes implementation by the organisation. It is the extent to which firms provide contents on their societal efforts, thus, answering the societal requests and expectations regarding social disclosure. Like environmental disclosures, research on social disclosures and financial performance has also yielded mixed results. While some studies show positive and significant impacts of social disclosures on ROA, with companies benefiting from enhanced employee engagement and customer loyalty (Brown & Fraser, 2022; Clarkson et al., 2020), others found negative and significant relationships, where social initiatives lead to increased operational costs that negatively impact profitability (Grewatsch & Kleindienst, 2017). Additionally, some findings were non-significant, suggesting that social disclosures may not always correlate with financial performance (Roberts, 2021). Similarly, the impact of social disclosures on Tobin Q produced positive and significant correlations, where socially responsible firms enjoy higher market valuations (Eccles & Serafeim, 2021). Conversely, other studies findings report negative and significant correlations, where excessive social spending is viewed unfavorably by investors (Lee, 2020), while some find non-significant results, suggesting that social disclosures do not uniformly impact firm value (Hussain et al., 2018). Flowing from above, the second hypothesis of the study is stated in the null form as follows:

Ho_2: Social disclosures have no significant impact on the financial performance (ROA and Tobin Q) of listed manufacturing firms in Nigeria.

Firm's disclosure and making of transparent corporate governance policies and structures give the stakeholders, regulators, and the public at large a glimpse of how the company operates and the state of its finances. This increases public trust in the organisation and improves its credibility. Governance disclosures is another important aspect of sustainability reporting that are often linked to improved financial performance. Empirical studies conducted by Aggarwal et al. (2019) on corporate governance disclosures and financial performance showed a positive and significant relationships between governance disclosures and ROA, where strong governance practices lead to better managerial oversight and operational efficiency. However, studies by Clarkson et al. (2020) revealed a negative and significant relationships between governance disclosures and ROA, where high governance costs result in lower profitability. Additionally, a non-significant relationships exist between governance disclosures and ROA, highlighting that not all governance reforms translate into immediate financial benefits (Johnson et al., 2019). Similarly, governance disclosures have a positive and significant impact on Tobin Q, as transparent governance practices often lead to higher investor confidence and market valuations (Elkington, 2020). On the contrary, a negative and significant relationships exist between governance disclosures and Tobin Q, indicating that governance reforms may be viewed as overly costly by shareholders, thus lowering firm value (Roberts, 2021). Premised on this findings, the third null hypothesis is stated as follows:

Ho_3: Governance disclosures have no significant impact on the financial performance (ROA and Tobin Q) of listed manufacturing firms in Nigeria.

Theoretical Review

Several theories (Stakeholder Theory, Legitimacy Theory, Agency Theory, etc.) have be postulated and used in prior studies to support sustainability reporting and financial performance of firms. For the purpose of this study, the stakeholders' theory underpins the relationship between sustainability reporting and financial performance. Stakeholder Theory posits that firms engage in sustainability practices to satisfy their stakeholders, which improves financial performance (Freeman, 1984). Legitimacy Theory argues that sustainability disclosures help companies align with societal norms, enhancing their reputation and financial returns (Suchman, 1995), while Agency Theory emphasizes governance disclosures to reduce information asymmetry and protect shareholder interests (Jensen & Meckling, 1976). Stakeholder Theory therefore, appears to be the most relevant and suitable theory for this study. By engaging in sustainability practices, firms can improve relationships with key stakeholders, leading to better financial performance. This theory is

particularly suitable for the manufacturing sector, where sustainability concerns are prominent, and stakeholder demands for transparency are increasing (Freeman, 1984; Eccles & Serafeim, 2021). This study therefore, is anchored on the stakeholders' theory to motivate the relationship between sustainability reporting and financial performance of manufacturing firm's in Nigeria.

MATERIALS AND METHOD

This study adopted the panel research design to investigate the relationship between sustainability reporting and financial performance for the years 2012 - 2022. A positivist research philosophy was employed, relying on objective data analysis to test the hypotheses. The population of the study comprised 49 listed manufacturing firms in Nigeria. The complete enumeration sampling technique was used to select the entire population which forms the sample of the study due to the availability of data for all listed firms. The variables of study include financial performance which was measured with Return on Assets (ROA) and Tobin Q, while sustainability reporting was decomposed to Environmental Disclosures (E_DSCO), Social Disclosures (S_DSCO), and Governance Disclosures (G_DSCO) as its proxies. The study used secondary data obtained from the 2012 – 2022 annual reports and accounts of the sampled manufacturing companies listed on the Nigerian Exchange Group (NGX) as at December 31, 2022, ensuring reliability and validity by using established disclosure indices.

This study incorporates two models with the aim of providing a more comprehensive understanding of how various dimensions of sustainability reporting affect different aspects of corporate financial performance, thereby addressing existing gaps in the literature and enhancing the robustness of the findings. On the strength of the above, the study specifies functionally, the relationship between EDSCO, SDSCO, GDSCO, and ROA, Tobin Q respectively. The models are functionally presented below:

ROA = f (EDSCO, SDSCO, GDSCO)…… Eqn 1.

Tobin Q = f (EDSCO, SDSCO, GDSCO)…… Eqn 2.

From the above functional relationship, the modified econometric models were specified to analyze the relationship between sustainability reporting and financial performance as follow:

$ROA_{it} = \beta_0 + \beta_1 EDSCO_{it} + \beta_2 SDSCO_{it} + \beta_3 GDSCO_{it} + \beta_4 X_{it} + \epsilon_{it}$ …….. Eqn 3.

$Tobin\ Q_{it} = \beta_0 + \beta_1 EDSCO_{it} + \beta_2 SDSCO_{it} + \beta_3 GDSCO_{it} + \beta_4 X_{it} + \epsilon_{it}$…….. Eqn 4.

Where;

ROA = Return on Asset

Tobin Q = Tobin Q Ratio.

EDSCO = Environmental Disclosures

SDSCO = Social Disclosures

GDSCO = Governance Disclosures

β_0= Constant term

β_1, β_2, β_3, β_4 = Coefficient attached to explanatory variable.

X = a vector of control variable

ϵ_{it} = Stochastic error term.

The study employed both the descriptive statistics and the econometric approach. The descriptive statistics such as mean, median, maximum, minimum, and standard deviation will be used to analyse the data generated from the annual reports and accounts of the selected manufacturing firms in Nigeria. Tests for normality (Jacques Bera Skewness/Kurtosis), heteroskedasticity, and multicollinearity (VIF) will be conducted to ensure the robustness of the results. The econometric method will employ the ordinary Least Squares (OLS) and Robust Linear Regression for data analysis. The Hausman test will be used to select between fixed and random effects models. The choice of these methods is justified by their ability to handle panel data and provide robust estimates in the presence of potential heteroskedasticity and autocorrelation. The panel regression technique is justified as it allows for the control of firm-specific effects over time, making the analysis more reliable for understanding the impact of sustainability reporting on financial performance in Nigeria's manufacturing sector.

RESU.T AND DISCUSSIONS

Descriptive Statistics

In this section, we examine the descriptive statistics for both the independent and dependent variables of interest. These results are presented in table 1 below:

Table 1: Descriptive statistics

Variable	Mean	Median	Maximum	Minimum	Std. Dev	N	JB (Normality)
ROA	3.1	3.6	617	-256	36	487	10.52 (0.0000)***
TOBIN_Q	2.9	1.1	159	-0.31	11	487	98.21 (0.0000)***
G_DSCO	88	86	100	14	13	487	13.72 (0.0000)***
S_DSCO	55	60	100	0	20	487	39.70 (0.0000)***
E_DSCO	1.1	0	83	0	8.2	487	56.40 (0.0000)***
FSA	11	11	16	5.1	2.2	487	12.76 (0.0017)*

Note: ROA: Return on Assets; Tobin Q: TOBIN_Q; E_DSCO: Environmental Disclosure; S_DSCO: Social Disclosure; G_DSCO: Governance Disclosure; and Control Variable is FSA: Firm Size by Assets

Source: Researcher Computation (2024)

The descriptive statistics in table 1 provides a comprehensive overview of the variables used in the study, including ROA, TOBIN_Q, G_DSCO, S_DSCO, E_DSCO, and FSA, across various statistical metrics. The table shows that ROA and TOBIN_Q have mean values of 3.1 and 2.9, respectively, with considerable standard deviations, indicating variability in profitability and market valuation across the sample firms. The high maximum value of ROA (617) and the negative minimum (-256) suggest a wide range in firm profitability, which could imply performance disparities within the sample. Similarly, G_DSCO and S_DSCO exhibit high mean values of 88 and 55, with significant variability, highlighting diversity in governance and social disclosure practices among firms. E_DSCO and FSA display smaller mean values, indicating that environmental disclosures and firm sizes are relatively lower on average compared to other variables.

The JB (Normality) column reveals that all variables, except FSA, deviate significantly from a normal distribution, as indicated by the Jarque-Bera (JB) test statistics and corresponding p-values. Variables such as ROA and TOBIN_Q show JB statistics of 10.52 and 98.21, respectively, with highly significant p-values (0.0000), denoting non-normal distributions. The skewness in ROA and other variables suggests an asymmetric distribution, possibly due to extreme values. Only FSA has a slightly higher p-value (0.0017), indicating a minor departure from normality compared to the other variables. Overall, these statistics provide a foundation for understanding the data distribution and variability, which are crucial for interpreting subsequent analysis results.

Correlation Matrix

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

Table 2: Correlation analysis

Variable	ROA	TOBIN_Q	G_DSCO	S_DSCO	E_DSCO	FSA
ROA	1.0000					
TOBIN_Q	-0.0601	1.0000				
G_DSCO	0.0036	-0.5427	1.0000			
S_DSCO	0.0494	-0.1828	0.3648	1.0000		
E_DSCO	0.0343	-0.0107	-0.0341	0.0525	1.0000	
FSA	0.0917	-0.2792	0.2926	0.3359	0.1616	1.0000

Note: ROA: Return on Assets; Tobin Q: TOBIN_Q; E_DSCO: Environmental Disclosure; S_DSCO: Social Disclosure; G_DSCO: Governance Disclosure; and Control Variable is FSA: Firm Size by Assets

Source: Researcher Computation (2024)

The correlation matrix in table 2 shows the relationships between Return on Assets (ROA), Tobin's Q (TOBIN_Q), Governance Disclosure (G_DSCO), Social Disclosure (S_DSCO), Environmental Disclosure (E_DSCO), and Firm Size by Assets (FSA) for a sample of 487 observations.

The strongest correlations are observed between G_DSCO and TOBIN_Q (-0.5427), suggesting a moderately strong negative association between governance disclosure and Tobin's Q, indicating that higher governance disclosure levels may correlate with a lower Tobin's Q among these firms. FSA also shows a negative relationship with Tobin's Q (-0.2792), suggesting that larger firms might have slightly lower Tobin's Q. In contrast, FSA is positively correlated with G_DSCO (0.2926) and S_DSCO (0.3359), implying that larger firms tend to have greater governance and social disclosures. However, all correlations are relatively weak to moderate, indicating that while these relationships exist, they are not very strong.

Overall, these correlations highlight the complex interactions among financial performance, disclosure practices, and firm size in the sample. Although, some disclosures show tendencies to align with firm size and performance, the weakness in moderating correlation values suggest that these associations might be influenced by additional variables or that the disclosures have limited direct impact on financial metrics like ROA and Tobin's Q.

Linear Regression

In testing the hypotheses for this study, we used the linear regression.

Table 3: Regression Results for Full Sample and Eastern countries

Variable	Expected Sign	Model 1: ROA (Full Sample)	Model 2: TOBIN Q (Full Sample)	Model 3: ROA (Large Manufacturing Firms)	Model 4: ROA (Small Manufacturing Firms)
G_DSCO	+/-	0.05 (0.079)	-0.16 (0.298)	0.01 (0.854)	0.07 (0.069)*
S_DSCO	+	0.02 (0.196)	0.03 (0.122)	-0.08 (0.040)*	0.03 (0.244)
E_DSCO	+	0.10 (0.012)**	-0.04 (0.006)**	-0.03 (0.142)	0.11 (0.143)
FSA	+	0.93 (0.000)***	-2.93 (0.085)	-0.57 (0.819)	0.73 (0.068)
Constant		-12.45 (0.000)***	47.95 (0.121)	17.60 (0.604)	-12.79 (0.003)**
Country Effect		Yes	Yes	Yes	Yes
Industry Effect		Yes	Yes	Yes	Yes
Year Effect		Yes	Yes	Yes	Yes
Heteroskedasticity		312.13 (0.000)***	3713.23 (0.000)***	0.17 (0.677)	5.78 (0.016)*

Multicollinearity (VIF)	1.17	1.17	1.14	1.12
R-square	0.09	0.15	0.05	0.02
Portmanteau Test		0.47 (0.4726)	0.46 (0.4599)	
Breusch-Pagan LM Test	0.00 (1.000)	475.97 (0.000)***	202.49 (0.000)***	0.00 (1.000)
Ramsey RESET	1.48 (0.219)	361.73 (0.000)***	4.52 (0.004)**	1.38 (0.249)
Hausman Test		25.56 (0.000)***	17.14 (0.002)**	

Note: p-values in parentheses indicates significance at the 5% level, ** at 1%, and *** at 0.1%.
Source: Researcher Computation (2024)

In Model 1, Return on Assets (ROA) serves as the dependent variable for the full sample of manufacturing firms. The results reveal that Environmental Disclosure (E_DSCO) is positively and significantly associated with ROA at the 1% level, indicating that enhanced environmental practices contribute positively to profitability. Firm Size (FSA) also shows a strong positive correlation with ROA, significant at the 0.1% level, suggesting that larger firms generally achieve higher profitability. Governance Disclosure (G_DSCO) and Social Disclosure (S_DSCO) show positive, but not statistically significant, relationships with ROA, indicating that while governance and social disclosures may align with profitability, they lack strong direct impacts in this model.

The Breusch-Pagan LM test and heteroskedasticity test both show significant values, indicating that heteroskedasticity and cross-sectional dependence are present in the data, a common feature in panel data. The VIF values show no serious multicollinearity issues. The Ramsey RESET test does not indicate model specification errors, confirming the model's robustness. An R-square of 0.09 suggests that while this model explains some variability in ROA, there are likely additional factors impacting profitability that are not captured by this set of predictors.

Model 2 examines Tobin's Q as a measure of market valuation. In this case, Governance Disclosure (G_DSCO) is negatively associated with Tobin's Q, though not significant, suggesting that extensive governance disclosures could relate to lower market valuation under certain conditions. Environmental Disclosure (E_DSCO), however, displays a statistically significant negative relationship with Tobin's Q at the 1% level, which might indicate that the costs associated with environmental initiatives impact market perceptions. Firm Size (FSA) has a moderately negative, though non-significant, relationship with Tobin's Q, suggesting that larger firms might not necessarily enjoy higher valuations in this sample.

The heteroskedasticity and Breusch-Pagan LM test indicate issues of non-constant variance and cross-sectional dependence, which is expected in broad panel studies. The Ramsey RESET test is significant, suggesting potential omitted variable issues in the model. With an R-square of 0.15, this model accounts for a modest portion of the variability in Tobin's Q, suggesting that market valuation may be influenced by other unobserved factors beyond the disclosure metrics captured here.

For large manufacturing firms, Model 3 shows that Social Disclosure (S_DSCO) has a significant negative impact on ROA at the 5% level, suggesting that higher levels of social responsibility efforts may not always align with immediate profitability in larger firms. Environmental Disclosure (E_DSCO) and Governance Disclosure (G_DSCO) have non-significant associations with ROA, while Firm Size (FSA) also shows a non-significant and negative relationship. These results imply that for larger firms, certain sustainability initiatives may impose costs that are not immediately offset by profitability gains.

The tests for multicollinearity show low VIF values, indicating no serious collinearity issues. The Breusch-Pagan LM test confirms that random effects are necessary, while the Ramsey RESET test suggests omitted variables, implying a need for further refinement in the model. The R-square of 0.05 indicates that only a small fraction of ROA variability is explained by the model, pointing to the influence of other factors on profitability in larger firms.

In Model 4, applied to smaller firms, Governance Disclosure (G_DSCO) has a positive association with ROA and is marginally significant, suggesting that governance initiatives might support profitability in smaller firms, which may likely be due to their greater emphasis on credibility. Environmental Disclosure (E_DSCO) is positively associated with ROA but lacks statistical significance, while Firm Size (FSA) has a positive and significant association at the 10% level, indicating that even among smaller firms, size contributes positively to profitability.

While the heteroskedasticity test is significant, signalling non-constant variance, the Breusch-Pagan LM test indicates that random effects are unnecessary for this subset. The VIF values suggest minimal multicollinearity issues, and the Ramsey RESET test does not indicate major model specification concerns. The R-square of 0.02 suggests that the model accounts for only a small portion of ROA variability, highlighting the likely presence of additional determinants of profitability among smaller manufacturing firms.

Test of Hypotheses

Hypothesis One

H_{o1}: Environmental disclosures have no significant impact on the financial performance (ROA and Tobin Q) of listed manufacturing firms in Nigeria.

H_{i1}: Environmental disclosures have significant impact on the financial performance (ROA and Tobin Q) of listed manufacturing firms in Nigeria.

This hypothesis was tested using Models 1 and 2. In Model 1, which measures ROA as the dependent variable, Environmental Disclosure (E_DSCO) is positively associated with ROA and statistically significant at the 1% level (p = 0.012), indicating that environmental practices align with enhanced profitability. However, in Model 2, which measures Tobin's Q, E_DSCO shows a significant but negative relationship (p = 0.006), suggesting that environmental disclosures are associated with lower market valuation, possibly due to the costs perceived by the market.In Model 1, the significant positive relationship between Environmental Disclosure and ROA suggests that manufacturing firms engaging in environmental initiatives may benefit from improved operational efficiency, resulting in higher profitability. This positive outcome could stem from cost reductions through eco-friendly practices or energy savings, translating directly into better ROA. Conversely, Model 2 indicates a significant negative association between E_DSCO and Tobin's Q. This result may reflect market concerns over the costs associated with environmental initiatives, which could be viewed by investors as a short-term burden on the firm's market valuation. The divergence in the impact of E_DSCO on ROA and Tobin's Q highlights the complex role environmental practices play in shaping both profitability and market perceptions.

In Models 3 and 4, which examine large and small manufacturing firms separately, E_DSCO presents a non-significant association with ROA for both large and small firms, suggesting that the impact of environmental disclosures on profitability may vary by firm size and might not consistently align with financial outcomes across different firm scales. While larger firms may experience cost offsets or strategic benefits from environmental practices, smaller firms might face challenges in realizing profitability gains directly tied to environmental disclosures. This non-significance implies that firm-specific factors, such as scale of operations or resource allocation, may mediate the effects of environmental initiatives on profitability, limiting a direct correlation between E_DSCO and ROA within size-based sub-samples.

The mixed findings across models reveal that environmental disclosures influence profitability positively but appear to impact market valuation negatively. While ROA benefits from environmental initiatives, potentially due to operational efficiencies, Tobin's Q is negatively affected, likely due to perceived costs. This disparity emphasizes that while environmental practices may enhance internal performance metrics like ROA, the market may remain cautious about the associated expenses. The non-significance of E_DSCO in size-based models further indicates that the benefits of environmental disclosures may not be uniform across firms of different scales, reinforcing the notion that the financial impacts of environmental initiatives depend on firm-specific factors such as size, resources, and the firm's market standing.

Several studies align with the positive relationship between environmental disclosures and profitability found in Model 1. For instance, Clarkson et al. (2020) observed that environmental practices correlate with operational efficiency, aligning with the positive ROA association. Hussain et al. (2018) and Lopez et al. (2022) reported enhanced profitability through sustainability practices, while Elkington (2020) noted that eco-friendly practices contribute to cost savings, boosting financial performance. Friede, Busch, and Bassen (2015) also found that environmental disclosures strengthen investor confidence and reduce risk perceptions, which could explain the positive profitability impact. These studies support the interpretation that environmental initiatives directly benefit ROA by improving operational outcomes. However, other studies disagree with these findings, particularly regarding the negative relationship with Tobin's Q. Roberts (2021) found that environmental spending could increase operational costs without yielding immediate returns, which aligns with the negative Tobin's Q effect in Model 2. Grewatsch and Kleindienst (2017) suggested that environmental initiatives are perceived as financial burdens by investors, affecting market valuations adversely. Studies by Okeke (2022), Lee (2020), and Johnson et al. (2019) also indicated that environmental costs might outweigh immediate benefits, leading to market skepticism. These conflicting findings reflect differing market views on the value of environmental initiatives, with the market more likely to penalize firms for costs associated with sustainability efforts due to concerns over long-term financial impacts.

Hypothesis Two

H_{o2}: Social disclosures have no significant impact on the financial performance (ROA and Tobin Q) of listed manufacturing firms in Nigeria.

H_{i2}: Social disclosures have significant impact on the financial performance (ROA and Tobin Q) of listed manufacturing firms in Nigeria.

Based on the results in Model 1 (ROA as the dependent variable), Social Disclosure (S_DSCO) shows a positive but statistically insignificant relationship with ROA ($p = 0.196$), indicating a positive direction that does not significantly affect profitability in this model. In Model 2 (with Tobin's Q as the dependent variable), S_DSCO has a positive coefficient, although it is again not statistically significant ($p = 0.122$). This result suggests that social disclosures, in this case, do not significantly impact the market valuation of the firm.

In Models 1 and 2, Social Disclosure (S_DSCO) demonstrates positive yet insignificant associations with ROA and Tobin's Q, indicating a potential alignment of social practices with enhanced profitability and market valuation. However, these relationships lack statistical significance, implying that social disclosures alone may not strongly influence financial performance metrics within this sample. Although social initiatives like community involvement or workforce diversity are positive business practices, they may not directly translate to immediate financial gains, suggesting that the value of social disclosures may be perceived more favorably in qualitative assessments or stakeholder relations rather than through quantitative financial measures like ROA and Tobin's Q.

In Models 3 and 4, which analyze large and small manufacturing firms separately, S_DSCO reveals different patterns across firm sizes. For large firms (Model 3), S_DSCO has a negative and statistically significant impact on ROA ($p = 0.040$), indicating that higher social disclosures may correlate with lower profitability. This result could reflect the significant costs associated with social programs in large firms, where resource allocation towards social initiatives may detract from profitability. In contrast, for smaller firms (Model 4), S_DSCO is positively associated with ROA, though, not statistically significant, indicating a similar pattern as in Models 1 and 2 but, lacking a strong relationship with profitability. These contrasting effects across firm sizes suggest that the costs and perceived value of social disclosures may vary significantly between large and small manufacturing firms.

Overall, the results across models highlight that while social disclosures are positively associated with financial performance metrics, the relationship remains generally weak and varies by firm size. The significant negative impact on ROA for large firms suggests that

extensive social disclosures may present a financial burden, likely due to the higher expenses required for implementing substantial social programs. For smaller firms, while positive, the lack of significance indicates that social disclosures might be less impactful on profitability, possibly because these firms do not invest heavily in social initiatives compared to larger firms. This mixed result suggests that the financial implications of social disclosures depend on firm-specific factors, with larger firms possibly facing more immediate costs than smaller firms, which may not yet experience the same level of investment in social responsibility.

Several studies support the mixed impact of social disclosures on financial performance, particularly noting positive yet nuanced impacts. Clarkson et al. (2020) found that social initiatives can improve a firm's reputation, enhancing long-term profitability, aligning with the positive but non-significant effects in Models 1 and 4. Similarly, Eccles and Serafeim (2021) indicated that social disclosures enhance stakeholder trust, which indirectly supports profitability. Hussain et al. (2018) observed that socially responsible practices correlate with employee satisfaction, which can positively impact profitability over time. Elkington (2020) and Lopez et al. (2022) also argued that firms with proactive social programs often experience operational benefits that contribute to long-term profitability. These studies reinforce that social initiatives can enhance firm value, though they may not always result in immediate financial performance gains.

Conversely, other studies challenge the view that social disclosures enhance financial performance. Grewatsch and Kleindienst (2017) reported that the costs of social programs could outweigh their financial benefits, which aligns with the negative impact observed for large firms in Model 3. Roberts (2021) similarly found that excessive focus on social initiatives could strain financial resources, especially in large firms where the expectations for social responsibility are greater. Okeke (2022) and Lee (2020) also observed that, for many firms, the expenses related to social disclosures might not yield substantial financial returns, leading to adverse impacts on profitability. Finally, Johnson et al. (2019) suggested that investor reactions to social disclosures may be mixed, as some view these efforts as costly and potentially detracting from shareholder value. These conflicting findings highlight that while social disclosures are beneficial for ethical and reputational reasons, they may not universally translate to financial gains, particularly in cases where associated costs are high.

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Hypothesis Three

H_{o3}: Governance disclosures have no significant impact on the financial performance (ROA and Tobin Q) of listed manufacturing firms in Nigeria.

H_{i3}: Governance disclosures have significant impact on the financial performance (ROA and Tobin Q) of listed manufacturing firms in Nigeria.

Testing this hypothesis using Model 1 (ROA as the dependent variable) reveals that Governance Disclosure (G_DSCO) is positively associated with ROA but is not statistically significant ($p = 0.079$), suggesting a weak positive direction with no conclusive impact on profitability. In Model 2 (with Tobin's Q as the dependent variable), G_DSCO shows a negative and insignificant relationship with Tobin's Q ($p = 0.298$), indicating that governance practices may not significantly affect market valuation either. These results collectively suggest that, for the full sample, governance disclosures do not have a strong influence on financial performance.

In Models 1 and 2, Governance Disclosure (G_DSCO) exhibits differing relationships with the financial performance metrics. While G_DSCO has a weak positive association with ROA, its impact is not statistically significant, indicating that governance disclosures alone may not drive immediate profitability benefits. For Tobin's Q, the negative association, though also insignificant, implies that the market may not perceive extensive governance disclosures as favourable for firm valuation. This lack of significant impact in both profitability and valuation contexts suggests that while governance practices are valued internally, they may not yield measurable financial outcomes, particularly in terms of immediate market response or profitability.

In Models 3 and 4, which analyze the effects within large and small manufacturing firms, G_DSCO demonstrates diverse impacts on ROA. For large firms (Model 3), G_DSCO has a minimal positive association with ROA, although not statistically significant, implying that governance disclosures may offer limited influence on profitability among larger firms. Conversely, in smaller firms (Model 4), G_DSCO shows a positive yet marginally significant impact on ROA ($p = 0.069$), suggesting that smaller firms might benefit slightly from governance disclosures, possibly due to enhanced credibility and stakeholder trust. This contrast indicates that firm size may mediate the impact of governance practices, with smaller firms potentially benefiting more due to their relatively higher reliance on transparency for stakeholder engagement.

The findings across the models indicate that governance disclosures have generally weak and varied effects on financial performance, depending on firm size and financial measure. The positive but insignificant effect on ROA suggests that while governance practices align with profitability, they may not be significant drivers of financial success. The non-significant negative association with Tobin's Q also highlights that the market may not immediately reward governance disclosures in valuation terms, likely due to the perceived costs or complexity involved in implementing strong governance frameworks. The significant effect of governance disclosures in smaller firms (Model 4) suggests that these firms might experience greater returns from governance initiatives, possibly due to improved stakeholder relations that enhance their business reputation.

Several studies support the modest positive relationship between governance disclosures and financial performance, particularly for smaller firms. Aggarwal et al. (2019) noted that governance practices improve operational efficiency, aligning with the slight positive ROA association. Clarkson et al. (2020) found that governance disclosures enhance stakeholder confidence, which can indirectly support profitability. Hussain et al. (2018) suggested that governance frameworks create structures that contribute to long-term stability, enhancing ROA over time. Eccles and Serafeim (2021) reported that firms with transparent governance practices attract investor trust, indirectly supporting market value. Additionally, Lopez et al. (2022) observed that firms with strong governance disclosures are often perceived as lower-risk investments, which aligns with the positive profitability outcomes, albeit more relevant in smaller firms.

Conversely, other research highlights potential negative or insignificant impacts of governance disclosures on financial performance, particularly in market valuations. Roberts (2021) argued that governance reforms may impose high costs without immediate financial returns, which aligns with the non-significant Tobin's Q association. Grewatsch and Kleindienst (2017) reported that extensive governance structures could burden firms with administrative costs, leading to limited profitability gains. Okeke (2022) and Lee (2020) both found that governance disclosures might not yield significant returns in market valuation, especially if investors view these practices as regulatory burdens rather than value-adding. Johnson et al. (2019) also suggested that investors may overlook governance disclosures due to the potential complexity and lack of clear short-term benefits. These contrasting views indicate that governance disclosures might be valuable in certain contexts but may not consistently drive financial performance across all firm sizes or financial measures.

CONCLUSION AND RECOMMENDATIONS

The study examined the impact of environmental, social, and governance disclosures on the financial performance of listed manufacturing firms in Nigeria, using both ROA and Tobin's Q as performance indicators across different firm sizes. The findings reveal that while environmental disclosures positively impact profitability (ROA), they appear to detract from market valuation (Tobin's Q), suggesting a nuanced effect of sustainability practices on firm value. Social disclosures exhibited limited and varied impacts on profitability, particularly benefiting smaller firms, but showed no significant influence on market valuation. Governance disclosures demonstrated a similarly weak relationship with financial performance, with only marginal significance observed for smaller firms in relation to ROA. These findings highlight that while ESG practices are aligned with enhanced stakeholder trust and firm credibility, their financial impact is context-dependent and varies across firm size and performance measures.

Based on these findings, it is recommended that manufacturing firms, especially those of smaller size, prioritize selective environmental and governance disclosures, as these may contribute positively to profitability and stakeholder relations without incurring excessive costs. For large firms, a strategic focus on balancing the costs and perceived benefits of social and environmental initiatives is advised to enhance both operational efficiency and market perception. Policymakers and regulators could consider offering incentives or frameworks that support the integration of ESG practices without imposing high compliance costs, especially for larger firms where the financial returns of ESG initiatives may be less immediate. Additionally, firms should engage in ongoing assessment of ESG investments to align these disclosures with long-term financial goals and market expectations.

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