

## SUSTAINABILITY REPORTING AND FINANCIAL PERFORMANCE OF LISTED INDUSTRIAL GOODS FIRMS IN NIGERIA

<sup>1</sup>Zaharadeen Khamis,  
<sup>2</sup>sefiat Olanrewaju Muritala  
<sup>3</sup>Hafsat Hayatuddeen

&

<sup>4</sup>Sabdat Mummy Abdulsalam

<sup>1-3</sup> Department of Banking and Finance, Kaduna Polytechnic

<sup>4</sup>Department of Accountancy Kaduna Polytechnic

### Abstract

*This study examines the financial performance of listed industrial goods firms in Nigeria from 2014 to 2024, a period during which return on investment, proxied by earnings per share (EPS) and profit after tax, declined significantly. Against this backdrop, responsibility accounting an emerging concept in accounting and finance is examined as a potential driver of improved financial performance, premised on the notion that socially responsible firms gain stakeholder respect and loyalty, which may translate into higher sales and performance. Sustainability reporting, proxied by social and environmental disclosures, is linked to firm value, with return on assets (ROA) serving as the proxy for financial performance. Using a correlational research design, data were collected from ten industrial goods firms listed on the Nigerian Exchange Group (NXG) over the 11-year period and analysed via panel-corrected standard error (PCSE) regression. The results show that sustainability reporting related to social disclosures has a negative effect (-0.381) on financial performance, whereas environmental disclosure has a positive effect (0.249). The study concludes that social-sustainability reporting may hurt financial performance, while environmental-sustainability reporting enhances it. The findings suggest that the Securities and Exchange Commission (SEC) should develop a comprehensive sustainability reporting framework aligned with the Global Reporting Initiative (GRI) and make sustainability reporting a statutory requirement in annual reports to strengthen accountability and reduce agency conflict between managers and shareholders.*

**Keywords:** *Financial Performance, environmental disclosure, sustainability reporting disclosure,*

### 1.1 Introduction

Financial performance plays a crucial role in the survival, long-term growth and development of a firm and the economy at large. Following the fact that a published financial statement is a statutory requirement of the listed companies in Nigeria. It is undebatable that a variety of stakeholders relied largely on it to assess the financial well-being or otherwise of a firm listed on the floor of the Nigerian Exchange Group (NXG). The stakeholders to whom a financial statement provides information necessary to make an informed decision concerning business investment range from creditors and shareholders to employees and customers, taking into consideration the influence they have on the business and the economy as a whole (Ladipo et al. 2015).

The traditional view of corporate responsibility is to maximise profit. However, the contemporary time is witnessing a little modification from profit maximisation to an era of sustainability reporting, which makes most of the managers of business concern go beyond profit maximisation and take into cognisance the effect of organisational activities on the social, environmental and economic. All these dimensions are now compiled in a single document, called sustainability reporting (Tyani et al. 2018).

Sustainability reporting is one of the fields in accounting that advocates the idea that a corporate entity is not restricted to economic and legal responsibilities but is also responsible to other parties concerned (Adeniyi & Fadipe, 2017). It is generally accepted that the concept might increase financial performance because socially responsible firms receive respect and loyalty from other stakeholders, which might result in higher sales, enhance employees' loyalty, and attract new customers. Consequently, increases financial performance (Hakeem, 2014). The study employed social and environmental disclosure as sustainability reporting proxies for the independent variable and return on assets as a proxy of the financial performance of the dependent variable.

The overall performance of non-financial firms among listed companies in the Nigerian Exchange Group (NXG), specifically, industrial goods firms, posed a great challenge to shareholder return on investment. For example, the financial parameters of NXG revealed 12 industrial goods firms' losers in 2016 (SEC report, 2016). This accounts for 70% of industrial goods firms at the moment. Additionally, the annual report and accounts of Austinlaz, Avon Crown, Port Paint, Vanleer, and Wapco show negative earnings per share of 0.03, 0.13, 0.07, and 0.068, respectively. Moreover, Wapco, Avon Cown, Vanleer, Port Paint, Austin-Laz, and AFR Paint had earnings per share of 0.06, 0.09, 0.012, 0.013, 0.07 and 0, respectively. Additionally, Avon Crown, Vanleer, Point Paint, Wapco, and Austin-Laz reported negative profit after tax margin due to poor financial performance (Annual Report and Accounts, 2010 to 2020).

In the last two decades, the empirical literature on sustainability reporting and financial performance has increased tremendously, especially in developed countries. In general, sustainability reporting is a broad and multi-dimensional concept that cannot be treated as one specific performance index (Dafna et al.2015).

However, recent studies on sustainability reporting and financial performance in Nigeria are still using the single-dimensional concept (philanthropic), Boreh et al. (2021). Yusha'u and Aliyu(2020), and aside from concentrating on the philanthropic aspect of sustainability reporting, the studies, for example, Williams et al. (2025), Solanke et al. (2023), Boreh et al. (2021), Yuasha'u et al. (2020), Okegbe and Egbunike(2016) and Abullahi and Bala(2015), used total spending to measure sustainability reporting, instead of disclosing several activities engaged in, on different dimensions as categorised in the Global Reporting Initiative (GRI) guideline.

Moreover, using the amount spent to measure sustainability reporting is cumbersome and therefore might not give the whole picture of policy decisions. In addition, environmental conservation has become an increasingly important concern for businesses around the world. Manufacturing companies, which industrial goods firms belong to, are held responsible for environmental impact, and investors are paying attention to how businesses are addressing this issue. One way of assessing environmental accountability is by reporting environmental expenses and their impact on financial performance (Fabian et al., 2022). The cost comprises expenses associated with pollution control, waste management and resource conservation. It increases corporate expenses and might lead to legal or regulatory fines; each of these expenses, however, has severe consequences on corporate financial performance. On the contrary, environmental cost disclosure can help industrial goods firms attract socially responsible investors, who are more likely to support companies that observe robust environmental practices in companies and might be inclined to maintain their shares over an extended period, thereby contributing to sustainability in the company's stock price (Fabian et.al.2022).

There is a growing recognition among investors and other stakeholders of the importance of compliance cost disclosure when assessing a company. Moreover, reporting costs are associated with compliance with the company's annual report. The concern firm, therefore, offers investors valuable insight into their dedication to sustainability and their potential exposure to environmental risks. In another development, companies that engage in environmental cost-related activities, which are considered an aspect of sustainability reporting, tend to achieve superior financial performance compared to those that do not. In a similar vein, Harvard Business School believed that companies that voluntarily report their greenhouse emissions tend to have higher market valuations compared to those that do not (Fabian et al., 2022 and Ikor, 2019). Debate on environmental disclosure and financial performance raises important questions about how non-financial firms can best measure and report on their environmental impact to support sustainability and environmental stewardship (Rita et al.2023). The sustainability reporting and financial performance are considerations in community development.

It is on the foregoing argument that the following research questions are raised to guide the study:

- i. Do sustainability reporting and socially related activities affect the financial performance of listed industrial goods firms in Nigeria?
- ii. To what extent do the effects of sustainability reporting and environmental activities affect the financial performance of listed industrial goods firms in Nigeria?

The main objective of the study is to examine whether sustainability reporting could affect the financial performance of listed industrial goods firms in Nigeria. In a specific term

- i. To analyse whether sustainability reporting related to social activities could affect the financial performance of listed industrial goods firms in Nigeria.
- ii. To determine whether sustainability reporting related to environmental activities could affect the financial performance of listed Industrial goods firms in Nigeria.

Other sections of this paper are the literature review and hypotheses development, the methodology adopted, the results of the study, and finally, the conclusion of the research.

## **2.1 Literature Review**

This section presents the financial performance, sustainability reporting, and the theory that connects them.

## **2.2 Conceptualization**

This part discusses relevant concepts of the key variables of the study. The key concepts include sustainability reporting and financial performance.

### **2.1.1. Financial Performance**

The utmost goal of a business firm, particularly a corporation, is to maximise shareholders' wealth as reflected in the market price of the firm's stock. Shareholders' wealth creation could also be viewed in the form of dividend payout, return on assets (ROA), return on equity (ROE), earnings per share (EPS), dividend per share (DPS), and other performance measurements of Business Corporation (Abken-Selcuk & Kiyamaz 2017). The world of business all the time requires management to be creative and innovative to improve performance (Ladipo, Aremu, andawal, 2015)

Financial performance is the term adopted in the general assessment of the financial condition of an organisation within a specified period, which can be used to make comparisons with other firms in the same industry (Ondieki, 2011). The company's achievements regarding financial growth and profitability are based on its financial statements and key financial indicators such as return

on assets, return on equity, earnings per share, dividend per share, and dividend payout, among other indicators (Adewara et al., 2023; Nguyen et al., 2023). It is a way of evaluating the company's capacity to generate revenue, control expenses, make profits, and create value for its shareholders and other stakeholders (Kolawole et al., 2023; Kumo et al., 2023). Analysing financial performance involves assessing various financial metrics and ratios to acquire an understanding of a company's financial well-being and effectiveness. This assessment is crucial for investors, shareholders, lenders, and other stakeholders to make well-informed decisions (Dagunduro et al., 2022). Berger and Patti (2002) are of the view that "A firm's financial performance, in the view of the shareholder, is measured by how 'better off' the shareholder is at the end of a period, than he was at the beginning. Also, this can be determined using ratios derived from financial statements, mainly the statements of profit or loss and financial position and data on stock market prices.

The present study adopts return on assets (ROA). The reason is that the study views financial performance as how efficiently a firm uses its resources to generate revenue. Though market indicators could also be used to assess a firm's performance, sustainability reporting proxies appear to be more highly correlated with accounting-based proxies of financial performance than market-based indicators (Orlitzky et al. 2003). Aside from the suitability of accounting based on measuring a firm's performance, the SEC and industrial goods firms' report (2016-2020) described poor firms' performance from an accounting point of view.

### **2.1.2. Sustainability Reporting**

There are many definitions of sustainability reporting, as several researchers have written about it. Each researcher tries to describe the concept to suit the context of his or her study. Jimoh et al (2015) viewed sustainability reporting as disclosing responsible behaviour towards the host community by both public and private sectors. Amaechi et al. (2006) described sustainability reporting as the level of commitment to the environment, society, waste management, employee health and safety, product safety, and research and development. Opusunju (2016) sees sustainability reporting as an organisational project in the form of the construction and distribution of basic social amenities. Segun and Adeyini (2017) defined it as community packages, which comprise the renovation of schools, provision of health services and health institutions, building of roads, provision of drinkable water, and donations for a community development project or cultural activities. Uwake (2016) defined it as welfare packages that cut across all stakeholders. It could also be seen as a corporate commitment to act ethically, contribute towards sustainable development, and add value to employees and their families, the host community, and the broader community (World Business Council on Sustainable Development-WBCSD, cited by Mardikano, 2014). In general, sustainability reporting is the process of communicating a company's operation in producing products that are valued from economic, labour, environmental, human rights, and social aspects (Global Reporting Initiative).

The present study defined sustainability reporting from a multi-dimensional (stakeholder) perspective as a comprehensive and well-balanced reporting system that portrays business responsibilities and transparency for environmental and social performance characteristics.

### **2.3.1. Sustainability Reporting Social-Related Activities and Financial Performance**

Omolaye and Salome (2024) examined the effect of the social aspect of sustainable development and the financial performance of consumer goods firms listed in Nigeria. An *ex post facto* research design that required obtaining information from secondary sources was employed. A census sampling technique was used to analyse the entire population of twenty (20) listed consumer firms as of December 2023. The study concluded that positive effect on the listed consumer goods firms in Nigeria.

Solanke et al. (2023) evaluated the effect of the social dimension of sustainable development and the financial performance of listed oil and gas companies in Nigeria. An *ex post facto* research design was employed to obtain data from annual reports and account for five oil and gas companies from the population of twelve listed 12 as of December 2020. The study covered ten (10) years, starting from 2011-2020. However, three proxies of financial performance of the study (profit after tax, return on capital employed and return on assets) were found to be insignificant in explaining the relationship between the social dimension of sustainable reporting and the financial performance of listed oil and gas companies in Nigeria.

Olayinka (2021) conducted a study on the corporate social aspect of business sustainable development and the financial performance of listed deposit money banks in Nigeria. Corporate social and financial performance data were extracted from the annual reports and accounts of the examined DMBs from 2009 to 2018. The study disaggregated the social dimension of the sustainable development report into community development, health, and education. The findings of the study revealed that community development has a significant positive effect on financial performance on the financial performance of listed DMBs in Nigeria. However, health and education were found to be insignificant in explaining the financial performance of listed DMBs in Nigeria.

Kim et al. (2019) carried out a study social aspect of sustainable reporting on the financial performance of U.S. companies. Information on social and financial performance was obtained from annual reports and accounts of the examined firms for the periods of the study. The study discovered that social activities of the examined firms improve their financial performance for the period under review.

Salvia et al. (2018) conducted a study on the effect of social and community projects and the financial performance of the non-financial sector. Data related to social and community development were extracted from audited annual reports of the examined firms. Fixed-effect regression revealed that social and community development projects enhance financial performance.

Uwakwe (2016) and Oboreh and Arukaha(2020), in their studies on CSR and financial performance, concluded that oil and gas-related activities to the host community affect their financial performance positively. Based on their findings, therefore, the Securities and Exchange Commission should monitor and ensure compliance with social and community development projects of oil and gas companies.

Okegbe and Egbunike (2016) explored the social and community dimension of the sustainable report of some selected quoted companies in Nigeria. Data on social/ community development and financial performance were collected from the thirty (30) sample size of the study. The purposive sampling technique was applied to 192 quoted companies for the period of 2011-2014. The study concluded that social/ community projects have a positive effect on return on assets, net profit margin, and current proxies of financial performance, while the finding was insignificant on the return on equity proxy of financial performance of selected quoted companies in Nigeria.

In line with the literature reviewed, the study proposes hypotheses:

H0<sub>3</sub>: There exists a positive relationship between social sustainability reporting activities and the financial performance of listed industrial goods firms in Nigeria.

### **2.3.2. Sustainability Reporting Environment-Related Activities and Financial Performance**

Rita et al. (2023) investigated the influence of environmental disclosure activities and the financial performance of listed consumer goods firms in Nigeria. Environmental disclosure data, such as reduction, reuse, recycling, and management of natural resources and financial performance, were obtained from annual reports and accounts for the periods 2012 to 2021. The

study concluded that environmental disclosure has a positive and significant effect on the financial performance of listed industrial goods firms in Nigeria.

Abubakar and Sdiq(2023) evaluated the effect of environmental disclosure and financial performance of listed cement companies in Nigeria. The study employs an ex post facto research design through which content analysis was conducted to construct the environmental disclosure index. The study framework for quantifying environmental disclosure comprises 10 items using a dichotomous approach. Dandote, BUA, Portland, and Lafarge cements were examined for the five (5) years, starting from 2017 to 2021. The study concluded that environmental disclosure has positive effects on the financial performance of listed cement companies for the years under study.

Cheran et al. (2019) evaluated the influence of environmental reporting activities and the financial performance of listed manufacturing firms in India. Environmental reporting and financial performance data were obtained from the annual report and accounts of the examined firms. The study concluded that it has a positive and significant effect on the financial performance of listed companies in India.

Kim et. Al. (2019) assessed the effect of environmental disclosure and financial performance of listed companies in the USA. Content analysis was conducted to measure environmental disclosure, while return on assets data were extracted from the accounts of the companies. The findings of the study revealed a positive and significant effect of environmental disclosure on the financial performance of listed USA companies.

Hassan (2017) examined the effect of environmental reporting disclosure and the financial performance of selected manufacturing firms in the United Kingdom (UK). Data were extracted from six manufacturing firms for this examination. However, the study concluded that corporate environmental disclosure hurts the financial performance of the examined firms.

Ahmad et al.(2014) explored the effect of environmental disclosure of sustainable development on the financial performance of listed Malaysian companies. The study regressed the information related to environmental sustainable development guidelines and the financial performance of the examined firms. The findings of the study revealed a positive and significant effect of environmental disclosure on the financial performance of listed Malaysian companies.

Following the findings in the reviewed literature concerning environmental disclosure activities and financial performance, the study proposes a hypothesis:

H0<sub>2</sub>: There is no relationship between environmental disclosure activities and the financial performance of listed industrial goods firms in Nigeria.

## **2.4 Theoretical Framework**

The study adopts stakeholder theory to connect sustainability reporting and the financial performance of listed industrial goods firms in Nigeria.

Edward Freeman (1983) was the founder of the stakeholder theory. The theory was laid on the foundation that business success relies upon the management of all the relationships a corporate entity has with its stakeholders. Stanford Research Institute (SRI) view stakeholders as those groups, without whose contribution, the entity's operation would be disrupted or cease to exist (Freeman, 1983). Freeman's stakeholder theory asserts that top management must satisfy a variety of constituents (Local community, environment, employees, customers and so on) that can influence business performance. Regarding this thought, it is practically insufficient for managers to consider shareholders alone. In other words, it is indeed beneficial for a corporate entity to engage in sustainable development activities that would support business operations.

Freeman (1983) developed the theory and incorporated the concept into categories: a business planning and policy model and a corporate sustainability model of stakeholder management. In the first model, the analysis of the model focuses on the development and evaluation of corporate strategy decisions by groups whose support cannot be overemphasised to preserve corporate continuity and existence. The calibre of stakeholders identified in this model

includes the owners, customers, public group and suppliers. Generally, this set of stakeholders is adversarial in nature; however, their possible conflict behaviour is considered a renewed strategy developed by management in favour of corporate resources and environment (Akinlon & Iredele, 2014).

In the second model, the corporate planning, analysis and evaluation extends to external influence, which might hinder the operational activities if not captured and implemented. The nature or type of stakeholders that belong to this category includes regulatory environmentalists and/ or special interest groups concerned with social issues (Idemudia & Ite, 2006). This model allows managers and accountants to consider a strategic plan to address the social demands of non-traditional stakeholder groups. The stakeholder theory proposes an increased level of all the dimensions of sustainable development awareness, which create rooms for companies to widen their scope of corporate planning to include non-traditional stakeholders host community, environment, employees, and customers, among others (Freeman, 1983). The main concern of the stakeholder theory is that sustainability reporting addresses key aspects of sustainable development. It is based on the context of this theory that the present study used stakeholder theory to underpin sustainability reporting and financial performance of listed industrial goods firms in Nigeria.

### **3.1 Methodology**

A correlation research design is adopted to assess the sustainability reporting and the financial performance of listed industrial goods firms in Nigeria. The population consists of all the listed industrial goods firms in the Nigerian Exchange Group (NXG) that have complete financial statements available on their websites or in the office of the Nigerian Exchange Group for the periods 2014-2024. As of December 2024, thirteen (13) industrial goods firms were listed; only ten (10) industrial goods firms met the criteria, and census sampling techniques were used to analyse ten industrial goods firms. The study used secondary data, which were obtained from the annual reports and accounts of the ten listed industrial goods firms in Nigeria for the period of the study. Panel Corrected Standard Error (PCSE) was adopted for the panel data analysis to establish the relationship among the variables of the study. Multiple regressions were considered appropriate because they help not only establish a relationship between dependent and independent variables but also provide the causes and effects of their relationship.

### **3.2 Variables of the study**

The dependent variable of this study is industrial goods firms' financial performance, measured by return on assets (ROA). The independent variable of the study is measured by two indicators, such as sustainability reporting, social and sustainability reporting environment, and two control variables, measured by leverage and firm size.

#### **3.2.1 Variable Definition and Measurement**

The variables of this study consist of the dependent variable, which is firm financial performance measured by return on assets (ROA), and the independent variable is sustainability reporting (society and environment and related activities). The study, however, formulates a framework for the analysis of sustainability reporting practice based on the adapted checklist of Fadio et al. (2013) and Isa & Madaki (2017), which was derived originally from the Global Reporting Initiative (GRI) guideline (2011). To measure the aforesaid sustainability reporting dimension, the study, therefore, adopted an unweighted content analysis approach to the sustainability reporting index through an annual report. To ensure the reliability of the analysis, the study assigned "1" to each sustainability reporting disclosure-related activity in the financial statement and "0" to the annual report if no sustainability reporting disclosure-related activity (Nasiru et al. 2018 & Senan et al. 2021) as follows:

$$TVDS = \sum_{j=1}^n \frac{d_j}{n}$$

Where *TVDS* is the cumulative score for sustainability reporting disclosure, *D<sub>j</sub>* is 1 if shown by an industrial goods firm, or 0 otherwise, and *n* is the maximum score for each industrial goods firm.

A total of 4 and 4(8) disclosure index items of sustainability reporting society and environment-related activities, respectively, are developed based on the adapted checklist of Fadio et al. (2013) and Isa & Madaki (2017).

**Table 1: Variable Definition and Measurement**

Definition	Type	Abbreviation	Measurement	Source
Return on Assets	Dependent	ROA	Measured as earnings before interest and tax Divided by the bank's total assets.	Kantudu & Ilu (2020) and Dachomo et al., (2020)
Social Responsibility Related Activity	Independent	SORA	Measured as the Ratio of the disclosure score of the individual firm to the maximum scores obtainable from community-related activities (Un-weighted index).	Nasiru et al. 2018 & Senan et al.( 2021)
Environmental Responsibility Related Activity	Independent	ENVRA	Measured as the Ratio of the disclosure score of the individual firm to the maximum scores obtainable from environmental-related activities(Un-weighted index)	Nasiru et al. 2018& Senan et al.(20121)
Leverage	Control	LEV	Measured as total assets divided by total debt	( Kandutu & Ilu, 2020)

Firm Size	Control	FSIZE	Measured as natural logarithms of a firm's total assets	Babalola (2012) and Usman & Amran (2015)
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Sources: *Compiled by the Author from Various Literature, 2025*

### 3.3 Model Specification

The models used to empirically test the hypotheses formulated are as follows:

$$ROA_{it} = \beta_0 + \beta_1 SORA_{it} + \beta_2 ENVRA_{it} + \beta_3 BLEV_{it} + \beta_4 FZ_{it} + \mu_{it}$$

Where:

ROA	=	Return on Assets
SORA	=	Society-Related Activity
ENVRA	=	Environment-Related Activity
LEV	=	Leverage
FS	=	Firm Size
$\beta_0$	=	Constant
$\beta_1 - \beta_4$	=	Coefficient of explanatory variables
$\mu$	=	Error term
it	=	Industrial firms and time (Panel Indicator)

### 4.1 Regression Results and Discussions

This section presents the descriptive statistics and summary of the regression model used in the study.

#### Descriptive Statistics

The descriptive statistics of the model of the study are given in Table 2:

**Table 2: descriptive statistics**

Variables	Obs.	Mean	Std. Dev.	Min.	Max.
ROA	100	0.077	0.237	-1.799	0.537
SORA	100	0.505	0.159	0.25	0.75
ENRA	100	0.425	0.247	0	0.75
LEV	100	0.440	0.254	0.004	2.220
FS	100	5.883	2.371	12.064	21.324

Source: STATA OUTPUT 2025

Table 2 shows that the minimum and maximum values of return on assets are -1.779 and 0.537, respectively. This implies that industrial goods firms with high return on assets perform better than those with a lower return on assets. This is because the return on assets signifies the actual amount that each unit of an industrial goods firm's assets is capable of generating. Even though some of the firms made losses, which could be seen from the minimum value of 1.79, the mean value of 0.077 proves that the sector is financially profitable.

In the case of the independent variable, sustainability reporting society-related activity exhibits a mean value of 0.505, with a considerable standard deviation of 0.15. This signifies the level of disclosure with regard to social-related activity is below moderate, with some having 2 and 3 disclosure activities as minimum and maximum, respectively.

Sustainability reporting environment-related activities present a mean value of 0.425, suggesting an average of 40.25% disclosure for industrial goods firms' sustainability reporting, environmental-related activities. The standard of 0.425 with a minimum of 0 and a maximum of

0.75 reveals that some firms among the sample of the study disclosed zero environmental activity, with some having above average to the tune of 0.75.

In the case of ROA from Table 2 below, sustainability reporting, society, and environment-related activities have a negative correlation. The correlation between the sustainability reporting society and environment-related activities was weak and moderate. Thus, it proves to be collinearity-free. This has been confirmed from the output of the variance inflation factor (VIF) in Table 3 displayed below the correlation matrix table. The VIF result provides evidence of collinearity-free predictors in the study. This is true because the highest VIF value is 1.38 among the variables of the study. The highest VIF confirmed the absence of collinearity since it is less than 5. The explanatory variables are said to be collinearity-free. The study assumes no multicollinearity on the independent variables (Gujarati, 2004).

**Table 3 Correlation matrix**

	ROA	SORA	ENVRA	LEV	FS
ROA	1.000				
SORA	-0.080	1.000			
ENVRA	-0.006	-0.215	1.000		
LEV	-0.004	-0.2007	0.642	1.000	
FS	0.274	0.389	0.064	-0.180	1.000

STATA OUTPUT 2025

**Table 4: Variance Inflation Factor (VIF)**

Variables	VIF	1/VIF
ENRA	1.38	0.725
LEV	1.35	0.736
FS	1.27	0.785
SORA	1.26	0.790
Mean VIF	1.32	

Source: STATAOUTPUT 2025

#### 4.2 Diagnostic Test

Before the study ran the final regression, a diagnostic analysis was conducted to maintain the unbiasedness of the parameters as argued by Wooldridge (2011). In addition to multi-collinearity, the Hausman test was conducted to choose between random and fixed effect models. With a p-value of 0.034. This provides sufficient evidence to reject the null hypothesis, which said that the fixed effect model is not appropriate. To take care of the heteroscedasticity in the fixed effect regression model, we conduct panel corrected standard error (PCSE) to make the result more robust.

#### 4.3 Panel Corrected Standard Error (PCSE)

The study presents panel-corrected error results in Table 4.

**Table 4: Panel-corrected error results**

Variables	Coeff.	Stand. Err.	z	Significance
Constant	0.430	0.490	8.680	0.000
SORA	-0.381	0.060	-5.46	0.000
ENVRA	0.249	0.643	3.77	0.000
LEV	-0.634	0.106	-5.97	0.000
FS	1.18	3.48	3.40	0.001

R <sup>2</sup>	0.398
Adj. R <sup>2</sup>	0.373
Wald chi <sup>2</sup> (3)	65.34
Wald chi <sup>2</sup> -prob.	0.000

**SOURCE:** STATA OUTPUT 2025

The PCSE regression is presented in Table 4 for the establishment of a relationship between the dependent and independent variables. From the results, the models of the study are:

The model depicts the constant ( $\beta_0$ ) value of 0.430. This means that in the absence of social and environment-related activities, the value of the return on assets is 0.430. In a related development, sustainability reporting social-related activity has a coefficient of -0.381 and a p-value of 0,000. This implies a negative, moderate, and significant effect on the financial performance since the corresponding p-value is significant at a 1 per cent level of significance. This means there is statistical justification for saying that an increase in social sustainability reporting-related activity by one of the industrial goods firms is seen to reduce financial performance by the value of 0.381, as seen in the parameter of the model  $\beta_2$ . The hypothesis developed earlier that said sustainability, a socially related activity, has no significant effect on financial performance, is not supported. These findings are contrary to Omolaye and Salome (2024) Solanke et al. (2023), Olayinka (2021), Kim et al. (2019), Salvia et al. (2018), Uwakwe (2016), and Okegbe and Egbunike (2016).

From the model, sustainability reporting environment-related activity has a coefficient value of 0.249 and a p-value of 0.000. This implies a positive and significant effect of sustainability reporting environment-related activity on financial performance measures (ROA). This is a clear justification that with one increase in the sustainability reporting environment-related activity, the financial performance of listed industrial goods firms would increase by 0.249, with the econometric assumption that all things are equal. The hypothesis developed earlier concerning sustainability, environment-related, and financial performance, however, is not supported. This finding, therefore, is in line with Ahmad et al. (2014), Cheran et al. (2019), and Kim et al. (2019), Rita et al. (2023), Abubakar and Sadiq (2023). However, it is contrary to Hassan (2017).

### **Policy Implications of the Research Findings**

The findings of this research could be used by relevant authorities, such as the Exchange Commission (SEC), to enact laws on sustainability reporting-related activities in Nigeria, as well as the Industrial Goods Firms Board of Directors, which would be charged with the policies for sustainability reporting-related activities and monitoring compliance.

### **5.1 Conclusion**

The study focused on establishing the effect of sustainability reporting (social and environmental) and financial performance measures (ROA) on listed industrial goods firms in Nigeria. The facts related to sustainability reporting (social and environmental) were measured with an adopted checklist originally developed by the Global Reporting Initiative (GRI), and financial performance was obtained from the annual report for the period of 2013 to 2022. The estimated PCSE regression analysis revealed that sustainability reporting environment-related activity had positive effects on the financial performance of listed industrial goods firms in Nigeria. However, in the same vein, sustainability reporting society-related activities had negative effects on the financial performance of the aforementioned firms.

## Recommendation

The outcome of sustainability reporting, society, and environment-related activities has positive and negative effects on the financial performance of listed industrial goods firms in Nigeria, respectively. Following these facts, therefore, the study recommends that the board of directors and top management should exercise due diligence in allocating corporate resources to minimise the negative and optimise the positive effects of sustainability reporting on financial performance. It could be achieved by comparably allocating more resources to environmental and fewer resources to social dimensions of corporate sustainable development.

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