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Environmental Sustainability Reporting Practices on Financial Performance of Listed industrial goods sector in Nigeria

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ABSTRACT

Environmental reporting is not just report generated from collected data, instead it is a method to internalize and improve an organization's commitment to sustainable development in a way that can be demonstrated to both internal and external stakeholders. The objective of this study is to examine the effect of environmental and social reporting practices on the financial performance of listed industrial goods firms in Nigeria where 10 industrial goods firms were selected from the 13 listed existing industrial goods firms based on purposive sampling. The study employed ex-post-facto research design and data were sourced from the annual reports and accounts statements/sheets of the sampled firms. The analysis begin with the description of data with the use of mean, standard deviation, minimum and maximum. Pearson correlation matrix also deployed. Regression analysis was carried out on the panel data with regards to pooled Ordinary Least Square (OLS) estimation, Fixed Effect Estimation, Random Effect Estimation. The study find out that environmental disclosure has a positive and significant impact on the financial performance captured with return on asset and return on equity of listed industrial goods firms in Nigeria to the tune of 0.3819956 (p= 0.025 <0 .05) and 0.1828716 (p=0 .012 <0.05). Also, social disclosure has a positive but insignificant impact on the return on capital employed and return on equity of the listed industrial goods firms in Nigeria to the tune of 0.373 (p= 0.557 > 0.05) and .0391407 (p= 0.875 > 0.05) respectively. The study therefore, concludes that sustainability practice disclosure can enhance the financial performance of listed industrial goods firms in Nigeria. The study recommend that management of listed industrial goods firms in Nigeria should ensure adequate compliance with the guidelines of environment practice disclosure as this portrays a good image of their firm. Thereby, a high level of financial stability will be achieved in the competitive business world.

Keywords: Environmental disclosure, Financial performance, Industrial Goods Sector, Social disclosure, Sustainability Reporting, Stakeholders.

INTRODUCTION

The problem of natural disaster, and environmental catastrophes brought about environmental issues to the literature since1960s, the recurring events stimulated a flow of concern which has led to sustainability reporting (Soderstrom, 2023). Sustainability reporting is a practice that enhances goalsetting, performance measurement and change management of organizations towards a sustainable global economy and it uses the medium of sustainability report (Isa, 2016). Additionally, Asaolu, Agboola, Ayoola, and Salawu (2011) posits that "Sustainability reporting is considered as a wider level of transparency and accountability to stakeholders for social activities of firms" that is because according to Adeyemi and Ayanlola (2015), the traditional financial statements can no longer provide a complete assessment of corporate performance and shareholder value creation.

According to Asaolu, Agboola, Ayoola and Salawu (2015) posits that sustainability reporting has emerged as a response to interdisciplinary reporting. This practice keeps the society abreast of what is happening in organizations in a holistic manner. Nonetheless, environmental sustainability is still voluntary in Nigeria. From the position of (Akhtaruddin, 2016) how well do organizations in Nigeria practice sustainability reporting? Are these organizations driven by their own policies to become transparent or they have to be coerced by regulatory institutions? To this end therefore, this study seeks to assess the extent of environmental reporting practices in some selected industrial goods sector in Nigeria as a basis of investigation.

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Statement of the Problem

It has been agreed by world business leaders and through academic research that sustainability tells on a firm's corporate responsibility, therefore any company that does not produce sustainability report could be seen as working towards unsustainable development (Abdullahi, 2023).

Researchers in Nigeria (Emmanuel, Elvis, & Abiola, 2019) undertook studies with the objective of evaluating the effect of sustainability reporting on financial performance, for instance, Agu and Amedu (2018) assessed the impact of SR on the profitability of pharmaceutical companies listed in Nigeria, Ucheagwu, Akintoye, and Adegbie, (2019) examined the impact of environmental sustainability practices on financial performance of listed firms in Nigeria. Asuquo et al (2018) evaluated the impact of sustainability reporting on business financial performance in some selected listed breweries firms in Nigeria; Ndukwe and Nwakanma (2018) examined sustainable development practices and financial performance of 34 listed firms from different sectors of Nigerian economy, Yusuf, Emmanuel, Akpan and Odumegwu (2020) examined the impact of Sustainability Reporting on Corporate Performance: Evidence from Nigeria Exchange Group, while Atanda, Osemene and Ogundana (2021) studied sustainability reporting and firm value: evidence from selected Deposit Money Banks in Nigeria. It is obvious that there is paucity of literature on the effect of environmnental reporting practices and financial performance of listed industrial goods sector in Nigeria. More so, the present study covers 2012-2021 financial year which also differs from earlier studies and the use of Return on Asset, Return on Equity and Return on Capital Employed as dependent variables which are not found in previous studies within the Nigeria Industrial goods literature. In view of the above gap, this study examines the effect of environmental reporting practices on the financial performance practices of listed Industrial Goods Sector in Nigeria.

Research Objective

The main objective of this study is to evaluate the effect of environmental sustainability disclosure practices on the financial performance of listed industrial goods sector in Nigeria;

Research Hypotheses

The study developed this null hypothesis:

H_O: Environmental sustainability disclosure practices has no significant effect on the financial performance of listed industrial goods sector in Nigeria

Scope of the Study

The focus of this study centers on economic sustainability reporting practices and financial performance of industrial goods sector in Nigeria. There are many sections in the manufacturing industry, however, the study is limited to listed firms producing industrial goods. This study covered a period of 10 years, spanning from 2012 to 2021. This study adopted panel multiple regression estimation technique.

LITERATURE REVIEW

This chapter reviewed the literature in the area of sustainability reporting and performance of manufacturing firms in Nigeria. The chapter is divided into conceptual review, theoretical review and empirical review.

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Conceptual Review

Financial Performance

The performance of the manufacturing industry is the total view of the industry within a given period to unveil the achievements of their operational activities (Olowokere, Adeniran & Onifade, 2021). Iheduru and Okoro (2019) postulated that the manufacturing firm's performance is the indicator of sustainability and progressive achievement of specific, tangible, worthwhile, personal and measurable goals. He further explained that performance is a vital construct in management that mirrors the best way to manage an organization. Performance also reflects the heterogeneous nature, objectives and circumstances and objectives of an organization at a given period (Kwaghfan, 2015). The actual performance of the manufacturing industry can either be financial and non-financial (Ngatia, 2015). In the context of this study, however, financial performance will be focused on.

Evaluating the financial performance of a manufacturing firm allows decision-makers to judge the result of a business strategy and activity in objective monetary terms. Asuquo, Dada and Onyeogaziri (2018) identified two broad categories of financial performance measures as investor returns and accounting returns. The basic idea of investor returns is that the return should be measured from the perspective of shareholders. Whereas accounting returns measures of financial performance focus on how firm earnings respond to different managerial policies (Abdulsalam, Abdulrahman, Mohammed & Abubakar, 2020). Based on the foregoing definitions, characteristics and significance of the concept, financial performance is the process of evaluating the monetary achievements of the business affairs by implementing policies and strategies terms. In this regard, Ngatia (2015) reported that there is a number of financial performance measures which include TOBIN Q, return on assets (ROA), return on equity (ROE), change in total asset, earnings per share (EPS), net profit, change in stock price, operating profit, gross profit, return on capital employed to estimate the monetary health and the corporation's efficiency in utilizing available monetary resources. Return on Asset (ROA), Return on Equity (ROE) and Return on Capital Employed (ROCE) will be focused on in the context of this study.

Return on Asset

Return on Assets (ROA) represents the amount of earnings (before interest and tax) a company can achieve for each naira of assets it controls and is a good indicator of a firm's profitability. According to Hagel, Brown and Davison (2010), ROA explicitly takes into account the assets used to support business activities. It determines whether the company is able to generate an adequate return on these assets rather than simply showing robust return on sales. Asset-heavy companies need a higher level of net income to support the business relative to asset light companies where even thin margins can generate a very healthy return on assets. Using ROA as a key performance metric quickly focuses management attention on the assets required to run the business.

It is given by the formula:

$$\text{ROA} = \frac{\text{Net Income}}{\text{Total Asset}}$$

Return on Asset (ROA) and Sustainability Disclosure

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Sustainability Disclosure and Return on Asset Financial Performance can be measured through the accounting measures. Return on asset is one of the profitability ratios used to measure financial performance. This has been used by researchers to measure financial performance of firms.

Ezeagba, John-Akamelu, and Umeoduagu (2017) in a study conducted on environmental disclosure and financial performance of food and beverage companies in Nigeria, revealed that there is a significant relationship between environmental accounting disclosure and return on asset. Dessy and Suryaningsih (2015) documented a significant effect between environmental disclosure and return on assets. Rokhmawati, Sathye, & Sathye (2015) found out that environmental accounting disclosure has a positive and significant effect on return on Asset.

Return on Equity

Return on equity which is a test of profitability based on the investments of the owners of the business. It measures the return which accrues to the shareholders after interest payments and taxes are deducted. It is given by the formula:

$$\frac{\text{Net profit (after interest, taxes and preference dividend}}{\text{Shareholders' Equity}}$$

Return on Equity (ROE) and Sustainability Disclosure

Financial Performance can be measured through profitability, and return on equity (ROE) has been used by researchers to measure profitability of firms. Dessy & Suryaningsih (2015) examined the effect of environmental disclosure on financial performance using companies listed on the Indonesian Stock Exchange. The results showed that environmental performance has significant effect return on equity (ROE). Adediran and Alade (2013) investigated if there is any significant relationship between environmental accounting disclosure and financial performance in Nigeria. The results showed that there is significant negative relationship between environmental accounting and return on equity. Agbiogwu, Ihendinihu, & Okafor (2016) examined the impact of environmental and social costs on performance of Nigerian manufacturing companies. Results showed that environmental and social cost significantly return on equity of manufacturing companies.Ezeagba, John-Akamelu, &Umeoduagu (2017) examined the relationship between environmental accounting disclosures, return on equity of food and beverage companies in Nigeria. The study revealed that there is a significant relationship between environmental accounting disclosures return on equity.

Return on Capital Employed

Return on capital employed (or return on Investment) which is an efficiency gauge to show the intensity and profitability of overall capital employed. It is given by the formula:

$$\frac{\text{Net profit(before interest and taxes)}}{\text{Capital employed}}$$

Return on Capital Employed (ROCE) and Sustainability Disclosure

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Financial Performance can be measured through profitability, and return on capital employed (ROCE) have been used by researchers to measure profitability of firms. Agbiogwu, Ihendinihu, and Okafor (2016) examined the impact of environmental and social costs on performance of Nigerian manufacturing companies. Results showed that environmental and social cost significantly affect earnings per share of manufacturing companies. Ahmed, Zakaree and Kolawole (2016) examine the impact of social and environmental disclosure on financial performance of listed manufacturing firms in Nigeria. The findings of the study indicated Social and environmental disclosure has significant positive effect on earnings per share, and hence profitability of companies.

Environmental Sustainability Disclosure Practice

Buallay (2020) described environmental sustainability disclosure practice as the potential to offer reduced long-term risks associated with resource exhaustion, fluctuations in energy costs, product liabilities, environmental pollution and waste management issues. In a similar context, Mutalib, Iriabije, Okon and Chijioke (2020) argued that environmental disclosure practice is the process of maintaining nature's services at a suitable level. According to these scholars, it is the consumption of natural resources at a rate below natural reproduction or no emissions at a rate beyond the capacity of the natural ecosystem to absorb and assimilate these emissions. To Asuquo, Dada and Onyeogaziri, (2018), environmental disclosure practice recognizes that environmental resources are limited, and thus posits that companies need to reform, redesign, and restructure their operations to minimize their negative environmental impact.

The relationship between environmental disclosure practice and firm financial performance has been extensively studied and, thus, remains controversial (Buallay, 2020; Mutalib, Iriabije, Okon & Chijioke, 2020; Mutalib, Iriabije, Okon & Chijioke, 2020). Environmentally sustainable practices can bring about enhanced competitive advantage, product quality improvements, and lower manufacturing costs through a reduction in the usage of raw materials, water, and energy (Ahmed, Zakaree&Kolawole, 2016). The concept, which then refers to the relationship between environmental sustainability and firms' value added, is called eco-efficiency (Hope, 2020).

The minimization of both hazardous and non-hazardous waste also, lead to better utilization of natural resources, improved efficiency, and reduction of operating costs (Okafor, 2018). Reduction of material and energy consumption equally encourages savings in resources and, thus, leads to competitiveness and higher levels of financial performance (Oti & Ogar, 2018). Similarly, reduction of packaging waste and the ability to design for reuse and disassembly brings about cost savings (Mutalib, Iriabije, Okon & Chijioke, 2020).

Conceptual Framework

Figure 2:1 shows the connectivity between the independent and dependent variables of the study:

Independent Variable **Dependent Variable**

Financial Performance

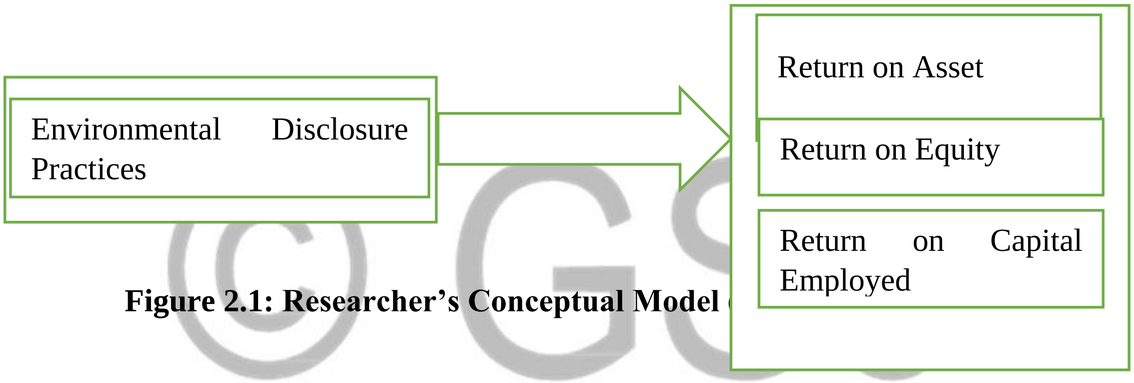
Environmental Disclosure Practices
Return on Asset
Return on Equity
Return on Capital Employed

Figure 2.1: Researcher's Conceptual Model (

Theoretical Review

This section shows the relevant theories for this study including the ones that this study is underpinned.

Signaling Theory

Signaling theory was established by Michael Spence in 1974. This theory asserts that signals are communicated between a firm and its external environment through her reporting practices, which influences its performance (Jones & Murrell, 2007). Amaya, López-Santamaría, Acosta and Hinestroza, (2021) believed that the consistent reporting practices implemented by a firm could improve their performance or hinder it. Thus, firms are advised to carry out actions that would reflect their transactions and can improve their reputation in society. The theory has been criticized based on some limitations. Firstly, the theory highly focused on the signal sent by the firm, and not the interpretation of the public (Amaya, López-Santamaría, Acosta & Hinestroza, 2021).

Resource Based Theory

It is widely accepted that this theory was established by Barney in 1991, when he asserted that the resources of a firm which would give it competitive advantage has to be valuable, rare, inimitable and non-substitutable (VRIN). These features later advanced to be the basis on which a firm's resource would be identified and on which their performance would be hinged on. Resource based theory admits that there are common resources to all firms, but the ones which would suitably improve their performance would be ones which are unique in their utilization to the firm.

This theory has been criticized based on some factors; the valuation and sustainable competitive advantage of resources are similar in their explanation, making the theory tautological (Abagail & Donald, 2011). More so, it is limited in its evaluation of a firm's performance to the internal resources of the firm.

Stakeholder's Theory

The theory was developed by Edward Freeman (1984). The underlying assumption of this theory is that a firm should create value for all stakeholders and not just the shareholders. The theory proposes that organizations embrace sustainability practices as a means of fulfilling their ethical, social and moral obligations to stakeholders and simultaneously maximize shareholders wealth.

Despite its seeming rise in popularity, many scholars have problems with stakeholder theory. Some (Key, 1999) argue that stakeholder theory lacks specificity and thus, cannot be operationalized in a way that allows scientific inspection. Some feel that stakeholder theory offers no decision-making criteria that would adequately guide corporate governance.

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Theoretical framework

This study was anchored on stakeholders' theory. Stakeholders' theory provides the theoretical foundation to the study and for explanation of the effects of sustainability reporting practices on the financial performance of manufacturing firms in Nigeria. The expectation of stakeholders regarding the activities of an organization is a factor that should be considered with priority by the management team during strategic planning. This is because the actions of stakeholders as individuals or groups add value to the firms by increasing productivity, profitability, public image and overall business sustainability (Igbekoyi, 2017).

RESEARCH METHODOLOGY

The study employed ex-post-facto research design and data were sourced from the annual reports and accounts statements/sheets of the sampled firms. 10 industrial goods firms were selected from the 13 listed existing industrial goods firms based on purposive sampling, the firms are Berger Paint, Dangote Cement, CAP Plc, BUA, Meyer Plc, Portland Paint, Lafarge Cement, Beta Glass, Greip Nigeria, and Notore Chemical.

The analysis begin with the description of data with the use of mean, standard deviation, minimum and maximum. Pearson correlation matrix also deployed. Regression analysis was carried out on the panel data with regards to pooled Ordinary Least Square (OLS) estimation, Fixed Effect Estimation, Random Effect Estimation.

Model Specification

$$Y = f(x)$$

Y = Financial Performance (FP)

X = Sustainability Reporting Practices (SRP)

Dependent Variable Y = y1, y2, y3

Where y1 = ROA

y2 = ROI

y3 = ROCE

Independent Variable X = (SRP)

Where x1 = Economic Sustainability Disclosure Practices (ECSDP)

x2 = Environmental sustainability Disclosure Practices (ENSDP)

x3 = Social Sustainability Disclosure Practices (SSDP)

$$Y = \beta_0 + \beta_1 x1 + \beta_2 x2 + \beta_3 x3 + ei$$

$$ROA = \beta_0 + \beta_1 ECSDP + \beta_2 ENSDP + \beta_3 SSDP + eit \ldots\ldots..1$$

$$ROE = \beta_0 + \beta_1 ECSDP + \beta_2 EVSDP + \beta_3 SSDP + eit\ldots\ldots\ldots2$$

$$ROCE = \beta_0 + \beta_1 ECSDP + \beta_2 ENSDP + \beta_3 SSDP + \text{eit}\ldots\ldots.3$$

Main Model

$$FP = \beta_0 + \beta_1 ECSDP + \beta_2 ENSDP + \beta_3 SSDP + eit\ldots\ldots\ldots.4$$

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Where

ROA = Return on Assets

ROE = Return on Equity

ROCE = Return on Capital Employed

DATA ANALYSIS AND DISCUSSION OF FINDINGS

Descriptive Statistics

Our result begins with the description of the characteristics of data series and as indicated in Table 4.1. Also, the determination of the multicollinearity problem among variables was carried out using the Pearson correlation coefficient. It was a balanced panel data of 10 years and across the selected 10 listed firms in industrial goods sector in Nigeria.

Table 4.1: Descriptive Statistics

Variables	Obs	Mean	Standard Deviation	Minimum	Maximum
ROA	100	7.434766	1.247114	5.451527	9.800101
ROE	100	7.309618	.9668016	5.033761	8.564072
ECD	100	.6142	.295977	.14	1
END	100	.692	.2452292	.2	1
SOD	100	.654	.2375889	.2	1

ROCE	100	.1522123	.1734618	0	.8684737

Source: Data Analysis, (2023).

Presented in Table 1 is the description of the balanced dataset that spanned 10 years and the selected 10 listed industrial goods firms in Nigeria. The descriptive statistics depict the average value for ROA as 7.434766, with minimum and maximum values of 5.451527 and 9.800101 respectively. The standard deviation of 1.247114 indicates average dispersion from the series mean. By implication, it means there is an average gap between Return on Asset of industrial goods firms listed on the Nigerian Stock Exchange. In the same result, the mean value of ECD is at 7.309618, with minimum and maximum values of 5.451527 and 8.564072 respectively and a standard deviation of 0.9668016 indicates an averagely wide dispersion from the series mean. This indicates that the return on equity of the selected industrial goods firms listed on the Nigerian Stock Exchange is relatively different. Also, the mean value of ECD is at 0.6142 with minimum and maximum values of 0.14 and 1 respectively. The standard deviation (0.295977) shows an average dispersion from the series mean. It shows the average disparities in economic disclosure of the selected industrial goods firms listed on the Nigerian Stock Exchange. Furthermore, for END, its mean value stands at 0.692, with minimum and maximum values of 0.2 and 1 respectively. The standard deviation (0.692) shows an average dispersion from the series mean. It shows an average disparity in environmental disclosure of the listed industrial goods firms in Nigeria. Also, SOD mean value is 0.659, with minimum and maximum values of 0.2 and 1 respectively. Its standard deviation of .1734618 shows a close dispersion from the series mean while the return on capital employed (ROCE) mean is 0.1522, minimum and maximum values of 0 and 0.86847 respectively and standard deviation of 0.17346.

Correlation Analysis

Table 4.2: Correlation Matrix

Var.	**ROA**	**ROE**	**ECD**	**END**	**SOD**	**ROCE**	**VIF**
ROA	1						
ROE	0.3165*	1					
ECD	0.2770	0.2123	1				2.38
END	0.1887*	0.2323	0.3803*	1			2.14
SOD	0.3881*	0.4295	0.4119	0.3982**	1		1.04
ROCE	0.3554	0.2087**	0.2384	0.3592	0.4212	1	1.28

Source: Researcher's Computation, (2023).

From the result presented in table 2, there is a positive relationship between ROA, ROE, ECD, END, COD and ROCE with a correlation coefficient of 0.3165 for ROE, 0.2770 for ECD, 0.1887 for END, 0.3881 for SOD and 0.3554 for ROCE. This indicates that the variables moved in similar directions over the period covered by this study across the sampled firms. Similarly, the result also showed that there exists a positive relationship between ROE, ECD, END, SOD and ROCE with a correlation coefficient of 0.2123 for ECD, 0.2323 for END, 0.4295 for SOD and 0.2087 for ROCE. This implies that the variables moved in similar directions across the selected firm for the period covered. That is, an increase in one variable would cause an increase in the other. Also, it was revealed that a positive relationship between ECD, END, SOD and ROCE with a correlation coefficient of 0.3803 for END, 0.4119 for SOD and 0.2384 for ROCE. On a similar note, a positive relationship exists between END, SOD and ROCE with a coefficient value of 0.3982 for SOD and

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0.3592 for ROCE. The result also revealed a positive relationship between SOD and ROCE with a correlation coefficient of 0.4212. The relationship between the predictors was positive with the highest correlation coefficient of 0.4295 for ROE and SOD. This indicates that the probability of multicollinearity among our independent or explanatory variables is extremely low and it was further confirmed through Variance Inflation Factor (VIF).

Regression Analysis

Model One: Impact of sustainability reporting practices (economic, environmental and social disclosure) on financial performance (Return on Asset) of listed industrial goods firms in Nigeria

Table 4.3: Results of Regression Estimate and Diagnostic Tests of Model One: Dependent Variable: ROA

	(1)	*(2)*	*(3)*	*(4)*
VARIABLES	*OLS*	*FE*	*RE*	*FGLS*
ECD	.1445676	.2601358	.2454034	.1025325
	(.4191341)	(.396556)	(.3827495)	(.1800892)
END	1.174163***	1.302263**	1.27708**	.3819956**
	(.5161898)	(.5459309)	(.51721)	(.034777)
SOD	-1.218418**	1.063577**	1.079516**	.1628105
	(.5239032)	(.4322301)	(.4233893)	(.2770059)
ROCE	.4349864	.4794357	.4644298	.3738827
	(.7031991)	(.6799426)	(.652391)	(.2533275)
Constant	7.473024	7.727152***	7.692537***	7.369754***
	(.5076051)	(.4848074)	(.551414)	(.3359559)
Observations	100	100	100	100
R-squared	0.7932	0.5487	0.5089	
Adj. R-Squared	0.6583	0.4736	0.4272	
F-Stat	F(4,95) = 32.44 Prob> F = 0.002	F(4,86) = 12.93 Prob> F = 0.0255	Wald chi^2(1) = 12.41 Prob>chi^2 = 0.0146	Wald chi$^2_{(5)}$ = 33.26 Prob>chi^2 = 0.000
Pesaran CD Test	-	1.4007 {0.361}	-	-
Hausman Test	-	-	Chi2(1) = 0.08 Prob>chi^2 = 0.9992	-
Breusch-Pagan LM Test	-	-	chi$^2_{(01)}$ = 57.70 Prob>chi^2 = 0.0000	-
Modified Wald Test for	-	chi^2(10)= 385.54 Prob>chi^2 = 0.000	-	-

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Heteroskedasticity				
Woodridge Test for Autocorrelation	-	$F_{(1,29)}$ = 6.003 Prob> F= 0.0368	-	AR (1) = 0.6456

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Source: Researcher's Computation, (2023).

Diagnostic Tests

The Hausman test results conducted to decide on the appropriateness of either fixed or random effects favours random effect as the chi-squares statistic is 0.08 with a probability value of 0.9992, which is greater than 0.05. On the other hand, the Breusch – Pagan LM test with a chi-square statistic of 57.70 and a prob-value of 0.000 makes random affect an inappropriate estimation technique for the model. However, since the Hausman test favours random effect estimation, further tests for cross-sectional independence, heteroskedasticity and serial/autocorrelation become necessary. The result of the Pesaran CD test reveals 1.4007 with a prob-value of 0.361 indicating the absence of cross-sectional dependence. The null hypothesis is rejected as a result of the significant result of the Modified Wald test for heteroskedasticity with a probability value of 0.000 and the Wooldridge test for autocorrelation in panel data with a probability value of 0.0368. Thus, the Feasible Generalized Least Squares, FGLS that corrects for heteroskedasticity and autocorrelation is considered appropriate for our hypothesis testing and result interpretation.

Regression Estimates Interpretation

Based on the FGLS results, ECD, SOD and END have a positive but insignificant impact on ROA of listed industrial goods firms in Nigeria. Also, a positive significant relationship exists between END and ROA of the listed industrial goods firms in Nigeria.

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Regression Analysis

Model One: Impact of sustainability reporting practices (economic, environmental and social disclosure) on financial performance (Return on Asset) of listed industrial goods firms in Nigeria

Table 4.4: Results of Regression Estimate and Diagnostic Tests of Model One: Dependent Variable: ROA

	(1)	***(2)***	***(3)***	***(4)***
VARIABLES	***OLS***	***FE***	***RE***	***FGLS***
ECD	.1445676	.2601358	.2454034	.1025325
	(.4191341)	(.396556)	(.3827495)	(.1800892)
END	1.174163***	1.302263**	1.27708**	.3819956**
	(.5161898)	(.5459309)	(.51721)	(.034777)
SOD	-1.218418**	1.063577**	1.079516**	.1628105
	(.5239032)	(.4322301)	(.4233893)	(.2770059)
ROCE	.4349864	.4794357	.4644298	.3738827

	(.7031991)	(.6799426)	(.652391)	(.2533275)
Constant	7.473024	7.727152***	7.692537***	7.369754***
	(.5076051)	(.4848074)	(.551414)	(.3359559)
Observations	100	100	100	100
R-squared	0.7932	0.5487	0.5089	
Adj. R-Squared	0.6583	0.4736	0.4272	
F-Stat	F(4,95) = 32.44 Prob> F = 0.002	F(4,86) = 12.93 Prob> F = 0.0255	Wald chi^2(1) = 12.41 Prob>chi^2 = 0.0146	Wald chi$^2_{(5)}$ = 33.26 Prob>chi^2 = 0.000
Pesaran CD Test	-	1.4007 {0.361}	-	-
Hausman Test	-	-	Chi2(1) = 0.08 Prob>chi^2 = 0.9992	-
Breusch-Pagan LM Test	-	-	chi$^2_{(01)}$ = 57.70 Prob>chi^2 = 0.0000	-
Modified Wald Test for Heteroskedasticity	-	chi^2(10)= 385.54 Prob>chi^2 = 0.000	-	-
Woodridge Test for Autocorrelation	-	F$_{(1,29)}$ = 6.003 Prob> F= 0.0368	-	AR (1) = 0.6456

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Source: Researcher's Computation, (2023).

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Diagnostic Tests

The Hausman test results conducted to decide on the appropriateness of either fixed or random effects favours random effect as the chi-squares statistic is 0.08 with a probability value of 0.9992, which is greater than 0.05. On the other hand, the Breusch – Pagan LM test with a chi-square statistic of 57.70 and a prob-value of 0.000 makes random affect an inappropriate estimation technique for the model. However, since the Hausman test favours random effect estimation, further tests for cross-sectional independence, heteroskedasticity and serial/autocorrelation become necessary. The result of the Pesaran CD test reveals 1.4007 with a prob-value of 0.361 indicating the absence of cross-sectional dependence. The null hypothesis is rejected as a result of the significant result of the Modified Wald test for heteroskedasticity with a probability value of 0.000 and the Wooldridge test for autocorrelation in panel data with a probability value of 0.0368. Thus, the Feasible Generalized Least Squares, FGLS that corrects for heteroskedasticity and autocorrelation is considered appropriate for our hypothesis testing and result interpretation.

Regression Estimates Interpretation

Based on the FGLS results, ECD, SOD and END have a positive but insignificant impact on ROA of listed industrial goods firms in Nigeria. Also, a positive significant relationship exists between END and ROA of the listed industrial goods firms in Nigeria.

Table 4.5 Validation of Hypotheses

S/N	Models	Hypothesis	P-value	Remark
1	ROA	ECD and ROA	0.569	Accept
		END and ROA	0.025	Reject
		SOD and ROA	0.557	Accept
2	ROE	ECD and ROE	0.034	Reject
		END and ROE	0.012	Reject
		SOD and ROE	0.875	Accept
	ROCE	ECD and ROCE	0.822	Accept
		END AND ROCE	0.558	Accept
		SOD AND ROCE	0.373	Reject

Source: Researcher’s Computation, 2023.

5. SUMMARY, CONCLUSION AND RECOMMENDATIONS

Summary

It was discovered that economic disclosure has a positive but insignificant effect on the return on asset of listed industrial goods firms in Nigeria to the tune of .1025325 (p= .569 >.05). This is a confirmation of the a-priori expectation. Also, it was unveiled that economic disclosure has a positive and significant impact on return on equity of listed industrial goods firms in Nigeria with the coefficient and probability values of .1461686 and .034.

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Conclusion

The economics dimension of information persuades stakeholders of the possibility of competitive capital resources and a low degree of risk. This is expected to increase investors' and creditors' trust in corporate responsibility, which will improve the company's reputation or image, and hence its financial success. Despite the expected attraction of investors, firms in Nigeria still lag on the statistical parameters to effectively establish the relationship between sustainability reporting practices and the financial performance of listed industrial goods. Empirically, the impact of sustainability practice disclosure on the financial performance of firms has generated several studies across the globe with mixed findings. In the same vein, some studies undertook the subject matter but failed to make a mark among listed industrial good firms. Nonetheless, the hypotheses of these studies require a further affirmation or nullification in ascertaining the direction of the relationship between social disclosure practices and the financial performance of listed industrial goods in Nigeria. Hence, the necessity to undertake this study. From the individual analysis carried out as hypothesized, it was concluded that sustainability practice disclosure can enhance the financial performance of listed industrial goods firms in Nigeria. Theoretically, this study confirms that the principles of signaling theory, stakeholder theory and resource-based theory are valid.

Recommendations

Based on the findings, the following recommendations were made:

i. Since it was discovered that economic disclosure has a positive but insignificant effect on the return on asset of listed industrial goods firms in Nigeria, it is recommended that management of industrial goods sector in Nigeria should embark on more economic disclosure so as to increase profitability of the industry.

ii. Given the insignificant relationship that exists between social development disclosure practices and the performance of firms in the industrial sector, the management of the listed industrial firms should channel effort into engaging in adequate follow up to ensure transparency in its social and community development practices and its disclosure as a way of increasing stakeholders trust and showing more transparency in their operations. This could in turn lead to achieving better financial performance.

iii. Furthermore, functional and intractable economic practices should be created by each industrial goods firm to ensure that the firms maintain their guidelines in reporting economic practices in their annual reports and accounts, this way stakeholders would access this information and even vouch for them as economically responsible and this could bring about more investors to the companies.

i. Management of listed industrial goods firms in Nigeria should ensure adequate compliance with the guidelines of environment practice disclosure as this portrays a good image of their firm. Thereby, a high level of financial stability will be achieved in the competitive business world.

Contribution to Knowledge

The study has contributed to the body of knowledge in accessing the sustainability performance heterogeneity across industrial goods firms and equally shows the complexity by which the overall sustainability disclosure affects their financial performance in terms of return on asset (ROA), return on equity (ROE) and return on capital employed (ROCE). The study also enables people to have full knowledge of what sustainability practice is and its impact on man and the overall environment. The findings also assist firms to improve on their support for sustainability reporting. The econometric model established also aids future researchers in sustainability reporting practices measurement.

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