Environmental Sustainability Reporting and Perceived Financial Performance of Listed Industrial Goods Manufacturing Companies in Nigeria

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DOI: https://doi.org/10.47772/IJRISS.2026.101100265

Received: 04 November 2026; Accepted: 10 November 2026; Published: 25 November 2026

ABSTRACT

The increasing environmental pressures associated with industrial goods manufacturing companies and the growing need for transparent disclosure of their environmental compliance and waste management practices calls for an investigation on how these pressures are associated with perceived financial performance of these firms. Accordingly, this paper investigated the relationship between environmental sustainability reporting and perceived financial performance of listed industrial goods manufacturing companies in Nigeria. The study was guided by two specific objectives, two research questions and two null hypotheses. Specifically, it examined the relationship between environmental regulatory compliance disclosure and perceived net profit margin (NPM), and between waste management disclosure and perceived return on assets (ROA). Anchored on the Stakeholder Theory; the study adopted a cross-sectional correlational survey design. Data were obtained through a 5-point Likert type, questionnaire administered on a sample size of 149 financially knowledgeable top management staff from the ten listed industrial goods manufacturing companies involved in the study. Data were analysed using mean, standard deviation and the Pearson Product-Moment Correlation Coefficient at the 5% level of significance with SPSS version 27. The findings showed a significant positive relationship between environmental regulatory compliance disclosure and perceived NPM ($r = .576$, $p < .001$), and between waste management disclosure and perceived ROA ($r = .643$, $p < .001$). The study concludes that the two environmental reporting dimensions: - Environmental Regulatory Compliance Disclosure (ERCD) and Waste Management Disclosure (WMD) examined are significantly associated with perceived financial performance of NPM and ROA among the sampled companies. Given the cross-sectional survey design and correlation analysis, the findings are interpreted as associations rather than causal effects. It is recommended that management should strengthen environmental regulatory compliance disclosure, improve the disclosure of waste management practices and related costs to enhance transparency, accountability and environmental risk management.

Keywords: Environmental sustainability reporting; environmental regulatory compliance disclosure; waste management disclosure; perceived financial performance; net profit margin; return on assets.

INTRODUCTION

Environmental sustainability reporting has become an important component of contemporary corporate reporting as organisations are increasingly expected to communicate the environmental consequences of their operations. Industrial activities can involve substantial resource consumption and the generation of waste and other environmental externalities. Consequently, environmental information disclosed by companies can provide stakeholders with evidence of how firms identify, manage and respond to environmental

responsibilities. Environmental sustainability reporting encompasses information relating to environmental policies, regulatory compliance, waste management, pollution control, emissions, energy and water management, environmental expenditure and other environmental protection activities. Within this broad area, environmental regulatory compliance disclosure is concerned with information about a company's adherence to applicable environmental laws, regulations, permits and standards, while waste management disclosure concerns information about the generation, treatment, recycling, reuse and disposal of operational waste. Financial performance is commonly assessed with accounting and market-based indicators. Net profit margin (NPM) expresses profit relative to revenue, while return on assets (ROA) indicates the extent to which assets are utilized to generate earnings. For this study, the adopted performance measures of net profit margin and return on asset represent perceived financial performance measures rather than ratios calculated directly from audited financial statement.

The relationship between environmental sustainability reporting and financial performance remains an important empirical issue in Nigeria. Existing Nigerian studies have frequently relied on secondary data and regression techniques. For example, Akinadewo et al. (2023) examined listed industrial goods firms using annual-report data and panel analysis, while Bello and Abdullahi (2024) examined listed consumer and industrial goods companies using secondary financial information. However, empirical findings have remained mixed. For instance, Akinadewo et al. (2023) reported that environmental sustainability practices had a positive and significant relationship with financial performance, whereas Bello and Abdullahi (2024) found no significant effect of sustainability reporting on financial performance proxies such as return on equity and economic value added. Similarly, Obamwonyi and Ugbogbo (2023) found that environmental sustainability reporting had a positive and significant relationship with earnings before interest and tax but an insignificant relationship with other financial-performance measures. Kornom-Gbaraba and Chukwuemeka (2022) on the other hand, reported a negative and insignificant relationship between waste management cost disclosure and corporate financial performance. These mixed findings suggest that the relationship between specific environmental reporting dimensions and financial performance may vary according to the reporting dimension, financial-performance measure and context examined. The present study differs methodologically by employing a cross-sectional survey to capture organizational perceptions of environmental regulatory compliance disclosure, waste management disclosure and financial-performance indicators, particularly perceived net profit margin and perceived return on assets.

Against this background, this paper examined the relationship between environmental sustainability reporting and perceived financial performance of listed industrial goods manufacturing companies in Nigeria. Specifically, environmental regulatory compliance disclosure and waste management disclosure are the adopted dimensions of environmental sustainability reporting. Accordingly, the specific objectives were to: examine the relationship between environmental regulatory compliance disclosure and perceived net profit margin of listed industrial goods manufacturing companies in Nigeria; and examine the relationship between waste management disclosure and perceived return on assets of listed industrial goods manufacturing companies in Nigeria. In line with these objectives, the study raised two research questions; what is the relationship between environmental regulatory compliance disclosure and perceived net profit margin of listed industrial goods manufacturing companies in Nigeria? and; what is the relationship between waste management disclosure and perceived return on assets of listed industrial goods manufacturing companies in Nigeria?

Correspondingly, two null hypotheses were formulated and tested at the 0.05 level of significance:

H_{01}: There is no significant relationship between environmental regulatory compliance disclosure and perceived net profit margin of listed industrial goods manufacturing companies in Nigeria;

H_{02}: There is no significant relationship between waste management disclosure and perceived return on assets of listed industrial goods manufacturing companies in Nigeria.

LITERATURE REVIEW

Theoretical Framework

This study reviewed Stakeholder Theory and the Polluter Pays Principle (PPP). This paper is anchored on Stakeholder Theory because the theory provides the principal theoretical basis for explaining why listed industrial goods manufacturing companies disclose environmental information to meet the information needs and expectations of stakeholders and how such disclosure may be associated with perceived financial performance.

Stakeholder Theory

Stakeholder Theory was advanced by Freeman (1984). The theory argues that organizations have responsibilities to a broad group of stakeholders rather than shareholders alone. From this perspective, corporate reporting can be used to communicate information that is relevant to investors, regulators, employees, customers, host communities and other stakeholders.

Environmental sustainability reporting is consistent with Stakeholder Theory because environmental information can reduce information asymmetry and enable stakeholders to evaluate how firms manage environmental responsibilities and associated risks. This study is therefore anchored on Stakeholder Theory because it provides a useful explanation for why listed industrial goods manufacturing companies communicate environmental information and how such reporting may be associated with perceived financial performance.

Polluter Pays Principle

The Polluter Pays Principle is an environmental policy principle associated with the OECD. It holds, in general terms, that the party responsible for pollution should bear the costs of measures required to prevent, control or remedy environmental damage. The principle is relevant to environmental regulatory compliance and waste management because firms may incur costs in meeting environmental requirements and managing environmental consequences of their operations. Although PPP provides supporting context for the study, Stakeholder Theory remains the principal theoretical anchor because the study focuses on environmental disclosure and its relationship with perceived financial-performance indicators.

CONCEPTUAL REVIEW

Environmental Sustainability Reporting

Environmental sustainability reporting refers to the process through which organizations communicate information about their environmental responsibilities, environmental impacts, sustainability practices and measures adopted to manage environmental issues (Nnedu, Okpanachi, and Achema (2025). They further opined that environmental sustainability reporting involves the disclosure of information relating to an organization's environmental activities and sustainability practices and provides stakeholders with information for assessing the organization's environmental performance. Similarly, Chen, Gummi, Ibrahim, and Tahir (2024) explain that environmental disclosure communicates information about an organization's environmental considerations and sustainability-related activities. Environmental sustainability reporting therefore provides a means through which organizations communicate their environmental responsibilities, practices and responses to environmental concerns.

Environmental sustainability reporting is particularly relevant to listed industrial goods manufacturing companies because their production activities may involve the consumption of resources, generation of waste and exposure to environmental requirements. In this study, environmental sustainability reporting is operationalized through Environmental Regulatory Compliance Disclosure (ERCD) and Waste Management

Disclosure (WMD). These proxies were adopted because they capture two important and complementary dimensions of environmental responsibility. ERCD reflects the disclosure of compliance with environmental requirements and obligations, while WMD reflects the disclosure of how environmental waste arising from organizational activities is managed. Their adoption is therefore appropriate because the two proxies capture both the regulatory-compliance dimension and the operational environmental-management dimension of environmental sustainability reporting. This focused operationalization is also consistent with Nigerian empirical studies that have examined environmental disclosure and sustainability reporting in relation to corporate performance (Akinadewo et al., 2023; Nnedu et al., 2025).

Environmental Regulatory Compliance Disclosure

Environmental regulatory compliance disclosure refers to information communicated by an organization concerning its compliance with environmental laws, regulations, standards, permits and other requirements governing its environmental responsibilities (Kornom-Gbaraba & Chukwuemeka, 2022). Akinadewo et al. (2023) examined sustainability reporting practices among listed industrial goods firms in Nigeria and treated environmental sustainability practices as an important component of corporate sustainability reporting. Similarly, Ohaka and Obi (2021) emphasized the importance of environmental reporting and adherence to environmental best practices in communicating corporate environmental responsibility. Environmental regulatory compliance disclosure may therefore encompass information concerning compliance activities, environmental obligations, regulatory requirements, environmental expenditure and measures adopted to manage environmental risks.

Environmental regulatory compliance disclosure was adopted as a proxy for environmental sustainability reporting because regulatory compliance represents a fundamental and observable aspect of an organization's environmental responsibility. This proxy is particularly appropriate for listed industrial goods manufacturing companies because their production activities may generate environmental consequences that require compliance with applicable environmental requirements. ERCD therefore captures the extent to which organizations communicate their environmental obligations and their responses to regulatory requirements. Its adoption also gives the study a specific compliance and accountability perspective of environmental sustainability reporting rather than treating environmental disclosure as a broad and undifferentiated construct. This makes ERCD relevant to the present study, which seeks to examine how environmental reporting relates to perceived financial performance among listed industrial goods manufacturing companies in Nigeria.

Waste Management Disclosure

Waste management disclosure refers to information provided by an organization concerning the generation, control, reduction, treatment, recycling, reuse and disposal of waste arising from its activities (Nwaiwu & Oluka 2018). They opined that in examining environmental cost transparency among Nigerian oil and gas corporations, identified waste management costs is an important component of environmental cost disclosure. Similarly, Kornom - Gbaraba and Chukwuemeka (2022) specifically examined waste management cost disclosure and corporate financial performance, demonstrating the relevance of waste-related information within environmental disclosure research in Nigeria. Waste management disclosure therefore provides information about the manner in which organizations recognize and communicate their responsibilities concerning waste generated from their operations.

Waste management disclosure was adopted as a proxy for environmental sustainability reporting because waste generation is a direct environmental consequence of many industrial activities, while its management provides an observable indication of an organization's environmental practices. The proxy is particularly appropriate for the present study because listed industrial goods manufacturing companies engage in production activities that may generate different forms of operational and production waste. Disclosure concerning waste reduction, treatment, recycling and disposal consequently provides a specific means of assessing the environmental-management practices communicated by these organizations. WMD complements ERCD by capturing the operational environmental-management dimension, whereas ERCD

captures the regulatory-compliance dimension. Together, the two proxies provide a focused representation of environmental sustainability reporting relevant to industrial goods manufacturing companies.

Financial Performance

Financial performance refers to the extent to which an organization achieves favourable financial outcomes through the effective utilization of its available resources (Korolo & Korolo, 2023). Chen et al. (2024) similarly considered profitability as an important dimension of financial performance. Financial performance may therefore be assessed using different accounting and profitability indicators depending on the purpose and context of the study.

In this paper, financial performance is represented by net profit margin (NPM) and return on assets (ROA). The two measures were adopted because they capture complementary dimensions of profitability: NPM focuses on the proportion of revenue converted into net profit, whereas ROA focuses on the organization's ability to generate earnings from the assets employed. Their combination is therefore appropriate because reliance on a single profitability measure may provide only a partial representation of financial performance. NPM provides a revenue-based profitability perspective, while ROA provides an asset-utilization perspective. The use of the two measures consequently provides broader coverage of perceived financial performance. However, because our study adopted a cross-sectional survey design, the questionnaire captured respondents' perceptions concerning management's use and review of NPM and ROA rather than extracting actual ratios from published financial statements. The findings should therefore be interpreted as relationships involving perceived financial performance.

Net Profit Margin

Net profit margin (NPM) is a profitability measure that expresses the proportion of revenue retained as net profit after accounting for the expenses incurred by an organization. It is commonly calculated by dividing net profit by revenue and multiplying the result by 100. NPM is widely used as an indicator of profitability because it relates the final profit generated by an organization to the revenue obtained from its operations. In Nigerian manufacturing research, for example, included NPM among the financial performance indicators used to assess the relationship between green accounting disclosures and corporate financial performance (Umaigba, Olumese, & Amawu, 2025).

NPM was adopted as a proxy for financial performance because it directly captures the organization's revenue-based profitability. It is appropriate for this study because the measure provides information about the extent to which organizational revenue is translated into net earnings after relevant expenses have been considered. NPM also complements ROA by providing a profitability perspective based on revenue rather than assets. Its inclusion therefore enables the study to examine perceived financial performance from the perspective of profit conversion and profitability from revenue, which is particularly relevant when examining the financial implications associated with environmental reporting practices.

Return on Assets

Return on assets (ROA) is a profitability measure that indicates the ability of an organization to generate earnings from the assets employed in its operations. It is commonly calculated by dividing net income by total assets or average total assets and expressing the result as a percentage (Korolo & Korolo, 2023). They further used ROA as a measure of corporate financial performance in their study of sustainability reporting among deposit money banks in Nigeria. Similarly, Chen et al. (2024) identified ROA as one of the measures used to assess financial performance in their study of sustainability-related environmental disclosure and financial performance in Nigeria.

ROA was adopted as a proxy for financial performance because it captures the asset-utilization dimension of profitability and complements the revenue-based perspective provided by NPM. This makes ROA appropriate for the present study because listed industrial goods manufacturing companies generally depend on physical

and productive assets to undertake their operations. Assessing financial performance through ROA therefore provides a useful perspective on the extent to which the resources committed to business operations are associated with earnings generation. Its inclusion alongside NPM enables the study to capture financial performance through two complementary perspectives: profitability in relation to revenue and profitability in relation to assets. In the present survey, respondents assessed management's use and review of ROA in business decisions and performance evaluation; hence, the measure represents perceived ROA-related financial performance rather than an independently calculated accounting ratio.

Empirical Review

Bello and Abdullahi (2024) investigated sustainability reporting and financial performance of listed consumer and industrial goods manufacturing companies in Nigeria using secondary data from 2012 to 2021. Their results indicated differences in the extent of sustainability disclosure between the two sectors and reported no significant effect of sustainability reporting on selected financial-performance proxies. This finding demonstrates that the sustainability-reporting and performance relationship may vary according to sector and performance measure.

Akinadewo et al. (2023) examined sustainability reporting practice and financial performance of listed industrial goods firms in Nigeria using annual-report data and panel analysis. They reported significant relationships for environmental sustainability practice with their selected financial-performance measures. Their study is closely related to the present research but differs in research design and data source because the present study uses a cross-sectional survey of organizational respondents.

Ohaka and Obi (2021) examined sustainability reporting and corporate performance among listed Nigerian companies using secondary data and regression/correlation techniques. They reported a positive relationship between sustainability reporting, proxied by environmental expenditure, and financial performance. Obamwonyi and Ugbogbo (2023) also examined sustainability reporting and financial performance of quoted consumer goods companies in Nigeria and reported mixed results across sustainability dimensions and financial-performance measures.

Aiyesan (2023) examined sustainability reporting and financial performance of listed manufacturing firms in Nigeria for 2010–2020 using panel regression and reported positive significant relationships for some sustainability variables. Ogunode and Adegbie (2022) examined environmental disclosure practices and sustainable performance of quoted manufacturing companies in Nigeria and reported mixed effects across environmental and social disclosure variables.

Adejola, Omonuk and Ojuola (2024) examined sustainability reporting and financial performance of listed agriculture and natural-resources firms in Nigeria using annual-report data and panel least-squares regression. Their findings showed insignificant negative relationships for the economic and social sustainability variables examined. Other Nigerian studies have examined environmental disclosure, waste-management disclosure and sustainability accounting across different sectors. The literature therefore provides evidence of mixed relationships between environmental reporting and financial performance. However, much of the available evidence is based on secondary financial data and ex-post facto designs. The present study contributes survey-based evidence by examining organizational perceptions of environmental regulatory compliance disclosure and waste management disclosure in relation to perceived NPM and ROA among listed industrial goods manufacturing companies.

Gap in Literature

The reviewed literature shows that prior Nigerian studies have examined sustainability reporting and financial performance using different sectors, disclosure dimensions, performance measures and research designs. Several studies have focused on secondary data obtained from annual reports and financial statements, whereas comparatively less attention has been given to the perceptions of organizational respondents concerning specific environmental reporting dimensions and financial-performance indicators. This study

addresses that methodological gap by examining environmental regulatory compliance disclosure and waste management disclosure through a cross-sectional survey of respondents drawn from ten listed industrial goods manufacturing companies. The study also explicitly examines their relationships with perceived NPM and perceived ROA. The contribution should therefore be understood as survey-based evidence rather than a substitute for financial-statement-based measurement of actual NPM and ROA.

METHODOLOGY

Research Design

The study adopted a cross-sectional correlational survey design within a positivist research paradigm. The design was appropriate because data were collected from respondents at a point in time and the study examined the direction and strength of relationships between environmental reporting variables and perceived financial-performance indicators without manipulating the variables.

Population, Sample and Data Collection

The study involved ten (10) out of the population of thirteen (13) indigenous industrial goods companies quoted on the Nigerian Exchange Group (NGX) (see appendix B). The ten (10) firms were selected using purposive sampling based on the following criteria: the company must be listed within the industrial goods sector of the NGX; have substantial and relevant operations in Nigeria; have remained active during the period covered by the study; provide sufficient information relating to environmental sustainability practices and financial performance; and have accessible top managerial staff who possess relevant knowledge of the company's environmental reporting practices and financial performance. Based on these criteria, the ten (10) firms were selected for the study (See Appendix B).

Of the total of 238 top management staff of the selected ten (10) companies, a sample size of 149 respondents was obtained using the Taro Yamane formular at a 5% level of precision. The sample was proportionately allocated among the selected companies to ensure adequate representation. Copies of the questionnaire were distributed through both manual and electronic methods. The "manual" questionnaire were personally administered to selected respondents at their respective organizations and retrieved directly after completion or at an agreed later date. The electronic version of the questionnaire was distributed to respondents through appropriate electronic channels and retrieved electronically upon completion. The use of both methods provided flexibility for respondents who were available for physical administration as well as those who preferred or were more accessible through electronic means.

Data were collected using a structured questionnaire designed to measure environmental regulatory compliance disclosure, waste management disclosure, net profit margin and return on assets. The questionnaire employed a five-point Likert scale ranging from Strongly Agree (5) to Strongly Disagree (1). The instrument was subjected to face and content validation, while its reliability was established using Cronbach's alpha, with coefficients of 0.82, 0.79, 0.84 and 0.81 obtained for environmental regulatory compliance disclosure, waste management disclosure, net profit margin and return on assets, respectively, indicating satisfactory internal consistency.

Data Analysis

A total of 149 copies of the questionnaire were administered to the sampled respondents, out of which 133 valid were retrieved and used for the analysis, representing a response rate of 89.3%. The retrieved data were coded and analysed using SPSS version 27.0. Descriptive statistics, including frequency, percentage, mean and standard deviation, were used to summarize the responses, while the Pearson Product-Moment Correlation Coefficient (PPMCC) was employed to examine the relationship between environmental regulatory compliance disclosure and net profit margin, and between waste management disclosure and return on assets. The two null hypotheses were tested at the 5% level of significance, with a probability value below 0.05 indicating a statistically significant relationship.

DATA ANALYSIS AND RESULTS

Descriptive Analysis

The analysis was based on 133 valid questionnaires. Mean and standard deviation were used to summarise respondents' responses on a five-point Likert scale, with higher mean scores indicating stronger agreement with the statements measuring each construct.

Environmental Regulatory Compliance Disclosure

Environmental regulatory compliance disclosure was assessed using three questionnaire items. The results are presented in Table 1.

S/N	Measurement Item	N	Mean	Std. Deviation
1	In our company, environmental regulatory cost is considered in the company's strategic planning.	133	4.18	0.83
2	Due to environmental regulatory compliance cost, our company minimises cost and environmental risk exposure as a result of value addition.	133	4.08	0.87
3	In our company, environmental regulatory compliance costs influence our company's business decisions.	133	4.14	1.01

Source: SPSS Version 27 Output, 2024.

The three items recorded mean scores above the scale midpoint of 3.00. The highest mean score was 4.18, indicating strong agreement that environmental regulatory costs are considered in strategic planning. The results suggest that respondents perceive environmental regulatory compliance considerations as relevant to company planning and decision-making.

Waste Management Disclosure

Waste management disclosure was assessed using three questionnaire items. The results are presented in Table 2.

S/N	Measurement Item	N	Mean	Std. Deviation
1	In my company, waste management disclosure costs influence our company's waste reduction strategies.	133	3.48	1.44
2	In our company, waste management disclosure costs impact our company's decision to implement sustainable practices.	133	3.60	1.21
3	In our company, waste management disclosure costs impact our company's compliance with environmental regulations.	133	3.96	0.97

Source: SPSS Version 27 Output, 2024.

All three items recorded mean scores above 3.00. The highest mean score was 3.96 for the influence of waste management disclosure costs on compliance with environmental regulations, while the lowest was 3.48 for

waste reduction strategies. The results indicate general agreement that waste management disclosure and its associated costs are relevant to organizational environmental practices.

Perceived Net Profit Margin

Perceived net profit margin was assessed through three questionnaire items concerning management's use of NPM in financial decision-making.

S/N	Measurement Item	N	Mean	Std. Deviation
1	In our company, management prioritises net profit margin as a key performance indicator.	133	3.87	1.00
2	In our company, net profit margin influences investment decisions as well as capital expenditures.	133	4.15	0.76
3	In our company, management conducts sensitivity analyses to assess the impact of changes in net profit margin on financial performance.	133	3.79	1.07

Source: SPSS Version 27 Output, 2024.

The three items recorded mean scores above 3.00. The highest mean score of 4.15 was recorded for the influence of NPM on investment decisions and capital expenditure, while the lowest mean of 3.79 related to sensitivity analysis. This indicates that respondents generally perceive NPM as an important consideration in financial management.

Perceived Return on Assets

Perceived return on assets was assessed through three questionnaire items concerning management's review and use of ROA.

S/N	Measurement Item	N	Mean	Std. Deviation
1	In my company, management reviews and analyses return on assets to inform business decisions.	133	3.64	1.29
2	Regular assessment of return on assets contributes to our company's financial stability and resilience.	133	3.65	1.18
3	Our company uses return on assets as a benchmark to evaluate the financial performance of different business units of the organization.	133	3.86	0.98

Source: SPSS Version 27 Output, 2024.

All three items recorded mean scores above 3.00. The highest mean score of 3.86 related to the use of ROA as a benchmark for evaluating business-unit performance, while the lowest mean of 3.64 related to reviewing and analysing ROA for business decisions.

Test of Hypotheses

The Pearson Product-Moment Correlation Coefficient was used to test the hypotheses at the 5% level of significance. The coefficient indicates the direction and strength of the linear association between the variables. A p-value below 0.05 indicates statistical significance.

Environmental Regulatory Compliance Disclosure and Perceived Net Profit Margin

Variables	**Environmental Regulatory Compliance Disclosure**	**Perceived Net Profit Margin**
Environmental Regulatory Compliance Disclosure	1	0.576**
Perceived Net Profit Margin	0.576**	1
Sig. (2-tailed)	—	<0.001
N	133	133

Note: ** Correlation is significant at the 0.01 level (2-tailed).

Source: SPSS Version 27 Output, 2024.

The result shows a significant positive relationship between environmental regulatory compliance disclosure and perceived NPM ($r = 0.576$, $p < 0.001$, $n = 133$). The coefficient indicates a moderate-to-strong positive association. Squaring the correlation coefficient gives $r^2 = 0.332$, meaning that the two measures share approximately 33.2% of their variance in this sample. This statistic does not establish that environmental regulatory compliance disclosure causes higher NPM.

Waste Management Disclosure and Perceived Return on Assets

Variables	**Waste Management Disclosure**	**Perceived Return on Assets**
Waste Management Disclosure	1	0.643**
Perceived Return on Assets	0.643**	1
Sig. (2-tailed)	—	<0.001
N	133	133

Note: ** Correlation is significant at the 0.01 level (2-tailed).

Source: SPSS Version 27 Output, 2024.

The result shows a significant positive relationship between waste management disclosure and perceived ROA ($r = 0.643$, $p < 0.001$, $n = 133$). The coefficient indicates a strong positive association. Squaring the correlation coefficient gives $r^2 = 0.414$, meaning that the two measures share approximately 41.4% of their variance in this sample. The result should be interpreted as an association and not as evidence of a causal effect.

Decision on Hypotheses

At the 0.05 significance level, both null hypotheses are rejected because the reported p-values are below 0.05.

The results indicate significant positive associations between environmental regulatory compliance disclosure and perceived NPM, and between waste management disclosure and perceived ROA, respectively.

DISCUSSION OF FINDINGS

Environmental Regulatory Compliance Disclosure and Perceived Net Profit Margin

The study found a significant positive association between environmental regulatory compliance disclosure and perceived NPM ($r = 0.576$, $p < 0.001$). This suggests that respondents who reported stronger environmental regulatory compliance disclosure also tended to report stronger organizational attention to NPM. The finding is broadly consistent with Bello and Abdullahi (2024), who examined sustainability reporting and financial performance among listed consumer and industrial goods manufacturing companies in Nigeria. It is also related to the findings of Akinadewo et al. (2023), whose study of listed industrial goods firms reported significant relationships for environmental sustainability practice and selected financial-performance measures.

Possible explanations include improved environmental-risk management, stakeholder communication and greater attention to compliance-related processes. These explanations are interpretive rather than directly tested in the present correlation analysis. Accordingly, the finding should not be interpreted as evidence that disclosure itself causes higher profitability.

Waste Management Disclosure and Perceived Return on Assets

The study also found a significant positive association between waste management disclosure and perceived ROA ($r = 0.643$, $p < 0.001$). The finding indicates that respondents reporting stronger waste management disclosure also tended to report stronger organizational attention to ROA. The result is consistent with the broader Nigerian literature showing that environmental disclosure and sustainability practices can be associated with financial-performance measures, although findings differ across sectors and measurement approaches.

The result may reflect the potential relevance of waste reduction, environmental compliance and operational efficiency to asset utilization. However, these possible mechanisms were not directly tested. The finding therefore establishes a significant association rather than a causal relationship.

CONCLUSION

The study examined the relationship between selected dimensions of environmental sustainability reporting and perceived financial performance of listed industrial goods manufacturing companies in Nigeria. The findings show significant positive associations between environmental regulatory compliance disclosure and perceived NPM, and between waste management disclosure and perceived ROA.

These findings provide survey-based evidence that environmental reporting considerations are related to how respondents perceive financial-performance management in the sampled companies. However, because the study employed a cross-sectional survey and Pearson correlation, the results do not establish causality. In addition, the financial-performance measures were perception-based rather than calculated directly from audited financial statements.

Implications of the Study

The study has both practical and theoretical implications. Practically, the significant positive relationships between environmental regulatory compliance disclosure and perceived net profit margin, and between waste management disclosure and perceived return on assets, suggest that management of listed industrial goods manufacturing companies should strengthen environmental compliance and waste management disclosures. Improved disclosure can provide stakeholders with relevant information on environmental responsibilities,

compliance practices and resource utilization. The findings also provide useful information to investors, regulators and other stakeholders in evaluating corporate environmental reporting and financial performance.

Theoretically, the findings provide empirical support for Stakeholder Theory, which underpins the study. The significant relationships observed suggest that environmental information disclosed by companies is relevant to stakeholders' assessment of corporate activities and performance. The study therefore extends the application of Stakeholder Theory by providing evidence from listed industrial goods manufacturing companies in Nigeria, particularly in relation to environmental regulatory compliance disclosure, waste management disclosure and perceived financial performance.

Recommendations

- Management of listed industrial goods manufacturing companies should strengthen environmental regulatory compliance disclosure by providing clear and comprehensive information on compliance activities, associated costs and environmental-risk management. This recommendation is consistent with the significant positive association observed between environmental regulatory compliance disclosure and perceived NPM.

- Management should improve the transparency of waste management practices and related costs in corporate and sustainability reports, including information on waste reduction, disposal, recycling and compliance activities. This recommendation is consistent with the significant positive association observed between waste management disclosure and perceived ROA.

Future studies should combine survey-based measures with secondary financial-statement data so that actual NPM and ROA can be examined alongside respondents' perceptions. Longitudinal or panel designs could also provide stronger evidence concerning temporal relationships and reduce the limitations of cross-sectional correlation.

Limitations of the Study

The study has three principal limitations. First, the cross-sectional design limits the ability to establish temporal or causal relationships. Second, the study relied on self-reported questionnaire responses, which may be affected by respondent perception or common-method bias. Third, NPM and ROA were measured through respondents' assessments rather than metrics calculated directly from audited financial statements. These limitations should be considered when interpreting and generalizing the findings.

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APPENDIX A

QUESTIONNAIRE ITEMS

Environmental Sustainability Reporting and Perceived Financial Performance of Listed Industrial Goods Companies in Nigeria

Please tick (✓) the option that best represents your opinion.

Response Scale

Response	Meaning	Score
SA	Strongly Agree	5
A	Agree	4
U	Undecided	3
D	Disagree	2
SD	Strongly Disagree	1

Please indicate the extent to which you agree with the following statements concerning your company.

SECTION A: ENVIRONMENTAL REGULATORY COMPLIANCE DISCLOSURE (ERCD)

	Questionnaire Item
	In our company, environmental regulatory cost is considered in the company's strategic planning.

	Due to environmental regulatory compliance cost, our company minimises cost and environmental risk exposure as a result of value addition.
	In our company, environmental regulatory compliance costs influence our company's business decisions.

SECTION B: WASTE MANAGEMENT DISCLOSURE (WMD)

S/N	Questionnaire Item
	In my company, waste management disclosure costs influence our company's waste reduction strategies.
	In our company, waste management disclosure costs impact our company's decision to implement sustainable practices.
	In our company, waste management disclosure costs impact our company's compliance with environmental regulations.

Section C: Perceived Net Profit Margin (Npm)

S/N	Questionnaire Item
	In our company, management prioritises net profit margin as a key performance indicator.
	In our company, net profit margin influences investment decisions as well as capital expenditures.
	In our company, management conducts sensitivity analyses to assess the impact of changes in net profit margin on financial performance.

SECTION D: PERCEIVED RETURN ON ASSETS (ROA)

	Questionnaire Item
	In my company, management reviews and analyses return on assets to inform business decisions.
	Regular assessment of return on assets contributes to our company's financial stability and resilience.
	Our company uses return on assets as a benchmark to evaluate the financial performance of different business units of the organisation.

APPENDIX B

List of Industrial Goods Companies in Nigeria

Company
Austin Laz & Company Plc
Berger Paints Plc
Beta Glass Plc
BUA Cement Plc
CAP Plc

Cutix Plc
Dangote Cement Plc
Greif Nigeria Plc
Lafarge Africa Plc
Meyer Plc
Notore Chemical Industries Plc
Premier Paints Plc
Tripple Gee and Company Plc

Source: Nigerian Exchange Group (NGX), 2024

List of Industrial Goods Company Used for the Study

	Company
	Austin Laz & Company Plc
	Berger Paints Plc
	Beta Glass Plc
	BUA Cement Plc
	CAP Plc
	Cutix Plc
	Dangote Cement Plc
	Greif Nigeria Plc
	Lafarge Africa Plc
	Notore Chemical Industries Plc

Source: Researcher's Compilation, 2024

APPENDIX C

Population of Top-Management Staff of Selected Listed Industrial Goods Companies

S/N	**Company**	**Number of Top-Management Staff**
1	Austin Laz & Company Plc	8
2	Berger Paints Plc	18
3	Beta Glass Plc	22
4	BUA Cement Plc	42
5	CAP Plc	15
6	Cutix Plc	12
7	Dangote Cement Plc	52

8	Greif Nigeria Plc	6
9	Lafarge Africa Plc	38
10	Notore Chemical Industries Plc	25
Total		**238**

Source: Compiled by the authors from the Annual Reports of the respective companies and Nigerian Exchange Group (NGX) publications, 2024