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Environmental Accounting Disclosures and Financial Performance of Listed Industrial Firms in Nigeria

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Abstract

This study investigated the effects of environmental accounting disclosure on the financial performance of quoted Industrial goods firms in Nigeria. Energy Policy (EPY), Employee, health and safety disclosures (EHS), Environmental Pollution and Control Policy (EPCP), Waste Management Policy (WMC), Compliance with environmental law and regulations (CLR) were used to proxy environmental disclosures. The study utilized ex-post facto research design and secondary data from 2012 to 2022. Data were sourced from selected Annual Report and Accounts of sampled 11 quoted industrial goods firms out of the 13 total industrial goods firms listed on the Nigeria Exchange Group. The study utilized Descriptive Statistics and panel regression estimation tools. The results discovered that EPY, EHS, WTP and CLR significantly and positively impacts the ROA of Nigerian industrial firms. The study therefore concludes that environmental accounting disclosure had a noteworthy effect on return on the financial performance of Nigerian industrial goods firms. The study recommended industrial goods firms should provide detailed reports on environmental impact, WTP, EPY, EHS, CLR in other to build investor trust. They should also ensure they make effort towards reducing carbon footprints and promote eco-friendly products. Industrial firms should ensure they continually seek and disclose environmental strategies that reduce costs and improve profitability.

Keywords: Environmental Disclosure, Energy Policy, Waste Management Policy, Return on Assets, Employee Health and Safety.

Introduction

The methodical ways that environmental accounting provides help in managing the environmental aspects of business operations. The recognition of the growing significance of environmental accounting research has resulted from the movement in business economics towards environmental challenges (Saman, 2019). Due to their economic operations, corporate organizations are purposefully altering the ecosystems which threaten the stability of the planet and of the economic system arising from air, water and land pollutions, dangerous wastes disposal, natural resources overexploitation, ozone depletion and climate change (Ofurum & Iwunna, 2022). Thus, companies are expected to consider not just the economic matters in their day-to-day operations but also consider the social and environmental responsibilities since the existing literature revealed that they significantly impact their profitability and their survival. According to Saman (2019), there are numerous ways that business activity affects the environment, including the air, water, drinking water, land, atmosphere, land, mass, and habitat for threatened and endangered species. All these have the tendency to result into the incurring of environmental costs. Environmental costs, according to Agboola and Orogbe (2019). Furthermore, Adagye and Abubakar (2018) claimed that environmental costs include money spent either on preventing environmental deterioration or on returning the environment to its pre-damage form, or a mix of the two.

The financial performance determinants of an organisation provide information on its profitability, earnings, and growth prospects (Oyedokun, et al. 2019). Financial performance provides an overview of a company's overall business activities, described by efficiency in managing its assets, liabilities, and equity (Hamidi, 2019). Profitability in a business is shown through factors affecting its profitability, leading management in a company to issue policies to create and increase profit growth. A company's financial performance is a numerical measure of how successfully it generates income and uses its resources for commercial operations (Agboola & Orogbe, 2019).

Environmental accounting has a reasonable impact on a firm's performance, either positively or negatively. According to Dikgang et al. (2012), the stock market reacts to environmental catastrophes more favourably. There are many issues, and growing worries about resource depletion and environmental deterioration are concerning. The environmental issues being considered today are worldwide in scope and may have an effect on a company's financial success (Folayan, 2016). Rufelawaty and Budi (2010) found that environmental cost data produced by environmental accounting can support business expansion. Lack of such information puts managers under more stress when it comes to tracking expenses and trying to cut expenses.

The National Environmental Protection Agency (NEPA) Act was superseded in Nigeria by the National Environment Standards and Regulation Enforcement Agency (NESREA) Act of 2007, which is a collection of laws and regulations designed to safeguard and maintain the growth of the natural resources and environment. The rule gives the necessary

authorities to promote adherence to national and international environmental laws, including those pertaining to environmental cleanliness and the prevention and control of pollution through monitoring and regulatory actions (Tochwuku, 2018). It is only natural that Nigerian industrial companies take responsibility for the emissions, pollution, and environmental degradations that emerge from their business operations. A report that only shareholders would be happy to cheer about would be one that included earnings and profit. Organisations' annual reports should include information on environmental damages, pollution in various forms, emissions into the air that need to be reported, corrective actions, necessary compensation, and preventative measures that should be implemented (Osemene, et al., 2012). According to Idowu and Agboola (2021), one of the economic sectors in Nigeria that has seen a lot of public outrage over environmental issues is the industrial sector. Nonetheless, given that the industry generates a large portion of the nation's total revenue, not many attempts have been made to improve the circumstances. The companies that take raw materials from the earth for consumer use or whose operations have a notable impact on the environment are considered to be part of the industrial sector.

Numerous studies had been conducted in this field, and the findings and perspectives of each researcher varied. For instance, Idowu and Agboola (2021), Lawrence and Bernard (2023), Nwaimo (2020), Ofurum and Iwunna (2022), Oraka (2021), Oyedokun, et al. (2019), Setiawan and Honesty (2020), Saman (2019), Peter and Mbu-Ogar (2018), Charles et al. (2017), Karambu and Joseph, (2016), Ndukwe and John (2015). Scanty research works have dealt on the direct impact of environmental accounting disclosure and financial performance of industrial firms in Nigeria within time frame of 2015 to 2022. The research found to have focused on the Nigeria Industrial sector was the study by Lawrence and Bernard (2023), but it only reviewed the timeframe period of 2011 to 2020. This study intends to bridge the gap of recency. Extant literatures are saturated with knowledge on the impact of environmental accounting disclosure on company's financial performance. Based on existing literature little evidence is provided on the direct relationship of environmental accounting disclosure (EVD) and financial performance of listed industrial goods companies in Nigeria, given the importance and the value accruable to companies that disclosed its environmental issues. These omissions in the literature therefore form a major gap in this study. Several literatures such as studies by Lawrence and Bernard (2023), Agboola and Orogbe (2019), Setiawan and Honesty (2020), Oraka (2021), The impact of EVD on the financial performance of listed food and beverage industries, mining, oil and gas companies, or cement enterprises alone has been studied by Tochukwu (2018). Similarly, academic research has looked closely at how EVD affects listed industrial businesses' market values. However, few literatures have been able to use component of environmental costs such as EVD index, environmental pollution and control policy, energy policy, biodiversity, waste management policy and award received for installing environmental management impact on corporate performance. The review of Emeka-nwokeji and Okeke (2019) was found to use few of these components as

independent variables. This study aims at filling the existing gap by reviewing extensively the influence of the integration of environmental costs such as Environmental pollution and control policy (EPCP), Energy policy (EPY), waste management policy (WTP), Employee Health and Safety (EHS), and compliance and regulations (CLR) in the financial statement with the financial performance of listed industrial goods firms in Nigeria from 2012-2022. This study will be of great significance to Nigeria firms in the industrial sector, management, investors, researchers and other stakeholders of the firms. Investors can rely on environmental disclosures to identify financially sound and environmentally responsible firms, improving investment decisions. Policy makers and regulators should strengthen disclosure standards and enforcement to promote transparency and sustainability across industries. Researchers can further explore causal mechanisms and develop context-specific environmental disclosure frameworks. Other stakeholders such as NGOs and communities can use environmental information to demand accountability and encourage sustainable business practices. This study therefore intends to examine the influence of environmental accounting disclosures on the financial performance of listed industrial goods firms in Nigeria.

Literature review

Environmental accounting disclosures (EVD)

According to Charles et al. (2017), environmental accounting refers to the efforts made by professional associations, governmental bodies, and standard-setters of accounting to encourage corporations to take an active responsibility for protecting and sanitising the environment, as well as for fully disclosing their environmental operations in stand-alone environmental disclosures or yearly reports. The definition of environmental accounting is the gathering, evaluation, and analysis of financial and environmental performance data from financial, environmental, and business management information systems. Corrective management measures are implemented to mitigate environmental impacts and costs. The area of accounting that tracks resource consumption, quantifies, and reports the true or projected environmental costs of a company or the country's economy is expanding (Osemene, 2010). The expenses an organisation bears to prevent, track, and report environmental impacts are known as environmental accounting costs (KPMG, 2012). The five categories of environmental costs include convectional, contingent, hidden and relationship, and social, according to the US Environmental Protection Agency (1995). The two main categories of these costs are social costs and private costs. While societal costs are incurred by society, private costs are borne by the enterprise. Environmental pollution and control policy (EPCP), Energy policy (EPY), waste management policy (WTP), Employee Health and Safety (EHS), and compliance and regulations (CLR) are used to proxy EVD in this study. Some of the researchers that have used some of these costs as measures of environmental accounting disclosures are Emeka-nwokeji and Okeke (2019), Agboola & Orogbe (2021), Lawrence and Bernard (2023), Nwaimo (2020), Ofurum and

Iwunna (2022), Oraka (2021), Oyedokun, et al. (2019), Setiawan and Honesty (2020), and Saman (2019).

Financial performance

Profit-making companies give careful thought to their financial performance. It serves as the basis for evaluating the firm's objectives. It alludes to the process of carrying out financial transactions. Financial performance refers to the degree to which financial objectives are being met in its broadest sense. According to Yahaya and Lamidi (2015), it is the process of determining how a company's activities and policies will affect its bottom line. It can be applied to sector or industry comparisons as well as cross-industry comparisons between comparable businesses. According to Yahaya et al. (2014), it is used to gauge the overall financial health of a company over a given time frame. In order to obtain a competitive advantage, a company's ability to lawfully obtain and manage its resources also determines how well it performs. Thus, performance measurement is crucial since it builds on findings and aids in various economic unit decisions (Falope et al., 2019; Tochukwu 2018). Hamidi (2019) opined that financial performance of firm provides an overview of a company's overall business activities, described by efficiency in managing its assets, liabilities, and equity. Profitability in a business is shown through factors affecting its profitability, leading management in a company to issue policies to create and increase profit growth. The indicator used for profitability is ROA (Return on Assets).

Environmental accounting disclosures and financial performance

Environmental cost disclosures provide transparency regarding a company's environmental expenditures, which can influence stakeholder trust and long-term profitability. Several studies have examined this relationship, revealing mixed findings. Rufelawaty and Budi (2010) found that environmental cost data produced by environmental accounting can support business expansion. Lack of such information puts managers under more stress when it comes to tracking expenses and trying to cut expenses. Disclosure of environmental costs can improve financial performance by enhancing the firm's reputation, thereby attracting environmentally conscious investors and customers (Chams & García-Blandón, 2019). According to Dikgang et al. (2012), the stock market reacts to environmental catastrophes more favourably. Naimo (2020) also opined those environmental costs such as WMC, community development costs and EHS costs have the tendency to positively influence profitability. Additionally, comprehensive environmental reporting may result in cost savings by reducing waste and improving resource efficiency, further contributing to financial gains (Liesen et al., 2017).

However, some research suggests that EVD might initially lead to higher costs without immediate financial returns, particularly for firms in industries with high compliance requirements (Luo & Tang, 2022). Moreover, the quality and credibility of such disclosures can also impact the strength of the relationship, as firms engaged in greenwashing might not

experience the same positive financial outcomes (Hummel & Schlick, 2016).

Theoretical review

However, this study is anchored on stakeholder theory. The concept of stakeholder theory was first popularised by Freeman in 1984, and during the 1980s, it was progressively incorporated into management theory. This theory, which was developed from two others, contends that company financial performance and social and environmental performance are positively correlated (Jones 1995). According to the instrumental stakeholders' theory, taking social and environmental responsibility improves stakeholder satisfaction, which in turn boosts financial success. According to this perspective, an organisation must actively participate in society since it depends on it for survival (Ojo, 2012). In line with this approach, managers must make sure that the needs of the stakeholders who have the power to affect an organization's performance.

Empirical review

The study of Oyedokun et al. (2019) reviewed the influence of environmental accounting disclosures (EVD) on firm value of quoted Nigerian Industrial products firms. Regression analysis were used to anlysed the data gathered from the selected firms. Discoveries in the study showed that EVD have a favourable and substantial impact on firm value whereas financial performance indicators were found to have no noteworthy impact on firm value.

Nwaimo (2020) conducted a review on the connection between environmental costs and performance of firms in Sub-Sahara African countries within a time frame period of year 2007 to 2016. The data utilized for this study were gathered from Nigeria, Ghana, South Africa and Tanzania stock exchange. Outcomes from the study disclosed that WMC, communities' development costs (CDC) and EHS costs have a favourable and noteworthy effect on profitability only in Ghana.

Setiawan and Honesty (2020) examined the effect of environmental performance and environmental costs on financial performance (FP) of Indonesia firms within a time frame period of 2014 to year 2018. All the mining and manufacturing firms are used as the study population. 29 firms were sampled from the total population. The outcome from the study revealed that environmental costs have notable impact on firm performance (FP). Whereas environmental performance was discovered to have no substantial effect on FP.

The nexus between environmental cost disclosure on the FP of quoted oil and gas firms in Nigeria was investigated by Ofurum and Iwunna (2022). 13 listed oil and gas firm were reviewed in this study. The time frame for the study covered year 2008 to year 2019. Ordinary least square was used as the data estimation tool utilized in this study. Outcomes from this research disclosed that WMC have a favourable notable influence on ROA, whereas pollution control costs had an adverse noteworthy impact on ROA.

Oraka (2021) assessed the nexus between environmental cost and FP of oil and gas firms in Nigeria. Environmental remediation cost (ERC) and Compliance cost (CC) were used to proxy environmental costs. The study period

covered 11 years. 12 oil and gas firms were sampled for this study. Outcome form the review disclosed that CC and ERC have a positive noteworthy effect on FP.

The effect of environmental costs on FP in Nigeria was reviewed by Lawrence and Bernard (2023) within a time frame period of 2011 to 2020. Panel regression was used as the data estimation method used in this study. WMC and communities' development costs (CDC) were used to proxy environmental costs. The outcome from thus review discovered that WMC and CDC have a favourable noteworthy effect on FP. Firm size was also found to have a substantial effect on FP.

Aliamutu et al. (2023) reviewed the impact of environmental costs on FP of two plastic manufacturing firms in South Africa. The study timeframe covered year 2018 and 2019. Content analysis was used as the method of inquiry to analyse the financial statement where the data needed were gotten. The outcome of the study revealed a favourable and noteworthy influence on financial performance.

Methodology

This study adopted an expo-facto research design. This method is suitable because it examines existing data on environmental accounting and financial performance without influencing the variables. The population of the study comprised of thirteen (13) listed industrial goods firms by Nigerian Exchange Group as at 2022. This study uses Nigerian industrial firms because they significantly impact the environment through their operations. They are crucial in assessing the link between environmental accounting and financial performance. Their public reports provide accessible data for analysis. The findings from the estimation of their data will guide firms and policy makers towards sustainable financial practices. The financial and the environmental data were extracted from the audited annual reports of the selected industrial companies submitted to the Nigerian Exchange Group (NGX). The study sample frame was 11, this sampled size was selected based on purposive sampling technique. The 11 firms were selected because they have the complete data needed for this study. This study employed secondary source of data. The timeframe covers year 2012 to 2022 (11 years). This study utilized descriptive statistics, correlation analysis and panel regression to determine the relationship between dependent variable and independent variables. Return on asset was used to proxy financial performance because it is relevant for industrial firms with large asset bases, it measures how efficiently a firm uses its asset to generate profit. It reflects both management effectiveness and operational performance, making it especially suitable for asset-intensive firms like those in the industrial sector.

Table 1 Measurement of variables

Dependent variable	Measurement	Sources
Return on Asset	Profit before tax x 100 / Average Total Asset 1	Iheduru and Chukwuma (2019), Herny and Herawaty (2024)
Independent variables		
Environmental accounting disclosures		
Energy Policy (EPY)	Measured as a dummy "0" in the absence of the Disclosure of Energy policy and "1" otherwise.	Tze, Boon and Yee (2014)
Employee Health and Safety disclosure (EHS)	Measured as dummy "0" in the absence of employee health and safety measures disclosure and "1" in the case of such disclosure.	Oshiole et al. (2020)
Environmental Pollution and Control Policy (EPCP)	Measured as a dummy "0" otherwise, and "1" for disclosure of environmental pollution and control.	Iheduru and Chukwuma (2019), Tochukwu (2018)
Waste Management Policy (WTP)	Measured as a dummy "0" in other cases and a "1" in cases of waste management policy disclosure.	Nwaimo (2020)
Compliance with environmental law and regulations (CLR)	Evaluated as a dummy value of "0" otherwise and "1" in the case of the disclosure of an environmental compliance policy.	Lawrence and Bernard (2023), Oraka (2021)
Control variable Firm Age (FAG)	The number of years since incorporation	Olowookere et al. (2023)

Source: *Researcher's (2024)*

Model specification

The study's model demonstrated the correlation between the independent variable of environmental accounting disclosure and the dependent variable of financial performance proxy, return on asset.The model specification modifies and adapt the models of Herny and Herawaty (2024), Iheduru and Chukwuma (2019) and Oraka (2021). The model is specified as the functional and stochastic method as follows:

$$ROA = f(\text{EPY}, \text{EHS}, \text{EPCP}, \text{WTP}, \text{CLR}, \text{FS}, \mu) \quad \ldots\ldots (1)$$

$$ROA_{it} = \delta_0 + \delta_1 EPY_{it} + \delta_2 EHS_{it} + \delta_3 EPCP_{it} + +\delta_4 WTP_{it} + \delta_5 CLR_{it} + \delta_6 FAG_{it} + \varepsilon \ldots\ldots (2)$$

Where:

ROA = Return on Asset
EPY = Energy Policy

EHS = Employee Health and Safety disclosure cost
EPCP = Environmental Pollution and Control Policy
WTP = Waste Management Policy
CLR = Compliance with environmental law and regulations
FAGE= Firm Age
δ_0- δ_6 = Parameters of the regression Coefficient
ε = Error terms

Results and discussions

Table 2 Descriptive Statistics

	ROA	EPY	EHS	EPCP	WTP	CLR	FAG
Mean	1.019	0.231	0.256	0.049	0.182	0.207	44.182
Median	0.418	0	0	0	0	0	44
Maximum	13.049	1	1	1	1	1	65
Minimum	0.0264	0	0	0	0	0	19
Stand Dev.	2.160	0.423	0.438	0.218	0.387	0.407	13.105
Kurtosis	4.458	1.274	1.117	4.149	1.649	1.449	-0.224
Skewness	24.132	2.623	2.248	18.219	3.722	3.100	1.812
Observation	121	121	121	121	121	121	121

Source: Authors' Computation (2024)

The results from the descriptive statistics indicate that the ROA have a mean, median, max. and min. values of (1.019, 0.418, 13.049, 0.0264) respectively. EPY and EHS has a mean, median, max. and min. values of (0.231, 0.256), (0, 0), (1, 1) and (0, 0) with standard dev. values of (0.423 and 0.438) correspondingly. EPCP and WTP were found to have a mean, median, max. and min. values of (0.049, 0.182), (0, 0), (1, 1) and (0, 0) with standard dev. values of (0.218, 0.387) respectively. CLR also have a mean and median values of (0.207, 0), stand dev. value of 0.407, min. and max. values of (0, 1). The control variables proxy with FAG has a mean, median, min. and max. values of (44.182, 44, 65 and 19) with stand dev. value of (13.105) correspondingly. All the variables have positive skewness except FAG which demonstrated a negative skewness. Furthermore, the kurtosis analysis revealed that EPY, EHS and FAG all displayed a platykurtic distribution, with their kurtosis value falling below three. In contrast, the other variables did not show a platykurtic distribution.

Correlation analysis

Table 3 Correlation and test of multi-collinearity

	ROA	EPY	EHS	EPCP	WTP	CLR	FAG	VIF	1/VIF
ROA	1.000								
EPY	0.186	1.000						3.61	0.104
EHS	0.276	0.395	1.000					3.76	0.195
EPCP	0.039	0.416	0.389	1.000				1.34	0.746
WTP	0.009	0.578	0.075	0.485	1.000			2.71	0.369
CLR	0.372	0.543	0.636	0.259	0.342	1.000		1.81	0.553
FAG	0.405	0.219	0.299	0.149	0.073	0.159	1.000	1.17	0.853

Source: Authors' Computation (2024)

The results from the correlation analysis table showed a weak positive connection between EPCP, WTP and ROA, with a coeff. of 0.039 and 0.009 respectively. Conversely, EPY, EHS, CLR all have a positive correlation of (0.186, 0.276 and 0.372) with ROA correspondingly. FAG also exhibited a positive correlation with ROA, with a coeff. of 0.405. These outcomes suggest that there is no substantial multicollinearity among the explanatory variables, which allows for the separate assessment of each variable's effect in the regression model. The VIF values, ranging from 1.17 to 3.76, further support the non-existence of multicollinearity among the variables under study. The data set passed the VIF test for multicollinearity and the Breusch pagan test for heteroskedasticity in Table 3, indicating that the data meets the assumptions for regression analysis.

Table 3 Model 1 Regression diagnostic and specification test results (EM)

Test	P-val.	Comments
F-test	0.0003	Pooled OLS is not appropriate for this study. Panel regression was appropriate.
Breusch pagan Heteroscedasticity test	0.523	There is no heteroscedasticity
Hausman Test	0.305	Random Effect is most Preferred

Source: Authors' Computation (2024)

The p-value of 0.0003 is highly significant, meaning the variables have significant effects. This implies that pooled OLS is not appropriate because it assumes no unobserved heterogeneity.

Panel regression results

Hypothesis: Environmental accounting disclosure does not have any influence on the (FP) financial performance of quoted Nigerian industrial firms.

Table 4 Estimated panel regression analysis results

Variables	Coeff.	Std. Error	T-stat.	Prob.
C	-0.560	0.262	-2.14	0.033
EPY	3.502	2.225	5.54	0.0001
EHS	4.904	3.934	4.02	0.016
EPCP	-0.533	0.377	-1.41	0.157
WTP	1.394	0.302	4.62	0.000
CLR	0.847	0.235	3.61	0.000
FAG	0.027	0.006	4.56	0.000
R^2	0.87			
F-Stat.	135.7			
Prob>F	0.0000			

Source: Authors' Computation (2024)

The Hausman Test p-value of 0.305 in Table 4 suggests that the random effects model is the more favorable. The model is considered fit and significant at the 5% level with a probability value of less than 0.05 and an F-stat. of 135.7, indicating that the variables were chosen and incorporated appropriately. This suggests that in the studied listed industrial products firms, environmental accounting disclosures has a noteworthy effect on the financial performance of the sampled organizations (FP). According to the R^2 value, the explanatory variables account for roughly 87% of the variation in ROA, with the error term accounting for the remaining 13%. Table 4's random effects panel regression results show that EPY, EHS, CLR and WTP significantly and positively impacts the Nigerian industrial firm FP, with a 5% level of significance ($t = 5.54, 4.02, 4.62, 3.61$; $p < 0.05$) correspondingly.

On the other hand, EPCP has a negative but insignificant influence (t-stat = -1.41; $p > 0.05$) while the control variable FSZ has a positive and noteworthy effect on ROA (t-stat = 4.56; $p > 0.05$). These findings imply that the disclosures of EPY, EHS, CLR and WTP will lead to increase in the financial performance of the organizations whereas the disclosure of ECPC was discovered to have an adverse insignificant influence on ROA.

Discussion of findings

Environmental cost data produced by environmental accounting can support business expansion (Rufelawaty & Budi, 2010). Lack of such information puts managers under more stress when it comes to tracking expenses and trying to cut costs. According to Chambers and García-Blandón (2019), revealing environmental expenditures can boost a company's earnings by improving its image and drawing in eco-aware investors and clients. This study examined the effect of environmental accounting disclosures on the financial performance of quoted Nigerian industrial goods firms. Findings from this study revealed that environmental accounting disclosure have a noteworthy impact on financial performance. Energy policy, employee health and safety, compliance to regulation, waste disclosure were all found to have a positive significant effect on ROA whereas only environmental pollution and control was found to have

no significant impact on ROA. This suggests that the disclosures of EPY, EHS, CLR and WTP by firms will bring about an improved financial performance. Whereas disclosure of EPCP will not have any impact on firms' performance. To buttress the discoveries of this study that majority of environmental disclosures proxy have effect on firm financial performance, Charms and Garcia-Blandon (2019) opined that disclosure of environmental costs can improve financial performance by enhancing the firm's reputation, thereby attracting environmentally conscious investors and customers. Naimo (2020) also attested to these that environmental costs such as WMC, community development costs and EHS costs have the tendency to positively influence profitability. In the long run, environmentally friendly businesses benefit from lower environmental costs and a competitive advantage when they share enough information about the environment.

However, in support of these findings, Tze et al. (2014) revealed that EPY has a positive and noteworthy effect on ROA. Oshiole et al. (2020), Nwaimo (2020) also Odesa et al. (2016) also found a favourable effect of EHS on ROA. Contra wise, Nwambeke et al. (2019) discovered an adverse effect of EHS on ROA whereas, Adeniyi and Adebayo (2020), Ilelaboye and Alade (2022) found that EHS does not have any noteworthy effect on ROA. Also, the studies of Ofurum and Iwunna (2022), Okeke et al. (2021), Okore (2021) and Oshiole et al. (2020) disclosed that WTP have a favourable substantial effect on ROA. In contrary, the studies of Maleka et al. (2017); Nwaiwu and Oluka (2018) discovered that no relationship exists between WTP and ROA. In addition, to buttress this study findings that CLR has a positive noteworthy impact on ROA, Chiamogu and Okoye (2020) and Tochukwu (2018) discovered that CLR has a favourable substantial impact on ROA. Researchers such as Pingli and Zhuang (2014), Nwaiwu and Oluka (2018), Iheduru and Chukwuma (2019), Ahmed et al. (2017) have also attested to the discoveries of this study that EVD have the tendency to improve the FP of listed Nigerian industrial firms. Contra wise, Ezejiofor et al. (2016) found that EVD have no significant effect on FP.

Conclusion and recommendation

This study thoroughly examined the effect of environmental accounting disclosures on the financial performance of quoted industrial goods firms in Nigeria. The study found that the disclosures of environmental matters such as energy policy, employee health and safety disclosure cost, compliance with environmental law and regulations, waste management policy all have a favourable substantial impact on the quoted Nigerian industrial goods firm's financial performance. Only environmental pollution and control policy was found to have no statistically significant effect on financial performance. This suggest that EPCP may have no statistically impact on ROA but it have the tendency to impact firms financial performance in the real world as stated by (Tochukwu, 2018). The conclusion drawn from this study findings implies that environmental accounting disclosures have a noteworthy influence on the financial performance of quoted industrial goods firms in Nigeria because most of these companies that incurred

expenses on environmental matter will attract investors both locally and internationally, this will invariably contribute to the firms ROA. Based on these findings, the study recommends that industrial goods firms should provide detailed reports on environmental impact, waste management, energy efficiency, employee, health and safety, environmental pollution and control in other to build investor trust. Industrial firms should ensures they continually seek and disclose environmental strategies that reduce costs and improve profitability.

Future research implications

The study focused exclusively on listed industrial firms, which may limit the generalizability of findings to other sectors such as financial services, oil and gas, or consumer goods. Future research could expand the scope to include a multi-sectoral analysis or comparative studies across industries to better understand sector-specific dynamics in environmental disclosure practices.

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