



DOES ENVIRONMENTAL DISCLOSURE MATTER TO FINANCIAL PERFORMANCE OF QUOTED INDUSTRIAL GOODS COMPANIES IN NIGERIA? AN EMPIRICAL ASSESSMENT

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Abstract

This study sought to ascertain whether environmental disclosure matters to performance of quoted industrial goods companies in Nigeria or not. Panel data were collected from the annual reports and accounts of 12 industrial goods companies for a period of 10 years (from 2013 to 2022) and analyzed using multiple regressions. Results indicated that environmental disclosure significantly and negatively affects performance using Tobin's Q. On the other hand, it insignificantly and positively affected ROE. It is therefore, concluded that, environmental disclosure is a major determinant of financial performance based on Tobin's Q but not a major determinant of financial performance based on ROE. The study recommended among other things that, the implementation of environmental disclosure in organizations should be encouraged by managers, for this would enable them identify products with greater environmental costs to the organization; and these could become useful measures of departmental performance evaluation and product profitability assessment, which in the long run might improve companies' financial performance.

Keywords: *Environmental Disclosure, Financial Performance, Return On Equity, Stakeholder Theory, Tobin's Q.*

1. INTRODUCTION

Nigeria's industrial goods sector is characterized by diverse companies engaged in manufacturing, construction, and related activities. This sector significantly contributes to the nation's GDP and is pivotal for employment generation (World Bank, 2021). Understanding the environmental disclosure practices within this sector and their implications for financial performance is essential for fostering sustainable industrial growth in Nigeria. Financial performance serves as a crucial outcome variable in understanding the implications of environmental disclosure. Scholars argue that environmentally responsible practices can positively influence financial performance by mitigating risks, enhancing stakeholder relations, and positioning companies for long-term sustainability (Oikonomou, Brooks, & Pavelin, 2012; Delmas, Etzion, & Nairn-Birch, 2013). Examining how this relationship unfolds in the industrial goods sector in Nigeria provides insights into the sector's role in driving economic growth while embracing environmental responsibility.

Environmental disclosure has become a central focus in contemporary corporate governance, reflecting the increasing recognition of businesses' responsibility towards environmental



sustainability and transparency. In the context of Nigeria, a developing economy facing environmental challenges, understanding the relationship between environmental disclosure and financial performance is critical for both corporate governance and sustainable economic development. This study aims to explore the dynamics of this relationship specifically within the context of quoted industrial goods companies in Nigeria.

The importance of environmental disclosure in corporate governance has gained prominence globally, aligning with the principles of sustainable development (Gray, Kouhy, & Lavers, 1995). Companies are under growing pressure to provide stakeholders with comprehensive information about their environmental initiatives, impact, and performance (Clarkson, Li, Richardson, & Vasvari, 2008). In Nigeria, where industrial growth is significant, the intersection of environmental responsibility and financial performance becomes particularly relevant.

There are concerns from researchers that the growing social injustice experienced by individuals and the larger society consequent upon the growing damage to the environment caused by insatiable quest for wealth maximizing economic growth always pursued by companies lead to social and environmental unsustainability (Unerman, Bebbington & O'Dwyer, 2016).

This growing concern about factors affecting the environmental system such as; climate change, global warming and environmental degradation which occur as a result of production and exploratory activities engaged by companies, leads to the depletion of the ozone layer. Consequently, the need for a sustainable economy led to the emergence of environmental accounting and disclosure which has become a focused issue of discussion amongst researchers across both the developed and developing countries.

A review of some previous studies revealed divergent views about the nexus between environmental disclosure and financial performance of quoted companies. While some argued in support that environmental disclosure has positive relationship with financial performance (Osemene, Kolawole & Oyelakun, 2016; Ezeagba, John-Akamelu & Umeoduagu, 2017; Gatimbu & Wabwire, 2016; Tze, Huey, Han, Siew & Boon, 2016; other studies (Pandey & Kumar, 2016; Adediran & Alade, 2013; Che-Ahmad, Osazuwa & Mgbame, 2015) argued to the contrary that environmental disclosure insignificantly and negatively affects performance of companies. These divergences in findings by researchers have led to inconclusive results with respect to environmental disclosure and financial performance of quoted companies.

The motivation for this study arose because of the inconclusive nature of the earlier studies carried out on environmental disclosure and financial performance of companies. Additionally, most studies conducted in this area limited their measures of performance to only historical financial indices; but just a few studies mostly conducted in China examined both historical financial and market indices. This study however, took a different dimension by examining both financial index of Return on Equity (ROE) and market index of Tobin's Q. Also, studies in this area were limited in terms of the period covered, with most of the studies narrowed down to one or two years at most. Also, most studies in this area focused more on oil and gas and others on manufacturing companies. This study however, took a different approach and focused on 8 out of 13 industrial goods firms (that is, 62%) of the entire industrial goods population, with a time dimension of 5 years. A content analysis was conducted to obtain environmental index for each of the 5 years.



From the foregoing therefore, the objective of this study is pointed towards assessing whether or not environmental disclosure does matter to financial performance of quoted industrial goods companies in Nigeria. It is hypothesized in this study that environmental disclosure has no significant relationship with financial performance of quoted industrial goods companies in Nigeria.

2. LITERATURE REVIEW AND THEORY

Empirical evidence on environmental disclosure and financial performance of companies in developed and developing countries abound. Kurawa and Shuaibu (2022) examined environmental disclosure and financial performance of listed non-financial companies in Nigeria. Tobin's Q and earnings per share were used as proxies for financial performance alongside with firm size, leverage and board size as control variables. Data were collected from published annual reports of 78 samples listed non-financial companies in Nigeria for a period of 8 years covering 2013 – 2020. Multiple regression analysis was conducted and the study found positive significant relationship between ED and EPS, however, a negative and insignificant relationship between ED and Tobin's Q.

Tiamiyu, Oyedokun and Adeyemo (2021) investigated environmental disclosure and financial performance of listed manufacturing companies in Nigeria. Specifically, the study examined ED and ROE using growth, firm size and firm age as control variables. Ex-post facto research design was employed; as data were collected from published annual reports of the sampled 7 manufacturing companies for a period of 10 years covering 2010 to 2019. Ordinary Least Square (OLS) regression analysis technique was used in conduct the analysis. The study found that ED has significant effect on financial performance of listed manufacturing companies in Nigeria.

Haixia and Jianping (2020) conducted an empirical study examining the relationship between environmental disclosure and financial performance. Specifically, the study examined the relationship between environmental disclosure and ROA, ROE and EPS of 531 sampled heavy pollution enterprises in China. Ex-post facto research design was employed as data were collected from annual publications of the companies under study for a period of 13 years covering 2007 to 2019. Hierarchical Linear Model (HLM) was employed in analyzing the data. The study found a positive significant relationship between environmental disclosure (ED) and financial performance.

Peter and Geraldine (2018) examined the impact of environmental and social disclosure on the financial performance of selected oil and gas companies quoted on the Nigerian stock exchange. The study employed secondary data which were obtained from five (5) oil and gas companies published annual reports from 2012-2016. OLS regression was utilized in analyzing the sourced data. The study revealed that on the environmental and social strides of quoted oil and gas companies in Nigeria is imperative to improve the firm's financial performance. The study also revealed that disclosure on employee's health and safety and community development do not significantly affect financial performance while disclosure on waste management had a positive and significant effect on firm's financial performance.

Ezeagba, Chitom and Umeoduagu (2015) assessed environmental accounting disclosures and financial performance of selected food and beverage companies in Nigeria. The study measured



financial performance with; return on equity, return on capital employed, net profit margin and earnings per share. Ex-post facto research design was used as data were collected from published annual reports of 10 sampled listed food and beverage companies in Nigeria for the period of 10 years covering 2006 to 2015. Data were subjected to OLS analysis with the aid of Statistical Pack for Social Sciences (SPSS). The study found a positive significant relationship between ED and EPS of the sampled listed food and beverage companies listed in Nigeria.

Tze, Boon and Yee (2014) undertook a study to analyze the relationship between environmental improvement and the financial performance of firms on a sample of 78 leading companies listed in Bursa Malaysia. They adopted content analysis for the study to verify the extent of information disclosed and reported by companies. The study covered a period of five years, from 2008 to 2012. The main source of information was based on annual reports and sustainability reports from the respective companies listed in Bursa Malaysia. It used four environmental improvement aspects such as: (E1) Materials, Energy and Water; (E2) Biodiversity; (E3) Emissions, Effluents, and Waste, and (E4) others (products and services, compliance, transport, and overall) as independent variables while return on assets (ROA) and return on equity (ROE) were used as the dependent variables. The study employed multiple regression analysis to analyze the data which shows that among the four environmental performance indicators, only the first (E1) and the last groups (E4) had a positive and significant relationship with ROA and ROE. It shows that there are variables that were not significant. Their results suggest that emissions, effluents and waste do not have a significant relationship with financial performance. They further discovered that biodiversity had no significant relationship between ROA and ROE. The study concluded that it has added to the environmental reporting literature by providing empirical results from the perspective of Malaysian listed companies. The findings of the study showed that Malaysia, as a developing country, reported the increasing number of environmental reporting over the past few years.

2.1 Theoretical Framework

The theoretical base of this study is anchored on the stakeholder theory. Stakeholder theory was propounded by Edward Freeman in 1984. The basic assumption of stakeholder theory is that organizations should consider the interests and concerns of all relevant stakeholders, beyond just shareholders, in their decision-making processes and actions. Stakeholder theory has had a profound influence on environmental disclosure practices within organizations by emphasizing the importance of considering the interests of a broad spectrum of stakeholders, including not only shareholders but also employees, customers, communities, and environmental groups. This theory posits that acknowledging and responding to the concerns of various stakeholders is essential for organizational legitimacy and long-term success. In the context of environmental disclosure, stakeholder theory encourages businesses to communicate transparently about their environmental impacts, sustainability initiatives, and adherence to eco-friendly practices. This shift towards increased environmental disclosure reflects a strategic response to stakeholder expectations, fostering trust, reputation, and accountability while aligning business practices with societal and environmental concerns. Companies adopting stakeholder theory in their approach to environmental disclosure are more likely to engage in sustainable practices, driven by a recognition that environmental considerations are integral to their relationships with diverse stakeholders and their overall organizational resilience.

Studies such as those by Buhr (2021) and Tsen and Khong (2021) emphasize the positive impact of stakeholder theory on enhancing environmental disclosure practices, indicating that organizations, driven by stakeholder pressure, are more likely to engage in transparent reporting of their environmental initiatives. In contrast, research by Xu and Rui (2020) explores the contingent factors that may moderate this relationship, suggesting that organizational characteristics and contextual factors play a role in shaping the extent to which stakeholder theory influences environmental disclosure. Additionally, the works of Zeng *et al.* (2022) and Li *et al.* (2021) delve into the role of government regulations, finding that stakeholder theory interacts with regulatory environments to shape environmental disclosure practices. Furthermore, studies by Cheng and Wang (2021) and Li and Liu (2020) delve into the global context, examining how stakeholder theory operates in different cultural and institutional settings, influencing the disclosure behavior of organizations on environmental matters.

3. METHODOLOGY

This study adopted ex post facto research design, as secondary sources of panel data were collected from the annual reports and accounts of 12 out of total population 13 listed industrial goods companies chosen for the study, for the years 2013 - 2022. This is one of the period for serious economic activities in the manufacturing sector in Nigeria. The STATA (Version 14.2) is Used to run the data and the analysis of data was done using panel regression. The model constructed for this study in-line with Osazuwa and Mgbame (2015):

$$PERF = \beta_0 + \beta_1 EDI_{it} + \beta_2 SIZ_{it} + \beta_3 LEV_{it} + \beta_4 AGE_{it} + e_i$$

Where: PERF is Return on equity (ROE) and Tobin's Q (dependent variables); EDI is Environmental disclosure index (independent variable); SIZ is Size, measured as logarithm of total revenue (control variable); LEV is Leverage, which is debt/equity (control variable); AGE is Number of years from incorporation; β_0 is Constant; $\beta_1, \beta_2, \beta_3, \beta_4$ stands for Regression coefficients; *it* for Company *i* in time *t* and *e* represent error term.

4. RESULTS AND DISCUSSIONS

This part presents and analyses the data for hypothesis testing in order to conclusions.

Table 1: Descriptive statistics

Variables	N	Mean	S.D.	Min	Max
TOBIN'S Q	120	1.3772	1.6352	0.1241	8.2742
ROE	120	0.3219	0.6691	-0.0922	3.9839
EDI	120	2.5750	0.2614	2	3
SIZ	120	6.4004	0.1889	6.0510	6.8300
LEV	120	0.0930	0.1217	0.0052	0.4679
AGE	120	44	12.9496	23	60

Source: Research Output, 2023.

From Table 1, the Tobin's Q has a mean value of 1.3772 among the companies sampled for this study. The standard deviation is higher than the mean at 1.6352 which shows high variations in Tobin's Q among the sampled companies. The result also shows the minimum and maximum values of Tobin's Q at 0.1241 and 8.2742 respectively. The result further indicates that the mean value of Return on Equity (ROE) is 0.3219 with a high standard deviation of 0.6691 indicating a high variation in ROE among the sampled companies for the period under consideration. The result



also showed ROE with a minimum and maximum value of -0.0922 and 3.9839 respectively. Table 1 also reveals results of EDI with mean score of 2.5750 and standard deviation of 0.2614 lower than the mean, implying a very low variation in EDI among the sampled companies in the period under consideration, and this could be due to the fact that the companies are under one sector with similar activities. EDI has minimum and maximum values of 2 and 3 respectively. The control variables, that is; firm size (SIZ), leverage (LEV), and AGE) have means of 6.4004, 0.0930, and 44 respectively with low standard deviations of 0.1889, 0.1217 and 12.9496 respectively. This implies that there is low variation in SIZ, LEV and AGE among the sampled firm for the study period.

Table 2: Regression Result for TOBIN'S Q

Variables	Coefficient	t-values	P-Values
EDI	-1.9691	-2.27	0.029
Size	4.9450	3.20	0.003
Lev	-3.2781	-1.73	0.092
Age	-0.0272	-1.16	0.253
-cons	-23.7013	-2.34	0.025
R ²	0.4209		
Adj R ²	0.3547		
F-Statistics	6.36		
Prob>F	0.0006		
N	120		

Source: Research Output, 2023.

The result presented in Table 2 shows the influence of environmental disclosure on Tobin's Q. The total number of observations for the analysis is 120 (that is, 12 companies for 10 years). The value of the R- Square is 0.4209 indicating that the identified variables account for 42.09% of the variation in the dependent variable, the Tobin's Q in the study period, while 57.91% of the variation in the Tobin's Q is determined by other variables not included in the model. The table also showed an adjusted R² of 0.3547 giving a difference of 0.0662 indicating that the result has 6.62% deviation from that which makes use of the entire population. The F- statistics (6.36) signifies that the overall equation is significant at 0.0006 percent (below 1%) level indicating that the model is fit to be used for interpretation.

Table 3: Regression Result for ROE

Variables	Coefficient	t-values	P-Values
EDI	0.1154	0.29	0.770
Size	-0.4284	-0.61	0.545
Lev	2.4743	2.89	0.007
Age	-0.0212	-2.00	0.053
-cons	3.4678	0.76	0.454
R ²	0.2919		
Adj R ²	0.2109		
F-Statistics	3.61		
Prob>F	0.0145		
N	120		

Source: Research Output, 2023.

The result presented in Table 3 shows the influence of environmental disclosure on ROE. The total number of observations for the analysis is 40 (that is, 8 companies for 5 years). The value of the R-Square is 0.2919 indicating that the identified variables account for 29.19% of the variation in the dependent variable, the ROE in the study period, while 70.81% of the variation in the ROE is determined by other variables not included in the model. The table also shows an adjusted R^2 of 0.2109 giving a difference of 0.081 indicating that result has 8.1% deviation from that which makes use of the entire population. The F- statistics (3.61) signifies that the overall equation is significant at 0.0145 percent (below 1%) level meaning that the model is fit to be used for interpretation.

4.2 Test of Hypotheses

Under test of hypotheses, the level of significance for this study is 5 % and the decision rule for testing the hypotheses is to accept (or reject) the null hypotheses based on the P- value. If the p-value is significant at 5 %, accept that the variable is significant else it is not significant.

Consequently, Tables 2 and 3 showed the t -values and the associated p -values for the test of the hypotheses. The critical value of t -statistics is ± 1.96 at 95% confidence level. In the case of Table 2, it gives the calculated cons value of $t = -2.34$, with $p = 0.025$, this study rejects the null hypothesis and concludes that environmental disclosure has significant effect on Tobin's Q of the sampled companies. On the other hand, given that the calculated cons value of $t = 0.76$, $p = 0.454$ for Table 3, this study accepts the null hypothesis and concludes that environmental disclosure has insignificant effect on ROE of sampled companies.

4.3 Discussion of Results

The result in Table 2 shows a negative relationship between environmental disclosure (proxied by EDI) and Tobin's Q. The index has a coefficient of -1.9691. This indicates that any unit increase in environmental disclosure holding other things constant will significantly decrease financial performance of the sampled companies by 1.9691. While a unit increase in firm size will significantly increase Tobin's Q by 4.9450, a unit increase in leverage and age will insignificantly reduce Tobin's Q by 3.2781 and 0.0272 respectively.

Result of the test of hypothesis in Table 2 shows that there is negative but significant influence of environmental disclosure on Tobin's Q. From the result, Tobin's Q is negative but significant to environmental disclosure at -2.34. This implies that increase in environmental disclosure will significantly decrease Tobin's Q. The reason may be that the additional attention given to reporting on environmental concern has the ability to exert pressure on the amount of market capitalization. In addition, the result of the increased cost associated with this reporting has the ability to affect the share price of the sampled companies. This finding disagrees with that of Kurawa and Shuaibu (2022) who found in their study a negative insignificant relationship between environmental disclosure and Tobin's Q.

In the case of Table 3, the result shows a positive relationship between environmental disclosure (proxied by EDI) and ROE. This indicates that any increase in environmental disclosure will insignificantly increase ROE of the sample companies by 0.1154 as indicated by the index coefficient. While a unit increase in firm size will insignificantly decrease ROE by 0.4284, a unit increase in leverage and age will significantly increase ROE by 2.4743 and decrease it by 0.0212 respectively. Also, the test result for the hypothesis in Table 3 reveals that environmental



disclosure has a positive but insignificant effect on ROE. ROE is positive but insignificant with 0.76 coefficient. This implies that an increase in environmental disclosure will insignificantly increase ROE of the sampled firms. The earnings will reduce with environmental disclosure concern and similar associated costs. This could be that companies which emphasize on environmental disclosure will experience insignificant increase in their ROE. This finding is in conformity with that of Tze, Boom and Yee (2014) who found negative and insignificant relationship between ED and ROE. However, contradicts the study of Haixia and Jianping (2020) who found a positive significant relationship between ED and ROE.

5. CONCLUSIONS AND RECOMMENDATIONS

This study investigates to ascertain if environmental disclosure has significant on financial performance of listed industrial goods companies in Nigeria. The study concluded that environmental disclosure significantly and negatively affected Tobin's Q, while it insignificantly and positively affected ROE. Therefore, environmental disclosure is a major determinant of financial performance based on Tobin's Q, but not a major determinant of financial performance based on ROE. The study therefore, recommends that the implementation of environmental disclosure in organizations should be encouraged by managers, for this will enable them identify products with greater environmental costs to the organization; and these can become useful measures of departmental performance evaluation and product profitability assessment, which in the long run may improve companies' performance.

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