IRASS Journal of Economics and Business Management
https://irasspublisher.com/journal-details/IRASSJEBM
ISSN *(Online) 3049-1320*

RELATIONSHIP BETWEEN FIRM ATTRIBUTES AND ENVIRONMENTAL ACCOUNTING REPORTING OF LISTED OIL AND GAS COMPANIES IN NIGERIA

Dr. SHARIMAKIN Akinwumi[1], OBAMOYEGUN Oluwaponmile Joseph[2], Dr. AKINOLA Emmanuel Taiwo[3*], Professor OZIEGBE Tope Rufus[4], Professor AKINTUNDE Samuel Akinrinola[5]

[1] Department of Economics, Adeyemi Federal University of Education, Ondo, Ondo State, Nigeria

[2] Ph.D Candidate in Accounting, Directorate of Audit, Adeyemi Federal University of Education, Ondo, Ondo State, Nigeria

[*3] PhD in Business Administration - Entrepreneurship and Human Resource Management, Statistics and Records, Adeyemi Federal University of Education, Ondo, Ondo State, Nigeria

[4] PhD in Economics, Department of Economics, Adeyemi Federal University of Education, Ondo, Ondo State, Nigeria

[5] Department of Social Studies ad Civic Education, Adeyemi Federal University of Education, Ondo, Ondo State, Nigeria

Corresponding Author **Dr. AKINOLA Emmanuel Taiwo**

PhD in Business Administration - Entrepreneurship and Human Resource Management, Statistics and Records, Adeyemi Federal University of Education, Ondo, Ondo State, Nigeria

Article History

Received: 29 / 08 / 2025

Accepted: 15 / 09 / 2025

Published: 20 / 09 / 2025

Abstract: The study investigates the relationship between firm attributes and environmental accounting reporting among listed oil and gas companies in Nigeria. Using secondary data extracted from annual reports of eleven firms between 2011 and 2020, environmental disclosure was measured through a 20-item Environmental Reporting Index (ERI). Firm size, leverage, profitability, and listing age were adopted as explanatory variables, while multiple regression analysis tested the hypotheses at a 5% significance level. The results show that the average ERI score of 12.7 out of 20 indicates a moderate but inconsistent level of disclosure among the firms studied. Empirical evidence revealed that firm size and leverage are significant positive predictors of environmental reporting, while profitability and listing age, though positive, are statistically insignificant. The model explains 62% of the variation in environmental disclosure, confirming the joint influence of firm attributes on reporting practices. The study concludes that larger and highly leveraged firms are more likely to disclose environmental information, supporting stakeholder and signaling theories, while profitability and firm maturity do not play decisive roles. It recommends strengthening regulatory frameworks, expanding disclosure requirements across industries, and promoting capacity building to enhance environmental accountability in Nigeria.

Keywords: Environmental Accounting Reporting, Firm Attributes, Oil and Gas Companies, Nigeria, Disclosure Practices

How to Cite in APA format: SHARIMAKIN, A., OBAMOYEGUN, O. J., AKINOLA, E. T., OZIEGBE, T. R. & AKINTUNDE, S. A. (2025). RELATIONSHIP BETWEEN FIRM ATTRIBUTES AND ENVIRONMENTAL ACCOUNTING REPORTING OF LISTED OIL AND GAS COMPANIES IN NIGERIA. *IRASS Journal of Economics and Business Management. 2(9)21-28.*

Introduction

Economic development efforts in Nigeria, particularly in the oil and gas sector, have generated significant environmental challenges such as pollution, global warming, deforestation, and desertification. These issues have heightened social awareness and intensified stakeholder pressure on corporate entities to take responsibility for their environmental impacts. Increasingly, firms are expected not only to comply with environmental regulations but also to integrate sustainability into their corporate social responsibility (CSR) practices. However, conventional accounting systems remain inadequate for capturing environmental costs, as they often classify them as overheads rather than recognizing their strategic importance (Gray, 2015; Benjamin et al., 2017).

In response, environmental accounting and reporting have become vital mechanisms for assessing how firms communicate their environmental performance and sustainability initiatives. Within the Nigerian oil and gas industry, adequate environmental reporting, both financial and non-financial has gained prominence as a means of engaging stakeholders, enhancing transparency, and improving accountability. Accountability in this regard is revealed in the annual reports of firms, which increasingly include environmental disclosures in recognition of rising expectations from stakeholders (Gani & Sharma, 2019; Chowdhury et al., 2020).

The protection of the environment has thus become an obligatory condition of industrial activity. While some firms adopt reactive strategies to meet legislative requirements, others pursue proactive strategies, voluntarily implementing environmental practices to reduce their ecological footprints. The environmental impact of industrial activities ranging from the release of harmful materials, toxic emissions, and carbon discharge has made firms increasingly responsible for mitigating degradation and fostering sustainable development (Gani & Sharma, 2019; Chowdhury et al., 2020). Yet, despite the benefits of environmental accounting, the decision to disclose environmental information remains influenced by firm-specific characteristics such as size, leverage, profitability, and listing age (Gray, 2015; Hackstone & Milne, 2016; Patten, 2017; Shuaibu, 2020).

Firm attributes are considered crucial drivers of disclosure, shaping both the quality and quantity of environmental information reported. These attributes, which define a company's activities, financial decisions, and governance structures, influence whether and how firms disclose non-financial information, including environmental reporting. Consequently, determining which firm characteristics significantly affect disclosure practices has important implications for stakeholders and corporate governance (Shuaibu, 2020).

However, in Nigeria, the absence of a standardized environmental reporting framework has led to voluntary, inconsistent, and often insufficient disclosures. Although global frameworks such as the International Accounting Standards (IAS), International Financial Reporting Standards (IFRS), and the ISO 14031 guidelines provide direct or indirect provisions on environmental reporting, their adoption in Nigeria remains limited (Goyal, 2018; Alena, 2017; Uwuegbe, 2018). The implementation of these standards has been shown to improve firm performance, enhance corporate image, and promote better governance practices. Nevertheless, regulatory pressure, consumer awareness, and stakeholder activism remain weak in many developing economies, including Nigeria (Ezeagba et al., 2017). Despite this, some Nigerian firms are becoming increasingly mindful of international market expectations and have started to make appreciable efforts toward improving their environmental practices (Ong et al., 2017; Suleiman et al., 2017).

This study, therefore, seeks to examine the relationship between firm attributes (size, leverage, profitability, and listing age) and environmental accounting reporting among listed oil and gas companies in Nigeria. The research carries significant implications: it will demonstrate to corporate managers the effect of environmental reporting on financial performance and investor perceptions, provide shareholders with insights into current disclosure practices, and encourage regulatory bodies to strengthen environmental reporting frameworks. Importantly, Nigerian scholarship on environmental accounting remains limited, fragmented, and sometimes contradictory (Jinadu et al., 2019), underscoring the scholarly contribution of this study.

To achieve its objectives, the study will focus on listed oil and gas firms, whose annual reports provide reliable and accessible data sources. Covering the period from 2011 to 2020, the analysis will adopt a correlational research design and employ panel data regression analysis to account for firm-level heterogeneity and establish the statistical relationships between firm attributes and environmental reporting practices (Creswell, 2018; Youssef & Hamid, 2017; Elassy, 2019). Although the broader population consists of 86 oil and gas firms—including Basic Engineering Services (33), Safety and Environmental Companies (6), and Service Companies (47)—this research will target a sample of 11 listed firms active during the study period. This focus is justified by the oil and gas subsector's unique environmental footprint and its strategic importance to Nigeria's economy.

The absence of standardized reporting frameworks, combined with the voluntary nature of most disclosures, has created inconsistencies in Nigeria's environmental reporting landscape. By examining how firm attributes shape environmental disclosure practices, this study aims to fill a critical gap in Nigerian literature and contribute to global discourse on corporate environmental accountability.

Problem Statement

Despite the recognized importance of environmental accounting in enhancing corporate accountability and sustainability, the determinants of environmental reporting in Nigeria remain ambiguous. Prior studies have produced inconclusive and often conflicting findings regarding the role of firm attributes such as size, leverage, profitability, and listing age in shaping environmental accounting practices. While some researchers argue that firm attributes exert a significant positive influence on environmental accounting reporting (Prot et al., 2021; Kipngetich, 2020; Egbunike & Tarilaye, 2017; Olurankinse & Mamidu, 2021; Antara et al., 2020; Chang, 2018; Jinadu et al., 2019), others maintain that no significant relationship exists (Shaibun, 2020; Odoemelam & Okafor, 2019).

The inconsistency in findings extends to specific firm attributes. For instance, while Antara et al. (2020) and Ahmadi and Bouri (2019) found a positive relationship between firm size and environmental reporting, Christopher and Filipovic (2018) and Beske et al. (2020) documented a negative association. Similarly, studies such as Rikaputri et al. (2019) and Aulia and Agustina (2018) reported a negative link between leverage and environmental reporting, whereas Olurankinse and Mamidu (2021) found a positive relationship, and Krista and Suhardianto (2018) observed no correlation. Profitability has also produced contradictory outcomes, ranging from positive associations (Reni & Anggraini, 2018) to insignificant (Beck & Campel, 2019) and even negative correlations (Hassan & Farouk, 2016; Nelson & George, 2019). In terms of listing age, Heinekin et al. (2020) and Johas (2021) suggested that older firms are more likely to engage in environmental reporting, though evidence remains limited.

These unresolved debates, contradictions, and divergent findings highlight both contextual and methodological gaps. Notably, much of the empirical evidence was generated outside Nigeria, where institutional, regulatory, and socio-economic dynamics differ markedly. Within Nigeria, most existing studies have either examined environmental accounting in relation to firm performance or employed narrow sets of variables, often overlooking the combined influence of firm size, leverage, profitability, and listing age. Moreover, research focusing specifically on the Nigerian oil and gas sector, a sector with significant environmental impact and economic importance remains sparse.

Given these inconsistencies and the paucity of comprehensive studies in the Nigerian oil and gas industry, there is a pressing need for empirical inquiry that holistically examines the effect of firm attributes on environmental accounting reporting. Addressing this gap will not only contribute to clarifying theoretical debates but also provide evidence-based insights for policymakers, regulators, and industry stakeholders to strengthen environmental accountability in Nigeria's oil and gas sector.

Objectives of the Study

The major objective of this study is to determine the relationship between firm attributes and environmental accounting reporting of listed oil and gas companies in Nigeria. However, the following are the specific objectives:

- to examine the relationship between firm size and environmental accounting reporting among listed oil and gas companies in Nigeria;

- to ascertain the extent to which Leverage affects environmental accounting reporting among listed oil and gas firms in Nigeria;
- to assess the relationship between Profitability and environmental accounting reporting among listed oil and gas companies in Nigeria;
- to examine the effect of listing age on environmental accounting reporting among listed oil and gas companies in Nigeria.

Research Questions

The study aims to answer the following research questions:

- What is the relationship between firm size and environmental accounting reporting among oil and gas companies in Nigeria?
- To what extent does leverage affect environmental accounting reporting?
- What is the relationship between profitability and environmental accounting reporting?
- What is the effect of listing age on environmental accounting reporting?

Research Hypotheses

The study formulates the following null hypotheses:

- H_{01}: There is no significant relationship between firm size and the extent of environmental accounting reporting.
- H_{02}: There is no significant relationship between leverage and the extent of environmental accounting reporting.
- H_{03}: There is no significant relationship between profitability and the extent of environmental accounting reporting.
- H_{04}: There is no significant relationship between listing age and the extent of environmental accounting reporting.

Operational Definitions

- **Environmental accounting reporting:** is defined as the disclosure of information regarding a firm's environmental impact and related activities in its annual reports. **Firm size**: This is measured by the natural logarithm of total assets.
- **Leverage**: is the ratio of total debt to total assets.
- **Profitability**: is represented by return on assets (ROA), and listing age is the number of years a firm has been listed on the Nigerian Stock Exchange.

Literature Review

Environmental accounting reporting has increasingly become a critical aspect of corporate accountability, integrating environmental costs and benefits into financial decision-making processes. It is widely acknowledged as an important mechanism for enhancing transparency, promoting sustainability, and meeting the expectations of various stakeholders. The disclosure of environmental information not only assists stakeholders in evaluating a company's environmental performance but also reinforces the legitimacy of firms in the eyes of society. Within the extant body of research, firm-specific attributes such as size, leverage, profitability, and listing age have been theorized and empirically examined as possible determinants of environmental reporting, but the findings have remained highly inconclusive and inconsistent.

The theoretical foundations most often used to explain environmental reporting practices are stakeholder theory and legitimacy theory. Stakeholder theory emphasizes the pivotal role played by stakeholders—shareholders, regulators, customers, and society at large—in shaping corporate disclosure practices by exerting pressure on firms to act responsibly and to communicate transparently (Dienes et al., 2016; Chu-Chun et al., 2017). On the other hand, legitimacy theory suggests that firms disclose environmental information as a strategy to maintain or regain societal approval, particularly when operating in industries with high environmental footprints such as oil and gas (Kuo & Yi-Ju Chen, 2018; Prot et al., 2021). These theoretical lenses provide the justification for examining how specific firm attributes, which represent internal organizational characteristics, may influence the scope and quality of environmental accounting reporting.

Firm attributes are generally understood as internal variables or distinctive features that differentiate one corporate entity from another and shape their decision-making processes. Shehu (2019) described them as variables that influence policy and decision outcomes, while Suhaila et al. (2020) divided them into two categories: performance-related attributes such as growth and profitability, and reporting-related attributes such as size, leverage, and listing age. Ali and Isa (2018) further identified these attributes as firm characteristics, including size, leverage policy, profitability, growth, management efficiency, and stability, which collectively distinguish firms and influence disclosure behavior. By adopting firm size, leverage, profitability, and listing age, researchers attempt to capture both performance and reporting dimensions in evaluating their relationship with environmental accounting reporting.

The relationship between firm size and environmental disclosure has been a central theme in prior research. Larger organizations are often presumed to disclose more information because they possess greater resources, enjoy economies of scale, and face higher visibility and scrutiny from stakeholders. Studies such as Shuchi (2017) and Dienes et al. (2016) provide strong evidence that firm size is a critical driver of environmental disclosure, while Haddad et al. (2017) also affirmed that larger firms are consistently more transparent. This perspective is reinforced by several scholars who reported a positive association between firm size and environmental accounting reporting (Ahmadi & Bouri, 2017; Andrikopoulos et al., 2018; Bowrin, 2018; Drobetz et al., 2017; Karaman et al., 2018; Khan, 2019; Khasharmeh & Suwaidan, 2018; Rouf, 2017; Shamil et al., 2018; Sharif & Rashid, 2016; Vitezić et al., 2020; Wang et al., 2021). These studies argued that large firms disclose more information not only to maintain legitimacy but also to signal environmental responsibility. Yet, there remains no consensus, as Marquis and Qian (2019) and Shamil et al. (2018) found a negative relationship, while Kolsi (2017) reported that firm size has no impact on disclosure practices. Such divergent results suggest that firm size alone may not determine disclosure, but rather interacts with contextual factors such as industry-specific environmental risks and regulatory pressures.

Leverage, another key attribute, has also been examined extensively as a determinant of environmental reporting. Conceptually, leverage indicates the extent to which firms rely on borrowed capital, and highly leveraged firms may have incentives to disclose more environmental information in order to reassure creditors and investors about their long-term sustainability (Prot et al., 2021). Supporting this argument, several studies found a positive relationship between leverage and disclosure (Andrikopoulos et al., 2017; Christopher & Filipovic, 2018; Li et al., 2016; Sharif & Rashid, 2016; Ahmadi & Bouri, 2017; Karaman et al., 2018). The findings suggest that firms under high debt pressure use disclosure as a mechanism to demonstrate good corporate citizenship and minimize potential reputational risks. Conversely, other researchers arrived at different conclusions. Drobetz et al. (2018) discovered a negative relationship, Kolsi (2017) found no association, while Chandok and Singh (2017) indicated only a weak connection. Similarly, Dilling (2019) and Khasharmeh and Suwaidan (2019) argued that leverage ratios are statistically insignificant in influencing disclosure. These inconsistencies reveal that while some firms may use environmental disclosure as a tool to manage stakeholder perception, others may be constrained by financial obligations and thus unable to allocate resources toward robust environmental reporting.

Profitability has also attracted substantial scholarly attention in the environmental reporting literature, but findings here are perhaps the most contradictory. A common expectation is that profitable firms, having more resources, are more likely to disclose environmental information voluntarily. Indeed, Hashem et al. (2016) and Davidson et al. (2015) found that profitability is positively associated with environmental reporting, while Klein (2017b) confirmed that higher profits tend to influence firms to disclose more. Reni and Anggraini (2018) also reported a positive correlation, suggesting that profitability creates financial flexibility that enables firms to invest in environmental initiatives and report accordingly. In contrast, several studies contradict this narrative. Beck and Campel (2019) found no significant association, while Hassan and Farouk (2016) and Nelson and George (2019) even documented a negative relationship, implying that firms may withhold disclosure to avoid drawing attention to resource allocation when profits are high. Nelson and George (2018), Alsaeed (2016), and Haniffa and Cooke (2016) similarly found no significant relationship, emphasizing that profitability alone does not guarantee improved reporting practices. The contradictory evidence suggests that profitability may not be a universal determinant of disclosure, but its effect could depend on contextual elements such as governance structures, regulatory oversight, and industry-specific expectations.

Listing age has been less studied compared to the other attributes, but it remains an important factor in understanding disclosure practices. The underlying assumption is that older firms, with longer histories in the capital market, face greater scrutiny and thus tend to disclose more information to maintain reputation and legitimacy. Supporting this, Heinekin et al. (2020) and Johas (2021) reported positive associations between listing age and environmental reporting, showing that firms with longer experience are more likely to embrace transparency. Nevertheless, evidence remains limited and inconclusive, as very few studies have directly examined listing age in the context of environmental accounting, particularly within developing economies.

The body of empirical evidence as a whole reflects deep contradictions. While Prot et al. (2021), Kipngetich (2020), Egbunike and Tarilaye (2017), Olurankinse and Mamidu (2021), Antara et al. (2020), Chang (2018), and Jinadu et al. (2019) support the view that firm attributes are positively associated with environmental reporting, others such as Shaibun (2020), Odoemelam and Okafor (2019), Christopher and Filipovic (2018), Rikaputri et al. (2019), Aulia and Agustina (2018), and Krista and Suhardianto (2018) highlight either insignificant or negative relationships. This inconsistency underscores the complexity of environmental reporting as a phenomenon shaped not only by firm-specific attributes but also by contextual, institutional, and cultural dynamics.

Despite the substantial body of research, significant gaps remain. The majority of studies have been conducted in developed countries where regulatory regimes, institutional frameworks, and societal expectations differ markedly from those in emerging economies. Within Nigeria, existing research has largely examined environmental accounting in relation to firm performance or has focused on limited variables, short time frames, and small samples. Very few studies have holistically considered the combined effects of firm size, leverage, profitability, and listing age on environmental disclosure, particularly in the oil and gas sector—a sector with one of the largest environmental footprints and profound socio-economic relevance. This gap represents a contextual, empirical, and methodological void in the literature, pointing to the urgent need for comprehensive studies in Nigeria that can clarify the nature of these relationships and contribute to theoretical and practical discourse on environmental accounting reporting.

Methodology

The study adopted a quantitative, ex post facto and correlational research design, using secondary data to examine the effect of firm attributes on environmental accounting reporting in Nigerian oil and gas companies. This design was suitable as it allowed the use of existing audited financial data without manipulation (Creswell, 2018). Panel data methodology was employed to capture firm-specific heterogeneity and unobservable effects, following the approach of Youssef and Hamid (2017) and Elassy (2019).

The population comprised eighty-six (86) oil and gas companies operating in Nigeria as of 2020, but only the eleven (11) listed on the Nigerian Stock Exchange (NSE) were selected. These firms were purposively chosen because they consistently published audited annual reports and were subject to regulatory and public scrutiny, making their data more reliable (Chong & Rahman, 2020; Savage, 2019; Adams et al., 2019; Ntim et al., 2017; Coy et al., 2020). Data were obtained from annual reports covering a ten-year period (2011–2020).

Environmental accounting reporting was measured using an Environmental Reporting Index (ERI) developed from a content analysis checklist based on GRI standards and ISO 14031 guidelines. The index included 20 disclosure items and recorded a Cronbach's alpha of 0.89, confirming high internal consistency. Firm size was measured as the natural logarithm of total assets, leverage as the ratio of debt to assets, profitability as return on assets (ROA), and listing age as the number of years the firm had

been listed (Ahmadi & Bouri, 2019; Olurankinse & Mamidu, 2021).

Descriptive statistics were used to summarize the data, while correlation analysis examined preliminary relationships. Panel regression analysis was applied to test the hypotheses, with the Hausman specification test guiding the choice between fixed and random effects models. Coefficient significance was tested at the 5% level, in line with similar studies (Youssef & Hamid, 2017; Elassy, 2019).

The scope was limited to listed oil and gas firms between 2011 and 2020, ensuring comparability and data availability. A limitation was the exclusion of unlisted oil and gas companies, which may also influence environmental accounting practices but are not obligated to publish detailed reports.

Results and Discussion

Table 1: Summary of Variables and Measurement

Variable	Description	Measurement/Scale
Environmental Reporting	Disclosure of environmental info	ERI (0–20)
Firm Size	Company's size	Log of Total Assets
Leverage	Debt ratio	Total Debt / Total Assets
Profitability	Earnings efficiency	ROA (%)
Listing Age	Years listed	Years

The study employs both dependent and independent variables to examine environmental reporting practices among firms. Environmental Reporting serves as the dependent variable, operationalized through an Environmental Reporting Index (ERI) ranging from 0–20, based on a coding checklist. The independent variables capture firm-specific characteristics: Firm Size is measured as the natural logarithm of total assets to normalize scale differences; Leverage is expressed as the ratio of total debt to total assets, reflecting financial risk; Profitability is proxied by return on assets (ROA %), showing earnings efficiency; while Listing Age is the number of years a firm has been listed on the Nigerian Stock Exchange, capturing maturity and experience in disclosure practices.

Data were obtained from companies' annual reports accessed through their official websites and the Nigerian Stock Exchange portal. Each report was systematically coded using the checklist, and the data were processed and analyzed using SPSS to ensure consistency and statistical validity.

Data Analysis

Descriptive statistics summarized the data. Multiple regression analysis tested the hypotheses at a 5% significance level.

Table 2: Descriptive Statistics of Variables (2013–2022)

Variable	Mean	Std. Dev.	Min	Max
ERI	12.7	3.2	7	18
Firm Size (log assets)	9.45	0.82	8.1	10.7
Leverage	0.54	0.14	0.22	0.79
Profitability (ROA)	8.3	4.1	1.2	16.5
Listing Age	18.2	6.7	7	32

The mean ERI of 12.7 out of 20 indicates a moderate level of environmental reporting among sampled firms, suggesting that while disclosures are practiced, they are not yet comprehensive. The standard deviation (3.2) and the range (7–18) show noticeable differences in disclosure levels across firms.

Firm size (mean log assets = 9.45, range 8.1–10.7) shows moderate variation, reflecting a mix of medium and large firms. Leverage (mean = 0.54, SD = 0.14) indicates that, on average, firms finance just over half of their assets with debt, with some variation across the sample. Profitability (ROA) shows a mean of 8.3%, with a wide spread (1.2–16.5%), suggesting differences in operational efficiency among firms. Finally, Listing Age (mean = 18.2 years, range 7–32 years) reflects that the sample includes both relatively new and long-established firms, providing a balanced representation in terms of market maturity.

Table 3: Correlation Matrix

Variable	ERI	Firm Size	Leverage	Profitability	Listing Age
ERI	1	0.61**	0.47**	0.13	0.09
Firm Size		1	0.22	0.17	0.36*
Leverage			1	0.08	0.11
Profitability				1	0.05
Listing Age					1

*Correlation is significant at the 0.05 level; ** at the 0.01 level.

The correlation matrix shows that Firm Size ($r = 0.61$, $p < 0.01$) and Leverage ($r = 0.47$, $p < 0.01$) have strong and significant positive correlations with ERI, suggesting that larger firms and more leveraged firms are more likely to engage in environmental reporting.

Other variables such as Profitability ($r = 0.13$, ns) and Listing Age ($r = 0.09$, ns) have weak and statistically insignificant correlations with ERI, indicating that they may not strongly influence environmental reporting in this sample.

Additionally, firm size shows a significant positive correlation with listing age ($r = 0.36$, $p < 0.05$), suggesting that older firms tend to be larger.

Table 4: Regression Results

Variable	Coefficient (β)	Std. Error	t-value	p-value
Constant	6.21	1.87	3.32	0.001
Firm Size	0.89	0.27	3.30	0.002**
Leverage	4.12	1.21	3.41	0.001**
Profitability	0.07	0.09	0.78	0.441
Listing Age	0.03	0.04	0.75	0.455
R^2	0.62			
F-Stat (p)	14.6			0.000

The regression results reveal that the constant term is significant ($\beta = 6.21$, $p = 0.001$), indicating that when all the independent variables are held constant, the dependent variable maintains a baseline value of 6.21. Firm Size has a positive and statistically significant effect on the dependent variable ($\beta = 0.89$, $p = 0.002$), suggesting that larger firms tend to record higher values of ERI. Similarly, Leverage shows a strong positive and significant relationship ($\beta = 4.12$, $p = 0.001$), implying that highly leveraged firms are associated with higher ERI.

On the other hand, Profitability ($\beta = 0.07$, $p = 0.441$) and Listing Age ($\beta = 0.03$, $p = 0.455$) both exhibit positive but statistically insignificant effects, meaning they do not contribute meaningfully to explaining variations in ERI. The model demonstrates good explanatory power, with an R^2 value of 0.62, indicating that 62% of the variation in ERI is explained by the included variables. Furthermore, the F-statistic (14.6, $p = 0.000$) confirms the overall significance of the model, showing that the independent variables jointly exert a meaningful influence on ERI.

Discussion of Findings

The findings of this study provide valuable insights into the determinants of environmental reporting among listed firms in Nigeria. The descriptive statistics show that the average Environmental Reporting Index (ERI) score of 12.7 out of 20 suggests a moderate level of disclosure. This implies that while Nigerian firms have adopted environmental reporting practices, their disclosures remain incomplete and far from international best practices. The wide range of ERI values (7–18) further highlights inconsistencies across firms, reflecting differences in their commitment to sustainability reporting.

The correlation results indicate that Firm Size and Leverage are positively and significantly associated with ERI, suggesting that larger firms and those with higher debt financing are more likely to disclose environmental information. This supports the stakeholder theory, which argues that large firms are subject to greater public scrutiny and pressure from diverse stakeholders, compelling them to adopt more transparent reporting practices (Freeman, 1984; Clarkson et al., 2008). The regression results confirm this, with Firm Size showing a positive and significant effect on ERI ($\beta = 0.89$, $p = 0.002$). This finding is consistent with prior Nigerian studies such as Uwuigbe and Egbide (2012) and Okike (2016), which reported that larger firms disclose more environmental information due to their visibility and pressure to maintain legitimacy. Similarly, international studies by Cowen et al. (1987), Branco and Rodrigues (2008), and Alotaibi and

Hussainey (2016) have consistently found firm size to be one of the most influential determinants of environmental disclosure.

Leverage also emerged as a strong predictor of environmental reporting ($\beta = 4.12$, $p = 0.001$), suggesting that highly leveraged firms disclose more information, likely to mitigate agency costs and reassure creditors about their sustainability practices. This finding is consistent with the signaling theory, which posits that firms use voluntary disclosures to reduce information asymmetry and build trust with stakeholders (Ross, 1977). Similar evidence has been documented in Nigeria by Nnamani et al. (2017), who observed that firms with higher debt ratios tended to adopt broader sustainability disclosures. International studies such as those by Roberts (1992) and Purushothaman et al. (2000) also support the positive association between leverage and disclosure practices.

In contrast, Profitability and Listing Age, although positive, were not statistically significant predictors of ERI. The insignificance of profitability ($\beta = 0.07$, $p = 0.441$) implies that environmental disclosure is not necessarily driven by earnings efficiency. This contradicts the slack resources theory, which assumes that profitable firms have excess resources to commit to voluntary reporting (Waddock & Graves, 1997). Similar findings of no significant effect of profitability on disclosure have been reported in Nigeria by Olayinka and Oluwamayowa (2014) and internationally by Hackston and Milne (1996), suggesting that profitability may not directly motivate firms to engage in environmental reporting. Likewise, Listing Age ($\beta = 0.03$, $p = 0.455$) did not significantly influence ERI, indicating that firm maturity in the stock market does not guarantee stronger disclosure practices. This finding aligns with the work of Iyoha and Oyerinde (2010) in Nigeria and Haniffa and Cooke (2005) in Malaysia, both of which found that the number of years listed does not significantly impact disclosure levels.

Overall, the model explains 62% of the variation in ERI ($R^2 = 0.62$), which demonstrates good explanatory power and highlights the importance of firm-specific characteristics in shaping disclosure practices. The significant F-statistic (14.6, $p = 0.000$) further confirms that the explanatory variables jointly exert a meaningful influence on environmental reporting.

The findings underscore the importance of firm size and leverage as critical determinants of environmental reporting in Nigeria, while profitability and listing age appear to have limited influence. These results align with both Nigerian and international evidence, reinforcing the view that regulatory frameworks and stakeholder pressure play stronger roles than internal profitability or firm maturity in driving disclosure practices.

Limitations and Suggestions for Future Research

This study is limited to oil and gas companies listed on the Nigerian Stock Exchange and relies on secondary data from annual reports, which may be subject to reporting bias. As such, the findings may not be fully generalizable to other sectors. Future studies could broaden the scope to include multiple industries, adopt mixed-method approaches for deeper insights, and examine the impact of recent regulatory reforms and global sustainability standards on environmental reporting practices in Nigeria.

Summary of Findings

The study revealed that the average Environmental Reporting Index (ERI) score of 12.7 out of 20 reflects a moderate level of environmental disclosure among listed oil and gas firms in Nigeria, though variations across firms indicate inconsistent practices. Firm size was found to have a positive and statistically significant influence on environmental reporting, showing that larger firms tend to disclose more information due to greater visibility and stakeholder pressure. Similarly, leverage exhibited a significant positive effect, suggesting that highly leveraged firms disclose more to reduce information asymmetry and reassure creditors of their sustainability practices. On the other hand, profitability and listing age, though positively related to ERI, did not show statistically significant effects, indicating that neither earnings efficiency nor firm maturity meaningfully drives disclosure in this context. The regression model demonstrated strong explanatory power with an R^2 of 0.62, and the F-statistic confirmed that the independent variables jointly exert a significant influence on environmental reporting. The findings therefore underscore the critical roles of firm size and leverage in shaping disclosure practices, while profitability and listing age appear to have limited influence.

Conclusion

This study concludes that environmental reporting among Nigerian oil and gas firms is at a moderate level, with firm size and leverage emerging as the most important determinants of disclosure practices. The results align with stakeholder and signaling theories, confirming that larger and more debt-financed firms disclose more information in response to external pressures. However, profitability and listing age are not significant drivers, which challenges assumptions that financial performance and firm maturity automatically translate into higher reporting standards. The overall model highlights that firm-specific characteristics play a substantial role in determining disclosure behavior, though gaps remain in achieving international best practices.

Recommendations

Based on the findings, it is recommended that policymakers and regulators, such as the Nigerian Exchange Group and the Financial Reporting Council, should strengthen existing regulatory frameworks to ensure that environmental reporting becomes more comprehensive, standardized, and comparable across firms. Beyond the oil and gas sector, sustainability reporting practices should also be expanded to other industries in order to promote wider adoption and establish a culture of accountability across the Nigerian corporate landscape. Furthermore, firms are encouraged to invest in internal capacity building by training staff in sustainability accounting and disclosure practices to improve the quality and consistency of their reports. Government agencies and regulators may also consider providing incentives, such as tax reliefs, recognition awards, or preferential access to capital, to encourage firms to adopt stronger environmental disclosure practices. Finally, further research should explore the use of mixed methods that combine quantitative analysis with qualitative approaches, such as interviews or case studies, to uncover deeper insights into the motivations and challenges of environmental reporting, while also examining the influence of recent global sustainability standards, such as the ISSB and IFRS S1/S2, on Nigerian firms.

References

1. Alotaibi, K., & Hussainey, K. (2016). Determinants of CSR disclosure quantity and quality: Evidence from non-financial listed firms in Saudi Arabia. *International Journal of Disclosure and Governance, 13*(4), 364–393. https://doi.org/10.1057/jdg.2016.2
2. Beck, A., & Campel, R. (2019). Profitability and environmental disclosure. *Sustainability Accounting Review, 8*(2), 101–115.
3. Benjamin, O., Adewale, S., & Okafor, C. (2017). Environmental accounting and corporate reporting. *Journal of Accounting and Management, 12*(4), 45–62.
4. Branco, M. C., & Rodrigues, L. L. (2008). Factors influencing social responsibility disclosure by Portuguese companies. *Journal of Business Ethics, 83*(4), 685–701. https://doi.org/10.1007/s10551-007-9658-z
5. Chowdhury, T., Dey, M. M., & Quaddus, M. (2020). Corporate environmental reporting: A systematic literature review. *Journal of Cleaner Production, 263*, 121500. https://doi.org/10.1016/j.jclepro.2020.121500
6. Clarkson, P. M., Li, Y., Richardson, G. D., & Vasvari, F. P. (2008). Revisiting the relation between environmental performance and environmental disclosure: An empirical analysis. *Accounting, Organizations and Society, 33*(4–5), 303–327. https://doi.org/10.1016/j.aos.2007.05.003
7. Cowen, S. S., Ferreri, L. B., & Parker, L. D. (1987). The impact of corporate characteristics on social responsibility disclosure: A typology and frequency-based analysis. *Accounting, Organizations and Society, 12*(2), 111–122. https://doi.org/10.1016/0361-3682(87)90001-8
8. Freeman, R. E. (1984). *Strategic management: A stakeholder approach*. Boston: Pitman.
9. Gray, R. (2015). Environmental accounting and reporting. *Accounting, Auditing & Accountability Journal, 28*(2), 243–272. https://doi.org/10.1108/AAAJ-03-2015-1989
10. Hackston, D., & Milne, M. J. (1996). Some determinants of social and environmental disclosures in New Zealand companies. *Accounting, Auditing & Accountability Journal,9*(1),77–108. https://doi.org/10.1108/09513579610109987
11. Nnamani, J. N., Onyekwelu, U. L., & Ugwu, O. K. (2017). Effect of sustainability accounting and reporting on financial performance of firms in Nigeria brewery sector. *European Journal of Business and Innovation Research, 5*(1), 1–15.
12. Odoemelam, N., & Okafor, T. (2019). Firm attributes and environmental disclosure. *African Journal of Business Management, 13*(7), 210–219. https://doi.org/10.5897/AJBM2019.8752
13. Okike, E. N. M. (2016). The environmental disclosures of Nigerian companies: A longitudinal study 1981–1991. *Research in Accounting in Emerging Economies, 16*, 283–305.
14. Olayinka, M. U., & Oluwamayowa, O. A. (2014). Corporate environmental disclosures in Nigeria: A study of selected firms. *International Journal of Business and Law Research, 2*(3), 1–14.
15. Olurankinse, F., & Mamidu, A. (2021). Leverage and environmental reporting. *Nigerian Journal of Accounting, 9*(1), 33–49.
16. Purushothaman, M., Tower, G., Hancock, P., & Taplin, R. (2000). Determinants of corporate social reporting practices of listed Singapore companies. *Pacific Accounting Review, 12*(2), 101–133. https://doi.org/10.1108/eb037979
17. Roberts, R. W. (1992). Determinants of corporate social responsibility disclosure: An application of stakeholder theory. *Accounting, Organizations and Society, 17*(6), 595–612. https://doi.org/10.1016/0361-3682(92)90015-K
18. Ross, S. A. (1977). The determination of financial structure: The incentive-signalling approach. *The Bell Journal of Economics, 8*(1), 23–40. https://doi.org/10.2307/3003485
19. Uwuegbe, U. (2017). Environmental disclosure in Nigeria. *Journal of Financial Reporting, 5*(2), 88–99.
20. Waddock, S. A., & Graves, S. B. (1997). The corporate social performance–financial performance link. *Strategic Management Journal, 18*(4), 303–319. https://doi.org/10.1002/(SICI)1097-0266(199704)18:4<303::AID-SMJ869>3.0.CO;2-G