



SUSTAINABILITY REPORTING AND FIRMS ECONOMIC PERFORMANCE IN NIGERIA

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Abstract: Sustainability reporting has become a pivotal tool for firms in industries and firms have faced significant scrutiny due to their environmental impact, necessitating the integration of environmental, social and governance considerations into financial decision-making. The goal of this study is to examine the influence of sustainability reporting on the economic performance of firms in Nigeria. Using the ex-post facto research design, data were extracted from 48 selected firms for 10 years and were analysed. The findings showed that sustainability reporting framework adoption has a slight negative and insignificant influence on return on assets, but insignificant positive influence on return on equity and net profit margin while sustainability reporting exercised statistically insignificant negative influence on return on assets, return on equity and net profit margin and the study concluded that sustainability reporting has not been significantly integrated into the annual financial reporting framework of most of the firms and that sustainability reporting does not significantly influence, return on assets (ROA), return on equity (ROE) and net profit margin (NPM) performance of firms in Nigeria. Upon this, study therefore recommends that despite the mixed regression results, the positive correlations suggest that sustainability reporting may still offer reputational and long-term financial benefits and that firms should improve sustainability reporting to meet stakeholders expectations and potentially gain market advantages and that clearer guidelines on sustainability reporting and disclosure could improve comparability and reliability thus helping investors and analysts better assess sustainability performances.

Keywords: Sustainability, Sustainability reporting, Environmental, Social, and Governance (ESG), Economic Performance, Return on Assets, Return on Equity, Net Profit Margin, Nigeria.

JEL Classification: M14, M41, Q56

Introduction

Sustainability accounting has emerged as a vital aspect of corporate performance evaluation, particularly in regions like Nigeria, where environmental, social and governance challenges significantly impact economic activities. Globally, the adoption of environmental accounting has gained momentum due to increased awareness of environmental sustainability and its impact on business operations. Environmental accounting involves identifying, measuring, and reporting environmental costs and liabilities incurred by firms as they strive to minimize their ecological footprint (Bernardi & Stark, 2022).

Sustainability accounting has become a pivotal tool for firms in industries such as oil and gas, manufacturing, and agriculture, particularly in Nigeria. These sectors have faced significant scrutiny due to their environmental impact, necessitating the integration of environmental considerations into financial decision-making (Ifurueze et al., 2023).

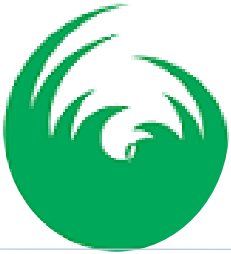
The Nigerian economy heavily depends on natural resources, which makes the adoption of sustainable practices essential for balancing profitability with environmental stewardship. However, the relationship between environmental accounting and financial performance is complex (Bouten et al., 2021).

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Some scholars argue that adopting environmental accounting enhances a firm reputation and profitability, while others contend that the associated costs may negatively impact financial performance (Chang, 2023). Despite these debates, regulatory pressures and stakeholder expectations have increasingly compelled Nigerian firms to adopt sustainability reporting (Jerry et al., 2014). Environmental sustainability is now a global concern, and many countries have embraced environmental accounting as a framework for sustainable development. In Nigeria, however, the adoption rate has been relatively low due to inadequate regulatory enforcement and limited awareness (Bassey et al., 2023).

The manufacturing industry in Nigeria, for instance, has struggled to comply with environmental regulations due to high implementation costs and technical challenges. This raises the need for empirical studies to explore the relationship between environmental accounting and firm financial performance (Campbell & Slack, 2021). Increased scrutiny from stakeholders has also increased pressure on firms to adopt transparent environmental accounting practices. The lack of proper reporting systems has often reduced investor confidence and public trust (McNally et al., 2023). However, firms implementing these practices effectively tend to gain a competitive edge in the marketplace.

The integration of environmental accounting vis a vis sustainability reporting into corporate strategies is further complicated by the lack of consistent guidelines and frameworks, especially in developing countries like Nigeria (Ismail & Ibrahim, 2022). Companies operating in the oil and gas sector, for instance, often face challenges balancing profitability and environmental accountability. Despite these challenges, firms that successfully adopt environmental accounting practices often experience improved financial performance due to enhanced efficiency and reputation (Medley, 2023). This highlights the potential benefits of such practices when implemented strategically.

This study seeks to examine how Nigerian firms integrate sustainability reporting into their operations and the extent to which these practices impact their financial performance. Addressing this knowledge gap is crucial to understanding the broader implications of environmental accounting reporting on economic sustainability in Nigeria (Marvin et al., 2023).

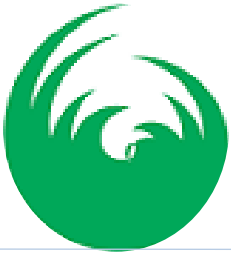
The findings from this study will contribute to the growing body of literature on environmental accounting and its role in shaping corporate financial strategies. Additionally, it will provide valuable insights into the challenges and opportunities faced by firms in adopting sustainable practices (Nyahuna et al., 2023).

By exploring the financial and operational impacts of Sustainability reporting, this research aims to provide actionable recommendations for Nigerian firms and policymakers to enhance sustainable practices (Neu et al., 2022). The outcomes of this study will not only benefit firms but also stakeholders, including investors, regulators, and the public, by promoting transparency and accountability in environmental reporting (Brolund & Lundmark, 2023). This comprehensive approach will ensure that firms understand the importance of environmental accounting and its potential to drive long-term financial and operational success in Nigeria. Moreover, it will encourage the adoption of globally recognized practices to achieve economic and environmental sustainability (Huibrecht, 2022).

Empirical research in this field will also help identify gaps in existing practices and provide a framework for improving environmental accounting in Nigeria. Such insights will be instrumental in driving policy reforms and fostering a culture of sustainability within the corporate sector (Nyahuna et al., 2023). By addressing the pressing challenges of environmental degradation and resource depletion, this study underscores the importance of integrating environmental accounting into the broader framework of sustainable development in Nigeria (Huibrecht, 2022). The ongoing debates surrounding the costs and benefits of environmental accounting necessitate a more nuanced understanding of its impact on firm performance. This study will explore the interplay between regulatory compliance, stakeholder expectations, and financial outcomes in the Nigerian context (Bai et al., 2024).

Statement of the Problem

The increasing global focus on environmental sustainability has highlighted the critical role of environmental accounting and sustainability reporting in fostering responsible corporate practices. Despite significant progress in developed economies, research in developing countries, including Nigeria, remains limited and fragmented. Several studies have explored the



adoption of environmental accounting practices globally, but few have specifically examined their impact on firm financial performance within the unique socio-economic and regulatory context of Nigeria (Bernardi & Stark, 2022). This gap underscores the need for localized investigations that address the peculiar challenges Nigerian firms face.

One significant gap lies in understanding the relationship between sustainability reporting and financial performance in sectors heavily reliant on natural resources, such as oil and gas, manufacturing, and agriculture. While some scholars have argued that implementing environmental accounting enhances firm profitability and reputation, others suggest that its associated costs might outweigh its benefits (Chang, 2023). These conflicting findings demonstrate the lack of consensus on the financial implications of adopting environmental accounting in resource-dependent economies like Nigeria.

Another underexplored area is the role of regulatory enforcement and its influence on firms' commitment to environmental accounting practices. Inadequate enforcement mechanisms and inconsistent guidelines have been highlighted as barriers to effective adoption in Nigeria, yet there is limited empirical research investigating how these factors affect firms' decision-making processes (Ismail & Ibrahim, 2022). Similarly, the potential of environmental accounting to drive innovation and operational efficiency in Nigerian firms has not been sufficiently examined.

Moreover, most existing studies have primarily focused on large multinational corporations, often neglecting small and medium enterprises (SMEs), which form a significant portion of the Nigerian economy. Understanding how SMEs integrate environmental accounting practices and their financial implications remains a critical research gap (Medley, 2023).

There is also a scarcity of research exploring the perceptions and attitudes of stakeholders such as investors, customers, and regulatory bodies toward environmental accounting in Nigeria. This limits the understanding of how stakeholder pressure influences firms' adoption of sustainable practices (Bassey et al., 2023).

Objectives of Study

This study aims to examine the impact of sustainability reporting on the economic performance of firms in Nigeria. The specific objectives are:

1. To assess the extent of sustainability reporting adoption among Nigerian firms.
2. To evaluate the influence of sustainability reporting on firms economic performance in Nigeria.
3. Review the challenges facing Sustainability Reporting in Nigeria

Conceptual Review

Economic Performance

Economic performance is a measure that determines the extent to which company's ability and resources are utilized in generating profits and create value for its stakeholders through efficient resource utilization, management, and operations. It is typically assessed using various financial metrics such as return on assets (ROA), return on equity (ROE), earnings per share (EPS), and profit margins, which provide a snapshot of a firm's profitability, liquidity, and overall financial health (Akabom, 2022). These indicators help stakeholders, including investors, creditors, and management, evaluate a company's financial stability, growth potential, and operational efficiency.

Environmental accounting practices have the potential to significantly influence a firm's financial performance. According to Ahmed and Anifowose (2023), companies that adopt environmental accounting practices often incur both direct and indirect environmental costs, such as expenditures on waste management or environmental remediation. While these costs may appear to reduce short-term profitability, they can enhance long-term financial performance by mitigating environmental risks and promoting sustainability. For instance, organizations that invest in green technologies, waste reduction, and energy efficiency can benefit from lower operational costs, improved resource management, and potential cost savings over time (Bernardi & Stark, 2022).

Furthermore, environmental disclosures can enhance a company's reputation, leading to increased customer loyalty, higher sales, and improved access to capital (Akbas, 2024). Environmental accounting not only aids in regulatory compliance but also signals to investors that the company is managing environmental risks effectively, which can result in better stock market



performance and lower cost of capital (Ibrahim et al. 2025). On the flip side, failure to address environmental concerns may lead to fines, regulatory sanctions, or a loss of consumer confidence, ultimately harming a company's financial performance (Bai et al., 2024).

Thus, while environmental accounting practices might lead to increased initial costs, they are ultimately beneficial for firms' long-term profitability and sustainability, as they help mitigate environmental risks, enhance market competitiveness, and foster financial stability (Jide, 2025).

Sustainability Reporting

Sustainability reporting refers to the practice of disclosing an organization's environmental, social, and governance (ESG) activities, focusing on its impact on the environment and society, in addition to its economic performance. This form of reporting goes beyond traditional financial disclosures to include non-financial aspects that reflect a company's long-term viability and ethical considerations. Sustainability reports typically encompass components such as environmental performance (e.g., carbon emissions, resource usage), social factors e.g., labour practices, community engagement, and governance practices e.g., board composition, ethics policies (Ahmed & Anifowose, 2023).

The importance of sustainability reporting lies in its ability to enhance transparency and accountability; allowing stakeholders, including investors, consumers, and regulators, to assess the company's commitment to sustainable practices. It provides companies with a platform to demonstrate their adherence to corporate social responsibility (CSR) and ethical values, potentially strengthening brand reputation and fostering trust with stakeholders (Jide, 2025). Furthermore, sustainability reporting helps organizations identify and mitigate risks related to environmental and social factors, which can affect their long-term financial stability and market competitiveness (Akbas, 2024). By adopting sustainability practices, companies can attract environmentally and socially conscious investors, reduce regulatory and reputational risks, and improve their operational efficiency (Bai et al., 2024).

However, sustainability reporting also has limitations. One of the key challenges is the lack of standardized guidelines and metrics, which can lead to inconsistency

in reporting practices across organizations (Bernardi & Stark, 2022). This inconsistency makes it difficult for stakeholders to compare sustainability performance across different firms. Furthermore, sustainability disclosures often focus on self-reported data, which may be subject to bias or manipulation, undermining the credibility of the reports (Akabom, 2022). In the context of Nigerian firms, these limitations are compounded by challenges such as insufficient awareness of sustainability reporting practices, lack of regulatory enforcement, and limited resources to adopt comprehensive sustainability strategies (Ibrahim et al. 2025). Consequently, while sustainability reporting can drive positive organizational change, its effectiveness is contingent on accurate, transparent, and consistent data reporting practices.

Environmental Accounting

Environmental accounting is a specialized branch and subset of sustainability accounting that seeks to measure, report, and manage environmental costs and performance. In its simplest form, it involves accounting for the environmental costs incurred by a company in its operations, such as pollution control, waste management, and resource utilization (Jerry et al., 2014). It ensures that companies reflect the environmental impact of their activities, contributing to more informed decision-making processes that align with sustainability goals.

Several scholars have provided definitions that highlight the broad scope of environmental accounting. According to Ahmad (2022), environmental accounting encompasses all financial activities related to the measurement and reporting of environmental costs, liabilities, and the effects of a company's operations on the environment. Ijeoma (2023) further expands on this by defining it as the integration of environmental information into financial statements to guide better business practices, considering both the direct and indirect environmental costs. In the same vein, Akinleye and Owoniya (2024) asserts that environmental accounting is a process that evaluates how environmental factors affect the economic performance of firms, providing insights into sustainability reporting and decision-making.

Despite its growing significance, environmental accounting practices face several critiques. One major



challenge is the lack of standardized methodologies for environmental reporting (Nzama et al., 2023). The diversity in reporting practices among firms, especially in developing countries like Nigeria, undermines comparability and the true reflection of environmental costs. Furthermore, environmental costs are often not fully integrated into financial statements, with many firms either downplaying or omitting these costs to avoid potential negative impacts on their financial performance (Medley, 2023).

In the context of Nigerian firms, environmental accounting has gained some relevance as organizations begin to recognize the importance of sustainable practices. However, the adoption of such practices remains limited due to insufficient regulatory frameworks and the high cost of implementing environmental management systems (Beredugo & Mefor, 2022). Additionally, companies often face challenges in measuring environmental costs accurately due to a lack of technical expertise and infrastructure (Ifurueze et al., 2023). Therefore, while environmental accounting presents significant opportunities for sustainability, its relevance in Nigeria is constrained by these limitations.

Corporate Social Responsibility (CSR)

Corporate Social Responsibility (CSR) refers to a business model that encourages companies to act in ways that benefit society, beyond their financial and operational goals. CSR involves voluntary actions taken by businesses to contribute to societal welfare, addressing social, and ethical issues. The concept of CSR encompasses a wide range of activities, including environmental sustainability efforts, charitable contributions, fair labour practices, and community engagement (Saputri et al., 2023). CSR is often aligned with a company's long-term commitment to positive societal impact, balancing profit-making with ethical responsibilities (Patima, 2024).

In sustainability accounting, CSR plays a vital role by encouraging companies to account for and reduce their environmental impact. Environmental accounting focuses on identifying and reporting the environmental costs associated with business activities, such as waste management, energy consumption, and emissions. CSR initiatives often integrate environmental concerns into a company's accounting practices by ensuring that firms

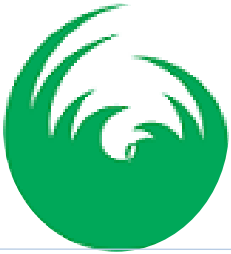
actively track and disclose their environmental performance. Through this integration, companies can identify areas where they can reduce their ecological footprint, optimize resource use, and implement more sustainable business practices. CSR programs that prioritize environmental sustainability can, therefore, improve a firm's environmental accounting transparency and promote a more eco-conscious approach to business (Afiyah et al., 2023).

Despite the potential benefits, CSR initiatives face several critiques and challenges in implementation. One of the main critiques is the perception that CSR is often a marketing tool rather than a genuine attempt to improve societal well-being. Many businesses are accused of "greenwashing," where they make superficial CSR claims without taking substantial action to address environmental or social issues (Saputri et al., 2023). Furthermore, CSR initiatives may not always align with a company's profit-maximizing goals, leading to resistance from stakeholders who view these actions as cost-prohibitive or distracting from core business activities (Ojo & Balogun, 2019).

In terms of challenges, the lack of regulatory frameworks and standardized guidelines for CSR can make it difficult for companies to develop and implement effective initiatives (Patima, 2024). Without clear definitions or metrics, businesses may struggle to measure the actual impact of their CSR activities, leading to inefficiencies or inconsistencies. Additionally, especially in developing economies like Nigeria, organizations may face resource constraints, lack of expertise, and insufficient government support to execute impactful CSR projects (Jide, 2025). As a result, while CSR initiatives hold great potential for contributing to societal and environmental welfare, their successful implementation requires overcoming these significant hurdles.

Governance and Regulatory Framework

The governance aspect relates to the ethical and transparent corporate governance practices of firms board constitution, executive remuneration, shareholders right, anti-corruption policies, legal and ethical standards and transparency of sustainability reporting (Efenyumi et al, 2022). According to Upaa and Iorlaha (2022), the priority of companies with strong governance practices includes accountability, integrity, and ethical decision-



making. Transparency of operations, ensuring the protection of shareholder rights, and adhering to regulatory compliance occupies the centre of their business policy. Effective governance does not only involve avoiding conflicts of interest, preventing bribery and corruption, but also include fostering a culture of ethical conduct within the organization. Evaluating the governance aspect of ESG is critical in assessing a company's internal controls, risk management practices, and overall ethical integrity (Ibrahim et al., 2025).

Regulations play a critical role in shaping environmental accounting practices, as they establish the legal boundaries and compliance standards for businesses to follow in managing their environmental impacts. Both local and international regulations guide firms in identifying, measuring, and reporting their environmental costs and liabilities. For instance, global frameworks such as the Global Reporting Initiative (GRI) and the International Financial Reporting Standards (IFRS) provide guidelines for corporate disclosures, ensuring that companies report their environmental performance and sustainability efforts (Ahmed & Anifowose, 2023). These international frameworks help promote transparency and accountability in environmental accounting, requiring companies to disclose their environmental costs, including pollution, waste management, and resource usage (Akbas, 2024). Additionally, companies are required to account for potential environmental liabilities such as fines and cleanup costs, which are crucial for providing a true and fair view of their financial performance (Beredugo & Mefor, 2022).

Local regulations are equally significant in regulating environmental accounting. In Nigeria, for instance, agencies like the National Environmental Standards and Regulations Enforcement Agency (NESREA) enforce laws that mandate the incorporation of environmental costs into financial statements (Akinlo & Iredale, 2024). Furthermore, Nigerian companies are required to conduct Environmental Impact Assessments (EIA) to assess potential environmental harm before beginning major projects (Akabom, 2022). These regulations ensure that companies account for the environmental risks they pose and adopt mitigation measures to reduce negative impacts on the environment. Regulatory bodies like NESREA play an essential role in ensuring

businesses comply with environmental laws, contributing to the broader objective of sustainable development (Akbas, 2024).

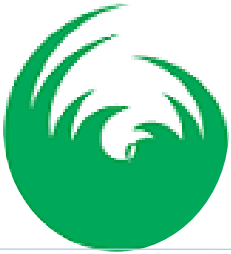
The incorporation of ESG dynamics into accounting frameworks is a paradigm shift from the old-fashioned profit-centric approach to an all-inclusive, sustainable business model. The interdependence of economic prosperity, as well as the environmental safeguarding, and the social well-being of companies in general are not just meeting regulatory requirements but actively contributing to a more sustainable and equitable world (Christensen et al., 2022).

Challenges in Sustainability Reporting in Nigeria

The adoption of environmental accounting practices in Nigeria faces several contextual challenges that hinder the effective integration of sustainability into corporate financial systems. One of the primary challenges is the lack of comprehensive environmental regulations and policies that mandate firms to adopt environmental accounting practices (Akabom, 2022). In many cases, businesses are not legally obliged to disclose environmental costs, liabilities, or performance, which leads to a lack of transparency and insufficient environmental reporting (Amahalu et al., 2022). This regulatory gap limits the motivation for Nigerian firms to adopt environmental accounting, as there is little legal pressure to integrate such practices into their operations (Beredugo & Mefor, 2022).

Moreover, Nigerian companies often face financial constraints that make it difficult for them to invest in the necessary infrastructure, systems, and training to implement sustainability reporting (Bai et al., 2024). Environmental accounting requires a significant investment in both human and technological resources, which many firms, particularly in small and medium-sized sectors, cannot afford and the lack of financial capacity to support these initiatives contributes to the slow adoption of environmental accounting practices as well as sustainability reporting in the Nigerian corporate landscape (Basse et al., 2023). This financial limitation is compounded by the high cost of compliance with international environmental standards, which many Nigerian companies perceive as burdensome (Akbas, 2024).

Cultural factors also play a significant role in hindering the adoption of environmental accounting in Nigeria.



Many businesses in Nigeria prioritize short-term financial gains over long-term sustainability goals, which lead to a lack of commitment to environmental initiatives (Nyahuna et al., 2023). Additionally, there is a limited understanding of the importance of environmental accounting within the corporate governance structures of many Nigerian companies, which further exacerbates the challenge (Adebayo et al., 2023). This lack of awareness and education on the benefits of environmental accounting creates a barrier to the adoption of these practices.

Another challenge is the inadequate infrastructure for environmental data collection and reporting. In Nigeria, many firms lack the necessary systems to monitor and assess their environmental impact, which makes it difficult to implement accurate environmental accounting practices (Bai et al., 2024). Without robust data collection mechanisms, businesses struggle to track and report their environmental costs and liabilities, resulting in poor environmental disclosure (Akbas, 2024). This issue is particularly pronounced in sectors such as oil and gas, where environmental degradation is more pronounced, and companies are often reluctant to report negative environmental impacts for fear of damaging their reputations (Akabom, 2022).

Additionally, Nigerian firms face challenges related to the inconsistency of environmental accounting practices across the industry. Due to the lack of standardized guidelines and frameworks for environmental accounting in Nigeria, companies adopt varying practices, making it difficult to compare or aggregate environmental data (Nzama et al., 2023). This lack of standardization undermines the effectiveness of environmental accounting and limits its utility in promoting sustainable practices across the business sector. Furthermore, the absence of a unified regulatory body to oversee environmental accounting practices exacerbates this issue (Al-Tuwaijri et al., 2024).

Theoretical Review

Stakeholder Theory and Sustainability Reporting

Stakeholder theory highlights the importance of understanding and addressing the needs, interests, and expectations of various stakeholders in corporate decision-making processes. In the context of Sustainability reporting, environmental accounting stakeholders such as customers, investors, regulatory

bodies, and local communities play a crucial role in influencing corporate environmental policies and practices (Efenyumi et al., 2022). Companies are increasingly recognizing the need to integrate ESG concerns into their accounting systems due to the pressure from stakeholders who demand greater transparency and accountability in environmental matters. For instance, investors are now more inclined to invest in companies that demonstrate strong environmental governance and responsible environmental practices, as these factors are seen to reduce risks and enhance long-term profitability (Jide, 2025). Additionally, customers are increasingly considering environmental impact in their purchasing decisions, further compelling companies to adopt more sustainable practices and disclose their environmental performance (Akabom, 2022).

Stakeholder theory emphasizes the interdependent relationship between businesses and their stakeholders, where companies that align their strategies with stakeholder interests can enhance their corporate reputation, build trust, and ultimately achieve better financial performance (Amahalu et al., 2023). In this light, integrating sustainability accounting into business practices is not just a regulatory or ethical obligation but also a strategic move to secure stakeholders' loyalty and improve corporate image. Stakeholders' expectations play a significant role in the integration of sustainability accounting as businesses are pressured to disclose environmental, social and governance impacts and performance metrics in ways that satisfy these stakeholders' concerns (Bai et al., 2024).

Moreover, stakeholder expectations often extend beyond mere compliance with legal regulations; they demand proactive engagement with environmental issues and long-term sustainability goals (Akbas, 2024). For example, the rise of social media has empowered consumers and advocacy groups to publicly challenge companies on their environmental practices, which can have significant financial repercussions. Companies that fail to meet the environmental expectations of stakeholders may face reputational damage, consumer boycotts, and potential legal challenges (Akinlo & Iredale, 2024). Therefore, businesses must recognize that the integration of environmental accounting is essential not only for regulatory compliance but also for meeting the evolving expectations of a diverse range of



stakeholders who are increasingly concerned with corporate environmental responsibility (Akbas, 2024).

In this context, sustainability accounting serves as a valuable tool for companies to manage stakeholder relationships effectively by providing transparent and accurate information about their environmental practices (Beredugo & Mefor, 2022). By incorporating stakeholder perspectives into the development of environmental accounting systems, companies can align their environmental goals with stakeholder interests, ensuring that they not only comply with regulations but also create value for both themselves and their stakeholders (Al-Tuwaijri et al., 2024). In turn, businesses can achieve greater stakeholder satisfaction, improve their sustainability performance, and foster stronger relationships with their stakeholders, thereby enhancing their long-term competitiveness (Adebayo et al., 2023).

Ultimately, stakeholder theory underlines the necessity of integrating stakeholder expectations into corporate environmental accounting practices and sustainability reporting in general. This integration helps businesses understand and respond to the growing demand for environmental accountability, fosters stronger relationships with key stakeholders, and contributes to the company's overall sustainability and financial performance (Nzama et al., 2023). Stakeholder Theory assumes that firms prioritize stakeholder needs, but in Nigeria, the influence of powerful economic stakeholders, such as government bodies and large corporations, may skew the environmental accounting practices of firms (Akinlo & Iredale, 2024). These contextual challenges may hinder the theories' ability to fully explain the relationship between Sustainability reporting and economic performance in Nigerian firms, suggesting the need for adaptations or further investigation into local business dynamics.

Empirical Review

The empirical review is organized thematically around the three main research objective of this study: Adoption of environmental accounting practices, the relationship between environmental accounting and firm profitability, and the challenges and benefits of environmental accounting implementation.

Adoption of Sustainability reporting framework

Using a survey of 250 manufacturing companies across Nigeria, Ahmad et al. (2021) Examine the adoption rate of environmental accounting practices and the study review that only 35% of the Soviet companies had implemented comprehensive environmental accounting system why 42% had adopted partial environmental accounting practices. The study identified several factors that influence adoption rates including firm size industry type regulatory pressure and stakeholders expectations. Large multinational companies showed significantly higher adoption rate of 78% compared to domestic companies which 28% suggesting that they international exposure and stakeholders pressure play crucial roles and driving environmental accounting adoption. Beredugo and Mefor (2022) further examine environmental accounting practices among 180 oil and gas companies operating in Nigeria and found that 56% of the company's had adopted some form of environmental accounting with most focusing on pollution control cost and environmental remediation expenses. The study however reveal significant variation in the comprehensiveness and quality of environmental accounting system with international oil companies demonstrating more sophisticated practices compared to local operators.

In a cross-sectional study of 120 listed Nigerian manufacturing firms, Ifurueze et al.(2023) Documented at 68% of the companies provided some form of environmental information and their annual report but only 31% disclose quantitative environmental data such as emission levels, waste generation, and resource consumption and and that companies in environmentally sensitive industries such as chemicals, cement, and still had higher disclosure risks compared to firms in less environmentally intensive sectors while a multi country study examining environmental accounting practices in 15 developing countries including Nigeria by Bernardi and Stark (2022) revealed that Nigeria ranked 11th out of 15 countries in terms of environmental accounting adoption with an overall adoption rate of 41% among surveyed firms. The study identified regulatory enforcement, stakeholders pressure, and access to technical expertise as key determinants of adoption rates across different countries. Bassey et al. (2023) Employed a mixed-method approach for examine environment accounting adoption among small and medium enterprises (SMEs) in Nigeria and their survey of 300



SMEs revealed that only 18% had implemented environmental accounting practices with most citing cost constraints, lack of technical expertise, and limited regulatory pressure as primary barriers.

Sustainability Reporting and Firm Profitability

Ibrahim et al. (2025) conducted a comprehensive analysis to examine the relationship between environmental accounting practices and financial performance and found a significant positive relationship between environmental accounting adoption and return on assets (ROA) which was corroborated by the research of Akbas (2024) which adopted a quantitative research design, using multiple regression analysis to explore the relationship between board characteristics and environmental disclosure in Turkish listed companies. The findings reveal that governance factors such as board size, diversity, and the presence of independent directors significantly influence the extent of environmental reporting and companies with larger and more diverse boards demonstrated higher levels of transparency in environmental disclosures, which in turn positively impacted their financial performance by fostering investor confidence and enhancing corporate reputation through effective governance structures that ensures accountability and aligning corporate strategies with sustainability goals.

Ahmed and Anifowose (2023) employed a case study approach to examine the financial impact of environmental accounting in Nigeria and their result show that companies with robust environmental accounting systems had 15% lower environmental compliance cost and 23% fewer regulatory penalties compared to companies with minimum environmental accounting practices while a sector-specific study by Medley (2023) found that companies with superior environmental accounting practices should consistently higher profit margins averaging 18.4% compared to 12.7% for companies with minimal environmental accounting systems.

International comparative research by Bai et al. (2024) Examine the environmental accounting-financial performance relationship across multiple African countries including Nigeria. The research review that Nigerian companies with high environmental accounting scores had an average return on equity that was 4.2% points higher than companies with low environmental

accounting scores confirming the earlier position reached by Chang (2023) who conducted a meta-analysis of 35 studies examining the environmental accounting-financial performance relationship in developing countries and found an overall positive but modest relationship between environmental accounting and financial performance.

In like manners, an earlier study of market-based performance implication of environmental accounting adoption among Nigeria publicly listed companies by Bouten et al. (2021) Revealed that companies with established environmental accounting practices had lower stock price volatility and higher institutional investor ownership compared to companies without such practices.

The empirical evidences from the studies collectively suggest that while environmental accounting implementation faces significant challenges in Nigerian context, companies that successfully overcome these challenges can realize substantial benefits in terms of improved financial performance, better risk management, and enhanced stakeholders' relationship. The variations in findings across studies highlight the importance of contextual factors and implementation approaches in determining the success of sustainability accounting initiatives; measuring the extent of sustainability framework adoption and integrated reporting and its influence on the economic performance of firms in Nigeria. We thus hypothesize that:

H0₁: Sustainability framework adoption and Sustainability (integrated) reporting do not significantly influence firms' returns on assets (ROA) performance in Nigeria.

H0₂: Sustainability framework adoption and Sustainability (integrated) reporting do not significantly influence firms' returns on equity (ROE) performance in Nigeria.

H0₃: Sustainability framework adoption and Sustainability (integrated) reporting do not significantly influence firms' net profit margin (NPM) performance in Nigeria.

Methodology

This study adopts a quantitative research design using secondary data (elicited from companies' annual report) for analysis to examine the relationship between environmental accounting practices and firms financial



performance in Nigeria. The research employs a descriptive and correlational design that allows for the systematic analysis of existing data to identify patterns trends and relationships between variables. The study covers a 10-year period from 2015 to 2024; providing sufficient temporary scope to capture trends and variation in environmental accounting adoption and financial performance. This longitudinal approach enhances the reliability of findings by accounting for year-to-year fluctuations and providing a more comprehensive view of the environmental accounting-financial performance relationship.

The population of this study comprises all publicly listed companies operating in Nigeria across the three key environmentally sensitive sectors: oil and gas, manufacturing, and agriculture. These sectors were selected because they have significant environmental impact and are more likely to adopt sustainability reporting practices due to regulatory requirements and stakeholders pressure. The target population includes:

1. Oil and Gas Sector - 7 companies
2. Manufacturing Sector - 54 companies.

3. Agricultural Sector: - 5 companies.

As of 31st December 2024, the total population consists of approximately 66 companies across these three sectors.

This study adopted the purposive sampling techniques as a basis of arriving at the sample size of this study in order to cater for the difficulties associated with missing letters and to ensure that reliable and valid data are obtained for the study. The under-listed criteria were established to regulate the inclusion of a company in the sample of the study:

- The company must be a listed company in the Nigeria (NGX) before 2015 and has not been removed till 2024.
- The company must be in operation within the study period and has updated annual report for the period under study.

Excluding the companies that did not meet the criteria, a total of forty eight (48) companies that met the criteria was therefore selected to constitute the sample size of this study:

Table 1: Sample size of this study

S/N	Sectorial Category	Number of Listed Companies	Sample Obtained
1.	Oil and Gas	7	5
2.	Manufacturing	54	39
3	Agriculture	5	5
Total		66	48

Source: Author’s Compilation (2026)

Variable Description

Table 2: Measurements of Variables

Variable	Description	Label	Operational Definition
Dependent	Return on Assets	ROA	Net profit for each year divided by the total assets multiplied by 100%
	Return on Equity	ROE	Net profit for each year divided by Equity multiplied by 100%
	Net Profit Margin	NPM	Net Profit for each year divided by the revenue multiplied by 100 %.
Independent	Sustainability Framework Adoption	SFA	Inclusion of sustainability information in reports: 0 = No adoption 1 = Partial adoption 2 = Full adoption
	Sustainability Reporting	SSR	Extent to which firms report environmental costs: Logarithm of firm’s total reported environmental cost



Control	Firm Size	FRS	Logarithm of firm’s total assets
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Source: Author’s Compilation (2026)

Model specification

The general model is as specified:

Firms Economic Performance = *f* (Sustainability Framework Adoption + Sustainability Reporting + Control Variable) + ϵ

Model 1: $ROA = \beta_0 + \beta_1SFA + \beta_2SSR + \beta_3FRS + \epsilon$

Model 2: $ROE = \beta_0 + \beta_1SFA + \beta_2SSR + \beta_3FRS + \epsilon$

Model 3: $NPM = \beta_0 + \beta_1SFA + \beta_2SSR + \beta_3FRS + \epsilon$

Where:

ROA = Return on Assets

ROE = Return on Equity

NPM = Net Profit Margin

SFA = Sustainability Framework Adoption

SSR = Sustainability Reporting

FRS = Firm Size

β_0 = Intercept

$\beta_1... \beta_3$ = Coefficients of independent variables

ϵ = Error term

Results and Discussion

Summary Statistics

Outlined in Table 3 below is the summary statistics for the variables of this study. The reported summary statistics results for selected measures of central tendencies, dispersion and distribution for the study’s variables include the total numbers of observations (N) reported alongside with mean values, standard deviations (Std.Dv.), minimum values (Min), maximum values (Max), Skewness and Kurtosis . From the table 3 reported results, the number of observations (N) for all variables were 480 obtained from the records of 48 sampled firms across a 10 year period.

Table 3: Summary Statistics of the Study’s Variables

Variable	N	Mean	Std. Dv.	Min	Max	Skewness	Kurtosis
ROA	480	0.0187873	0.0128231	-0.1131853	0.0964	-2.88285	41.89967
ROE	480	0.2781155	0.2283268	-2.490077	1.238227	-5.703381	72.23748
NPM	480	23.65010	11.400880	-125.4921	59.13553	-4.99203	63.58509
SFA	480	1.566667	0.0665064	0	2	-1.246931	3.273731
SSR	480	5.330517	1.7409700	0	9.42488	-1.980261	7.222997
FRS	480	8.080907	1.1681200	6.009797	10.6346	0.35961	1.648222

The mean value of the dependent variables, ROA, ROE and NPM are 0.0187873, 0.2781155 and 23.6501, while their standard deviations are 0.0128231, 0.2283268 and 11.400880 respectively. These reported low standard deviations are indications that data for ROA, ROE and NPM relatively exhibited similar trends though with insignificant magnitudes of apparent deviations about the mean among the sampled companies, evidently submits that the economic performance of firms across sectors exhibit similar trend throughout the sampled period.

The independent and control variables for sustainability (SFA, SSR and FRS) had mean values of 1.566667, 5.330517, and 8.080907 respectively while their respective standard deviations that ranged from 0.0665

(SFA) to 1.7409 (SSR) appear to be low. Again, this indicates that the sustainability framework adoption and sustainability reporting in Nigeria across firms and sectorial categories appear to be relatively similar irrespective of the sizes of the firms across the sector.

The measure of asymmetry in the series (skewness) for both dependent (ROA, ROE, and NPM) and independent variables (SFA, and SSR), except control variable (FRS) were negatively skewed; an indication of left-skewed, assymetric distribution to the left supposing that firms has differing levels of sustainability adoption and sustainability reporting across the sectors. The Kurtosis measuring within the series asymmetry also confirmed this position that the ROA, ROE, NPM, SFA, SSR and



FRS satisfy this condition of a long left-hand-tail distribution.

Correlation Analysis for firms Economic Performance and Sustainability Reporting

The correlation result for our study’s variables explains the direction of relationship between variables. Earlier studies used correlation results to determine signs of multicollinearity in a given datasets for pairs of

independent variables that exceeds a threshold of 0.80. (see Efenyumi, 2023, Efenyumi & Ikelegbe, 2025). Table 4 below revealed that all the correlation coefficient between ROA, ROE and NPM and the independent variables were negative. This means that a unit rise in the level of sustainability framework adoption, Sustainability reporting and firm size explains a reduction in firms economic performance.

Table 4: Correlation Results for Sustainability Measures

	ROA	ROE	NPM	SFA	SSR	FRS
ROA	1.0000					
ROE	0.8456	1.0000				
NPM	0.6501	0.7166	1.0000			
SFA	-0.0728	-0.0104	0.0407	1.0000		
SSR	-0.0732	-0.0734	-0.0419	0.5878	1.0000	
FRS	-0.1638	-0.0361	-0.0067	0.2211	0.1007	1.0000

The recorded coefficient between the predictor variables has its highest value as 0.5878 between SFA and SSR which was below the specified threshold, supporting our argument that our specified model is fit and lacks multi-

collinearity issues. We further tested for the presence of multi-collinearity and heteroscedasticity and the outcome was presented in Table 5.

Table 5: VIF & B-P/CW Results

Variable	VIF	1/VIF
SFA	1.59	0.627987
SSR	1.53	0.653570
FRS	1.05	0.949808
Mean VIF	1.39	
Fitted Values of ROA, ROE and NPM		
	chi2(1)	Prob > chi2
ROA	35.11	0.0000
ROE	128.20	0.0000
NPM	31.31	0.0000



Table 5 showed the output from the multicollinearity (VIF test) and the heteroskedasticity (B-P/CW test). With the mean VIF of 1.39 (below the maximum stipulated brink of 10), VIF scores 1.59 (SFA), 1.53 (SSR) and 1.05 (FRS), one can argue the possible non-existence of multi-collinearity hitches in the collated data for the study (see Efenyumi & Ikelegbe, 2025). Contrary to the above result, the fitted values of the ROA, ROE and NPM suggest otherwise. The outcome of the B-P/CW test showed that ROA has Chi2(1) of 35.11 (p-value = 0.0000 < 0.05), ROE has Chi2(1) of 128.20 (p-value = 0.0000 < 0.05) and NPM has Chi2(1) of 31.31 (p-value = 0.0000 < 0.05) announcing that the variance of the error terms or the residuals is not

constant across all the independent variables and in which case, signifying that the OLS regression technique is not suitable for our model. Considering this outcome, the study now depends on the outcome of the Generalized Linear Model (GLM) for testing our hypotheses.

Test of Hypotheses

Hypothesis 1: Sustainability framework adoption (SFA) and Sustainability (integrated) reporting (SSR) do not significantly influence returns on assets (ROA) performance of firms in Nigeria

Model 1: $ROA = \beta_0 + \beta_1SFA + \beta_2SSR + \beta_3FRS + \epsilon$

Table 6: GLM result for testing of hypothesis I

Dependent Variable	Firms Economic Performance (ROA)			
Independent Variables	Coef.	Std. Err.	z	P > z
SFA	-0.0001276	0.0010983	-0.12	0.908
SSR	-0.0003943	0.0004113	-0.96	0.338
FRS	-0.0017232	0.0005084	-3.39	0.001
_CONS	0.0350143	0.0042906	8.16	0.000
Residual df	476			
Scale Parameter	0.0001605			
(1/df) Deviance	0.0001605		Deviance	0.0763911673
(1/df) Pearson	0.0001605		Pearson	0.0763911673
AIC	-5.891131			
BIC	-2938.646			
Log likelihood	1417.8713			
N	480			

Source: Authors’ Computation (2026)

Our test for Hypothesis I according to the GLM result presented in table 6, the low values for standard errors, confirming the near absence of possible vagueness in the ability of the GL model in specifying the exact relationship between our variables and this is confirmed by the extremely low values of the AIC and the BIC.

From the GLM outcome in table 6, SFA, SSR and FRS had negative regression coefficients of 0.0001276, 0.0003943, and 0.0017232, respectively. Individually, measures of sustainability, SFA-adoption (z = -0.12; p-

value = 0.908 > 0.005) and SSR-reporting (z = -0.96; p-value = 0.338 > 0.005) do exert very insignificant but negative influence on measures of economic performance of firms. This signifies that most of the firms in the oil and gas, manufacturing, and agricultural sectors exert negative insignificant influence on firms economic performance (ROA) as a result of conscious acts of not adopting sustainability framework and sustainability (ESG) reporting among companies’ in Nigeria.



Therefore, from the above result, it is confirmed that sustainability reporting has not been significantly integrated into the financial reporting framework of most of the firms in the oil and gas, manufacturing, and agricultural sectors and that their sustainability reporting does not significantly influence returns on assets (ROA) performance of firms in Nigeria.

Hypothesis 2: Sustainability framework adoption (SFA) and Sustainability (integrated) reporting (SSR) do not significantly influence returns on equity (ROE) performance of firms in Nigeria.

Model 2: $ROE = \beta_0 + \beta_1SFA + \beta_2SSR + \beta_3FRS + \varepsilon$

Table 7: GLM result for testing of hypothesis 2

Dependent Variable	Firms Economic Performance (ROE)			
Independent Variables	Coef.	Std. Err.	z	P > z
SFA	0.0204894	0.0197729	1.04	0.300
SSR	-0.013718	0.0074041	-1.85	0.064
FRS	-0.0075701	0.0091538	-0.83	0.408
_CONS	0.3803127	0.0772467	4.92	0.000
Residual df	476			
Scale Parameter	0.052018			
(1/df) Deviance	0.052018		Deviance	24.76056621
(1/df) Pearson	0.052018		Pearson	24.76056621
AIC	-0.1099901			
BIC	-2913.962			
Log likelihood	30.39761329			
N	480			

Source: Authors' Computation (2026)

According to the GLM result presented in table 7 for our hypothesis 2 testing, the GLM specifying the exact relationship in our model showed that the model is fit as evidenced by the low values for standard errors which were confirmed by the extremely low values of the AIC and the BIC.

From the GLM result in table 7, only SFA had positive regression coefficient (0.0204894), while SSR and FRS had regression coefficients of -0.013718 and -0.0075701, respectively. Individually, the Z stat showed that measures of sustainability adoption, SFA (z = 1.04; p-value = 0.300 > 0.005) does exert insignificant positive influence on measures of economic performance (ROE) of firms while measures of sustainability reporting, SSR (z = -1.85; p-value = 0.064 > 0.005) exerts insignificant and negative influence on measures of economic performance (ROE) of firms, signifying that some of the firms in the oil and gas, manufacturing, and agricultural

sectors which has adopted the sustainability framework exert positive but insignificant influence on firms economic performance (ROE) while few others though integrated sustainability (ESG) reporting has not impacted meaningfully on firms economic performance (ROE) among companies' in Nigeria.

Therefore, from the above result, it is confirmed that Sustainability reporting has not been significantly integrated into the financial accounting framework of most of the firms in the oil and gas, manufacturing, and agricultural sectors and that their Sustainability reporting does not significantly influence returns on equity (ROE) performance of firms in Nigeria.

Hypothesis 3: Sustainability framework adoption (SFA) and Sustainability (integrated) reporting (SSR) do not significantly influence net profit margin (NPM) performance of firms in Nigeria



Model 3:
$$NPM = \beta_0 + \beta_1SFA + \beta_2SSR + \beta_3FRS + \varepsilon$$

Table 8: GLM result for testing of hypothesis 3

Dependent Variable	Firms Economic Performance (NPM)			
	Coef.	Std. Err.	z	P > z
SFA	1.793212	0.9872188	1.82	0.069
SSR	-0.6639757	0.3696706	-1.80	0.072
FRS	-0.1918898	0.4570323	-0.42	0.675
_CONS	25.93071	3.856764	6.72	0.000
Residual df	476			
Scale Parameter	129.6702			
(1/df) Deviance	129.6702		Deviance	61723.01378
(1/df) Pearson	129.6702		Pearson	61723.01378
AIC	7.71117			
BIC	58784.29			
Log likelihood	-1846.680743			
N	480			

Source: Authors’ Computation (2026)

In testing our hypothesis 3, the GLM result presented in table 8 confirmed that the specified model measuring the variables relationship is fit. This is supported by the low values for standard errors which were confirmed by the values of the AIC and the BIC.

From above table 8, SFA had positive regression coefficient of (1.793212), while SSR and FRS had negative regression coefficients of 0.6639757 and 0.1918898, respectively. The table further revealed that sustainability adoption, SFA has a Z stat of 1.82 with a p-value of 0.069 > 0.005) which exert insignificant positive influence on measures of economic performance (NPM) of firms while measures of sustainability reporting, SSR has Z stat of -1.80 with a p-value of 0.072 > 0.005) thus exercising insignificant negative influence on measures of economic performance (NPM) of firms, signifying that some of the firms in the oil and gas, manufacturing, and agricultural sectors which has adopted the sustainability framework exerted positive but insignificant influence on firms net profit margin (NPM) while few others though integrated sustainability (ESG) reporting has not impacted

meaningfully on firms on firms net profit margin (NPM) among companies’ in Nigeria.

In line with this result, it can be argued that sustainability reporting has not been significantly integrated into the financial accounting framework of most of the firms in the oil and gas, manufacturing, and agricultural sectors and that their Sustainability reporting does not significantly influence net profit margin (NPM) performance of firms in Nigeria.

Conclusion

The study examines sustainability reporting and firms economic performance in Nigeria. The data for the study was collected from forty eight listed companies across key sectors including oil and gas, manufacturing, and agriculture. The findings revealed that measures of sustainability reporting jointly had negative relationship with measures of economic performance, return on assets, return on equity and net profit margin; although the impact is marginally significant and vary across the financial indicators. The Generalized Linear Model (GLM) regression showed that sustainability reporting framework adoption has a slight negative and



insignificant influence on return on assets, but insignificant positive influence on return on equity and net profit margin while sustainability reporting exercised statistically insignificant negative influence on return on assets, return on equity and net profit margin suggesting that the economic (especially financial) benefit of sustainability may not be immediate or uniformly experienced across firms, although firms-specific characteristics such as firm size was found to influence the relationship between sustainability reporting and firms economic performance, indicating that sustainability reporting depends on internal and contextual factors.

Despite challenges including regulatory weakness, cost of compliance, and limited technical capacity, firms that adopted sustainability framework and reporting practices reported benefits such as improved operational efficiency, better stakeholder engagement, enhanced regulatory compliance, and reduced risk exposure. Sustainability reporting, although not conclusively linked to immediate profitability, can serve as a strategic tool for improving long-term financial sustainability, organizational transparency and corporate reputation when effectively implemented and integrated into core business operations in Nigeria. Therefore, the study concluded that sustainability reporting has not been significantly integrated into the annual financial reporting framework of most of the firms and that sustainability reporting does not significantly influence, return on assets (ROA), return on equity (ROE) and net profit margin (NPM) performance of firms in Nigeria.

Recommendations

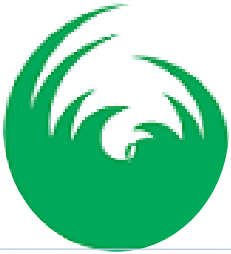
This study therefore proposed the following recommendations based on our findings:

1. Despite mixed regression results, the positive correlations suggest that sustainability reporting may still offer reputational and long-term financial benefits. Firms should improve sustainability reporting to meet stakeholders expectations and potentially gain market advantages.
2. Clearer guidelines on sustainability reporting and disclosure could improve comparability and reliability, helping investors and analysts better assess sustainability performances.

3. Tax benefits, subsidies, or recognition for firms with IIRC compliance could encourage broader adoption.

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