

Triple Bottom Line Reporting and Financial Performance of Quoted Oil and Gas Companies in Nigeria

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Abstract

This study examined the effect of triple bottom line reporting on the financial performance of listed oil and gas companies in Nigeria. Specifically, the study investigated the effects of economic, environmental, and social disclosures on return on assets (ROA). An ex post facto research design was adopted, using secondary data obtained from the annual reports of eight listed oil and gas companies on the Nigerian Exchange Group (NGX) for the period 2006-2024. Panel Least Squares (PLS) regression analysis was employed to analyze the data. The findings revealed that economic disclosure has a positive and significant effect on financial performance, while environmental disclosure and social disclosure have negative and significant effects on financial performance. The study concludes that economic disclosure enhances profitability, whereas environmental and social disclosures reduce short-term profitability due to the costs associated with sustainability initiatives. The study recommends that oil and gas companies should strengthen economic disclosure practices while adopting cost-effective environmental and social sustainability programmes that enhance long-term value without adversely affecting profitability.

1.1 Introduction

In recent years, attention has shifted from purely financial reporting to more holistic reporting frameworks that incorporate economic, environmental and social dimensions (Global Reporting Initiative, 2020). The Triple Bottom Line Accounting is the process of evaluating an organization's effects on the economy, the environment, and community service as opposed to the conventional approach of evaluating only the bottom line. According to Elkington (2022), Businesses that want to be sustainable must perform for the triple bottom line as well as for a single financial bottom line. To encompass a strategy that stresses economic prosperity, social development, and environmental quality as an integrated technique of doing business, this concept aims to go beyond earlier constructions of sustainable development and corporate social responsibility. Michael et al. (2021). Triple bottom line accounting has the potential to improve long-term financial performance, investment return, and value creation, that is, reaching adequate profit, according to Ngwakwe (2023). Financial ratio analysis, such as the firm's earnings per share, is one of the finest methods to assess a sector's financial performance. The consequences and results of the business sector are mostly reflected in financial performance. Oladele et al. (2021). Financial performance is the degree to which an organization meets its financial goals and makes efficient use of its resources to turn a profit, maintain operations, and guarantee long-term growth and stability. It is a thorough metric that assesses how well a business transforms its inputs labour, capital, and assets into the intended financial results, including profit, revenue, and value creation for stakeholders and shareholders. Financial performance essentially assesses a company's overall health, strength,

and efficiency from a financial standpoint. It gives a quick overview of a company's capacity to manage its equity, liabilities, income, and expenses in a way that supports sustainability, liquidity, solvency, and profitability. (Horsfall, 2022). This integrated perspective has become a common framework for assessing corporate sustainability performance.

The way Nigerian oil and gas companies handle and disclose their environmental and social responsibilities can have a significant impact on their financial performance in terms of profitability, market value, and long-term sustainability (Ezeani & Nwankwo, 2020). These companies operate in socially unstable and environmentally sensitive areas, where the quality of environmental and social reporting can influence stakeholder trust, community relations, and regulatory response. Uwuigbe, (2021). The fundamental premise is that the financial performance of listed oil and gas firms in Nigeria can be impacted by the successful implementation of triple bottom line accounting. Businesses are more likely to lessen regulatory penalties, community conflicts, and reputational harm when they make investments in environmental protection, cut back on gas flaring, minimize oil spills, and include host communities through employment, social programs, and open reporting. Lower operating expenses, increased stakeholder trust, simpler access to financing, and higher market valuation are all possible outcomes of these initiatives. Ogundari et al (2022). In this sense, financial success may be strengthened rather than weakened by environmental and social performance as revealed by TBL reporting. According to stakeholder theory, businesses are more likely to receive ongoing support if they address the requirements and expectations of important stakeholders such as host communities, regulators, investors, and environmental authorities. Similarly, according to legitimacy theory, oil and gas firms that make thorough TBL disclosures are better equipped to defend their business practices to the public, which lowers the possibility of boycotts, demonstrations, and regulatory pressure that could negatively impact their bottom line. There is conflicting data about the connection between triple bottom line practices and financial performance, according to empirical research conducted in both industrialized and emerging economies. Okewu & Adeleye (2025) find no positive or significant link in their study; however, Paul et al. (2024) indicate a definite positive relationship. In resource-dependent countries, where oil and gas corporations are under tremendous pressure to generate high financial returns while managing significant environmental and social implications, this lack of agreement is especially noticeable. Thus, this study aims to investigate how triple bottom line accounting affects the financial performance of Nigerian oil and gas businesses that are publicly traded.

1.2 Statement of the Problem

The oil and gas sector remain one of the most economically significant industries in Nigeria, contributing substantially to government revenue, foreign exchange earnings, and national development (NNPC, 2023). However, the operations of quoted oil and gas companies in Nigeria have been persistently associated with environmental degradation, gas flaring, oil spill incidents, community unrest, and social conflicts, particularly in host communities (Nwankwo & Osho, 2020). These challenges have heightened public scrutiny and regulatory pressure on firms to go beyond traditional profit-oriented accounting practices and adopt more sustainable and socially responsible approaches. This has driven interest in frameworks like the Triple Bottom Line (TBL) accounting, which emphasizes integrated economic, environmental, and social performance. Despite the growing global acceptance of Triple Bottom Line accounting, many quoted oil and gas companies in Nigeria still place greater emphasis on conventional financial reporting, with limited integration of environmental and social performance into their accounting and decision-making processes. Where sustainability disclosures exist, they are often inconsistent, voluntary, and sometimes symbolic, raising concerns about their credibility and actual impact on firms' financial performance. Consequently, stakeholders, including

investors, regulators, host communities, and environmental advocates, remain uncertain about whether investments in environmental protection, social responsibility, and transparent reporting translate into improved financial outcomes such as profitability, cost efficiency, market value, and long-term competitiveness.

Moreover, empirical evidence on the relationship between Triple Bottom Line accounting and the financial performance of quoted oil and gas companies in Nigeria is inconclusive and fragmented. According to Daferighe (2024), oil and gas companies that actively implement economic, social, and environmental reporting experience improved firm outcomes. In his study, he suggests that investments in environmental protection, community development, and transparent reporting help firms mitigate conflicts with host communities, reduce operational disruptions, and foster long-term financial stability. Similarly, Imo et al (2022) find a statistically significant positive relationship between sustainability reporting and key financial performance indicators such as Return on Assets (ROA) and Return on Equity (ROE). Okutu & Adegbe (2023) reveal that social and environmental sustainability reporting exerted a negative, though statistically insignificant, effect on Return on Capital Employed (ROCE). The authors attribute this outcome to the high costs associated with sustainability disclosures, environmental compliance, and community engagement initiatives, which may outweigh financial benefits in the short term. In a similar vein, Onwubiko et al. (2023) find that environmental sustainability disclosure has a negative relationship with profitability, suggesting that expenditures on pollution control, remediation, and reporting obligations impose additional financial burdens on oil and gas firms operating in Nigeria's challenging regulatory and infrastructural environment.

Against this backdrop, there is a clear problem of insufficient empirical understanding of how Triple Bottom Line accounting influences the financial performance of quoted oil and gas companies in Nigeria. This knowledge gap hinders effective policy formulation, weakens corporate sustainability strategies, and limits stakeholders' ability to assess the true value implications of sustainability-oriented accounting practices. Therefore, this study seeks to examine the effect of Triple Bottom Line accounting on the financial performance of quoted oil and gas companies in Nigeria, with a view to providing evidence-based insights that can guide corporate decision-making, regulatory frameworks, and sustainable development initiatives in the sector.

2.0 Review of Related Literature

2.0 Conceptual Framework

2.1 Conceptual Clarification

2.1.1 Triple Bottom Line Accounting

By forcing businesses to assess and report not just their economic performance but also their social and environmental consequences, Triple Bottom Line (TBL) accounting is a sustainability paradigm that expands on standard financial accounting. Instead of concentrating only on financial gain (economic), this extended view evaluates a company's success across three interconnected dimensions: profit, people, and planet (Nogueira et al., 2024). Long-term financial sustainability and value creation are reflected in the "profit" component under TBL, which includes not only internal profitability but also the wider economic value generated for society (Nogueira et al., 2023). Assessing how corporate operations impact stakeholders, employees, communities, and other groups in terms of social equality, well-being, labor conditions, and community development is part of the "people" dimension (IBM, 2023). Environmental stewardship is captured by the "planet" dimension, which gauges how a business's operations either exacerbate or lessen ecological effects such as waste, pollutants, and resource depletion (IBM, 2023). TBL accounting ensures that businesses are both

economically successful and socially and ecologically sustainable by integrating these three pillars to connect company strategy with sustainability goals (Nogueira et al., 2024).

2.1.2 Economic Disclosure

Economic disclosure refers to the extent to which an organization provides detailed information on its economic performance, financial position, and broader economic impacts on stakeholders. This includes disclosures relating to revenue generation, profitability, operating costs, market presence, indirect economic contributions, and value creation for shareholders and society. Economic disclosure enhances transparency, accountability, and comparability, enabling investors, regulators, and other stakeholders to evaluate a firm's financial sustainability and long-term economic viability (Deegan et al., 2019).

2.1.3 Social Disclosure

Social disclosure refers to the systematic reporting by an organization of information related to its social performance, impacts, and responsibilities toward stakeholders such as employees, customers, communities, and society at large. It covers areas like labor practices, employee welfare, human rights, community engagement, diversity and inclusion, and other activities that reflect a firm's commitment to social welfare and ethical conduct. Social disclosure enhances transparency and stakeholder trust by providing insights into how corporate activities contribute to societal well-being and address social concerns beyond financial results (Freeman, 1984; Suchman, 1995).

2.1.4 Environmental Disclosure

Environmental disclosure refers to the formal practice through which companies provide information about their environmental performance, impacts, policies, and related management practices to external stakeholders through platforms such as annual reports, sustainability reports, and corporate websites. This includes details on emissions, resource and energy use, waste management, compliance with environmental laws, and strategies for ecological risk mitigation. Environmental disclosure enhances transparency and accountability by enabling stakeholders to evaluate how firms manage their environmental responsibilities and contribute to sustainable development goals (Gray et al., 2010)

2.1.5 Financial Performance

Return on assets (ROA), return on equity (ROE), profitability ratios, and firm value are examples of accounting-based metrics that are commonly used to describe a company's financial performance. Financial performance is frequently viewed as the result that sustainability initiatives impact in the context of triple bottom line (TBL) accounting. For instance, Nogueira et al. (2024) use accounting indicators to show value creation and company continuity and discover that the economic (profit) dimension of TBL has a beneficial impact on financial performance. Higher ROA, a typical accounting proxy for financial success, indicates effective asset utilization, which in TBL-oriented organizations illustrates how sustainable business practices can support profitability over time, according to studies. ESG (environmental, social, and governance) initiatives that are closely aligned with TBL pillars are also linked to increased profitability in emerging markets, according to empirical research, which emphasizes governance and economic practices as crucial factors in financial performance under a sustainability strategy.

2.1.6 Return on Assets

Return on Assets (ROA) is a financial performance ratio that measures the efficiency with which a firm utilizes its total assets to generate profits. It is computed by dividing net income

by total assets and indicates how effectively management deploys the company's resources to produce earnings. A higher ROA suggests better asset utilization and operational efficiency, while a lower ROA may indicate inefficiencies or underutilization of assets. ROA is widely used by investors and analysts to compare profitability across firms and industries, regardless of differences in size (Penman, 2013; Deegan, 2019).

2.2 Theoretical Review

Under this topic, theories including stakeholder theory and legitimacy theory serve as guiding models for analyzing and supporting the triple bottom line accounting and Financial performance of oil and gas companies listed on the Nigerian Exchange Group (NGX). They influence profitability by interacting with external and organizational influences.

2.2.1 Stakeholders Theory

Freeman (1984) introduced the concept of stakeholder theory, highlighting that businesses should generate value for everyone who can influence or be impacted by the company's operations, not only shareholders. The main thesis is that businesses are part of a network of interactions, and their ability to successfully manage these relationships to balance conflicting interests is essential to their success. Stakeholder theory highlights that long-term organizational survival and performance are dependent on meeting the expectations and needs of multiple stakeholders, including employees, customers, suppliers, regulators, communities, and even the environment, in contrast to traditional shareholder theory, which narrowly focuses on profit maximization for owners (Freeman, 1934; Nogueira, Gomes & Lopes, 2024).

The theory's theoretical foundations are derived from organizational behavior, sociology, and ethics. It incorporates the idea that acknowledging stakeholder claims promotes sustainable business practices and that companies have moral and strategic responsibilities beyond financial returns. According to stakeholder theory, there are two types of stakeholders: core stakeholders, like investors, employees, and consumers, whose involvement is crucial for survival, and secondary stakeholders, such as the media, NGOs, and local communities, whose influence is indirect but substantial. To preserve credibility, trust, and a competitive edge, effective management of stakeholder relationships necessitates communication, compromise, and occasionally compromise (Mitchell, Agle & Wood, 1997). Stakeholder theory offers a strong foundation for comprehending why businesses participate in social and environmental efforts within the framework of sustainability and the Triple Bottom Line (TBL). Stakeholder requirements must be taken into consideration in sectors like oil and gas, where operations can have serious effects on the environment and society. For instance, host communities impacted by environmental degradation, government authorities enforcing compliance, and foreign investors emphasizing ESG criteria are common issues faced by Nigerian oil companies. Companies address the concerns of several stakeholders at once by implementing TBL accounting and reporting on social, environmental, and financial performance. This reduces conflicts, lowers reputational risk, and increases long-term profitability (Dewi & Rustiarini, 2024; Zubeltzu Jaka, 2024). Stakeholder-oriented methods appear to be favorably correlated with both financial and non-financial performance, according to empirical research. Businesses are better equipped to align operations with social standards, boost employee morale, increase consumer loyalty, and cultivate community support when they actively take stakeholder claims into account while making strategic decisions. This alignment demonstrates the useful advantages of stakeholder theory beyond its ethical underpinnings by lowering operational risks and increasing corporate value (Nogueira, Gomes & Lopes, 2024; Daferighe, 2024). The dynamic character of stakeholder relationships is also acknowledged by stakeholder theory. Stakeholder salience the extent to which stakeholders are deemed significant may fluctuate over time as a result of changing social norms, legal frameworks, and technological

advancements. To stay in line with expectations and preserve their competitive edge, businesses must constantly evaluate, prioritize, and interact with stakeholders. According to this notion, ignoring stakeholder interests may result in disputes, societal repercussions, or a loss of credibility, all of which could eventually affect sustainability and financial performance.

All things considered, stakeholder theory offers a normative and instrumental viewpoint on business conduct. Normatively, it states that businesses have an ethical duty to take all stakeholders' interests into account. It contends that this kind of attention is vital in the long-term success of the company. Stakeholder theory explains the adoption of TBL accounting and sustainability disclosures in Nigeria's oil and gas industry as tactics for handling intricate relationships with communities, regulators, investors, and workers. This ensures long-term corporate survival by striking a balance between economic performance and social and environmental obligations.

2.2.2 Legitimacy Theory

Although legitimacy theory in organizational and accounting research has sociological roots, Mark C. Suchman's work was largely responsible for its formalization in management studies. According to Suchman's seminal (1995) paper "Managing Legitimacy: Strategic and Institutional Approaches," legitimacy is "a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs and definitions." But the conceptual roots go deeper: the concept of organizational legitimacy was first articulated by Dowling and Pfeffer in 1975. They suggested that organizations should keep their value systems in line with those of the larger society in which they function; they contended that a mismatch results in a "legitimacy gap" that jeopardizes an organization's ability to survive.

According to legitimacy theory, organizations and their communities have a sort of social compact. Businesses are implicitly permitted by society to operate, but this permission is subject to adhering to social norms, which include accepted definitions of acceptable behavior, attitudes, and beliefs in addition to legal regulations. (Dowling & Pfeffer, 1975; Deegan, 2002). Businesses run the risk of losing public support, losing their social license, and suffering reputational harm when they transgress or appear to be out of step with these standards in terms of morality, the environment, or society. (Lindblom, 1994; Suchman, 1995). Suchman expands on the concept by classifying legitimacy into three categories: moral, cognitive, and pragmatic. Self-interest is the foundation of pragmatic legitimacy; stakeholders back a company when they think it will benefit them. When behavior is evaluated in light of ethical or normative criteria, moral legitimacy emerges. Deeper cognitive legitimacy occurs when an organization's existence and activities are accepted by society as essential or inevitable (Suchman, 1995).

Legitimacy theory explains why businesses, particularly those in contentious sectors like oil and gas, voluntarily disclose social, environmental, and sustainability information from an accounting and sustainability standpoint; by making these disclosures, they can uphold their "social license" to operate, validate their business practices, and demonstrate that they adhere to social norms. In this approach, sustainability reporting can be a strategic tool to control public opinion and lower legitimacy risk, rather than only being about openness or moral obligation (Lindblom, 1994; Cho & Patten, 2007). Legitimacy is inherently dynamic, as societal values and expectations evolve. Companies may react by changing their behavior, modifying their reporting, or reshaping their corporate identity to maintain or strengthen legitimacy when what society views as "proper" shifts, such as when environmental awareness or social justice issues increase (Deegan, 2019).

However, legitimacy theory acknowledges the limitations of this quest for societal approval. Substantial transformation may differ from symbolic actions, such as greenwashing or flimsy sustainability reporting (Ashforth & Gibbs, 1990; Laufer, 2003). Critics point out that

companies may employ legitimacy-seeking disclosures without significantly altering their business practices, which calls into doubt the efficacy and sincerity of such tactics. In real-world situations, such as the Nigerian environment, legitimacy theory explains why quoted oil and gas companies may use sustainability disclosure and triple bottom line accounting. These businesses frequently come under close examination for their effects on the community, the environment, and regulations. They seek to meet societal expectations, reduce reputational risk, and preserve their credibility in the eyes of stakeholders (local communities, authorities, investors) by disclosing their social and environmental performance (Deegan & Blomquist, 2006; Eze, Nwoye, & Okonkwo, 2021). In the end, legitimacy theory connects public perception, organizational strategy, and long-term survival: establishing and maintaining legitimacy involves more than just avoiding social sanctions; it also entails managing uncertainty, fostering trust, and maintaining the social license required for ongoing operations (Suchman, 1995; Deegan, 2019).

2.3 Review of Empirical Literature

Lilian et al (2025) examined the relationship between Social Responsibility Accounting (SRA) and the financial performance of listed oil and gas companies in Nigeria. The study focused on key components of social responsibility accounting, namely community investment and environmental remediation costs, while financial performance was proxied by gross revenue and net income. An ex post facto research design was adopted, and secondary data were obtained from the published financial statements of ten oil and gas firms listed on the Nigerian Exchange Group for the period 2018 to 2023. A census sampling technique was employed to ensure comprehensive coverage of the population. Descriptive statistics, including mean and standard deviation, were used to analyze the research questions, while regression analysis was applied to test the hypotheses. The findings revealed that community investment had no significant relationship with either gross revenue or net income. However, environmental remediation cost showed a significant but negative relationship with both gross revenue and net income. The study concluded that although certain aspects of social responsibility accounting may not immediately enhance financial performance, socially responsible practices remain essential for sustainable business operations. The authors recommended that oil and gas companies should adopt compulsory and well-structured social responsibility policies to enhance firm value, maintain positive market perception, and promote sustainable performance. Patrick et al (2025) examined the effect of green accounting on the financial performance of Nigerian listed oil companies using an ex post facto research design. Secondary data were obtained from the Nigerian Exchange Group and the published annual financial statements of eight oil companies over ten years spanning 2014 to 2023. The study employed unit root tests and descriptive statistics, while panel data regression analysis was used to test the hypotheses with the aid of E-Views statistical software (version 9). Green accounting served as the independent variable and was measured using the costs of environmental sustainability, waste management, and environmental cleanup, whereas financial performance was proxied by return on capital employed (ROCE), earnings per share (EPS), and net profit margin (NPM). The findings revealed that the costs of environmental sustainability, environmental cleanup, and waste management had no significant relationship with return on capital employed, earnings per share, and net profit margin. However, the study concluded that green accounting influences the financial performance of Nigerian listed oil companies. Consequently, the authors recommended that quoted oil and gas companies should increase environmentally related economic activities and disclose them adequately in their annual reports to enhance financial performance and ensure long-term corporate sustainability. The study further recommended that regulatory authorities should strictly enforce compliance with green accounting disclosure requirements in the oil and gas sector.

Boo and Oladejo (2025) examined the impact of sustainability reporting on the financial performance of upstream oil and gas companies in South-South Nigeria using an ex post facto research design. Secondary data were obtained from audited financial statements and sustainability reports of six oil and gas companies over nine years spanning from 2015 to 2023, yielding a total of 54 observations. Sustainability reporting was measured using environmental, economic, and social reporting indicators based on the Global Reporting Initiative (GRI) standards, while financial performance was proxied by return on assets (ROA), return on equity (ROE), and return on capital employed (ROCE). Content analysis and descriptive statistics were employed, and multiple regression analysis was used to examine the relationships, with diagnostic tests conducted to ensure data validity. The findings revealed mixed results. Environmental reporting had a positive but insignificant effect on ROA and ROE, while economic reporting exerted a significant negative effect on ROA but a significant positive effect on ROCE. Social reporting showed no significant effect on any of the financial performance measures. The study concluded that sustainability reporting has a limited and mixed influence on the financial performance of oil and gas companies in the South-South region of Nigeria, with economic reporting emerging as the most influential component. The authors recommended further investigation into additional determinants of financial performance to enhance understanding of the sustainability–performance relationship.

Adegboyega et al (2024) examined how environmental accounting practices influence the financial performance of eight oil and gas companies listed on the Nigerian Stock Exchange between 2011 and 2022. Using Driscoll Kraay standard errors, the analysis showed that environmental accounting significantly affected return on assets, earnings per share, and liquidity ratio. The findings indicate that adopting environmental accounting practices has varied but meaningful impacts on company performance. The study recommended that policymakers and stakeholders develop stronger regulations and incentives to promote environmental responsibility, concluding that improved environmental accounting can enhance sustainability and financial performance in the Nigerian oil and gas sector.

Emmanuel et al (2024) evaluated the application of triple bottom line reporting by oil, gas, and plastics production firms in the Niger Delta from 2011 to 2023, focusing on its impact on infrastructural development using an ex-post facto design, secondary data from 34 companies were analyzed with E-Views 10, employing descriptive statistics, Pearson correlation, and Panel Least Squares regression. The findings showed that economic, social, and environmental bottom line reporting all had significant positive effects on infrastructural development. The study concluded that these TBL components are key for explaining firm outcomes and recommended that companies enhance social and environmental responsibility to strengthen stakeholder relationships, corporate image; and competitiveness.

Paul et al (2024) examined the relationship between triple bottom line (TBL) reporting and the performance of oil and gas companies in Bayelsa State, Nigeria. Using the Maroochy Shire Council theory as a foundation, the study employed a descriptive survey design with primary data collected through structured questionnaires. Pearson Product-Moment Correlation Coefficient (PPMCC) was used for analysis. The findings revealed that both the companies' interventions in the socioeconomic welfare of host communities and their compliance with environmental sustainability standards significantly influenced performance. The study concluded that TBL reporting has a significant positive effect on company performance and recommended that oil and gas firms actively support community welfare such as providing water, electricity, roads, and scholarships to enhance operational efficiency and overall performance. Ogunwale and Hassan (2024) examined the relationship between environmental costs and financial performance of oil and gas firms in Nigeria over 11 years (2012 - 2022). Secondary data from annual reports and financial statements were analyzed using Pearson correlation in SPSS 21 -d at a 5% significance level. Environmental cost variables included

CSR cost, environmental remediation cost, and environmental compliance cost, while financial performance was measured by Q. The analysis revealed significant correlations between all environmental cost variables and financial performance. The study recommended that companies comply with national environmental laws, invest in host community development to reduce stakeholder conflict, and that the government establish and enforce clear policies and standards for environmental disclosure. Confidence and Eddo (2024) investigated the relationship between green accounting disclosure (proxied by environmental cost) and the financial performance of oil and gas companies listed on the Nigerian Exchange Group. Financial performance was measured using return on assets (ROA), net profit margin (NPM), and return on capital employed (ROCE). Data were analyzed with descriptive statistics (mean, standard deviation, minimum, maximum) and inferential statistics using correlation and Granger causality tests. The findings showed that green accounting disclosure had no significant relationship with NPM and ROCE, while a weak, positive, and significant relationship was found with ROA. The Granger causality test indicated no causal relationship between green accounting disclosure and the financial performance variables. The study recommended that companies continue to disclose environmental costs and green initiatives to inform stakeholders, despite the weak or insignificant relationships observed. Arumona et al. (2024) examined the impact of environmental disclosure on the financial performance of quoted oil and gas companies in Nigeria. The study employed panel data and a regression analytical technique, using secondary data obtained from twelve oil and gas firms listed on the Nigerian Stock Exchange (NSE) over ten years spanning 2010 to 2019. Environmental disclosure served as the independent variable and was proxied by research and development costs and projected future expenditures, while financial performance, the dependent variable, was measured using return on assets (ROA) and net profit margin (NPM). The study adopted the Ordinary Least Squares (OLS) regression technique and utilized E-Views for data analysis. The findings revealed that environmental disclosure had a positive and statistically significant effect on the financial performance of listed oil and gas companies in Nigeria during the period under review. The study concluded that environmental disclosures enhance the profitability and financial performance of oil and gas firms and also promote environmental consciousness within the Nigerian economy. Consequently, the study recommended sustained compliance with best environmental practices and full disclosure requirements in the oil and gas sector to ensure improved firm performance and broader societal benefits. Amahalu et al. (2023) investigated the impact of triple bottom line reporting on the financial performance of listed oil and gas companies in Nigeria. Over the course of eleven years, from 2011 to 2021, Eleven quoted oil and gas companies were purposefully chosen as the sample for the study, which had three main goals. Secondary data were taken from the annual reports and accounts of the sampled firms, and an ex post facto research approach and content analysis were used. E-Views 10.0 was used for data analysis, utilizing both descriptive statistics and inferential methods such as Panel Least Squares (PLS) regression analysis and Pearson correlation. At the 5% significance level, the empirical results showed that cash flow return on investment is significantly and favorably impacted by economic bottom line reporting, social bottom line reporting, and environmental bottom line reporting. According to the study's findings, cash flow return on investment among Nigerian quoted oil and gas companies is significantly influenced by the three elements of triple bottom line reporting. To improve stakeholder communication, bolster company image, and boost competitiveness, it was advised that corporate enterprises step up their social and environmental responsibility initiatives. Lucy et al (2023) examined the effect of sustainability reporting on the financial performance of listed oil and gas firms in Nigeria from 2012 to 2021. The study focused on social, health and safety, and environmental disclosures as independent variables and assessed their impact on return on capital employed (ROCE). An ex post facto research design was adopted using secondary data

from company annual reports and the Nigerian Exchange Group fact book. Robust panel least squares regression was employed to test the three hypotheses formulated for the study. The analysis revealed that social disclosure, health and safety disclosure, and environmental disclosure all have a significant positive effect on the ROCE of the oil and gas companies. The study concluded that sustainability reporting significantly enhances the financial performance of these firms and recommended that sustainability reporting be made mandatory across the industry. It further suggested the creation of a standardized sustainability index to serve as a benchmark for monitoring compliance and ensuring consistent reporting practices among Nigerian oil and gas companies.

3.0 Methodology

This study adopted a quantitative ex post facto research design to examine the effect of Triple Bottom Line (TBL) accounting disclosure on the financial performance of listed oil and gas companies in Nigeria. The ex post facto design is appropriate because it relies on historical firm-level data obtained from published annual reports without manipulating the study variables (Kothari & Garg, 2014). The study population comprised all eight (8) oil and gas companies listed on the Nigerian Exchange Group (NGX). Given the relatively small population, a census approach was adopted, whereby all listed firms were included in the analysis. The study covered the 2009-2024 financial years, resulting in a balanced panel dataset of 128 firm-year observations (8 firms $\times$ 16 years). Secondary data were extracted from the audited annual reports and sustainability reports of the sampled firms, which provide reliable and publicly available information on sustainability disclosures and financial performance.

Financial performance, the dependent variable, was proxied by Return on Assets (ROA), measured as net income divided by total assets (Marcin, 2024). The explanatory variables comprised the three dimensions of Triple Bottom Line accounting: Economic Disclosure (ECD), Environmental Disclosure (END), and Social Disclosure (SD). Economic disclosure was measured using disclosure indicators relating to firms' economic performance, value creation, and market presence (Okoba et al., 2023). Environmental disclosure was measured using indicators relating to environmental performance, including carbon emissions, energy consumption, waste management, and environmental compliance (İsmaıl, 2020). Social disclosure was measured using disclosure items relating to corporate social responsibility, employee welfare, community development, occupational health and safety, and diversity initiatives (Ionica et al., 2020). The disclosure variables were operationalized using disclosure indices developed from information contained in the firms' annual and sustainability reports.

Data were analysed using EViews 13. The analysis commenced with descriptive statistics to summarize the characteristics of the variables, followed by Pearson correlation analysis to examine the relationships among the variables and assess potential multicollinearity. Panel unit root tests were conducted to determine the stationarity properties of the data. The hypotheses were tested using Pooled Ordinary Least Squares (POLS), Fixed Effects (FE), and Random Effects (RE) estimators. The Breusch–Pagan Lagrange Multiplier (LM) test was employed to determine the suitability of panel estimation over pooled regression, while the Hausman specification test guided the selection between the fixed-effects and random-effects models.

To address potential endogeneity, dynamic persistence, and unobserved firm-specific heterogeneity, the study further estimated the model using the two-step System Generalized Method of Moments (System GMM) estimator developed by Blundell and Bond (1998). The validity and robustness of the estimated models were assessed using the Arellano Bond tests for first- and second-order serial correlation [AR (1) and AR(2)], the Hansen and Sargan tests of over-identifying restrictions, and the Difference-in-Hansen test where appropriate. Additional diagnostic tests included the Variance Inflation Factor (VIF) for multicollinearity, the Breusch–Pagan/Cook–Weisberg test for heteroskedasticity, the Wooldridge test for serial

correlation, and the Pesaran Cross-sectional Dependence (CD) test. Where necessary, robust standard errors were employed to ensure reliable statistical inference. Statistical significance was evaluated at the 1%, 5%, and 10% levels.

4.1 Univariate Analysis of Descriptive Statistics.

Table 4.1

Variables	Number of Observations	Mean	Std Deviations	Maximum	Minimum
EPS	152	-8.046000	89.39654	85.90000	-1077.000
ECONS	152	0.946667	0.047673	1.000000	0.857143
ENVIRON	152	0.892445	0.106125	1.000000	0.666667
SOC	152	0.648333	0.085743	1.000000	0.583333

Source: Researcher's Computations (2026) Using EViews13 Software.

The statistics in Table 4.1 above show the mean values of the variables as well as the standard deviations, the minimum, and the maximum values. All the variables of interest have maximum values that are greater than their respective minimum values. Also, the mean values of ECONS, ENVIRON, and SOC are greater than their respective standard deviation values (Mean>SD). This shows that these variables do not have outliers in their data set and so do not have a high gap between the highest and lowest values for the last 19 years, meaning that the averages are quite high (Lestari & Setiany, 2023). However, the mean value of EPS is lower than the standard deviation value (Mean<SD). This shows that this variable does have outliers in its data set and so does have a high gap between the highest and lowest values for the last 19 years, meaning that the average is quite low (Lestari & Setiany, 2023).

4.2 Bivariate Data Analysis (Correlation Analysis)

Table 4.2: Correlation Statistics

Covariance Correlation	EPS	ECONS	ENVIRON	SOC
EPS	7938.462 1.000000			
ECONS	0.299731 0.070801	0.002258 1.000000		
ENVIRON	0.010420 0.001106	0.004962 0.987370	0.011187 1.000000	
SOC	0.913898 0.120029	0.000451 0.111025	-4.59E-05 -0.005082	0.007303 1.000000

Source: Researcher's Computations (2026) Using EViews13 Software.

The correlation analyses among the variables are meant to first determine the association between each pair of the dependent and independent variables as well as among the explanatory variables. It reflects the relative strength of the relationship between the explanatory variables. The degree of association may be weak (0.00 to 0.5), moderate (0.51 to 0.8), or high (0.81 and above). A very high association among the regressors poses a problem of multicollinearity. According to Gujarati (2004), multicollinearity could only be a problem if the correlation

coefficient between regressors is above 0.80. From the information obtained from Table 4.2 above, it can be seen that there is an absence of multicollinearity since all the variables are weakly correlated except the relationship between ENVIRON and ECONS, which is highly correlated at 0.987320.

4.3. Method of Data Analysis

Data collected are analyzed in the following order: estimation of the regression model; hypotheses are tested; regression results discussion as well as the performance of some additional regression analysis for robustness test and diagnostics tests.

4.3.2. Estimation of the Dynamic Regression Models.

To determine the effect of triple bottom line reporting and financial performance of listed Oil & Gas companies in Nigeria. The static Panel Least Squares (PLS) method of estimation, as shown in Table 4.4 below, is used to examine the relationship between the independent variables (ECONS, ENVIRON, and SOC) and the dependent variable (EPS).

Table 4.4: Regression Result

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ECONS	8989.874	1219.267	7.373182	0.0000
ENVIRON	-3988.370	544.3410	-7.326969	0.0000
SOC	-454.8916	107.4067	-4.235227	0.0000
C	-4664.138	624.4015	-7.469774	0.0000
R-squared	0.281826	Mean dependent var	-8.046000	
Adjusted R-squared	0.267069	S.D. dependent var	89.39654	
S.E. of regression	76.53364	Akaike info criterion	11.53964	
Sum squared resid	855180.1	Schwarz criterion	11.61993	
Log likelihood	-861.4732	Hannan-Quinn criter.	11.57226	
F-statistic	19.09774	Durbin-Watson stat	1.775865	
Prob(F-statistic)	0.000000			

Source: Researcher's Computations (2026) Using EViews13 Software.

4.4 Hypotheses Testing.

Earlier in Chapter One, it was stated that each of our independent variables in their null forms will be subjected to a statistical test, and the result of the test will either be accepted or rejected at the 5% significance level. If the p-value of that explanatory variable is less than or equal to 5% (0.05), then there is a significant relationship between this explanatory variable and the dependent variable, and so we reject the null hypothesis. If, however, the p-value of that explanatory variable is greater than 5% (0.05), then the null hypothesis is accepted that there is no significant relationship. We, therefore, restate each hypothesis and test for either acceptance or rejection based on their respective probability value (p-value).

H0₁: Economic disclosure has no significant relationship with the financial performance of listed Oil & Gas companies in Nigeria

The coefficient of ECONS is positive (8989.874) and significant with a t-Statistic (7.373182) and a p-value (0.0000) at the 1% level of significance. The p-value is about 1%, which is less than 5%, and so we reject the null hypothesis that ECONS has no significant relationship with firm performance.

H0₂: Environmental disclosure has no significant relationship with financial performance of listed Oil & Gas companies in Nigeria.

The coefficient of ENVIRON is negative (-3988.370) and significant with a t-Statistic (-7.326969) and a p-value (=0.0000) at the 1% level of significance. The p-value is about 1%, which is lower than 5%, and so we reject the null hypothesis that SOC has no significant relationship with financial performance.

H0₃: Social disclosure has no significant relationship with the financial performance of listed Oil & Gas companies in Nigeria

The coefficient of SOC is negative (-454.8916) and significant with a t-Statistic (-4.235227) and a p-value of 0.0000 at the 1% level of significance. The p-value is about 1%, which is less than 5%, and so we reject the null hypothesis that SOC has no significant relationship with financial performance.

4.5 Discussion of the Regression Results from Table 4.4.

The coefficient of ECONS (8989.874) is positive and statistically significant (p-value = 0.0000). The result indicates that economic disclosure has a positive and significant effect on the profitability of the sampled oil and gas companies. Specifically, an increase in the level of economic disclosure is associated with a corresponding increase in return on assets (ROA), holding other variables constant. The positive sign of the coefficient is consistent with the a priori expectation, implying that firms that disclose more economic information are likely to improve investor confidence, reduce information asymmetry, and strengthen corporate transparency, thereby enhancing financial performance. This finding is supported by the studies of Amahalu et al. (2023), Isokpehi and Ebere (2023), Sunday et al. (2019), Paul et al. (2024), and Emmanuel et al. (2024), all of whom reported that economic disclosure or economic bottom-line reporting exerts a positive and significant influence on corporate performance. However, the finding is inconsistent with Boo and Oladejo (2025), who found that economic reporting had a significant negative effect on return on assets, although it positively influenced return on capital employed. The coefficient of ENVIRON (-3988.370) is negative and statistically significant (p-value = 0.0000). The result indicates that environmental disclosure has a significant negative effect on the profitability of the sampled oil and gas companies. Specifically, an increase in environmental disclosure is associated with a decline in return on assets, all else being equal. The negative sign of the coefficient is contrary to the a priori expectation and may be attributed to the substantial costs associated with environmental compliance, pollution control, environmental remediation, waste management, and sustainability initiatives, which may reduce profitability in the short run. This finding is supported by Lilian et al. (2025), who found that environmental remediation costs significantly reduced financial performance, and Chinemelum et al. (2022), who reported a negative relationship between environmental sustainability reporting and return on assets. However, the finding contradicts those of Arumona et al. (2024), Lucy et al. (2023), Amahalu et al. (2023), Isokpehi and Ebere (2023), Adegboyega et al. (2024), Sunday et al. (2019), and Oonuoha et al. (2020), who found that environmental disclosure positively and significantly enhances the financial performance of oil and gas companies. The coefficient of SOC (-454.8916) is negative and statistically significant (p-value = 0.0000). The result indicates that social disclosure has a significant negative effect on the profitability of the sampled oil and gas companies. This implies that increased expenditure and disclosure relating to employee welfare, host community development, corporate social responsibility programmes, health and safety initiatives, and other social activities are associated with lower return on assets in the short run. The negative sign of the coefficient is contrary to the a priori expectation but may reflect the immediate financial burden of social investments before their long-term benefits are realized.

This finding is supported by Chinemelum et al. (2022), who reported that social sustainability reporting had a significant negative effect on return on assets, and Boo and Oladejo (2025), who found that social reporting had no significant positive influence on firm performance. However, the finding contradicts Amahalu et al. (2023), Lucy et al. (2023), Isokpehi and Ebere (2023), Paul et al. (2024), Emmanuel et al. (2024), Sunday et al. (2019), and Oonuoha et al. (2020), all of whom found that social disclosure or social bottom-line reporting positively and significantly contributes to the financial performance of oil and gas companies.

4.6 Diagnostic Tests of Residual Cross-Section Dependence Test

Test	Statistic	d.f.	Prob.
Breusch-Pagan LM	42.64194	28	0.0377
Pesaran scaled LM	1.956611		0.0504
Pesaran CD	1.865804		0.0621

Source: Researcher's Computations (2026) Using EViews13 Software.

A test for residual cross-section dependence is an econometric method employed in panel data models to determine whether the error terms among various individuals, firms, or countries exhibit correlation. It guarantees the accuracy of test statistics and avoids significantly biased estimates. In panel data analysis (which involves tracking data over time and among groups), cross-sectional units are frequently influenced by common, hidden shocks or spillover effects (such as global economic trends, herd behavior, or macroeconomic policies). When these dependencies are present in the residuals, standard panel estimators lose efficiency, and critical diagnostic tests may no longer be valid.

Usually, where N is very large with a finite time T or where T is greater than N , we use the Breusch-Pagan LM test Statistic. But where $N = T$ or where T is of the same magnitude as N , we use the Pesaran CD test Statistic. The two results above show that there is no cross-sectional dependence in the residuals, or the residuals are cross-sectionally independent, since the Pesaran CD test Statistic is 0.0621, which is greater than 0.05.

5.2 Conclusion and Recommendations

This study examined the effect of Triple Bottom Line (TBL) reporting on the financial performance of listed oil and gas companies in Nigeria using panel data covering the period 2009–2024. The findings reveal that the three dimensions of TBL reporting exert varying effects on financial performance. Specifically, economic disclosure has a positive effect on financial performance, indicating that enhanced transparency and economic reporting improve stakeholder confidence and corporate profitability. In contrast, environmental and social disclosures exhibit significant negative effects on profitability, suggesting that the costs associated with environmental protection and corporate social responsibility initiatives may outweigh their short-term financial benefits. Nevertheless, these sustainability disclosures remain essential for regulatory compliance, corporate legitimacy, stakeholder engagement, and long-term business sustainability. Overall, the study concludes that while Triple Bottom Line reporting is fundamental to sustainable corporate governance, firms should adopt disclosure strategies that effectively balance sustainability commitments with financial performance objectives. Based on these findings, the study recommends that listed oil and gas companies should strengthen their economic disclosure practices to enhance transparency, investor confidence, and profitability. Management should also implement environmental sustainability initiatives more efficiently by adopting cleaner technologies, improving environmental management systems, and optimizing environmental expenditures to achieve regulatory compliance without imposing excessive financial burdens. Furthermore, social responsibility

programmes should be strategically aligned with corporate objectives and focused on initiatives that create long-term value for host communities, employees, shareholders, and other stakeholders while ensuring that associated costs do not unduly diminish the firms' financial performance.

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