

## Sustainability Reporting and Performance of Oil and Gas Companies Listed in Nigeria Exchange Group (2012-2024)

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**Abstract:** *This research work evaluated the effect of sustainability reporting on the performance of Oil and Gas companies listed on the Nigeria Exchange Group. The research adopted Ex post facto research design. The Sustainability Reporting was proxied by Environmental Sustainability Reporting Index (ENSRI), Economic Sustainability Reporting Index (ECSRI) and Social Sustainability Reporting Index (SOSRI), while company performance was proxied by Return on Capital Employed (ROCE). The population of this study was eight (8) oil and gas companies listed on the Nigeria Exchange Group (NGX) as at 31st December 2024. The researcher studied the 8 oil and gas companies listed on the Nigeria Exchange Group (NGX) as at 31st December 2024. The oil and gas companies are Aradel Holdings PLC, Conoil PLC, Eterna PLC, JapaulGold & Ventures PLC, Mrs Oil Nigeria PLC, Oando PLC, Seplat Energy PLC and TotalEnergies Marketing Nigeria PLC. The study used secondary data for the analysis. Data were extracted from the published annual reports and financial statements of the oil and gas companies. The independent variable used for the analysis was sustainability reporting while the dependent variable was financial performance. Data were analysed using descriptive statistics and inferential statistics. Multiple regression was used to test the hypothesis at 5% level of significance. The result revealed that sustainability reporting has positive and significant effect on performance of Oil and Gas companies listed on the Nigeria Exchange Group. The study concluded that sustainability reporting has positive and significant effect on Return on Capital Employed (ROCE). The study recommended that regulators such as Financial Reporting Council of Nigeria and Nigerian Exchange Group should encourage full adoption of Global Reporting initiative (GRI). It also recommended that Oil and Gas firms should enhance quality, accuracy, depth and credibility of sustainability information disclosed, covering environmental, social and economic indicators to strengthen investor confidence and market reputation. This will boost the confidence of the company's stakeholders and consequently increase their performance.*

**Key words:** Sustainability Reporting, Return on Capital Employed, Firm Performance, Oil and Gas Companies, Environmental Sustainability, Economic Sustainability, Social Sustainability.

## 1. Introduction

Sustainability Reporting is concerned with disclosures on the economic, social, environmental and governance impacts of business operations on diverse stakeholders. According to Global Reporting Initiative (GRI) framework (2011), sustainability reporting is the activities and practice, which is concerned with measuring, disclosing, and being accountable to the needs and interest of firm's internal and external stakeholders for organisational effort towards the attainment of sustainable development goals. Okon et al, 2023 stated that sustainability disclosure is seen as a measurement, analysis and communication of interactions and connections between social, environmental, and economic issues that make up the three dimensions of sustainability. The introduction of non-financial information in published reports is seen as a step forward in corporate communications and an effective way to increase corporate engagement and transparency. Sustainability reports can help companies build consumer confidence and improve corporate reputations through transparent disclosure on social responsibility programs and risk management.

The environmental issues are concerned with matters of emissions, resource depletion, conserving natural resources, protecting ecosystems, promoting renewable energy, reducing carbon emissions, ensuring equitable resource access, etc. The social sustainability deals with issues of equality, governance, education, human health and well-being, quality of life, social responsibility. On the other hand, economic sustainability entails reducing waste, renewable energy, recycling, fair trade, resource management, social equity, innovation, among others.

Sustainability reporting has been variously argued by researchers as a factor which can affect the financial performance of companies positively or negatively. Clarissaa and Rasmini (2018) stated that the company's financial performance is not only seen from the figures listed in the financial statements, but there are other factors that can affect company performance, such as how the company acts on the environment or social issues. Sustainable company is a company that not only pay attention to the benefits, but also aware about environment and social impacts around their company. In the opinion of Clarissaa and Rasmini, (2018), if a company wants to maintain its survival, company should pay attention to "3P". That is, profit, people's welfare (people) and environment (planet). This study focused on assessing the sustainability reporting and how it affects the performance of oil and gas companies listed in Nigeria Exchange group (NGX).

## 2. Literature Review

### 2.1 Sustainability Reporting

Global Reporting Initiative (GRI, 2011) defines Sustainability Reporting as the practice of measuring, disclosing, and being accountable to internal and external stakeholders for organisational performance towards the goal of sustainable development. GRI (2011) also defines a sustainability report as a report published by a company or organisation about the economic, environmental, and social impacts caused by its everyday activities. A sustainability report also presents the organisation's values and governance model and demonstrates the link between its strategy and its commitment to a sustainable global economy (GRI, 2016). Atanda, Okoye & Abubakar (2021) describes sustainability reporting as the practice of disclosing a company's environmental, social, and governance (ESG) performance to stakeholders, including investors, employees, customers, and the public. It involves the communication of information about a company's sustainability initiatives, policies, goals, and outcomes, as well as its environmental impact, social responsibility efforts, and governance practices. According to Umoren & Ukpong (2022), sustainability accounting is the sub-branch of accounting which handles the activities, methods and systems of the business to record, analyze and report, the financial effects caused by environmental and social factors, the ecological and social effects of a defined economic system. It is a method to internalize and improve an organisation's commitment to sustainable development in a way that can be demonstrated to both internal and external stakeholders. In the view of Wagner & Schaltegger (2004), sustainability reporting is a system of accounting and reporting involving the recording, analysing and reporting of environmental, social and economic impacts of an economic system.

The concern of Sustainability Reporting is to evaluate the impact of activities of an organisation on the environment, the economy and the society and how these impacts are being mitigated. Osemene, Kolawole, & Oyelakun (2016) states that the principles and governance framework of an organisation are presented in a sustainability report showing the relationship between its strategic plans and its commitment to environmental conservation. Also Kozłowski, Searcy & Bardeck (2015) and Harangozó, Széchy & Zilahy (2016) stated that reporting on sustainability means disclosing the company's positive or negative impacts on the environment, society, and economy.

Asuquo et al. (2018) argued that the expectations of all firms are to be transparent about the way they manage their environment, how they handle governance issues, as well as the treatment given to their employees, and how they manage their host communities. Sustainability seeks to focus on how to organize and coordinate human activities so as to satisfy physical and psychological needs without hindering the ecological, social or economic basis that allows these needs to be met. The sustainability report of a company

can affect its financial performance, this implies that the larger the company in terms of sustainability reporting expression, the greater its financial performance (Fuadah et al., 2019).

### **2.1.1 Environmental Sustainability Reporting**

Kolawole, Igbekoyi, Ogungbade & Dagunduro (2023) describes environmental profile disclosure in the context of sustainability reporting as the systematic and transparent communication of information related to a company's environmental performance, impacts and initiatives. It involves disclosing detailed data, metrics and narratives concerning the company's environmental footprint, resource consumption, pollution emissions, and efforts to minimize environmental harm. It involves quantifying and reporting on the company's environmental impacts, such as greenhouse gas emissions, energy consumption, water usage, waste generation, and pollution levels. Environment performance disclosure is a disclosure of information relating to organisational impact on living and non-living natural systems, including land, air, water and ecosystems (Global Reporting Initiative, 2013). It consists of timely information communicated to relevant stakeholders at regular intervals regarding the environmental activities of a company. Iliemena, Ijeoma & Uagbale-Ekatah (2023) posits that environmental reporting involves disclosures regarding the impacts which an organisation has on the natural systems (water, air and land) and the ecosystems which serve as either input resources (e.g. energy) or output resources (e.g. effluents, wastes and emissions), transport, environmental expenditure, product and service related impacts, environmental compliance and biodiversity as subcategorized in Global Reporting Initiative (GRI 4). According to Effiong, Oti & Akpan (2019), environmental sustainability disclosure involves the disclosure of organisations' impacts on the living and non-living natural systems. It is also concerned with the input-output mode of organisational impacts on the environment.

### **2.1.2 Economic Sustainability Reporting**

Economic performance disclosure is a disclosure of information related to the impact of company on the economic situation of its stakeholders and on the domestic, national and global economic system (Global Reporting Initiative, 2013). Economic sustainability reporting assists companies display their dedication to ethical business practices and enduring financial well-being (Global Reporting Initiative, 2018). The concept of economic sustainability performance reporting revolves around maximizing the utilization of available resources through various means to achieve a responsible and profitable balance in the long-term (Asuquo et al., 2018). It can also serve as a means of attracting investors who are fascinated by the social, governance and environmental performance of a company (Aniefor et al, 2024). Iliemena, Ijeoma & Uagbale-Ekatah(2023) describes economic reporting in sustainability reporting as the impacts which organisational activities make on

the general stakeholders, and the general economic system at both local and global levels. It involves the flow of capital among the corporate stakeholders and its economic impact on the society at large.

### **2.1.3 Social Sustainability Reporting**

Social performance disclosure is a disclosure of information relating to the impact the company has on the social system around companies (GRI, 2013). The social aspect of sustainability reporting focuses on the impact of a business organisation on the existing social system. This social system includes disclosure regarding labour practices and descent work, social responsibility, human rights and product responsibilities (Iliemena, Ijeoma & Uagbale-Ekatah, 2023). According to Lucy, Ime & Agnes (2023), social sustainability disclosure has to do with the disclosure of organisational impact or footprint on society. Social performance indicators focus attention on the impacts organisations have on the local communities in which they operate and also involve the disclosure of how the risks that may arise from interactions with other social institutions are managed and mediated.

### **2.1.4 Firm Performance**

Aniefor (2024) describes firm performance as the ability of a company to use its resources to generate profit or revenue and satisfy the needs of numerous stakeholders of the company. Performance can be measured using growth, profitability or market value whereas profitability and growth indicate the ability of a company to make a profit and increase its size respectively. Market value evaluates the prospects of the future performance of the company (Santos & Brito, 2012). According to Atoyebi & Okpe (2021), performance refers to the measurement of the results of a firm's strategies, policies, and operations in monetary terms with results that are reflected in the firm's return on assets and return on investments. It provides a subjective measure of how well a company can use assets from its primary mode of business and generate revenues. It is measured by revenues from operations, operating income, or cash flow from operations or total unit sales. Margolis and Walsh (2001) describes financial performance as a term used to measure company results, policies, and processes in monetary terms. Financial performance provides guidelines for future decisions that affect business development and managerial control (Tehrani & Rahnama, 2006). Abdulrasheed & Aminu (2024) also posits that financial performance measures how well an organisation uses its resources to generate revenue and reveals what it achieves in monetary terms over a specific period, which can also be used for industry comparisons. Barney (2002) defined financial performance as the evaluation of a company's ability to meet the objectives of resource providers (shareholders). According to the Naz et al. (2016), Financial Performance largely reflects the performance of the corporate sector and the results that reflect the overall financial

condition of the industry over a period of time. It shows how well a company manages its resources to increase shareholder wealth and profitability. Hubbard (2009) believed that financial performance can be measured in terms of earnings growth, return on equity, return on investment and gearing ratio. Lawal, Igbekoyi & Dagunduro (2024) describes firm performance as encompasses various measures used to evaluate the overall effectiveness, efficiency, and success of a company in achieving its objectives and delivering value to stakeholders. It typically includes financial metrics, such as profitability measures, revenue growth, and return on investment, as well as non-financial indicators, such as customer satisfaction, employee productivity, and market share.

### **2.1.5 Sustainability Reporting and Firm Performance**

Researches indicated that firms demonstrating superior sustainability disclosure had enhanced financial performance results (Adepiti 2023; Elaigwu et al. 2024). A study by Isaac et al. (2024) established that among companies practicing economic sustainability in Nigeria, there was an improvement in investment return and market competitiveness. Rohendi et al. (2024) and Sohn et al. (2020) found that organisations with good environmental practices have fewer operational costs and lesser regulatory fines compared to others. Akhigbe & Olokoyo (2019) found that Nigerian firms that engaged in social sustainability practices, such as community development etc, experiences an increase in customer loyalty and brand recognition. Previous studies show that economic, environmental and social sustainability increases stakeholders' confidence and royalty to the company. It promotes peaceful co-existence and good business relationship among the various stakeholders in the region. It reduces environmental and social crises, thereby reducing environmental and social costs to the companies. Consequently, it improves the performance and financial status of the company.

## **2.2 Theoretical Review**

There are different theoretical approaches that have been used to explain sustainability, but the most widely advanced theoretical perspectives in the social and environmental accounting literature are legitimacy and stakeholder theories (Branco, Eugenio, & Ribeiro, 2008; M. Islam & C. Decgan, 2010; Joshi & Gao, 2009). This research was anchored on Stakeholder and Legitimacy theories.

### **2.2.1. Stakeholder Theory**

The Stakeholder Theory was propounded by Edward Freeman in 1984. He stated that an organisation or company is accountable to a group of individuals referred to as stakeholders. He posits that a company is not an entity that only operates for its own sake, but must provide benefits to its stakeholders so it will improve the company's image and

also will improve the company's financial performance. Stakeholder theory assumes that a company is not an entity that operate only for the benefit of shareholders but must also provide benefits to stakeholders Clarissaa & Rasmini (2018). According to Freeman (1984), any business has interconnected relationships with other parties, such as employees, special interest groups, prospective clients, trade association customers, government, communities, investors, suppliers and others. The success of a firm is linked to how successfully it meets the diverse needs of its stakeholders and not just its shareholders. Freeman (1984) also stated that an organisation should consider the interests and concerns of all stakeholders in their decision making processes to achieve long-term sustainability and value creation. He defined stakeholders as any group or individual capable of influencing or being influenced by the firm's objectives, while Shafiq, Johnson, Klassen & Awaysheh (2017) also defined stakeholders as individuals or groups with legitimate interests in procedural and substantive aspects of corporate activities. Logsdon & Wood (2000) argued that a primary aim of the stakeholder theory was to assist corporate managers in comprehending their stakeholders and managing relationships more effectively within the framework of their companies.

By disclosing the sustainability report, the company discloses financial information and non-financial information, enabling companies to more transparently communicate with the stakeholders about their business activities related to non-financial management and performance aspects (Clarissaa & Rasmini, 2018). In the context of sustainability reporting, Stakeholder Theory offers a valuable framework for understanding the relationship between firms' engagement with stakeholders and their performance outcomes. Sustainability reporting serves as a mechanism through which organisations communicate their economic, environmental, and social impacts to stakeholders. By disclosing information on their sustainability practices, firms demonstrate their commitment to addressing the interests and concerns of various stakeholders, including environmental conservation, social responsibility, and ethical governance. Stakeholder Theory posits that by actively engaging with stakeholders and responding to their expectations, firms can enhance their reputation, legitimacy, and trustworthiness, thereby contributing to their long-term success. Hoffmann (2011) emphasized that stakeholder theory, known as good management theory, is meant to do good to those with whom the business interacts to create an environment in which the business can gain a competitive advantage. This approach assumes that a good corporate citizen can also make a more profitable business. It is assumed that all stakeholders have the right to receive information about organisational implications for them through service provision, community sponsorship, pollution control, safety initiatives, etc., even if they decide not to use the available information, and even though they cannot have a direct impact on the continuity of the organisation (Deegan, 2000).

King (2002) recognized the significance of integrated sustainability reporting in strengthening the relationship between firm and society in which it operates. He opines that ignoring the stakeholder interests may taint firm's public image, which would unfavorably affect its financial performance.

Mitchell, Agle & Wood (1997) stated that companies that prioritize stakeholder engagement and incorporate stakeholder feedback into their sustainability reporting processes are more likely to build stronger relationships with customers, attract and retain talented employees, and foster goodwill within the communities in which they operate. Moreover, research has shown that firms with robust stakeholder engagement practices tend to outperform their peers in terms of financial performance and market valuation (Harrison & Wicks 2013). This shows that there is a positive relationship between stakeholder engagement, as facilitated through sustainability reporting and firm performance outcomes.

### 2.2.2 Legitimacy Theory

This theory was proposed by John Dowling and Jeffrey Pfeffer in 1975. The legitimacy theory is widely regarded as one of the most frequently cited theories in studies relating to environmental and social reporting. Fundamental to this theory is the notion that meeting societal norms and expectations is relevant for the survival of a company in the long-term (Guthrie, Cuganesan, & Ward, 2007). Legitimacy can be perceived as a reciprocal interaction between the company and the community where the community provides support to the company in exchange for benefits from the company (Ghozali & Chariri, 2007). According to Tilling (2004), Legitimacy theory offers a mechanism for understanding social and environment disclosures made by companies. Legitimacy theory is a theory that assumes companies are trying to ensure that the operations they run are already under existing social rules and norms (Deegan, 2004). The legitimacy theory is a framework that is often used to explain and understand the motivations behind sustainability reporting. It suggests that organisations engage in sustainability reporting in order to maintain or improve their legitimacy in the eyes of various stakeholders, such as shareholders, regulators, customers, and the general public (Zarefar et al., 2022). According to the legitimacy theory, organisations must meet the expectations and norms of their stakeholders in order to be perceived as legitimate. Sustainability reporting can be a way for organisations to demonstrate that they are meeting these expectations and norms by providing information about their Economic, Social and environmental performance. The company uses a sustainability report to illustrate the impression of responsibility for the economy, social and environment, so that the company is accepted by the society. With the acceptance of the society, company expected to improve their performance and it will also increase corporate profits.

According to this theory, corporate sustainability reporting plays a significant role in shaping perceptions as the community's approval of a company's activities establishes its legitimacy and has implications for its long-term sustainability. Companies can enhance their legitimacy and maintain positive relationships with stakeholders, ultimately contributing to their continued success by demonstrating alignment with societal values and expectations through sustainability reporting. By doing so, organisations can improve their reputation and demonstrate their commitment to sustainability, which can help to maintain or enhance their legitimacy (Zarefar et al., 2022; Yassin, 2017). The legitimacy theory suggests that sustainability reporting is driven by the need to maintain or improve an organisation's legitimacy in the eyes of its stakeholders. It is an important consideration for organisations that want to demonstrate their commitment to sustainability and maintain a positive reputation in the marketplace.

### 2.3 Empirical Review

Erhirhie & Ekwueme (2019) assessed the effect of corporate social sustainability reporting on Return on Assets, Return on Equity, and Return on Capital Employed of oil and gas companies listed on the Nigeria Stock Exchange. Ten oil and gas companies were sampled for the study. The study adopted ex-post facto research design. The study utilized secondary data collected via financial ratios and accounts of the individual companies and content analysis. Data were analysed using descriptive statistics and regression analysis technique. The findings showed that social sustainability reporting exerts negative effect on all three performance proxies, howbeit only its effect on return on equity was statistically significant. The study recommends, among others, that existing sustainability reporting standards should be aligned to reflect country-specific social and environmental challenges, while its implementation should rather be obligatory rather than voluntary.

Okon, Philip & Okpoko (2023) examined the effect of sustainability reporting on the financial performance of listed oil and gas firms in Nigeria. The researcher used independent variables of social, health and safety and environmental disclosures to ascertain the effect on return on capital employed. The research design adopted for the study was ex post facto and secondary data were obtained from the studied companies' annual report and Nigeria Exchange Group fact book from 2012 to 2021. Panel least square regression method was adopted to test the three hypotheses formulated for the study. From the analysis, it was observed that social disclosure, health and safety disclosure and environmental disclosure have a significant positive effect on the Return on Capital Employed by oil and gas companies in Nigeria.

Motwani & Pondya (2016) explored how sustainability reporting affects the operations and profitability of companies. The study used the GRI guidelines to determine sustainability measures as overall sustainability reporting scores (OSR) as well as the scores of 4 key

sustainability reporting variables, these are community (COM), Employees (EMP), Environment (ENV) and governance (GOV). In the study, the impact of these variables on profitability of companies listed on the NSE using ROA, ROE, ROCE and PBT were assessed using a sample of 103 companies listed on the NSE. Data were collected over a six-year period from 2009 to 2015, using multiple regression analyses to determine the impact of the firm's sustainability. The study found out that the general practice of sustainability has a significant positive effect on the profitability of the company.

Iliemena et al. (2023) examined the effect of social and environmental disclosure respectively on gross profit margin (GPM) and return on capital employed (ROCE) of manufacturing firms in Nigeria. The study adopted ex-post facto research design while data were gathered from annual reports and sustainability reports of the 23 sampled companies from the period 2012 to 2021. Finding from the regression analysis showed there is significant positive effect of social disclosure on GPM. However, no significant effect of environmental disclosure was observed on ROCE.

Siew et al. (2013) examined the non-financial reporting status of public construction companies on climate change, environmental management, environmental performance, health and safety, human capital, stakeholder participation, governance and other issues of interest to investors. The study also examined the impact of the publication of non-financial statements as the sustainability practices of companies (represented by ESG estimates) on the financial performance of the companies selected. Financial performance is measured using several financial ratios. The results of the study showed that most of the construction companies selected have low level of reporting in terms of sustainability behaviour. While construction companies that produce non-financial reports, despite financial performance's interdependence, generally exceed in terms of financial performance than those that did not.

Johari & Komathy (2019) ascertained the efficacy of sustainability reporting on the performance of publicly listed firms in Malaysia. The study used weighted disclosure index for the regressors and the regressed are: ROA, ROE, and DPS. Findings affirmed that the more the selected firms disclosed their books to the general public, the more they become profitable in terms of ROA and ROE but did not affect EPS and DPS of these selected firms.

Ayyed, Alallaq & Kareem (2024) examined the sustainability reporting (SR) and corporate profitability (CP) of the south Asian large banks. This research employs the secondary data from 134 banks for the year 2019–2022. This research employed the “Ordinary Least Squares” (OLS). The results of this study showed that there is a positive and significant relationship among Sustainability Reporting and its dimensions (community and environment) with Corporate Profitability.

### 3. Methodology

#### 3.1 Research Design

This study employed *ex-post facto* research design. The study used secondary data for the analysis. Data were sourced from the published annual reports and financial statements of eight (8) oil and gas companies listed companies on the Nigerian Exchange Group (NGX). The period covered was 13 years from 2012-2024.

#### 3.2 Area of Study

The area of study of this research is on the oil and gas sector in Nigeria. It focused on the oil and gas companies listed on Nigeria exchange Group (NGX). The oil and gas companies are Aradel Holdings PLC, Conoil PLC, Eterna PLC, JapaulGold & Ventures PLC, Mrs Oil Nigeria PLC, Oando PLC, Seplat Energy PLC and TotalEnergies Marketing Nigeria PLC.

#### 3.3 Method of Data Analysis

Data were analysed using descriptive statistics and inferential statistics. The Descriptive Statistics assess the strength and direction of relationship between the variables across time periods. The Multiple Regression Analysis was used to assess the effect of the independent variables on the dependent variable.

#### 3.4 Description of Variables

##### 3.4.1 Dependent Variable

The dependent variable used for the study was Financial Performance proxied by Return on Capital Employed (ROCE).

##### 3.4.2 Independent Variable

The independent variable used for the study was Sustainability Reporting Index proxied by Environmental Sustainability Reporting Index (ENSRI), Economic Sustainability Reporting Index (ECSRI) and Social Sustainability Reporting Index (SOSRI) as the independent variables.

**Table 3.1 Description of Variables**

Variables	Definitions	Measurement
Return on Capital Employed (ROCE)	Return on Capital Employed (ROCE) is a profitability ratio that measures how a company uses its capital to generate profit for the shareholders.	Return on Capital Employed (ROCE) was measured by dividing the company's Profit Before Interest and Tax (PBIT) by the Capital Employed. Capital Employed is the total assets less current liabilities.

Environmental Sustainability Reporting Index (ENSRI)	Environmental Sustainability Reporting Index is the average index for environmental reporting.	A checklist was prepared using the 2018 World Bank Global Reporting Initiative (GRI) guidelines. Environmental Sustainability was assigned 1 point when reported in sustainability reports of the annual report of a company while 0 point was marked indicating the absence of reporting. The total point is the addition of all 0 and 1 as observed. Sustainability Reporting Index was measured as the sum of the points for each company as a ratio of the total number of assessment items.
Economic Sustainability Reporting Index (ECSRI)	Economic Sustainability Reporting Index is the average index for Economic reporting.	A checklist was prepared using the 2018 World Bank Global Reporting Initiative (GRI) guidelines. Economic Sustainability will be assigned 1 point when reported in sustainability reports of the annual report of a company while 0 point was marked indicating the absence of reporting. The total point is the addition of all 0 and 1 as observed. Sustainability Reporting Index was measured as the sum of the points for each company as a ratio of the total number of assessment items.
Social Sustainability Reporting Index (SOSRI)	Social Sustainability Reporting Index is the average indexes for social reporting.	A checklist was prepared using the 2018 World Bank Global Reporting Initiative (GRI) guidelines. Each indicator will be assigned 1 point when reported in sustainability reports of the annual report of a company while 0 point was marked indicating the absence of reporting. The total point is the addition of all 0 and 1 as observed. Sustainability Reporting Index was measured as the sum of the points for each company as a ratio of the total number of assessment items.

Source: Researcher's Compilation, 2025

### 3.5 Model Specification

The model used in this study is a modified form of econometric model as used by Argyrous (2005) and Eccles et al. (2014). The model shows the relationship between financial performance and sustainability reporting as follows:

Financial Performance = F (Sustainability Reporting)

Financial Performance was proxied by Return on Capital Employed (ROCE), while Sustainability Reporting was proxied by Economic Sustainability Reporting Index (ECSRI), Social Sustainability Reporting Index (SOSRI) and Environmental Sustainability Reporting Index (ENSRI).

The variables were used to formulate the following models:

$$ROCE = \beta_0 + \beta_1 ECSRI + \beta_2 SOSRI + \beta_3 ENSRI + e$$

Where;

$\beta_0$  = Intercept;

$\beta_1$ -  $\beta_3$  = Coefficients of independent variables;

ROCE = Return on Capital Employed

ECSRI = Economic Sustainability Reporting Index

SOSRI = Social Sustainability Reporting Index

ENSRI = Environmental Sustainability Reporting Index

e = error term.

## 4 Results and Analysis

### 4.1 Descriptive Statistics

Descriptive statistics show the characteristics of the variables of the study used in the regression analysis. Table 4.1 displays the Descriptive Statistics of Return on Capital Employed and Environmental Sustainability Reporting Index (ENSRI), Economic Sustainability Reporting Index (ECSRI) and Social Sustainability Reporting Index (SOSRI). It shows the mean and the standard deviation of the variables.

**Table 4.1 Descriptive Statistics of Variables**

variables	Mean	Std. Deviation	N
ROCE	91.6515	146.12260	13
ENSRI	2.6900	.00000	13
ECSRI	3.4462	.06602	13
SOSRI	3.7077	.11931	13

Source: Researcher’s SPSS Computation, 2025

From Table 4.1, mean of ROCE at 91.6515 indicates on average a high ROCE among the listed oil and gas companies. Std. Deviation of 146.12260 is a very large variation meaning

that company performances differ widely (some firms are highly profitable, while others perform poorly). Mean of ENSRI is 2.69, Std. Deviation: .00000, shows no variation, meaning that all sampled firms have the same level of environmental reporting. This implies uniform compliance due to regulation (statutory environmental disclosures by the oil firms). Mean of ECSRI is 3.4462, Std. Deviation: .06602, shows a high mean and low deviation which indicate that most firms report economic sustainability activities consistently. Mean of SOSRI is 3.7077, Std. Deviation: .11931 shows the highest mean value among the indices, showing strong emphasis on social responsibility reporting.

#### 4.2 Correlation Analysis

**Table 4.2 Correlations of Return on Capital Employed (ROCE), Environmental Sustainability Reporting Index (ENSRI), Economic Sustainability Reporting Index (ECSRI) and Social Sustainability Reporting Index (SOSRI)**

		ROCE	ENSRI	ECSRI	SOSRI
Pearson Correlation	ROCE	1.000	.	-.213	-.025
	ENSRI	.	1.000	.	.
	ECSRI	-.213	.	1.000	.946
	SOSRI	-.025	.	.946	1.000
Sig. (1-tailed)	ROCE	.	.000	.242	.467
	ENSRI	.000	.	.000	.000
	ECSRI	.242	.000	.	.000
	SOSRI	.467	.000	.000	.
N	ROCE	13	13	13	13
	ENSRI	13	13	13	13
	ECSRI	13	13	13	13
	SOSRI	13	13	13	13

Source: Researcher’s SPSS Computation, 2025

**Table 4.3 Model Summary of ROCE And (ENSRI, ECSRI and SOSRI)**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.582 <sup>a</sup>	.339	.206	130.17442	.339	2.560	2	10	.127	1.869

a. Predictors(Constant): ENSRI, SOSRI, ECSRI

b. Dependent Variable: ROCE

Source: Researcher's SPSS Computation, 2025

**Table 4.4 Coefficients of Return on Capital Employed (ROCE), Environmental Sustainability Reporting Index (ENSRI), Economic Sustainability Reporting Index (ECSRI) and Social Sustainability Reporting Index (SOSRI)**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	
	B	Std. Error	Beta			
1	(Constant)	6162.067	2881.932		2.138	.058
	ECSRI	-3954.335	1749.153	-1.787	-2.261	.047
	SOSRI	2038.150	967.893	1.664	2.106	.061

a. Dependent Variable: ROCE

Source: Researcher's SPSS Computation, 2025

Table 4.3 of the model summary of the multiple regression analysis results  $R = 0.582$ . This indicates a moderate positive correlation between sustainability reporting (Environmental, Economic and Social) and firm performance (ROCE). It means that as sustainability reporting improves, performance tends to improve moderately. R Square value of 0.339 (33.9%) means that about 33.9% of the variation in ROCE among the listed oil and Gas companies can be explained by their sustainability reporting practices. The remaining 66.1% of the variation in performance is explained by other factors not captured in the model (such as oil price fluctuations, management efficiency, operational costs or regulatory issues). Adjusted R Square value of 0.206 shows that after adjusting for the number of independent variables, the explanatory power reduces slightly to 20.6%. This suggests that the model has a modest predictive ability, meaning sustainability reporting contributes positively but not strongly to firm performance. The Durbin- Watson (DW) statistics is 1.869. Values below 2.0 mean there is positive autocorrelation and above 2.0 indicates negative autocorrelation. This shows that there is a positive autocorrelation between sustainability reporting and Return on Capital Employed (ROCE) of oil and gas companies in Nigeria. The model is statistically sound for interpretation.

#### 4.4 Test of Hypotheses

##### Hypothesis

- i. There is no significant effect of sustainability reporting on Return on Capital Employed (ROCE) of oil and gas companies in Nigeria.
- ii. There is a significant effect of sustainability reporting on Return on Capital Employed (ROCE) of oil and gas companies in Nigeria.

**Table 4.5 ANOVA of Hypothesis**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	86767.998	2	43383.999	2.560	.127 <sup>b</sup>
	Residual	169453.788	10	16945.379		
	Total	256221.785	12			

a. Dependent Variable: ROCE

b. Predictors: (Constant): ENSRI, SOSRI, ECSRI

Source: Researcher's SPSS Computation, 2025

##### Decision Rule

From the ANOVA table 4.5 which uses the computed F-value to test the acceptability of the model from a statistical perspective, the decision criterion is stated below as follows:

$F_{\text{calculated}} > F_{\text{tabulated}}$  Reject the null hypothesis

$F_{\text{calculated}} < f_{\text{tabulated}}$  Accept the null hypothesis

**Decision:** Since the F cal. (2.560) is greater than the F-tab. (.127) at a 5% level of significance and 2 degrees of freedom, we reject the null hypothesis and accept the alternate hypothesis that there is a significant effect of sustainability reporting on Return on Capital Employed (ROCE) of oil and gas companies in Nigeria.

## 5 Discussion of Findings, Conclusion and Recommendation

### 5.1 Discussion of findings

**Positive Relationship:** There is a positive relationship ( $R = 0.582$ ) between sustainability reporting and firm performance measured by Return on Capital Employed (ROCE) in Nigerian oil and gas companies.

**Predictive Power:** Sustainability reporting explains about 33.9% of performance variation

(R square = 0.339), showing that while it matters, other determinants also play major roles in profitability and capital efficiency.

**Model Reliability:** The Durbin-Watson value (1.869) shows that the model is free from autocorrelation, meaning the regression estimates are reliable.

**Contribution of Environmental Sustainability Reporting Index (ENSRI), Economic Sustainability Reporting Index (ECSRI) and Social Sustainability Reporting Index (SOSRI):** Each of the three components jointly contributes to ROCE, though with moderate overall impact. Although it contributes meaningfully to explaining variations in Return on Capital Employed, it does not solely determine corporate performance. This implies that sustainability practices are valuable but must be integrated strategically with other financial, operational and risk management activities to maximize profitability. The outcome of the test of hypothesis revealed that there is a significant effect of Sustainability Reporting on Return on Capital Employed (ROCE) of oil and gas companies in Nigeria. The result is in consonant with the findings of several scholars such as (Motwani & Ponda, 2016; Johart & Komathy, 2019 and Ayyed, Alallaq & Kareem, 2024).

## 5.2 Conclusion

The study concluded that there is a positive and significant effect of sustainability reporting on Return on Capital Employed (ROCE) of oil and gas companies in Nigeria. It showed that Sustainability reporting has a positive and significant effect on the performance of listed oil and gas companies in Nigeria.

## 5.3 Recommendations

The following recommendations were made from the findings of this study:

- i. Regulators such as Financial Reporting Council of Nigeria and Nigerian Exchange Group should encourage full adoption of Global Reporting initiative (GRI) for better transparency and comparability.
- ii. Oil and Gas firms should enhance the quality, accuracy, depth and credibility of sustainability information disclosed, covering measurable environmental, social and economic indicators to strengthen investor confidence and market reputation.
- iii. Oil and Gas Companies should continuously assess how sustainability activities influence their financial performance and adjust their strategies accordingly.
- iv. Oil and Gas Companies should move beyond compliance driven reporting to embed sustainability principles into their strategic and operational frameworks, ensuring measurable impacts on financial outcomes.

- v. Firms should prioritize sustainability initiatives that reduce costs, enhance efficiency and improve stakeholder relations since such initiatives are more likely to translate into measurable financial performance.

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