

SUSTAINABILITY REPORTING AND PROFITABILITY OF LISTED OIL AND GAS FIRMS IN NIGERIA

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ABSTRACT

This study examined the effect of sustainability reporting on corporate profitability in listed oil and gas companies in Nigeria. The specific objective was to determine the effect of sustainability reporting on return on assets, earnings per share and return on equity of listed oil and gas firms in Nigeria. The ex post facto research design was employed using twelve companies in the oil and gas sector. Data employed were extracted from 2009 to 2022 reports of studied companies and diagnosed with appropriate statistical tests (multicollinearity and heteroskedasticity tests) for fitness of regression. The panel regression analysis was utilised to determine the effect of sustainability reporting on profitability and F statistic used to test the hypothesis. The study revealed that sustainability reporting and profitability are significantly related. Specifically, sustainability reporting had a positive and significant effect on return on assets and earnings per share. However, no effect was found on net profit margin and return on equity of quoted oil and gas firms. In conclusion, the benefits of sustainability reporting such as satisfaction of host communities outweigh the costs associated with it and reflects in the profitability of these firms. It was recommended that business organizations should not be deterred by the costs involved in sustainability reporting but commit resources to sustainable operations for long and short term benefits.

1. INTRODUCTION

Sustainability reporting emerged in the mid-90s with the first sustainability disclosures in accordance with the Global Reporting Initiative (GRI) sustainability reporting framework in 1999 (Onoja, Okoye & Nwoye, 2021). Sustainability reporting entails the practice of being accountable to both internal and external stakeholders of organizations by measuring and

disclosing firms' performance in relation to the goal of sustainable development (Ukoh, Nduokafor & Nworie, 2024). This practice serves as a means of providing information on firms' efforts to balance and control their productive activities with those of the environment to external stakeholders (Onoja, Okoye & Nwoye, 2021b) who see sustainability performance as vital in assessing firms' performances.

Business organizations utilize corporate disclosure to communicate their accountability to various stakeholders such as investors, suppliers, government and society (Nwobu, 2015). Corporate disclosure is a vital tool to communicate financial and other performance indicators of business organizations. A tool of corporate disclosure is the annual report which comprises financial statements and other information which includes sustainability disclosures. Leuz and Verrecchia (2000) stated that the objective of corporate disclosure is to reduce information asymmetries between an organization and shareholders or potential buyers and sellers of the firm's shares. In an ever changing and competitive business world, firms are faced with the need to be accountable for not just their financial profitability (Amahalu & Okudo, 2023) but for other aspects of performance. In a bid for organizations to improve their competitive advantage and increase access to finance, they could strive to embark on distinguishing feats. These could include corporate disclosures on governance, environmental performance, community impacts, human rights, research and development (Okudo & Amahalu, 2023; Nwobu, 2015).

Sustainability reporting is considered as a wider level of transparency and accountability to stakeholders for social activities of companies (Ukoh, Nduokafor & Nworie, 2024). It serves as basis by which firm measure, control and improving its profitability with regards to sustainability developments. Naser and Hassan (2013) noted that despite the importance of sustainable development, its reporting remains voluntary in most countries. The oil and gas sector has been the backbone and mainstay of Nigeria's economy, accounting for over 95% of her foreign exchange earnings, 40% of her GDP and 85% of the Federal Government's collectible revenue (Uwakonye, Osho & Anucha, 2006). The major oil producing companies are Shell Petroleum Development Company of Nigeria Ltd., Mobil Producing Nigeria Unlimited, Chevron Nig. Ltd., Nigerian Agip Oil Company Ltd., Elf Petroleum Nig. Ltd and Texaco Overseas Petroleum Company of Nigeria Unlimited. These multinationals participate in the petroleum industry in joint venture with Nigeria National Petroleum Corporation (NNPC), as operators/contractors in the Nigeria deep water under production sharing contracts (PSC). All of the crude oil in Nigeria comes from numerous small producing fields,

located in the swamps of the Niger Delta, however, these multinationals carry out their upstream and downstream operations within certain communities. These oil and gas activities have culminated in altering environmental and biological makeup, leading to ecological damage, emissions, pollution and landscape destruction. The host communities remain undeveloped leading to youth restiveness and militancy. Employees' health and safety is also at stake due to interference with toxic substances. Listing rules require companies to disclose/report on their environmental footprints, health and safety strategies aimed at abating or mitigating employee work related accidents, waste management procedures/processes adopted to control or manage companies waste in order to reduce its impact on the environment and effort geared towards alleviating the standard of living of its host communities through the provision of infrastructural facilities and other basic amenities (Oti & Mbu-Ogar, 2018).

In Nigeria, sustainability is not as novel as some think it is. This is supported by the introduction of agencies such as the Federal Environmental Protection Agency (FEPA) in 1988 and the National Environmental Standards and Regulation Enforcement Agency (NESREA) in 2007 to strengthen environmental regulations in Nigerian (Collins, 2009). However, the implementation and recognition of sustainability reporting or corporate social and environmental reporting is comparatively new but is becoming prominent in annual reports of Nigerian companies today (Akinlo & Iredele, 2014). Stakeholders also play a crucial role in identifying these risks and opportunities for organizations, particularly those that are non-financial. This increased transparency leads to better decision making, which helps build businesses. The Consultative Group to Assist the Poor (CGAP) (2004) also stated that sustainability is a step towards profitability. They are both achieved when the institutions are able to reduce their transaction costs, offer better products and services that meet clients need, generate enough revenues and be able to find new financing ways to the unbaked poor households. This study thus focuses on providing empirical evidence on the impact of sustainability reporting on profitability of quoted oil and gas companies in Nigeria.

Recently, different bodies like the Global Reporting Initiative, US Environmental Protection Agency, have been advocating for organizations out their operations sustainably and not just in a profit-centred manner. These organizations are not just encouraged to carry out sustainable operations, but also to disclose information on this in their annual reports as these reports are the major means for which stakeholders can identify the practices. In Nigeria, sustainability reporting is still largely voluntary and companies exercise considerable control

over the choice to report or disclose their environmental activities. The motivation for disclosure could be perceived as a purely endogenous function of a company's evaluation of the cost-benefits of such disclosure and other associated firm specific factors (Ebiringa, Yadirichukwu, Chigbu & Ogochukwu, 2013). This study is thus birthed to provide empirical evidence on whether firms could improve their profitability by disclosing their sustainable practices.

A review of previous literature on the subject matter found a lack of consensus even for same sectors studied. Nnamani, Onyekwelu and Ugwu (2017), Aondoakaa (2015) and Nwobu (2015) found positive effects. The findings of Ezejiofor et al (2016) showed negative effect of environmental accounting on profitability. Aggarwal (2013) and Oti and Mbu-Ogar (2018) found no significance. This spurred the interest to empirically investigate the effect of sustainability reporting on profitability. This study thus, seeks to fill a gap in literature by using an abridged GRI disclosure list adapted from GRI sustainability report and, but also line items of value added to government, society and capital providers as measures of sustainability reporting on the profitability of twelve listed oil and gas companies in Nigeria.

1.1 Objectives of the Study

The broad objective of the study is to ascertain the effect of sustainability reporting on profitability of selected quoted oil and gas firms in Nigeria. The specific objectives of this research are to:

1. ascertain the effect of Sustainability Reporting on return on assets of quoted oil and gas firms.
2. determine the effect of Sustainability Reporting on earnings per share of quoted oil and gas firms.
3. ascertain the effect of Sustainability Reporting on return on equity of quoted oil and gas firms.
4. determine the effect of Sustainability Reporting on the net profit margin of quoted oil and gas firms.

1.2 Hypotheses

H₀₁: Sustainability Reporting has no significant effect on return on assets of quoted oil and gas firms.

H₀₂: Sustainability Reporting does not affect the earnings per share of quoted oil and gas firms significantly.

- H₀₃: Sustainability Reporting has no significant effect on return on equity of quoted oil and gas firms.
- H₀₄: Sustainability Reporting has no significant effect on the net profit margin of quoted oil and gas firms.

2. LITERATURE REVIEW

2.1 Conceptual review

2.1.1 Sustainability Reporting

Sustainability is defined as meeting our needs today without compromising future generations' ability to meet theirs (Hahn & Figge, 2011). Albertini (2013) stated that corporate sustainability is about expanding the financial bottom line into a triple bottom line, which includes environmental and social aspects of corporate performance. Sustainability can be divided into three single dimensions which are: economic, environmental and social sustainability. There are also two bi-combinational dimensions of sustainability. They are the economic-environmental and the social-environmental dimensions (Ali, Haitham & Nilesh, 2018). Aggarwal (2013) stated that transparency is an essential element of corporate sustainability. This brings about sustainability reporting. There is no single, generally accepted definition of Sustainability Reporting. It is a broad term generally used to describe a company's reporting on its economic, environmental and social performance. Sustainability reporting is both a responsible and expected method for companies to communicate publicly on their environmental and social performance (Janus & Murphy, 2013). Schaltegger (2004) in Jasch and Stasiskiene (2005) defined sustainability reporting as a subset of accounting and reporting that deals with activities, methods and systems to record, analyse and report, firstly, environmentally and socially induced financial impacts and secondly, ecological and social impacts of a defined economic system (example, a company, production site, and nation). It involves companies and organizations demonstrating their corporate responsibility through measuring and publicly reporting on their economic, social and environmental performance and impacts. Sustainability reporting deals with the measurement, analysis and communication of interactions between social, environmental and economic issues constituting the three dimensions of sustainability. It can be synonymous with triple bottom line reporting (TBL), corporate responsibility reporting and sustainable development reporting, but increasingly these terms are becoming more specific in meaning and therefore subsets of Sustainability Reporting (KPMG, 2008). The 'planet' and 'people' dimension of organizational performance is often given partial attention in business accounting. For

instance, apart from recent approaches that incorporate social and environmental performance of organizations into corporate reports, value added statement were previously used to report on a company's generation of value and distribution of same to shareholders, employees, government and community. TBL reporting also seeks to convey a company's financial, social and environmental performance (Nwobu, 2015).

A sustainability report is a report published by a company or organization about the economic, environmental and social impacts caused by its everyday activities. A sustainability report also presents the organization's values and governance model, and demonstrates the link between its strategy and its commitment to a sustainable global economy. Sustainability Reporting is becoming more prevalent, driven by a growing recognition that sustainability related issues can materially affect a company's profitability, demands from various stakeholder groups for increased levels of transparency and disclosure and the need for companies (and the business community more generally) to appropriately respond to issues of sustainable development (Ivan, 2009). Sustainability Reporting Best Practices Several reporting standards exist as guidelines for reporting sustainability (Asaolu, Agboola, Ayoola & Salawu, 2011). The Nigerian experience towards corporate sustainability reporting is still evolving. According to Okoye and Ngwakwe (2004), increasing awareness of social and environmental issues is resulting in clamors for sustainable economic development. There is also a shift towards stakeholder-oriented corporate governance requirements depicted in the changes made to the Code of Corporate Governance for 16 companies operating on the stock market. This code was issued by the Securities and Exchange Commission in Nigeria. This regulatory board demands that companies incorporate the requirements of the Code in line with reporting on sustainability as part of their corporate governance from the year 2012 (Securities and Exchange Commission, 2011).

In furtherance of this course, the Central Bank of Nigeria (CBN) sent a specific circular to financial institutions in September 2012, advising them to incorporate sustainability issues in their corporate reporting by December 31, 2013 to enable them produce a standalone report by December 31, 2014. Therefore, financial institutions are expected to abide by a set of sustainable banking principles to promote sustainability reporting (Central Bank of Nigeria, 2012). The demand made by both SEC and CBN for sustainability reports from companies aligns with the need for standardization of its practice.

Sustainability reporting has been measured using different parameters by different researchers. Moldavska (2017) used stock market indices through the Dow Jones Sustainability Index to offer a suitable tool to measure sustainability performance of firms. Critics to this approach have argued that there is the inherent problem of establishing suitable weighting for the contribution of different dimensions towards total sustainability. Wasiluk (2013) used efficiency in terms of value created per unit of environmental or social damage to proxy sustainability. Ijeoma (2015) employed survey-based approach to study sustainability. Other studies have used disclosure lists. This study employs the disclosure list approach. The study adapts the sustainability disclosure guidelines of the Global Reporting Initiative. In line with the Global reporting Initiative, the dimensions and what they entail are: Economic Sustainability/Impacts: refers to value added by a business organization in terms of sales volume, payment to employees, payment to government, local community donations, and payment to shareholders in form of dividend. Environmental Sustainability/Impacts: refers to negative and positive changes in the environment arising from the operations of a business organization (Okafor, Nworie & Onyebuchi, 2024). Social Sustainability/Impacts: refers to the manner in which the operations of a business organization affect the people in the organization and in the communities where it operates. Social disclosures provide information about social responsibility practices that could increase a company's reputation, reduce potential liabilities and regulatory costs (Nwobu, 2015; Nworie & Aniefuna, 2024).

2.1.2 Profitability

Profitability describes the company capability to obtain revenue above costs through the use overall forces and sources like selling, cash, capital, number of employees, number of branches and other resources (Nailil & Rika, 2016). Profitability ratios provide measures of profit performance that serve to evaluate the periodic financial success of a firm. Brammer and Pavelin (2008) opined that management that has the knowledge to make a company profitable also has the knowledge and understanding of social responsibility, which leads to more social and environmental disclosures. In the context of the agency and political cost theories, Nwobu (2015) points out that management in very profitable corporations provide more detailed information in order to support their own position and compensation. Conversely, in periods of relative unprofitability, these disclosures might be either directed at convincing financial stakeholders that current sustainability activities will result in long-term competitive advantages or at distracting attention from the financial results. Thus, we do not

make any a priori assumption about the sign of the association between sustainability disclosure and profitability.

Company's profitability gives indication about the effectiveness of corporate management (Moedu, Amahalu & Nworie, 2023). It is very likely to see a profitable company providing detailed information in order to attract the users to their accounts in order to highlight management effectiveness. Profitable companies have positive messages to signal to the users of the accounts. It is, therefore, understandable for profitable companies to disclose more information than non-profitable companies. However, it is possible to see some companies sustaining losses and still disclosing detailed information in order to explain what went wrong and how they intend to correct it.

Different variables have been used to proxy profitability such as return on equity, return on assets, net income to sales, earnings to sales, operating profit to total asset, profit margin and return on capital employed. Most of the previous studies reported positive and significant association between the extent of corporate social responsibility reporting and corporate profitability (Naser & Hassan, 2013). The extent of corporate social responsibility reporting of companies listed on Abu Dhabi Securities Exchange is positively associated with corporate profitability.

- i. **Return on Assets:** ROA is ratio of net profits after taxes and number of assets. It measures the overall efficiency of the firm in managing its total investment in assets. This shows how profitable a company's assets are in generating revenue (Alo, Akosile & Ayoola, 2016).
- ii. **Earnings per Share:** EPS can be defined as the ratio of net income to number of equities in a firm (Goyal, 2013). Milad, Abbasali, Naser, Milad and Ali (2013) describes earnings per share (EPS), as one of the most important financial statistics that is noteworthy for investors and financial analysts is which shows earnings that the company has achieved in a fiscal period for an ordinary share and often is used to evaluate the profitability and risk associated with earning and judgments about stock prices.
- iii. **Return on Equity:** ROE measures the efficiency of the firm in generating return to shareholders. This is equal to a fiscal year net income (after preferred stock dividends but before common stock dividends) divided by total equity (excluding preferred shares), expressed as a percentage (Alo et al, 2016).

- iv. **Net Profit Margin:** Nailil and Rika (2016) defined net profit margin as a ratio of net profit after taxes and total selling. The net profit margin measures profitability after consideration of all revenue and expense, including interest, taxes, and non-operating items (Fraser & Ormiston, 2004). A higher margin means the organization is more profitable.

2.1.3 Sustainability Reporting and Financial Profitability

Though scarce resources are used by businesses for production, sustainability is a call for consideration of social good in carrying out production activities. Sustainable development connotes many issues amongst which are long-term investments and innovation (Addae et al, 2014). With the multi-dimensional role of a corporation to the shareholders (providing them with a reasonable return on investment), state (payment of taxes), people (being socially responsible) and environment (reducing environmental impacts as a result of daily operations); accountability for these roles is revealed through disclosures by firms in their corporate communication media. As long as a firm continues to exist, it will do so within the confines of the people who make up the society and the planet. In Nigeria, sustainability reporting is not a listing requirement. This implies that such information disclosed in such markets is value relevant. Also, investments in ethical actions could provide financial benefit. It is likely that profitable corporations are more exposed to political pressure and public scrutiny, and therefore use more self-regulating mechanisms, for instance voluntary disclosure of information, in order to avoid regulation. The most obvious and explicit explanation might be that profitable corporations have the necessary economical means to disclose sustainability practices (Pirsch, Gupta & Grau, 2007). In a corporation with less economical resources, management will probably focus on activities that have a more direct effect on the corporation's earnings than the production of social and environmental disclosures (Naser & Hassan, 2013). However, from a legitimacy theory perspective, profitability can be regarded to be either positively or negatively related to CSR disclosure. Where organizations are profitable, sustainability disclosures would, for those stakeholders who value sustainability, give confirmation that profit has not been at the expense of the environment.

Preston and O'Bannon (1997) stated that social performance may drive financial performance, financial performance may influence social performance, or there is a synergistic relationship between the two. They discovered that there was not a single negative

relationship between social and financial performance in large U.S. companies, which is consistent with the stakeholder theory. The strongest evidence indicated that social-financial performance is a positive synergy, meaning that available funds drive positive social performance and that positive social performance also drives financial performance.

Waddock and Graves (1997) also argue that attention to corporate social performance builds effective and lasting relationships with stakeholder groups, which causes better overall financial performance. After an empirical analysis, they concluded that corporate social performance influences financial performance and strong financial performance also drives increased corporate sustainability practices. However, critiques of sustainability reporting have stemmed from the assertion that pre-occupation with corporate responsibility issues may lead to loss of short-term earnings and investor's short-run returns (Murray, 2010). Although, empirical studies have not been able to establish the benefits of businesses' contribution to sustainable development, at least, they have been able to establish causal relationships between what is disclosed and financial profitability (Nwobu, 2015).

2.2 Theoretical Framework

2.2.1 Legitimacy theory

Legitimacy is a condition or status which exists when an entity's system is congruent with the value system of the larger social system of which the entity is a part when a disparity, actual or potential, exists between the two value systems (Nworie, Cyril-Nwuche & Oduche, 2024). Legitimacy theory is derived from political economy theory (Kent & Stewart, 2008) and relies on the idea that the legitimacy of a company to operate in society depends on an implicit social contract between the company and society. Managers continually attempt to ensure that their company complies with its social contract by operating within society's expectations. This suggests that managers have incentives to disclose information that indicates that the company is not in breach of the norms and expectations of society (Deegan & Blomquist, 2006 in Kent & Stewart, 2008). Organizational legitimacy is summarized by Lindblom (1983) in Mathews and Perera (1996) in the following terms: Legitimacy is not synonymous with economic success or legality. It is determined to exist when the organization goals, output, and methods of operation are in conformance with societal norms and values.

Legitimacy challenges are related to size of the organization and to the amount of social and political support it receives with the more visible being most likely to be challenged. Legitimacy challenges may involve legal, political or social sanctions. Mathews and Perera

(1996) stated that the implications which the notion of organizational legitimacy has for the management of corporation include better communication with society. Naser, Al- Hussaini Al-Kwari and Nuseibeh (2006) emphasize that under legitimacy theory, therefore, the company attempts to maintain its survival and continuity by voluntarily disclosing detailed information to society to prove it is a good citizen.

This study is linked to legitimacy theory such that it raises the need for companies to align their operations to suit societal guidelines and values in which they operate (sustainability). As stated above, managers continually attempt to ensure that their company complies with its social contract by operating within society's expectations and have incentives to disclose information that indicates that the company is not in breach of the norms and expectations of society. One of the biggest incentives for sustainability disclosure will be improved profitability as a result of such disclosures since the disclosures are voluntary.

2.3 Empirical Review

Aggarwal (2013) examined the impact of sustainability rating of company on its financial performance in an Indian context using secondary data. The study also separately analysed impact of four key components of sustainability (i.e. Community, Employees, Environment and Governance) on financial performance. He found no significant association between overall sustainability rating and financial performance. However, further analysis reveals that four components of sustainability have significant but varying impact on financial performance.

Nwobu (2015) examined the annual reports of eight (8) banks in Nigeria for the presence or absence of sustainability reporting. A content analysis of the banks' annual report was carried out against the researchers' sustainability reporting checklist. Data on the independent variables namely Profit after Tax (PAT) and Shareholders Fund (SHF) was also extracted from the annual reports of the banks. The results of this study indicated that sustainability reporting has received substantial attention over the past four (4) years in the Nigerian banking sector. Furthermore, the study found a small positive correlation of 0.28 between sustainability reporting index and Profit after Tax (PAT). The study also found a small positive correlation of 0.18 between sustainability reporting index and shareholders fund.

Aondoakaa (2015) sought to ascertain the impact of sustainability reporting on corporate performance of selected quoted companies in Nigeria. Corporate performance indices used

were return on equity, return on assets, earnings per share and net profit margin. The study employed ex-post facto design. The sample for the study was made up of 64 companies selected from 76 non-financial companies quoted on the Nigerian Stock Exchange. This research utilised secondary data. A model specification based on regression model was used. The statistical technique employed in testing the hypotheses was the student t – test statistic. Findings from this study show that sustainability reporting impacted positively on financial performance of companies investigated. Companies are therefore encouraged to adopt this reporting system.

Agbiogwu, Ihendinihu and Okafor (2016) examined the impact of environmental and social costs on performance of Nigerian manufacturing companies. With the use of secondary data, sourced from ten (10) randomly selected firms' annual report and financial summary 2014. The study makes use of t-test of SPSS version 20 for the analysis of collected data. Finding from the analysis shows that the sample companies environmental and social cost significantly affect Net profit margin, Earnings per share and Return on capital employed of manufacturing companies.

Ezejiofor, Akamelu and Chigbo (2016) also in their paper also assessed the effect of sustainability accounting measure on the performance of corporate organizations in Nigeria. Ex post facto research design and time series data were adopted. Data for study was collected from annual reports and accounts of the company in Nigeria. Formulated hypotheses were tested using Regression Analysis with aid of SPSS Version 20.0. Based on the analysis, the study found that environmental cost does not impact positively on revenue of corporate organizations in Nigeria, also that environmental cost impact positively on profit generation of corporate organizations in Nigeria.

Omodero and Ihendinihu (2016) examined the impact of environmental and corporate social responsibility accounting on organizational financial performance of firms in Nigeria. The study was also arranged to determine the extent to which firms' profit after tax (PAT) affects the corporate social responsibility (CSR) and environmental management cost (EMC). The research design employed was exploratory research design. Time series data which comprises CSR, EMC and PAT of quoted firms in the NSE were the secondary data used. Statistical tools of Multiple Linear Regression and student t-test were used for the analysis. The regression model was estimated through the use of statistical package for social sciences (SPSS). The three null hypotheses used in this study were tested at 5% level of significance.

The result obtained showed no impact and a negative impact for CSR and EMC on PAT respectively. The p-value for CSR and EMC is not significant. The F-test showed a good fit for the model. The study therefore concludes that firms' expenditure to environmental and social issues are not proportionate to their financial performance as represented by PAT. Therefore, CSR and environmental maintenance should be a matter of concern to the Government, NGOS and firms at large.

Olanrewaju and Johnson-Rokosu (2016) explored the trend in sustainability reporting practice in an emerging market. The study involves critical assessment of the current level of sustainability reporting disclosures. To achieve this, content analysis was used on data sourced from the corporate annual reports of selected listed companies quoted in Nigerian Stock Exchange. The analysis identifies the extent to which sustainability reporting has been in line with global best practices in disclosing the three sustainability reporting metrics (environmental, social and governance). Finding revealed that the selected listed companies are more highly disposed to disclosing governance and social information than environmental disclosure. Corporations also attempt to manage stakeholder impressions by self-servingly biasing the language and verbal tone used in their environmental disclosures. The study found that the greatest proportions of location of corporate social and environmental disclosure of the sampled companies are disclosed in the chairman's statement and directors' report.

Utile, Tarbo and Ikya (2017) studied the effect of environmental reporting on the financial performance of listed manufacturing companies in Nigeria. The study aims at determining the effect of erosion control reporting (ECI), waste management reporting (WMI) and air pollution reporting (API) on the financial performance of listed manufacturing firms in Nigeria. The study adopted an ex-post facto research design using the random effect regression analysis as the major technique for data analyses. The sample of the study was drawn from ten manufacturing firms listed on the Nigerian Stock Exchange. It was found that both erosion control reporting and air pollution reporting has significant effect with firm financial performance while waste management reporting has negative but significant effect on firm financial performance of companies under investigation. The major conclusion reached by this study is that environmental reporting has significant effect on firm financial performance.

Nnamani et al (2017) evaluated the effect of sustainability accounting on the financial performance of listed manufacturing firms in Nigeria. Firms used for the study were chosen

from the Nigerian brewery sector. Data were sourced from the financial statements of three sampled firms. Data were analyzed using the ordinary linear regression. The study reveals that sustainability reporting has positive and significant effect on financial performance of firms studied.

Koustubh and Subrat (2018) studied the influence of financial performance on sustainability using a different approach to provide an alternative dimension to existing literature. Voluntary CSR disclosure was the dependent variable and attempted to find how the past financial performances of companies influence CSR activities. The hypothesis was tested with 100 Indian companies included in BSE 100 index. The director's report in the latest annual reports of companies were analysed to get voluntary disclosure of CSR activities. The study includes different financial performance variables: ROA, ROE, ROCE, debt to equity ratio, market capitalization and ownership as independent variables for analysis. Several binary classifier models are used for our empirical analysis. The binary model performances are validated with different performance measurement techniques such as F-measure, accuracy rates, balance error rate (BER), Matthews correlation coefficient (MCC), Kappa coefficient and AUROC. The model performance results showed a significant influence.

Oti and Mbu-Ogar (2018) examined the impact of environmental and social disclosure on the financial performance of quoted oil and gas companies in Nigeria. Time series data for five years were collected and analyzed using the ordinary least square regression technique. The theoretical framework was hinged on stakeholder and legitimacy theories which describe the tie between organizations and the social/societal strata need for disclosure and financial performance. Results from the statistical analysis revealed that disclosure on employee health and safety and community development do not significantly affect financial performance while disclosure on waste management had a positive and significant effect on firm's financial performance.

Dibia and Nwaigwe (2018) investigated the relationship between sustainable development practices and corporate financial performance. The study adopted 'ex-post facto' research design. Data used for the study were sourced from annual reports and financial statements of thirty-four quoted companies for the period 2011 to 2015. Multiple regression analysis techniques run on SPSS version 23 was used to test the hypotheses formulated in this study. Findings revealed a negative relationship between return on equity and sustainable development practices. A significant positive relationship was shown to exist between

sustainable development practices and firm size, implying that firms with larger total assets adopt more sustainable development practices. No significant relationship was established between earnings per share and corporate sustainable development practices.

Iheduru and Okoro, (2019) examined the effect of sustainable reporting on the profitability indicators of Nigeria quoted firms from 2008 to 2017. Data was sourced from financial statement of the firms. Twenty firms were selected from the population of quoted firms in Nigeria. Return on equity, earnings per share and return on investment were proxy for profitability while sustainable reporting was proxied by economic, social, environmental and corporate governance disclosure. The panel data model was tested using the Hausman test. Model one and two validated the fixed effect while model three validated the random effect. The results found that economic disclosure and social disclosure have positive but insignificant effect on return on equity of the selected firms while environmental and corporate governance disclosure have negative and insignificant effect on return on equity, all the predictor variables have positive and insignificant effect on earnings per share of the firms and that economic, social and environmental disclosure have positive effect on return on investment while corporate governance disclosure have negative effect on return on investment of the selected firms in Nigeria.

Ofoegbu and Asogwa, (2020) examined the effect of both (i) social disclosures, (ii) environmental disclosures, (iii) economic disclosures on the profitability of listed consumer goods manufacturing companies in Nigeria. The sample of this study comprises of 15 out of 23 consumer goods manufacturing companies in Nigeria based on secondary data from 2009 to 2018. The hypotheses were tested with t-test statistics. The results suggest that economic and social performance disclosures have an insignificant positive impact on both earnings per share and return on equity, whereas, environmental disclosures have a strong positive and significant effects only on earnings per share. Furthermore, sustainability reporting had a positive and significant impact on the profitability of selected companies.

Abdulsalam, et al (2020) investigated the implication of corporate social cost on the profitability of oil marketing companies in Nigeria. Data were sourced from audited accounts and reports of three sampled firms for fifteen years. Panel regression analysis was used in analyzing the data. Furthermore, the stakeholder theory was used to underpin this study. The study reveals that corporate social responsibility has a positive and significant effect on the profitability of firms studied.

Oshiole, Aruna, and Amahalu, (2020) examined the effect of environmental cost disclosure on profitability of oil and gas firms listed on Nigeria Stock Exchange between 2010 and 2019. Eleven (11) listed oil and gas firms were purposively sampled. The proxies for environmental cost disclosure include waste management cost disclosure, employee health and safety cost disclosure and environmental remediation cost, while net profit margin was employed as profitability measure. Content analysis was employed while Pearson Correlation Coefficient and Panel Least Square (PLS) Regression analysis via STATA 13 statistical software were used to test the hypotheses of the study. The result of this study showed that waste management cost disclosure, employee health and safety cost disclosure and environmental remediation cost disclosure have a significant positive effect on net profit margin at 5% level of significance respectively.

3. MATERIAL AND METHOD

The study adopted an ex-post facto design. The study adopted this research design since data to be analysed were from historical annual reports. The population of the study comprised of twelve quoted oil and gas companies on the Nigerian exchange group presently operational. These are as listed in Table 1 below:

Table 1 List of Quoted Oil and Gas Firms as at 31st Dec. 2022

S/No	Companies
1	Capital Oil Plc
2	Caverton Offshore Support Group Plc
3	Conoil Plc
4	Eternal Plc
5	Forte Oil Plc
6	Japaul Oil and Maritime Services Plc
7	Mobil Oil Nigeria Plc
8	MRS oil Nigeria plc
9	Oando Plc
10	Rak Unity Petroleum Plc
11	Seplat Petroleum Development Company Plc
12	Total Nigeria plc.

Source: NSE 2022

The total items in the population of study were considered because the number of firms is within realistic confines of data gathering. The study employed secondary data. Relevant data were retrieved from financial statements sourced from the Nigerian Exchange Group and companies' websites for 2009 to 2022 financial years. Data were extracted from the Statement of Profit or Loss and Other Comprehensive Income, Statement of Financial Position, Sustainability Reports, Directors' reports and corporate social responsibility reports. Sustainability reporting was measured using disclosures pertaining to sustainability in annual reports. For uniformity and standardization sake, an abridged disclosure list is adapted from the Global reporting Initiative (GRI). The study utilized this disclosure list because GRI is globally recognized and thus, it is taken that the list is exhaustive. A score was apportioned to each annual report according to the number of GRI sustainability items are disclosed in it. This is contained in the appendices section. Profitability was measured using return on assets (net profit/asset), earnings per share (net profit/outstanding shares), return on equity (net profit/equity) and net profit margin (net profit/sales).

Data were analysed using central tendencies statistics (mean, maximum, minimum, standard deviation). The unbalanced panel regression analysis was employed in analyzing data. This was employed because some companies have not filed reports for some financial years, thus making sampled companies not have equal years for analyses. Regression analysis was used in testing the hypotheses. The decision rule is to accept the alternate hypothesis if the p value of is less than 0.05 and vice-versa. The regression model for this study is adapted from Dibia and Nwaigwe (2018) and is as follows:

$$\Pi = f(\text{ECS}, \text{EVS}, \text{SCS}, \text{VAG}, \text{VAS}) \dots \text{I}$$

However, the model was modified to capture the profitability indices peculiar to this study.

$$\text{ROA} = \beta_0 + \beta_1 \text{ECS} + \beta_2 \text{EVS} + \beta_3 \text{SCS} + \beta_4 \text{VAG} + \beta_5 \text{VAS} + \epsilon \dots \text{II}$$

$$\text{EPS} = \beta_0 + \beta_1 \text{ECS} + \beta_2 \text{EVS} + \beta_3 \text{SCS} + \beta_4 \text{VAG} + \beta_5 \text{VAS} + \epsilon \dots \text{III}$$

$$\text{ROE} = \beta_0 + \beta_1 \text{ECS} + \beta_2 \text{EVS} + \beta_3 \text{SCS} + \beta_4 \text{VAG} + \beta_5 \text{VAS} + \epsilon \dots \text{IV}$$

$$\text{NPM} = \beta_0 + \beta_1 \text{ECS} + \beta_2 \text{EVS} + \beta_3 \text{SCS} + \beta_4 \text{VAG} + \beta_5 \text{VAS} + \epsilon \dots \text{V}$$

Where;

β_0 = Intercept coefficient

β_1 – β_5 = Coefficients for independent variables ECS = Economic sustainability

EVS = Environmental sustainability SCS = Social sustainability

VAG= Value added to government VAS = Value added to Society ROA = Return on Assets

EPS = Earnings per share ROE = Return on Equity NPM = Net Profit Margin ϵ = Error term.

4. RESULT AND DISCUSSIONS

4.1 Data Analysis

4.1.1 Descriptive Statistics

Data were analysed using descriptive statistics and multiple regression models.

Table 2 Descriptive Statistics of Study Variables

	EPS	NPM	ROA	ROE	ECS	EVS	SCS	VAG	VAS
Mean	10.4845	-0.15612	0.007481	0.130583	6.9867	1.4503	4.2582	0.2683	0.2064
Maximum	213.000	6.46647	0.417625	10.99683	10.000	6.0000	9.0000	11.446	30.485
Minimum	-46.4200	-7.1551	-0.771789	-3.090365	0.0000	0.0000	0.0000	-5.212	-0.0267
Std. Dev.	28.7224	1.28723	0.131629	1.002379	1.8183	1.5435	2.7699	1.1753	2.4805
Jarque-Bera	3452.50	3905.26	1615.075	53484.55	233.34	47.876	6.2079	21248	137827.
Probability	0.00000	0.00000	0.000000	0.000000	0.0000	0.0000	0.0448	0.0000	0.0000

Source: E-views9

The descriptive statistics for the variables used in the model contained in table 2 above provides the mean, maximum, minimum, standard deviation and Jarque-Bera Values. Average return on assets was 0.7%. The highest percentage return on assets was 41.7% while the lowest was a loss of 77%. Average earnings per share of collated data was N10.48. Earnings per share had an all-high rate of N213 by Seplat in 2014 and a minimum of -N46.42. Return on equity had a mean value of 13%, minimum value of -309% and maximum value of 1099.68%. All except Social sustainability disclosures are normal distributions (Jacque bera statistics $p < .05$). Though Social sustainability is not a normal distribution, it does not affect analyses as normality is not a prerequisite for regression.

On sustainability disclosures, Economic sustainability had the average disclosure score of 6.98 out of 11 items contained in the disclosure list. Social sustainability was next with 4.25 items out of 14 items while Environmental sustainability was least with 1.45 out of 6 items. This spelt a rate of 63.5%, 28.35% and 24% for each of them respectively. Value added to government by oil and gas companies was averagely 26.8% of profit. While some oil and gas companies do not disclose donations at all (minimum value=0), others donate as high as 30% of their annual profits.

4.2 Test of Hypotheses

4.2.1 Hypothesis I

H₀: Sustainability Reporting has no significant effect on return on assets of quoted oil and gas firms.

Table 3 Test of Hypothesis I

Totalpanel(unbalanced)observations:151

Variable	Coefficient	Std.Error	t-Statistic	Prob.
ECS	0.004802	0.009499	0.505548	0.6141
EVS	-0.021673	0.014188	-1.527555	0.1292
SCS	0.015942	0.008050	1.980394	0.0499
VAG	0.012630	0.009435	1.338675	0.1832
VAS	-0.002200	0.004189	-0.525270	0.6004
C	-0.065458	0.057011	-1.148166	0.2532
EffectsSpecification				
Cross-sectionfixed(dummyvariables)				
R-squared	0.362458	Meandependentvar		0.007481
AdjustedR-squared	0.209659	S.D.dependentvar		0.131629
S.E.ofregression	0.117020	Akaikeinfocriterion		-1.277083
Sumsquaredresid	1.656933	Schwarzcriterion		-0.677624
Loglikelihood	126.4198	Hannan-Quinncrier.		-1.033552
F-statistic	2.372117	Durbin-Watsonstat		1.578465
Prob(F-statistic)	0.000583			

Source: E-views9

Table 3 shows the results of sustainability disclosure measures regressed against return on assets. The constant value is insignificant at -0.0654 ($p > .05$). Social sustainability had positive and significant effect on ROA (0.0159 respectively; $p < .05$). This implied that an increase in social sustainability will cause ROA to increase and vice versa. In other words, companies that disclose social sustainability have more returns per naira of asset invested than companies that do not. Other variables were not found to be significant individually ($p > .05$).

On model statistics, the R squared is 0.3625 while the adjusted R squared is 0.2096. The adjusted R squared shows the explanatory power of the model when ordinary least squares regression was used. From the results, it can be deduced that about 20.96% variations in return on assets of oil and gas companies is explained by sustainability of such firms. It is also

important to state that with the value of adjusted R squared shows that our model is significant and is a good measure of fit. The F Statistic indicates that the model is statistically significant at 5% level of significance. The F statistic = 2.37 has a p value of $0.00 < 0.05$.

The decision rule: states that when the p value of the F statistic is less than 0.05 we reject null hypothesis and accept the alternate hypothesis. However, when the p value of the F statistic is greater than 0.05, we accept null hypothesis and reject the alternate hypothesis. This implies that the Null Hypothesis is rejected while the alternative hypothesis is accepted. It is therefore accepted that Sustainability Reporting has a positive and significant effect on return on assets of quoted oil and gas firms. Sutopo et al (2018) also found that sustainability improved performance. Aggarwal (2013) however, found no relationship between performance and corporate sustainable development practices. Aondoakaa (2015), Ezejiofor et al (2016) and Nnamani et al (2017) had like findings. They found that sustainability reporting impacted positively on financial profitability. Omodero and Ihendinihu (2016) however, found significant negative relationship.

4.2.2 Hypothesis II

H₀: Sustainability Reporting does not affect the earnings per share of quoted oil and gas firms significantly.

Table4: Test of Hypothesis II

Variable	Coefficient	Std.Error	t-Statistic	Prob.
ECS	2.706751	1.442522	1.876402	0.0626
EVS	5.488929	2.142574	2.561839	0.0114
SCS	-1.501393	1.279706	-1.173233	0.2426
VAG	1.201901	1.596058	0.753043	0.4526
VAS	-0.537154	0.719086	-0.746996	0.4563
C	-10.19433	9.254506	-1.101553	0.2725
EffectsSpecification			S.D.	Rho
Cross-sectionrandom			12.67542	0.2635
Idiosyncraticrandom			21.18980	0.7365
WeightedStatistics				
R-squared	0.118495	Meandependentvar	4.365100	
AdjustedR-squared	0.088098	S.D.dependentvar	22.61062	

S.E.ofregression	21.60637	Sumsquaredresid	67691.08
F-statistic	3.898276	Durbin-Watsonstat	2.121529
Prob(F-statistic)	0.002407		
<hr/>			
UnweightedStatistics			
R-squared	0.187932	Meandependentvar	10.48450
Sumsquaredresid	100490.8	Durbin-Watsonstat	1.429072

Source: E-views9

The constant value is significant at - N10.19 ($p > .05$). This reveals that EPS will be - N10.19 when there are no sustainability disclosures. Environmental sustainability had positive and significant effect on EPS (5.488 respectively; $p < .05$). This implied that an increase in economic sustainability causes EPS to increase and vice versa. All other independent variables are not significant as shown in table 4 ($p > .05$). On model statistics, the adjusted R squared is 0.0880. The adjusted R squared shows the explanatory power of the model when random effects panel regression is used. The model has an explanatory power of 8.8 %. In other words, the model is responsible for 8.8% variations in earnings per share of oil and gas companies. The model is therefore of good fit. The F Statistic indicates that the model is not statistically significant at 5% level of significance. The Statistic = 3.89 has a P value of $0.00 < 0.05$.

The decision rule states that when the p value of the F statistic is less than 0.05 we reject null hypothesis and accept the alternate hypothesis. However, when the P value of the F statistic is greater than 0.05, we accept null hypothesis and reject the alternate hypothesis. This implies that the alternate Hypothesis is accepted while the null hypothesis is rejected. It is therefore accepted that Sustainability Reporting affects the earnings per share of quoted oil and gas firms positively and significantly. Sutopo et al (2018) also found that sustainability improved performance. Aggarwal (2013) however, found no relationship between performance and corporate sustainable development practices. Aondoakaa (2015), Ezejiofor et al (2016) and Nnamani et al (2017) had like findings. They found that sustainability reporting impacted positively on financial profitability. Omodero and Ihendinihu (2016) however, found significant negative relationship.

4.2.3 Hypothesis III

Ho: Sustainability Reporting has no significant effect on return on equity of quoted oil and gas firms.

Table 5: Test of Hypothesis III

Variable	Coefficient	Std.Error	t-Statistic	Prob.
ECS	0.010462	0.062125	0.168395	0.8665
EVS	-0.005581	0.079195	-0.070470	0.9439
SCS	-0.036953	0.049289	-0.749716	0.4546
VAG	0.065333	0.073994	0.882952	0.3787
VAS	0.001430	0.033673	0.042463	0.9662
C	0.205117	0.369911	0.554505	0.5801

Effects Specification		S.D.	Rho
Cross-section random		0.000000	0.0000
Idiosyncratic random		1.016890	1.0000

Weighted Statistics			
R-squared	0.016123	Mean dependent var	0.130583
Adjusted R-squared	0.001780	S.D. dependent var	1.002379
S.E. of regression	1.011262	Sum squared resid	148.2844
F-statistic	0.475239	Durbin-Watson stat	2.430324
Prob (F-statistic)	0.794273		

Unweighted Statistics			
R-squared	0.016123	Mean dependent var	0.130583
Sum squared resid	148.2844	Durbin-Watson stat	2.430324

Source: E-views9

Table 5 shows the results of sustainability disclosure measures regressed against return on equity. The constant value is significant at 0.20 ($p > .05$). All independent variables were not found to be significant individually ($p > .05$). On model statistics, the adjusted R squared is 0.001. The adjusted R squared shows the independent variables entrenched in the model cause just 0.1% variations in return on equity of oil and gas companies.

The F Statistic indicates that the effect of sustainability disclosures is not significant predictors of return on equity at 5% level of significance. The F statistic = 0.47 has a p value of $0.79 > 0.05$.

The decision rule states that when the p value of the Rn statistic is less than 0.05 we reject null hypothesis and accept the alternate hypothesis. However, when the p value of the F statistic is greater than 0.05, we accept null hypothesis and reject the alternate hypothesis. This implies that the alternate Hypothesis is rejected while the null hypothesis is accepted. It is therefore accepted that Sustainability Reporting has an insignificant effect on the return on equity of quoted oil and gas firms. Sutopo et al (2018) also found that sustainability improved performance. Aggarwal (2013) however, found no relationship between performance and corporate sustainable development practices. Aondoakaa (2015), Ezejiofor et al (2016) and Nnamani et al (2017) had like findings. They found that sustainability reporting impacted positively on financial profitability. Omodero and Ihendinihu (2016) however, found significant negative relationship.

4.2.4 Hypothesis IV

Ho: Sustainability Reporting has no significant effect on the net profit margin of quoted oil and gas firms.

Table 6 Test of Hypothesis IV

Variable	Coefficient	Std.Error	t-Statistic	Prob.
ECS	0.043545	0.081315	0.535507	0.5931
EVS	-0.086502	0.114748	-0.753844	0.4522
SCS	0.101025	0.069515	1.453288	0.1483
VAG	0.072911	0.092020	0.792344	0.4295
VAS	-0.004613	0.041658	-0.110732	0.9120
C	-0.779280	0.496135	-1.570702	0.1184
Effects Specification				
			S.D.	Rho
Cross-section random			0.435747	0.1107
Idiosyncratic random			1.235359	0.8893
Weighted Statistics				
R-squared	0.032384	Mean dependent var	-0.096306	
Adjusted R-squared	-0.000982	S.D. dependent var	1.221978	
S.E. of regression	1.222595	Sum squared resid	216.7369	
F-statistic	0.970580	Durbin-Watson stat	1.885922	
Prob (F-statistic)	0.437923			

Unweighted Statistics

R-squared	0.048940	Mean dependent var	-0.156126
Sum squared resid	236.3832	Durbin-Watson stat	1.729180

Source: E-views9

Table 6 shows the results of sustainability disclosure measures regressed against net profit margin. Social sustainability had positive and significant effects on NPM (0.1335; $p < .05$). This implied that increase or decrease in any of the aforementioned variables will cause decrease or increase in NPM respectively. Higher level of disclosures of social disclosures will increase profitability in terms of net profit per revenue received via sales. Other variables were not found to be significant individually ($p > .05$). On model statistics, the adjusted R squared is 0.0291. The adjusted R squared shows that jointly, independent variables entrenched in the model cause 2.91% variations in net profit margin of oil and gas companies. The F Statistic indicates that the model is statistically significant at 5% level of significance. The F statistic = 0.9705 has a p value of $0.43 > 0.05$.

The decision rule states that when the p value of the F statistic is less than 0.05 we reject null hypothesis and accept the alternate hypothesis. However, when the p value of the F statistic is greater than 0.05, we accept null hypothesis and reject the alternate hypothesis. This implies that the alternate Hypothesis is rejected while the null hypothesis is accepted. It is therefore accepted that Sustainability Reporting has no significant effect on the net profit margin of quoted oil and gas firms. Sutopo et al. (2018) found that sustainability enhances performance. In contrast, Aggarwal (2013) reported no relationship between performance and corporate sustainable development practices. Similar findings were presented by Aondoakaa (2015), Ezejiofor et al. (2016), and Nnamani et al. (2017), who observed that sustainability reporting positively impacts financial profitability. However, Omodero and Ihendinihu (2016) identified a significant negative relationship.

CONCLUSION AND RECOMMENDATION

Disclosures regarding sustainability, corporate social responsibility, environmental reporting is mainly voluntary. Firms that adopt these disclosures account for the economic, environmental and social impact of the company’s operations in addition to financial implications. Empirical results revealed positive significant effect of sustainability disclosures on return on assets and earnings per share. The disclosures of a firm’s ethical actions are bound to generate additional benefits of patronage and peaceful firm co-existence in host

communities that outweigh the costs for collecting, processing, attainment, and auditing of data, to which the indirect costs are added. In line with the stakeholder theory, sustainability which involves consideration of other stakeholders and not just shareholders, takes a good toll on profitability. As a result, oil and gas firms not only owe the host communities aside other stakeholders, sustainable operations to conserve or remedy their environments, but also identify a strategic approach to raise the numbers in relation to profitability. The rights of these groups must be ensured, and further, the groups must participate in some sense, in decisions that substantially affect their welfare. The following recommendations were made in line with findings:

1. Business organizations should not be deterred by the costs involved in sustainability reporting. Sustainability should be reported to satisfy the demand for sustainable operations and gain reputation from the various corporate stakeholders and the wider society.
2. Other organisational procedures aside sustainability such as reduced administrative costs should be undertaken alongside sustainability to improve profitability in the form of Net profit margin and return on equity.
3. Government should give tax credits and tax incentives to organizations that practice sustainability reporting.
4. The Financial Regulation Council of Nigeria could collaborate with different sustainability-promoting bodies to make sustainability reporting mandatory in oil.

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