



GLOBAL REPORTING INITIATIVE AND SUSTAINABILITY REPORTING PRACTICES: A STUDY OF NIGERIA AND SOUTH AFRICA OIL AND GAS FIRMS

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Abstract

This study identified the factors that could determine Global Reporting Initiative-Based Sustainability Reporting of listed Oil and Gas Firms in Nigeria and South Africa. The determinant factors which include Ownership Structure and Profitability served as proxies to the independent variable (Determinant) while Social Sustainability Reporting was used to measure Sustainability Reporting (the dependent variable). Ex-Post facto research design and content analysis method were adopted. Fourteen (14) listed Oil and Gas firms: seven (7) listed Oil and Gas firms in Nigeria and seven (7) listed Oil and Gas firms in South Africa constituted the sample size of this study for the years 2010 and 2020. Secondary data were extracted from the annual reports and accounts of the sampled firms and extracts from the annual reports were analyzed using Pearson Correlation, Panel Least Square (PLS) regression analysis through E-Views 10.0 statistical software. Findings from the empirical analysis showed that Ownership Structure, and Profitability, had significant effect on Social Sustainability Reporting, though Ownership Structure, (for Nigeria) maintained negative attitude to Social Sustainability Reporting at 5% level of significance

Keywords: Sustainability Reporting, Ownership Structure, and Profitability

Introduction

Sustainability reporting is a form of corporate reporting that focuses on economic, environmental, social, and corporate governance issues. Information that was once regarded as proprietary, non-financial and management accounting in nature has now become primary information just like financial information. Furthermore, several organizations and initiatives have become involved in sustainability reporting including the International Federation of Accountants (IFAC), Global Reporting Initiatives (GRI), Organization for Economic Cooperation and Development (OECD) and Institute of Directors in Southern Africa (IoDSA). Financial reporting, which focuses on purely monetary precepts and primarily looks at the past, has been gradually expanded over recent decades, as a result of the increasing importance of intangible assets (such as market positioning or human capital, for example) as well as ecological and social value drivers ((Mnif-Sellami, Dammak & Jarboui, 2019). Large companies in particular have set up their reporting in such a way as to take account of the information needs of relevant stakeholders inside and outside the company, in terms of the company's social and ecological performance, as well as to provide a more complete and future oriented picture. At the present time, the most integrated format for corporate reporting is sustainability reporting. With this type of reporting, companies place a balanced focus on the backwards and forwards-looking (economic, ecological and social) impact dimensions of their activities and their interaction, explaining synergies and conflicts of interests between the different dimensions ((Welbeck, Owusu, Bekoe & Kusi, 2017). Habek and Wolniak (2015) define corporate sustainability as meeting the needs of a firm's direct and indirect stakeholders without compromising its ability to meet the needs of future stakeholders as well. To achieve this goal, companies need to maintain their economic, social and environmental capital base which directly refers to Elkington's (1997) triple-bottom-line (TBL) thinking.

Determinant is a factor which decisively affects the nature or outcome of something. According to Global Reporting Initiative (GRI) framework (2018), the following factors could be used to determine the sustainability performance disclosures of firms; stand-alone sustainability reporting (SR), reporting language, leverage, cash flow capacity, profitability, size of the company, firm age presence o sustainability committee, type of industry, profitability, corporate governance structure, corporate visibility, sector affiliation, country of origin, legal requirements and auditor type (GRI, 2018). Nigeria as an emerging economy with its main stay been petroleum resources and other solid mineral endowments is faced with substantial environmental degradation in a bid to improve her economic base and the standard of living of her citizenry. Natural resources constantly explored and exploited by oil and gas companies are not without their imminent environmental impact such as emissions, hazardous waste, soil contamination, biodiversity loss (wildlife, agro diversity) and global warming. These natural resources are tapped to enhance economic development are finite and non-renewable in nature subject to diminution. Sustainability reporting aligns with the triple bottom line framework which emphasizes balancing all stakeholder concerns.

Oil and gas operations in Nigeria and South Africa are mainly extractive in nature and employees are predisposed to dangerous and hazardous experiences such as mechanical, chemical, physical and biological risks factors. Upstream activities in the oil and gas sector in Nigeria and South Africa are not devoid of waste materials which are grossly inimical to environmental sustainability. On the extent of the sustainability reporting in emerging economies, (Dang & Li, 2015) explained that corporate sustainability disclosure is lagging in developing countries. Also, sustainable reporting practices are still voluntary and extent of disclosure very low in Nigeria. Companies in Nigeria report sustainability issues in different

ways and comply with different reporting framework resulting to production of various types of reports. No wonder Nigeria is classified by KPMG (2011) in the corporate sustainability quadrant as starting behind. As a matter of fact, Nigeria has no mandatory environmental or social reporting requirement for public companies, though there have been significant efforts like the Nigerian Stock Exchange (NSE) sustainability disclosure guideline 2016. Thus, it is against this backdrop that this study seeks to identify the factors that play an influencing role in determining sustainability reporting of quoted oil and gas firms in Nigeria and South Africa.

Based on the divergent views of the various streams of studies on the factors that are determinants to sustainability reporting which has caused a lacuna, therefore and in an attempt to close the gap in literature, this study examined the determinants of sustainability reporting of listed Oil and Gas firms in Nigeria and South Africa. This study approach is distinct from previous studies by concentrating on cross-country analysis using Nigeria and South Africa as prior studies focused on a mono-country analysis (to the best knowledge of the researcher), thereby mitigating the geographical gap. Again, this study generated five different explanatory data sets (stand-alone report, existence of sustainability committee, ownership structure, profitability and leverage) to test the hypotheses, thus, closing the variable gap, while sustainability reporting was measured with social sustainability reporting.

The main objective of this study is to evaluate how the Determinants of GRI affect Sustainability Reporting of listed Oil and Gas Firms in Nigeria and South Africa.

The specific objectives are to:

1. Assess the effect of Ownership Structure on Social Sustainability Reporting of listed Oil and Gas firms in Nigeria and South Africa.
2. Evaluate the effect of Profitability on Social Sustainability Reporting of listed Oil and Gas firms in Nigeria and South Africa.

Review related literature

Global Reporting Initiative (GRI)

The Global Reporting Initiative (GRI) is an international independent standards organization that helps businesses, governments and other organizations understand and communicate their impacts on issues such as climate change, human rights and corruption (Pedersen, 2015). The Global Reporting Initiative (GRI) is an independent institution whose mission is to develop and disseminate globally applicable sustainability reporting guidelines that help organizations to report on the economic, environmental, and social dimensions of their activities, products, and services (Safari & Amreen, 2020). The Global Reporting Initiative (GRI) is an international not-for-profit organization, with a network-based structure. To enable all companies and organizations to report their economic, environmental, social and governance performance, GRI produces free Sustainability Reporting Guidelines. The guidelines are currently in their fourth generation ("G4") (Willis, 2020). The Global Reporting Initiative (GRI) is an international, multi-stakeholder and independent non-profit organization that promotes economic, environmental and social sustainability. The GRI was established in 1997 in partnership with the United Nations' Environment Programme (UNEP) (Knebel & Seele, 2015).

Under increasing pressure from different stakeholder groups such as employees, managers, owners, suppliers, investors, customers, society, creditors governments, shareholders,

consumers to be more transparent about their environmental, economic and social impacts, many companies publish a sustainability report, also known as a corporate social responsibility (CSR) or environmental, social and governance (ESG) report. GRI's framework for sustainability reporting helps companies identify, gather and report this information in a clear and comparable manner. First launched in 2000, GRI's sustainability reporting framework is now the most widely used by multinational organizations, governments, small and medium enterprises (SMEs), NGOs and industry groups in more than 90 countries. In 2017, 63 percent of the largest 100 companies (N100), and 75 percent of the Global Fortune 250 (G250) reported applying the GRI reporting framework (Szejnwald, De-Jong & Lessidrenska, 2019). The most recent of GRI's reporting frameworks are the GRI Standards, launched in October 2016. Developed by the Global Sustainability Standards Board (GSSB), the GRI Standards are the first global standards for sustainability reporting and are a free public good. In contrast to the earlier reporting frameworks, the GRI Standards have a modular structure, making them easier to update and adapt (Solsbach, 2020).

The GRI was formed by the United States-based non-profits Ceres (formerly the Coalition for Environmentally Responsible Economies) and Tellus Institute, with the support of the United Nations Environment Programme (UNEP) in 1997. It released an "exposure draft" version of the Sustainability Reporting Guidelines in 1999, the first full version in 2000, the second version was released at the World Summit for Sustainable Development in Johannesburg - where the organization and the guidelines were also referred to in the Plan of Implementation signed by all attending member states. Later that year it became a permanent institution. In 2002 GRI moved its secretariat to Amsterdam, Netherlands. Although the GRI is independent, it remains a collaborating centre of UNEP and works in cooperation with the United Nations Global Compact (Sebastian, 2020). The GRI refers to the global network of many thousands worldwide that create the reporting framework, use it in disclosing their sustainability performance, demand its use by organizations as the basis for information disclosure, or are actively engaged in improving the standard. And examples of good sustainability reporting practices include digitalization of organizations' supply-chain management, communication strategies and stakeholder relation mechanisms, and implementation of two-way communication strategies that enable sense-making and sense-giving conjointly (Howitt, 2014). Sustainability reporting aims to standardize and quantify the environmental, social and governance costs and benefits derived from the activities of the reporting companies accordingly. Some of the examples of the reporting measures to be used would be the quantified results of the CO2 emissions, working and payment conditions, financial transparency and alike (Solsbach, 2020). For the assessment of the social impact created by the reporting organization, GRI standards were created according to international labor practices and the environmental impact by conducting an independent audit. ISO 14010, ISO 14011, ISO 14012 and ISO 26000 set out a standard for assessing the environmental impact, while OHSAS 18001 lays down a health and safety risk management system (Willis, 2020).

Ownership Structure and Social Sustainability Reporting

Ownership structure concerns the internal organization of a business entity and the rights and duties of the individuals holding a legal or equitable interest in that business (Sanlam, 2020). Ownership structure is the relative amounts of ownership claims held by insiders (management) and outsiders (investors with no direct role in the management of the firm) (Sakawa & Watanabel, 2018). It is the internal organization of a firm that defines the rights and duties of the people that have legal interest or stake in it. It is the structure that defines

how the ownership and control of a company is distributed (Motta & Uchida, 2018). The increased volatility of corporate ownership portfolios observed in recent years has led to renewed interest in ownership structures, especially with respect to multinational enterprises (Rediker & Seth, 2020). Ownership structure is an important means for governance. Likewise, for interlocking directorships, share ownership may provide influence and control over a third party. Generally, one can assume that a higher ownership stake comes with more influence on the management of the respective entity (Uno & Kamiyama, 2019). It follows that the more dispersed share ownership one company has, the more independently the management may govern the organization (Aguilera, Desender, López-Puertas & Lee, 2017).

Ownership structures are of major importance in corporate governance because they affect the incentives of managers and thereby the efficiency of the firm. The ownership structure is defined by the distribution of equity with regard to votes and capital but also by the identity of the equity owners (Ikeda, Inoue & Watanabe, 2018). A classic reference is Jensen and Meckling (1976), these economists tried to develop a theory of the ownership structure of the firm by integrating elements from the theory of agency, the theory of property rights and the theory of finance.

Ownership Structure = Ratio of Shares held by the Highest Shareholders

Total Shares Outstanding

Ownership structure is measured as the accumulated percentage of shareholdings by all large investors, Block holding. Large shareholders are categorized as shareholders owning at least 5% of a firm's outstanding shares (Angelstig & Gustavsson, 2020).

Corporate social responsibility (CSR) is a continuously growing issue and firms across all sectors are increasingly presenting sustainability reporting (SR). Investors, consumers and other stakeholders are raising their demands for corporate transparency and accountability, and the perceived value of CSR is growing (Johnson, Mans-Kemp, Erasmus, 2019). The institutional ownership may ignore the corporate social responsibility as its primary objective is to benefit shareholders and stakeholders, profit maximization. The CSR is costly and there is no linkage with revenues. The CSR is more related with operational performance than achieving strategic objectives (Ofoegbu, Odoemelam, Okafor *et al.*, 2018). Most of the senior management compensation is not conditioned on the performance of CSR. The quality, relevance, and the extent of the information provided in the annual corporate citizenship reporting varies, subject to the interest and risk management of the senior management. This has implications towards generating intangible corporate values and declaring executive bonus (Majumder, Akter & Li, 2017).

Adams, Picot, Druckman (2019) believed that the CSR can be viewed as a component of the corporate governance, encouraging good business practices that promote accountability and transparency to the shareholders and the society in general. Bebbington and Unerman (2018) believe that the inconsistencies in defining corporate governance lead to the divergent interpretation of the relationship between corporate governance and CSR. Smith (2014) found that there is a positive relationship between the institutional ownership and corporate social performance (CSP). This is supported by Arikan, Reinecke, Spence & Morrell (2017) stated that a higher proportion of external directors enhances corporate social performance. Hofmann, Schleper, Blome (2015) believed that effective governance should minimize negative CSR by minimizing negative impacts to corporate financial performance. Boulouta, Pitelis (2014); Steenkamp, Dippenaar, Fourie, Franken (2019) believe that the CSR is more valued-based and externally focused, whereas, corporate governance is internally focused and

have strategic objectives to implement based on rules and regulations. Yu (2015); Che, Hung and Wang (2018) suggest that profit maximization includes playing a good corporate citizenship role and achieving economic objectives.

Profitability and Social Sustainability Reporting

Profitability is the ability of a business to earn a profit. A profit is what is left of the revenue a business generates after it pays all expenses directly related to the generation of the revenue, such as producing a product, and other expenses related to the conduct of the business activities (Horton, 2019). Profitability is ability of a company to use its resources to generate revenues in excess of its expenses. In other words, this is a company's capability of generating profits from its operations (Shawn, 2020). It is the metric used to determine the scope of a company's profit in relation to the size of the business. Profitability is a measurement of efficiency –and ultimately its success or failure. Profitability is a business's ability to produce a return on an investment based on its resources in comparison with an alternative investment (Melissa, 2019). Profitability ratios are financial metrics used by analysts and investors to measure and evaluate the ability of a company to generate income (profit) relative to revenue, statement of financial position, operating costs, and shareholders' equity during a specific period of time. They show how well a company utilizes its assets to produce profit and value to shareholders. A higher ratio or value is commonly sought-after by most companies, as this usually means the business is performing well by generating revenues, profits, and cash flow. The ratios are most useful when they are analyzed in comparison to similar companies or compared to previous periods (Grimsley, 2020).

The two key aspects of profitability are revenues and expenses. Revenues are the business income. This is the amount of money earned from customers by selling products or providing services. Generating income isn't free, however. Businesses must use their resources in order to produce these products and provide these services. Resources, like cash, are used to pay for expenses like employee payroll, rent, utilities, and other necessities in the production process (Scott, 2019). Profitability looks at the relationship between the revenues and expenses to see how well a company is performing and the future potential growth a company might have.

There are various profitability ratios that are used by companies to provide useful insights into the financial well-being and performance of the business.

All of these ratios can be generalized into two categories, as follows:

a. Margin Ratios

Margin ratios represent the company's ability to convert sales into profits at various degrees of measurement. Examples are gross profit margin, operating profit margin, net profit margin, cash flow margin, Earnings Before Interest and Taxes (EBIT), Earnings Before Interest, Taxes, Depreciation, and Amortization (EBITDA), Net Operating Profit After Tax (NOPAT), operating expense ratio, and overhead ratio.

b. Return Ratios

Return ratios represent the company's ability to generate returns to its shareholders. Examples include return on assets, return on equity, cash return on assets, return on debt, return on retained earnings, return on revenue, risk-adjusted return, return on invested capital, and return on capital employed.

The success or failure of companies in the conditions of the sustainable economy is influenced by the particularities in which their corporate social responsibility is manifested. It

reflects the direction in which the available resources are mobilized under the conditions of national and regional environmental regulations (Izzo, Ciaburri & Tiscini, 2020). Information in sustainability reports differs depending on the type of stakeholder, and affects certain activities or their performance (Cupertino, Consolandi, Vercelli, 2019). Both practitioners and theorists agree that companies engage in CSR activities, and they decide what activities they will engage in the future for sustainability reporting, in order to increase their reputation and financial performance (Morioka & Carvalho, 2016; Cui, Jo & Na, 2018). Increasing the impact of sustainability by gathering a wealth of information and measuring social and environmental impacts helps organizations improve their operational efficiency and natural resource management, which remains important to shareholders, employees, and other stakeholders (Dang, Li & Yang, 2018). Among the drivers that determine whether companies report or not are shareholder and stakeholder pressure, compliance with legislation, competitive advantages, and public image (Lozano, Nummert, & Ceulemans, 2016). Social reporting generates benefits in terms of the direct effects on the assessment and communication of the conditions, wherein different entities act but also contribute to build internal and external credibility (Bice, 2015).

Corporate sustainability (CS) reporting has become very crucial for a firm to demonstrate its activities towards the triple bottom line. Evidences reveal a significant increase in the number of firms publishing sustainability report based on Global Reporting Initiatives (GRI) framework (Costa & Pesci, 2016; Yu, Huang & Luo, 2018; Munteanu, Grigorescu, Condrea, & Pelinescu, 2020). However, the findings on the relationship between profitability and sustainability reporting are inconclusive encompassing positive association (Higgins & Coffey, 2016; Truant, Corazza & Scagnelli, 2017; Maj, 2018), negative association (An, Davey & Harun, 2017; Zou, Zeng, Xie & Zeng, 2020) and neutral association (Hu, Du & Zhang, 2020).

Empirical studies

Chandrapala and Wickremasinghe (2012) examined the impact of ownership concentration and the other endogenous factors on the financial performance of 116 companies listed on the Colombo Stock Exchange from 2006-2010. Both pooled and ordinary least squares regressions were used to analyze the data. The return on assets (ROA) was used as the performance measure. It was found that ownership concentration does not have a statistically significant positive relationship with ROA. However, the study indicated that firm size, quick ratio and ratio of inventory investment to total assets have positive impacts on the ROA. But the debt ratio is negatively related to the financial performance of the listed companies.

Yusuf (2015) explored the relationship between social and financial performance and sustainability costs on institutional ownership companies. The quantitative research method was used for this research study. The sample comprised of top forty US environmental companies from 2012 to 2014. This research found that there is a positive correlation among all the variables except for the sustainability costs. The social performance has a significant correlation with the institutional ownership than sustainability costs. Employee stock ownership had a strong correlation with the stock price. The quality and frequency of the CSR reporting varies from company to company; hence, the investors, stakeholders, and shareholders had to depend on the management goodwill. Alhassan and Salim (2016) determined the relationship between environmental information disclosure and ownership structure of Nigeria in combination with environmental agencies using the latest version of GRI (G4). The study considered 81 companies in 6 environmentally sensitive industries of the economy. From a stratified random selected sample of 67 firms, the study tested for the relationship from 2009 to 2014. The outcome showed an inverse and significant relationship

between environmental disclosure and ownership structure. The study recommended that local ownership should be encouraged to grow at a faster rate so that a positive impact will be reflected on environmental information disclosure. Mohammad, Mohamad and Ahmad (2016) examined the impact of board characteristics on the level of corporate social responsibility disclosure (CSR) in the Jordanian banking sector for a sample of 147 banks/years during a period of 10 years (2004-2013). A checklist consisting of 100 items is developed to measure the disclosure level and the result indicates a relatively low level of disclosure in Jordanian banks. Multiple regression analysis is employed to examine the developed hypotheses. The results indicated that the larger board size and higher level of disclosure are correlated. Aman and Ismail (2017) explored the corporate sustainability reporting disclosure practice by Public listed companies of Bursa Malaysia for the year 2016. Specifically the objective was to examine the level and factors that influence the corporate sustainability reporting in public listed companies in Malaysia. Results showed a significant association between industry and the level of sustainability reporting among listed firms in Malaysia. Results also did indicate that women on board are positively significant in explaining the variability in CSR.

Okoye and Ezejiofor (2014) examined the impact of the International Financial Reporting Standards (IFRS) on bank stock market performance in order to determine whether investors' expectations are met. The population consists of fourteen Nigerian Stock Exchange-listed banks. The Stratified Random Sampling approach was used, and the annual accounts of these banks were examined for seven years (2006-2012), covering both SAS and IFRS. Findings revealed that most banks were unable to generate adequate interest earnings to pay their interest obligations, leaving investors unsatisfied. As a result, evaluating bank stock market performance can be used to determine whether or not investors' expectations are met. Ozigi, Ridzwana and Zaidi (2017) examined the level of employee disclosure and factors that determine such disclosure. The study covered a six year period of 2010 to 2015 of 253 companies in Malaysia. The study employed two-step system generalized method of moment (GMM) for analysis. The findings revealed a low level of corporate sustainability disclosure on employee in Malaysia. The findings revealed that company size and age are strong determinants of employee disclosure; multiple directorships appeared to be insignificant with employee disclosure. The findings underscored the need for Malaysian Stock Exchange to come up with corporate sustainability disclosure guidelines on employees. Ezejiofor (2018) assessed how much the value relevance of financial information has improved in Nigerian manufacturing enterprises since the implementation of International Financial Reporting Standards (IFRS). The study used an ex-post facto research design. From the manufacturing companies listed on the Nigerian Stock Exchange from 2008 to 2015, a sample of 54 manufacturing companies was chosen at random. The data for the study came from the sampled companies' annual reports and accounts. With the help of SPSS version 20.0, the data was analyzed and validated using regression analysis and the Chow test statistical methods. The adoption of International Financial Reporting Standards (IFRS) has enhanced the book value per share, market share price, earnings per share, and cash flow of manufacturing companies in Nigeria, according to the study. Kamwana and Ombati (2018) investigated the effect of selected board characteristics on financial voluntary disclosure among 54 manufacturing firms listed in Nairobi securities in Exchange from 2009-2016. Exploratory research was adopted. Correlation and regression analysis were used to analyze the data. Results of the study revealed positive and significant relationship between board size, independent directorship, audit committee size, gender board diversity board ownership and financial voluntary disclosure. It was concluded that there is need to incorporate

independent board membership, match board size with company size and fully functional audit committee.

Ofoegbu and Odoemelam (2018) compared the influence of corporate board characteristics on the extent of environmental disclosure quantity of listed firms in two leading emerging economies in Africa, South Africa (integrated reporting framework) and Nigeria (traditional reporting framework). The sample comprised of 303 firms including environmentally sensitive companies purposively selected for content analysis study in South Africa (213) and Nigeria (90) from 2010-2016. The study used both descriptive, multivariate and regression models to comparatively analyze the differences about corporate board characteristics as determinants of the extent of their environmental disclosure quantity. The results revealed a more significant positive association between board characteristics and environmental disclosure in South Africa and less relevant association in Nigeria. Also, the results supported that board independence arrangement may serve as bonding mechanisms in weak reporting environments, suggesting a substitutive relationship between board independence and the regulatory framework.

Masud, Nurunnabi and Bae (2018) examined the effect of corporate governance (CG) elements on environmental sustainability reporting performance (ESRP) in South Asian (SA) countries. The study takes three SA countries (Bangladesh, India, and Pakistan) and 88 listed organizations' sustainability reports during the years 2009-2016 from the Global Reporting Initiative (GRI) database. The study considered a variety of mixed theoretical framework; agency, resource dependency, stakeholder, legitimacy and political cost theories to indicate which ownership (foreign, institutional, director and family) and board characteristics (independence, size, diversity and committee) affect ESRP practices in the world's most environmentally vulnerable region. Empirical results indicated that ESRP has a positive association with foreign and institutional ownership, board independence, and board size. Moreover, the study found director share ownership significantly relates with ESRP. Oraka, Okoye, and Ezejiofor (2019) investigated the relationship between the drivers of Nigerian deposit money banks' financial reporting timeliness. The study looked at the impact of bank size and audit firm type on financial reporting timeliness in Nigeria. The study used an ex-post facto research design. The study's population comprises of sixteen (16) Nigerian Stock Exchange-listed banks. With the help of SPSS version 20.0, regression analysis was used to examine the assumptions. The study found that bank size, bank age, audit firm type, and bank performance all have an impact on financial reporting timeliness in Nigerian banks. Salh (2020) investigated how board characteristics impact the governance, environmental and ethics disclosure. Board characteristics included board size, gender diversity, Board independence, CEO/Chair duality and Board meeting. The research was based on a sample of 82 companies listed in the SBF120 over 2012-2017. Generalized least squares (GLS) model was used to test the panel regressions. It was found that board independence, board gender diversity and board meetings have a positive and significant influence on each Governance, environmental and ethics disclosure. Board size is positively and significantly associated only with corporate environmental disclosure.

In a study of Amahalu (2020), between 2010 and 2019, determine the impact of environmental cost disclosure on the profitability of oil and gas companies listed on the Nigeria Stock Exchange. Eleven (11) publicly traded oil and gas companies were randomly selected. Waste management costs, employee health and safety costs, and environmental remediation costs were used as proxies for environmental cost disclosure, whereas net profit margin was used as profitability metric. The study's hypotheses were tested using content

analysis, as well as Pearson Correlation Coefficient and Panel Least Square (PLS) Regression analysis using STATA 13 statistical software. The findings of this study revealed that, at a 5% level of significance, waste management cost disclosure, employee health and safety cost disclosure, and environmental remediation cost disclosure all have a substantial beneficial effect on net profit margin. Nzekwe, Okoye and Amahalu (2021), from 2008 to 2019, researchers looked at the impact of sustainability reporting on the financial performance of listed industrial goods businesses in Nigeria. From a population of fifteen (15) quoted industrial goods companies in Nigeria, a purposeful sampling technique was used to pick eleven (11) industrial goods companies. This study relied on panel data derived from annual reports and accounts of sample firms for the years 2008 to 2019. The study used an ex-post facto research design. The mean, standard deviation, minimum, and maximum values of the data for the research variables were used to define descriptive statistics of the dataset from the sample firms. The study's hypotheses were tested using inferential statistics such as Pearson correlation coefficient, Panel least square regression analysis, Granger causality test, and Hausman test. At a 5% level, the results demonstrated that environmental reporting, social reporting, and economic reporting all have a significant beneficial effect on cash value added. Nam and Le (2020) examined the association of corporate governance with firm risk-taking and performance in a typical frontier equity market characterized by high ownership concentration and weak investor protection. Using an extensive sample of Vietnamese listed firms from 2012-2018, the study found that there is no relation between ownership concentration and firm profitability, but a non-linear relation between ownership concentration and firm valuation; and that concentrated ownership increases the riskiness of accounting performance; however, there is no evidence of the linkage between concentration and the riskiness of market performance. Agyemang, Yusheng, Ayamba, Twum, Chengpeng and Ali (2020) examined the impact of board characteristics on environmental accounting information disclosure for listed mining companies in China. Using multiple regression analysis with a sample of 34 listed mining companies from both Shanghai and Shenzhen Stock Exchanges covering 2000-2018 periods, the study found a significant positive correlation between board size and Environmental Accounting Disclosure Index (EADI). Alsayegh, Rahman and Homayoun (2020) examined the environmental, social, and governance (ESG) disclosure-corporate sustainability performance (economic, environmental and social; EES) framework. Empirical analysis examined the impact of environmental, social, and governance (ESG) disclosure information disclosure on economic, environmental and social (EES) sustainability performance among Asian firms from 2005 to 2017. The results also showed that environmental performance and social performance are significantly positively related to economic sustainable performance, indicating that the corporation's economic value and creating value for society are interdependent. Angelstig and Gustavsson (2020) used logistic regressions with a sample of the listed firms on NASDAQ Stockholm (small, mid and large cap) at year-end 2013 to determine factors that influence the choice of applying sustainability reporting assurance (SRA) in Sweden. The study focused on the effects of institutional investors and majority owners in order to investigate if ownership structure has an impact on the use of SRA. The findings showed a positive relationship between the probability of using SRA and institutional ownership, indicating that a higher level of institutional ownership increases the likelihood that a firm applies assurance on its CSR report. No statistically significant relation is found between having a majority owner and the decision to apply SRA. Tri and Ismawati (2018) gave empirical evidence about the effect of three disclosure dimensions of Sustainability Reporting (SR) to firm performance using ROA and Tobin's Q. The three dimensions of SR consist of economic dimension, environment dimension, and social dimension. The sample of the study comprised of 60 listed companies in IDX in 2014-2017, in mining and metal and food

processing industries. The sampling method is purposive sampling. The results show two dimensions of SR (economic dimension and social dimension) has an impact on market value (Tobin's Q) but not on book value (ROA). Amahalu, Ezechukwu and Obi (2017) determined the relationship between corporate social responsibility (CSR) and the financial performance of Nigeria's quoted deposit money banks from 2010 to 2016. Ex-post fact research was used in this study. This study's sample size is made up of the fifteen Nigerian deposit money institutions that are publicly traded. E-View 9.0 was used to perform Pearson Coefficient Correlation, Panel Least Square (PLS) regression analysis, and the Granger Causality test. At a 5% level of significance, the analysis discovered a substantial positive link between return on asset, return on equity, market-to-book value, and donations. The data imply that CSR adoption maximizes future earnings for deposit money banks in the long run. The relationship between corporate governance and carbon disclosure procedures of Nigerian listed industrial enterprises was investigated from 2011 to 2020 by Okudo and Amahalu (2021). This research sought to determine the association between ownership concentration, board gender diversity, sustainability committee, and carbon emission disclosure of eighteen (18) Nigerian listed manufacturing enterprises. Ex-post facto research was used in this study. E-View 10.0 statistical software was used to perform Pearson coefficient correlation and Panel Least Square (PLS) regression analysis. The study discovered that at a 5% level of significance, ownership concentration, board gender diversity, and sustainability committee have a substantial beneficial link with carbon emission disclosure of listed manufacturing enterprises in Nigeria. Orazalin and Mahmood (2019) investigated determinants of sustainability performance disclosures reported by publicly traded companies in Kazakhstan by using the Global Reporting Initiative (GRI) framework. The study analyzed data from publicly traded companies at the Kazakhstani Stock Exchange for the years 2013-2015. The results indicated that determinants such as stand-alone reporting, reporting language, firm profitability, firm size and auditor type substantially influence the extent, nature and quality of sustainability-reporting practices of Kazakhstani companies. Najul (2019) examined the relationship between corporate sustainability reporting and firms profitability of Indian and South Korean companies. For calculating the disclosure score of sustainability performance, content analysis technique was employed based on the reporting format of Global Reporting Initiatives. The study sample consisted of 28 listed non-financial firms from India and 26 listed non-financial firms from South Korea over a period of 6 years (2010–2015). Using the disclosure scores, regression analysis was used to examine the association between sustainability reporting/performance and firm performance. The regression results indicated that, for South Korean firms, the association is positive and significant. However, in Indian context, the impact of sustainability performance is negative. Further, the relative impact of sustainability reporting is found to be significantly more in South Korea as compared with India. Nam and Le (2020) examined the association of corporate governance with firm risk-taking and performance in a typical frontier equity market characterized by high ownership concentration and weak investor protection. Using an extensive sample of Vietnamese listed firms from 2012-2018, the study found that there is no relation between ownership concentration and firm profitability, but a non-linear relation between ownership concentration and firm valuation; and that concentrated ownership increases the riskiness of accounting performance; however, there is no evidence of the linkage between concentration and the riskiness of market performance. Yang, Wen and Li (2020) used the difference-in-differences (DID) model and the propensity score matching (PSM) method to investigate whether the Environmental Information Disclosure Measure (for Trial Implementation; EIDMT) affects the firm value based on a panel dataset composed of the listed manufacturing firms in China during 2006–2016. The results showed that EIDMT exerted a significant impact on the listed manufacturing firms' value. In consideration of the firm's ownership,

EIDMT played a more important role in the firm value of non-state-owned firms than state-owned firms. Furthermore, using a PSM–DID model for eastern, central, and western China, the study found that EIDMT significantly affected the firm value in eastern and western China but has little impact on central China. Festus, Rufus and Janet (2020) examined the effect of sustainability reporting on turnover growth of quoted companies in Nigeria. The study adopted an ex-post facto research design with 167 listed firms as the population. 28 quoted firms were chosen with the use of purposive sampling. Data from 2009 to 2018 were obtained from secondary sources. Content analysis was employed as a tool to analyze the disclosures in sustainability reports. The model was estimated using Pooled OLS (multivariate regression). Company age and financial leverage were used as control variables. The study found that the compliance level of the sampled firms with sustainability reporting requirements for the four dimensions are below average, however, sustainability reporting has a significant effect on turnover growth with Prob. (F-stat) of $0.0463 < 0.05$. Therefore, the study recommended that management of firms should intensity efforts to ensure maximum compliance with GRI sustainability guidelines. Mohamad, Rahayu, Kaujan and Irwandi (2020) examined the effect of environmental performance on firm value with environmental disclosure as a mediation variable. Sample of research is non-financial companies at the Indonesia Stock Exchange that have followed the Environmental Performance Assessment Program (PROPER) held by the Ministry of Life Environment and Forestry from 2011-2018. The data analysis method is Structural Equation Modeling-Partial Least Square (SEM-PLS), and the analysis operation was facilitated by the software of Warp PLS 6.0. The result of analysis found that environmental performance has a positive effect on firm value and environmental disclosure. Other result showed that environmental disclosure does not affect firm value and does not mediate the effect of environmental performance on firm value. Adegbe, Akintoye and Taiwo (2020) examined the effect of sustainability reporting on turnover growth of quoted companies in Nigeria. The study adopted an ex-post facto research design with 167 listed firms as the population. 28 quoted firms were chosen with the use of purposive sampling. Data from 2009 to 2018 were obtained from secondary sources. Content analysis was employed as a tool to analyse the disclosures in sustainability reports. The model was estimated using Pooled OLS (multivariate regression). Company age and financial leverage were used as control variables. The study found that the compliance level of the sampled firms with sustainability reporting requirements for the four dimensions are below average, however, sustainability reporting has a significant effect on turnover growth with Prob. (F-stat) of $0.0463 < 0.05$. Oncioiu, Petrescu, Bilcan, Petrescu, Popescu and Anghel (2020) identified the accessibility of corporate sustainability reporting instruments for Romanian managers and their role in increasing the financial performance of organizations from 2009-2018. The study concluded that corporate social reporting indicators can be integrated into the reporting of the financial performance of a company and can transform sustainability into tangible value for all interested parties. Omaliko, Nweze and Nwadiakor (2020) investigated the effect of social and environmental disclosures on performance of non financial firms in Nigeria. In order to determine the relationship between social and environmental disclosures and firms performance, some key proxy variables were used in the study, namely corporate social responsibility disclosure and environmental disclosure; firms' performance is however represented by net asset per share (NAPS). Two hypotheses were formulated to guide the investigation and the statistical test of parameter estimates was conducted using panel regression model. The research design used is Ex Post Facto design and data for the study were obtained from the NSE Factbook and published annual financial reports of the entire 112 non financial firms quoted on NSE with data spanning from 2011-2018. The findings generally indicated that corporate social and environmental disclosures have significantly influenced firms' performance at 5% significant level. The study

concluded that social and environmental disclosures have positively improved firms performance over the years. The study however suggested that firms should have positive disposition towards social and environmental friendly practices and also disclose more of these information in their annual reports as the level of these information disclosures have exerted significant influence on firms' performance. Hidayah, Nugroho and Prihanto (2021) examined the determinant factors of sustainability report, including environmental, employee shareholder pressures and board of commissioners in Indonesia. Analysis of data in the study was done using multiple regression models, supported by secondary data and purposive sampling with the criteria of companies that publish sustainability reports in Indonesia from 2008-2019. The research indicated that environmental and shareholder pressures affect the quality of the sustainability report. Pressure from employees and the board of commissioners did not affect the sustainability report. Further, ROA was proved not to moderate the influence of environmental pressures, shareholders, employees, and commissioners on the sustainability report's quality.

Methodology

Research Design

This study achieved its objectives by employing *ex-post facto* research design. This is because *ex-post facto* research design involves repeated observations of the same units (companies in this study) over a period of time (2010 to 2020). *Ex-post facto* research design also seeks to determine the cause-effect relationship between the dependent and independent variables of the study. This study also employed content analysis. Content analysis is a method of research that applies methodological procedures to analyze the content of the written medium and convert it into quantitative measures ((Bouten, Everaert, Van-Liedekerke, De-Moor & Christiaens, 2011).

Population and Sample Size and Sampling Method

Eighteen (18) listed Oil and Gas companies were selected as the sample size of this study with the utilization of purposive sampling method. Data were gathered from the published financial statements of seven (7) listed most capitalized Oil and Gas companies in Nigeria: Conoil Plc; Eterna Plc; MRS Oil Nigeria Plc; Oando Plc; Rak Unity Petroleum Company Plc; Seplat Petroleum Development Company Plc; Total Nigeria Plc and seven (7) listed most capitalized Oil and Gas firms in South Africa: Engen Petroleum; Imvume; Montuak Energy; PetroSA; Sasol; Total South Africa; Transnet Pipelines for eleven (11) years period spanning from 2010-2020, using Purposive sampling method. The sample of the study also consists of all companies that meet the following conditions: the shares of the company shall be traded in the financial market during the study period; the company has all the necessary data to calculate the variables of the study.

Primarily, this study would make use of secondary data. The data would be sourced from publications of the Nigerian stock exchange (NSE) and Johannesburg Stock Exchange (JSE), Fact Books for various years, Annual Report and Accounts, and websites of the respective sampled listed Oil and Gas companies, particularly the Comprehensive Income Statement and Statement of Financial Positions of these companies as well as their respective notes to the accounts and standalone sustainability report from 2010-2020.

Model Specification

This study adapted the model of Grigorescu, Maer-Matei, Mocanu and Zamfir (2020):

$$SRlit = \theta_i + \lambda_1 BODCit + \lambda_2 LEV_{it} + \lambda_3 FSE_{it} + \lambda_4 PROF_{it} + \rho_{it}$$

Where:

θ : constant

λ : coefficient variable

ρ : error term

SRI = Sustainability Reporting Indicator

BODC: Board Committee on Sustainability,

Leverage = LEV

FSE = Frequency of Stakeholder Engagement

Profitability = PROF

Thus, the resultant linear regression models of this study are:

$$\begin{aligned} \text{SSR}_{it} &= \beta_0 + \beta_1 \text{OWNS}_{it} + \beta_2 \text{CTR}_{it} + \beta_3 \text{FSZ}_{it} + \mu_{it} & - & - & - & \text{i} \\ \text{SSR}_{it} &= \beta_0 + \beta_1 \text{ROE}_{it} + \beta_2 \text{CTR}_{it} + \beta_3 \text{FSZ}_{it} + \mu_{it} & - & - & - & \text{ii} \end{aligned}$$

Where:

SSR_{it} = Social Sustainability Reporting of firm i in period t

OWNS_{it} = Ownership Structure of firm i in period t

ROE_{it} = Return on Equity of firm i in period t

CTR_{it} = Capital Turnover Ratio of firm i in period t

FSZ_{it} = Firm Size of firm i in period t

$\mu_{i,t}$ = component of unobserved error term of firm i in period t

β_0 = constant term

β_1, β_2 and β_3 = are slopes to be estimated of firm i in period t .

i = firm identifier (14 firms)

t = time variable (2010, 2011,2020) – (Eleven Years)

Method of Data Analysis

This current study is based on panel data. The study combined data of sampled Oil and Gas companies' cross-section for a period of time series, where the data were composed of a set of indicators for 14 listed Oil and Gas companies in Nigeria and South Africa, and eleven (11) year period from 2010 to 2020.

The inferential data analysis which entails the use of statistical tools to test the hypotheses was equally employed:

- i. Pearson Correlation Analysis: is a good measure of relationship between two variables, tells us about the strength of relationship and the direction of relationship as well.
- ii. Panel least square (PLS) regression analysis: was used to predict the effect of the independent variable on the dependent variable.

Decision Rule

Accept Null hypothesis (H_0) if the P-value of the test is greater than 0.05, otherwise reject, and accept the alternate hypothesis (H_1).

Analysis of Data

Table 1: Pearson Correlation Matrix (Nigeria)

	SSR	OWNS	ROE	CTR	FSZ
SSR	1.0000				
OWNS	-0.1381	1.0000			
ROE	0.1024	0.5716	1.0000		
CTR	-0.1084	-0.5744	-0.7107	1.0000	
FSZ	0.4726	-0.1507	-0.6011	0.0805	1.0000

Source: E-Views 10.0 Correlation Output, 2021

The Pearson correlation Matrix in table 1 shows that there is a positive relationship between ROE, FSZ and SSR at coefficient factors of 0.1024 and 0.4726 respectively, while a negative relationship exist between OWNS (-0.1381), CTR (-0.1084) and SSR.

Table 2: Pearson Correlation Matrix (South Africa)

	SSR	OWNS	ROE	CTR	FSZ
SSR	1.0000				
OWNS	0.6461	1.0000			
ROE	0.6297	0.6649	1.0000		
CTR	-0.6055	-0.6159	-0.5655	1.0000	
FSZ	0.1529	0.4869	0.2433	-0.3852	1.0000

Source: E-Views 10.0 Correlation Output, 2021

The Pearson Correlation Matrix in table 2 shows that there is a negative relationship between CTR and SSR at coefficient factors of -0.6055, while a positive relationship exists between OWNS (0.6461), ROE (0.6297),FSZ (0.1529) and SSR.

Test of Hypotheses

Hypothesis One

Ho₁: Ownership Structure has no significant effect on Social Sustainability Reporting of listed Oil and Gas firms in Nigeria and South Africa.

Table 3 Panel Least Square Regression Analysis on effect of Ownership Structure on Social Sustainability Reporting (Nigeria)

Dependent Variable: SSR
 Method: Panel Least Squares
 Date: 06/30/21 Time: 06:36
 Sample: 2010 2020
 Periods included: 11
 Cross-sections included: 7
 Total panel (balanced) observations: 77

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.742427	0.466934	3.731638	0.0003
OWNS	-0.103122	0.113612	-2.024146	0.0452
CTR	0.198274	0.143915	1.377716	0.1709
FSZ	-0.142259	0.047141	-3.017703	0.0031
R-squared	0.310057	Mean dependent var		0.360627
Adjusted R-squared	0.287238	S.D. dependent var		0.252160
S.E. of regression	0.240910	Akaike info cri*terion		0.023716
Sum squared resid	6.790429	Schwarz criterion		0.116139
Log likelihood	2.565162	Hannan-Quinn criter.		0.061253
F-statistic	4.823012	Durbin-Watson stat		1.819128
Prob(F-statistic)	0.003344			

Source: E-Views 10.0 Regression Output, 2021

Table 4: Panel Least Square Regression Analysis on effect of Ownership Structure on Social Sustainability Reporting (South Africa)

Dependent Variable: SSR
 Method: Panel Least Squares
 Date: 06/30/21 Time: 09:48
 Sample: 2010 2020
 Periods included: 11
 Cross-sections included: 7
 Total panel (balanced) observations: 77

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1.421937	0.556745	-2.554020	0.0127
OWNS	0.043132	0.161434	3.445366	0.0010
CTR	-0.004139	0.006248	-0.662443	0.5098
FSZ	0.183979	0.055773	3.298700	0.0015
R-squared	0.540022	Mean dependent var		0.358133
Adjusted R-squared	0.514680	S.D. dependent var		0.278203
S.E. of regression	0.263239	Akaike info criterion		0.219042
Sum squared resid	5.058521	Schwarz criterion		0.340798
Log likelihood	-4.433112	Hannan-Quinn criter.		0.267743
F-statistic	4.961963	Durbin-Watson stat		1.735527
Prob(F-statistic)	0.001270			

Source: E-Views 10.0 Regression Output, 2021

Interpretation of Regression Results

Table 3 (regression model analysis for Nigeria) shows that 28.7% variations in Social Sustainability Reporting (SSR) practices in Nigeria were explained by the independent variables OWNS, CTR and FSZ (adjusted R-square was 0.287238). This is completely different in South Africa where OWNS, CTR and FSZ as observed in Table 4 explained 51.5% of the variations in Social Sustainability Reporting practices in South Africa (adjusted R-square was 0.514680).

Moreso and unlike in South Africa where OWNS made a strong, positive and statistically significant predictive contribution (*t-statistics 3.445366 and p-value 0.0010 which is less than 0.05*) in explaining Social Sustainability Reporting practices, the situation in Nigeria as in Table 3 indicates that t-statistics was -2.024146 while p-value stood at 0.0452. This implies that Ownership Structure (OWNS) of sampled Oil and Gas firms in Nigeria though statistically significant in predicting Social Sustainability Reporting (SSR) practices, maintained a negative trend in doing so.

On the other hand, Firm Size (FSZ) made a statistically significant but negative contribution in OWNS' explanation of SSR practices in Nigeria (p-value 0.0031 is less than 0.05 and t-statistics -3.017703), though it (FSZ) made a statistical significant and positive contribution in OWNS explanation of Social Sustainability Reporting (SSR) practices of sampled Oil and Gas companies in South Africa *t-statistics of 3.298700 and p-value of 0.0015 which is less than 0.05 standard significant level*).

Capital Turnover Ratio (CTR) contributions to OWNS explanation of Social Sustainability Reporting (SSR) in Nigeria peaked at t-statistics 1.377716 and p-value 0.1709 thereby indicating strong, positive but statistically insignificant contributions. The situation in South Africa however revealed a strong but negative and statistically insignificant contributions by CTR (t-statistics -0.662443 and p-value 0.5098 which is greater than 0.05). The implication is

that the contributions made by CTR to OWNS in explaining SSR practices in Nigeria and South Africa are statistically insignificant.

Deducing further from Table 3, the value of β_1 (OWNS) is 0.103122 which shows that 1% increase in OWNS will cause SSR to reduce by 10%; 1% increase in CTR (β_2) will positively lead to 19.8% increase in SSR. Also, 1% increase in FSZ will negatively exert 14.2% decrease in SSR. But in South Africa, Table 4 reveals that the coefficient value of β_1 (OWNS) is 0.043132 which shows that 1% increase in OWNS will cause SSR to increase by 4%; 1% increase in CTR (β_2) will inversely lead to 0.4% decrease in SSR. Also, 1% increase in FSZ will negatively exert 18.40% decrease in SSR.

Looking at the Durbin Watson for Nigeria and South Africa as in Tables 3 and 4 which lay great emphasis on the auto correlation among the study variables, it was discovered that the values of 1.819128 and 1.735527 which are less than 2, provide evidence of no auto-correlation among the variables in both countries studied. Also, the value of F-statistic for Nigeria and South that equal 4.823012 and 4.961963 respectively with associated P-values of 0.003344 and 0.001270, readily attests to the fact that the overall model for Nigeria and South Africa is a good fit.

Decision

Accept null hypothesis if p-value is greater than 0.05, otherwise reject and accept the alternate hypothesis. Since the Probability values (p-value) for Nigeria and South Africa (0.003344 and 0.001270 respectively) is significant and less than 0.05 at 5% level of significance, the alternate hypothesis is accepted and this means that *Ownership Structure has significant effect on Social Sustainability Reporting of listed Oil and Gas firms in Nigeria and South Africa.*

Hypothesis Two

Ho₂: Profitability has no significant effect on Social Sustainability Reporting of listed Oil and Gas firms in Nigeria and South Africa.

Table 5: Panel Least Square Regression Analysis on effect of Profitability (measured by ROE) on Social Sustainability Reporting (Nigeria)

Dependent Variable: SSR

Method: Panel Least Squares

Date: 06/30/21 Time: 06:50

Sample: 2010 2020

Periods included: 11

Cross-sections included: 7

Total panel (balanced) observations: 77

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.434602	0.495925	1.281980	0.2024
ROE	0.051194	0.039934	2.892782	0.0046
CTR	0.316372	0.150292	2.105047	0.0374
FSZ	-0.123282	0.048968	-2.517620	0.0132
R-squared	0.316205	Mean dependent var		0.360627
Adjusted R-squared	0.293543	S.D. dependent var		0.252160
S.E. of regression	0.240077	Akaike info criterion		0.016784
Sum squared resid	6.743519	Schwarz criterion		0.109207
Log likelihood	2.984558	Hannan-Quinn criter.		0.054321
F-statistic	5.127856	Durbin-Watson stat		1.815810
Prob(F-statistic)	0.002283			

Source: E-Views 10.0 Regression Output, 2021

Table 6: Panel Least Square Regression Analysis on effect of Profitability (measured by ROE) on Social Sustainability Reporting (South Africa)

Dependent Variable: SSR
 Method: Panel Least Squares
 Date: 06/30/21 Time: 09:59
 Sample: 2010 2020
 Periods included: 11
 Cross-sections included: 7
 Total panel (balanced) observations: 77

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1.411895	0.512601	-2.754374	0.0074
ROE	0.052155	0.051772	3.353322	0.0013
CTR	-0.003541	0.006217	-0.569662	0.5707
FSZ	0.179996	0.053035	3.393902	0.0011
R-squared	0.650984	Mean dependent var		0.358133
Adjusted R-squared	0.616093	S.D. dependent var		0.278203
S.E. of regression	0.261556	Akaike info criterion		0.206213
Sum squared resid	4.994040	Schwarz criterion		0.327969
Log likelihood	-3.939202	Hannan-Quinn criter.		0.254914
F-statistic	4.327297	Durbin-Watson stat		1.725793
Prob(F-statistic)	0.007285			

Source: E-Views 10.0 Regression Output, 2021

Interpretation of Regression Results

Table 5 (regression model analysis for Nigeria) shows that 29.4% variations in Social Sustainability Reporting (SSR) practices in Nigeria were explained by the independent variables ROE, CTR and FSZ (adjusted R-square was 0.29354). This is completely different in South Africa where ROE, CTR and FSZ as observed in Table 6 explained 61.6% of the variations in Social Sustainability Reporting practices in South Africa (adjusted R-square was 0.61609).

Moreso, Tables 5 and 6 show that ROE made a strong, positive and statistically significant predictive contribution in explaining Social Sustainability Reporting practices in Nigeria and South Africa (*t-statistics 2.892782, p-value 0.0046 for Nigeria and t-statistics 3.353322, p-value 0.0013 for South Africa*). This implies that Return on Equity (ROE) of sampled Oil and Gas firms in Nigeria and South Africa is statistically significant in predicting Social Sustainability Reporting (SSR) practices in both countries.

On the other hand, Firm Size (FSZ) made a statistically significant but negative contribution in ROE's explanation of SSR practices in Nigeria (*p-value 0.0132 is less than 0.05 and t-statistics -2.517620*), though it (FSZ) made a statistical significant and positive contribution in ROE's explanation of Social Sustainability Reporting (SSR) practices of sampled Oil and Gas companies in South Africa (*t-statistics of 3.393902 and p-value of 0.0011 which is less than 0.05 standard significant level*).

Capital Turnover Ratio (CTR) contributions to ROE's explanation of Social Sustainability Reporting (SSR) in Nigeria peaked at *t-statistics 2.105047 and p-value 0.0374* thereby indicating a state of strong, positive and statistically significant contributions. The situation in South Africa however revealed a strong but negative and statistically insignificant contributions by CTR (*t-statistics -0.569662 and p-value 0.5707 which is greater than 0.05*).

The implication is that the contributions made by CTR to ROE in explaining SSR practices in Nigeria and South Africa are statistically differed in terms of significance.

Deducing further from Table 5, for there to be a unit increase in SSR in Nigeria, there must be 0.051194 and 0.316372 multiplying effect increase of ROE and CTR, while FSZ would decrease by 0.123282 units. But the situation appears so different in South Africa as for there to be a unit increase in SSR, there must be 0.052155 and 0.179996 multiplying effect increase of ROE and FSZ, while CTR would decrease by 0.003541 units.

Looking at the Durbin Watson for Nigeria and South Africa as in Tables 5 and 6 which lay great emphasis on the auto correlation among the study variables, it was discovered that the values of 1.815810 and 1.725793 which are both less than 2, provide evidence of no auto-correlation among the variables in both countries studied, also, the value of F-statistic for Nigeria and South that equal 5.127856 and 4.327297 respectively with associated P-values of 0.002283 and 0.007285, readily attests to the fact that the overall model for Nigeria and South Africa is a good fit.

Decision

Accept null hypothesis if p-value is greater than 0.05, otherwise reject and accept the alternate hypothesis. Since the Probability values (p-value) for Nigeria and South Africa (0.002283 and 0.007285 respectively) is statistically significant and less than 0.05 at 5% level of significance, the alternate hypothesis is accepted and this means that *Profitability as measured by Return on Equity has significant effect on Social Sustainability Reporting of listed Oil and Gas firms in Nigeria and South Africa.*

Discussion of Results and Recommendations

The regression model for Nigeria shows that there is a significant negative relationship between OWNS ($\beta_1 = -0.103122$), FSZ ($\beta_3 = -0.142259$) and SSR. On the other hand, CTR ($\beta_2 = 0.198274$) has a significant positive relationship with SSR. The value of β_1 (OWNS) is 0.103122 which shows that 1% increase in OWNS will cause SSR to reduce by 10%; 1% increase in CTR (β_2) will positively lead to 19.8% increase in SSR. Also, 1% increase in FSZ will negatively exert 14.2% decrease in SSR. The value of the t-statistic = -2.024146, 1.377716 and -3.017703 for β_1 , β_2 , and β_3 respectively. The adjusted R^2 is 0.287238 which shows that 28.72% variation in SSR is explained by the explanatory variables OWNS, CTR and FSZ). The value of Durbin Watson is 1.819128 which shows that problem of auto-correlation does not exist. Value of F-statistic equals 4.823012 with an associated P-value of 0.003344 shows that overall model is good fit.

On the other hand, the outcome in South Africa reveals that there is a significant positive relationship between OWNS ($\beta_1 = 0.043132$), FSZ ($\beta_3 = 0.183979$) and SSR. On the other hand, CTR ($\beta_2 = -0.004139$) has a significant negative relationship with SSR. The coefficient value of β_1 (OWNS) is 0.043132 which shows that 1% increase in OWNS will cause SSR to increase by 4%; 1% increase in CTR (β_2) will inversely lead to 0.4% decrease in SSR. Also, 1% increase in FSZ will negatively exert 18.40% decrease in SSR. The adjusted R^2 is 0.514680 which shows that 51.47% variation in SSR is explained by the explanatory variables (OWNS, CTR and FSZ).

In hypothesis two, the regressed coefficient result for Nigeria shows that Profitability (measured by ROE) ($\beta_1 = 0.051194$) and CTR ($\beta_2 = 0.316372$) have positive statistically significant association with SSR at 5%. On the other hand, a negative but however, statistically significant relationship exists between FSZ and SSR at 5% level of significance.

The overall significance of the model; Prob > F-statistic (0.002283) is statistically significant at 5%. This however appear to differ from the results obtained in South Africa which shows that Profitability (measured by ROE) ($\beta_1=0.052155$) and FSZ ($\beta_3=0.179996$) have positive statistically significant association with SSR at 5%. On the other hand, a negative but however, statistically significant relationship exists between CTR ($\beta_2=-0.003541$) and SSR at 5% level of significance. The overall significance of the model; Prob > F-statistic (0.007285) is statistically significant at 5%.

Recommendations

Based on the findings of this study, the following were suggested:

1. Corporate governance measures should be employed to make management of Oil and Gas firms take more responsibilities for Social Sustainability Reporting through effective monitoring and control of Oil firms' activities in host communities. This will readily help promote environmental sustainability reporting by supporting long term environmental initiatives and providing suggestions and directions based on expertise and experience.
2. The positive correlation between profitability and corporate reporting level results should encourage firms to engage more in corporate social sustainability responsibility and report these activities objectively and transparently.

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