

EFFECT OF SUSTAINABILITY REPORTING ON PERFORMANCE OF QUOTED AGRICULTURAL FIRMS IN NIGERIA

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Abstract

The study examined the effect of sustainability reporting on the performance of quoted Agricultural firms in Nigeria. Ex-post facto research design was adopted. Population comprised all the quoted Agricultural firms in the Nigerian Exchange Group. The study covered a period of 10 years from 2012 to 2021. Secondary data collected from the Nigerian Exchange Group fact book and the audited annual reports and accounts of the sampled firms were used. Data analysis was done using descriptive statistics and the formulated hypotheses were tested using multivariate regression analysis with the aid of STATA version 14. Findings showed that environmental reporting [coef. = 13.893 (0.654)], [coef. = 0.099 (0.807)] has an insignificant positive effect on firm performance proxy as Return on Assets (ROA) and Economic Value Added (EVA) respectively. However, environmental reporting [coef. = -3.357 (0.000)] has a significant negative effect on firm performance when proxy as Tobin Q (TBQ). Social reporting [coef. = -42.947 (0.006)], [coef. = -0.551 (0.002)], [coef. = -69.146 (0.000)] has a significant negative effect on firm performance when proxy in terms of ROA, EVA and TBQ respectively. The study concluded that environmental reporting significantly decreases Tobin Q but insignificantly improves ROA and EVA of listed agricultural firms in Nigeria during the period under study. Furthermore, social reporting significantly decreases ROA, EVA and TBQ of listed agricultural firms in Nigeria during the period under study. The study recommended among others that the cost of environmental disclosure should be minimized as the study shows it is reducing the performance of the firms under study.

Keywords: Environmental Reporting, Social Reporting, Economic Reporting, Governance Reporting

1. Introduction

Sustainability has gained popularity recently among businesses because firms have seen the need to create values in the long term. It is no longer the issue of maximizing profits or creating shareholders' wealth alone but business considerations are extended on environmental, social and governance issues that concern the business. The sustainability impacts of businesses are reflected in their sustainability reporting. Thus, sustainability reporting is the means through which businesses disclose their sustainability practices in their annual reports. However, some Nigerian firms are yet to imbibe sustainability reporting in their business practices due to lack of regulated guideline yet in place.

Sustainability is not limited to the Nigerian context but it is a matter of global concern which drew the attention of the United Nations as the earth and its environment need to be protected. The earth's resources must not be exhausted, so that the generations to come must have the resources to be used in providing their own needs. In the Brundtland conference held in 1987, the United Nations developed/introduced 17 Sustainable Development Goals (SDGs) in the pursuit of sustainable development globally. Thus the idea of sustainability reporting emerged from sustainable development. Sustainability reporting is not too different from other non-

financial reporting for example triple bottom line reporting, corporate social responsibility reporting and so on (Ohaka& Obi, 2021, Asaolu, Agboola, Ayoola & Salawu, 2011).

In pursuing this sustainability, investors and other stakeholders desire that businesses should disclose their economic, social, governance and environmental concerns in their corporate reporting as it has been discovered that these concerns help businesses to be more sustainable and the interest of the corporate stakeholders is on the continual existence of their organizations in the foreseeable future as well as creation of long-term value (Agbata, Eze & Uchegbu, 2021). This is important as sustainability reporting helps to increase the comprehension of business risks and opportunities. It portrays the association between financial and non-financial performance of firms. It affects the strategies, policies, in addition to plans made by the managers for their organizations. It simplifies processes, reduces costs and improves efficiency (Gaurav & Ashu, 2021). It also helps businesses to compare performance within the business, and with firms within the same industry. Sustainability reporting also helps in reducing adverse environmental, social and governance effects improves corporate repute and trade name fidelity and as well improve the performance of the companies. It shows how companies are moving in the direction of sustainable development. Through sustainable reporting, the stakeholders understand the actual worth of businesses, among others (Gaurav & Ashu, 2021).

Even though that sustainability reporting is considered important globally, not all the countries of the world have adopted it in their reporting framework. According to the study by Carrots and Sticks (2016), about 64 nations which including United Kingdom, United States of America, European Union, China, India etc. have made sustainability reporting compulsory in their corporate reporting. However, Nigeria is not among these 64 nations as it is yet to mandate it and provide a guideline which businesses especially listed firms are to follow. The industrial activities of firms' affect people, the society and the environment. They are greatly affected by the waste disposal and oil spillage which affects land and water, air pollution, and so on. In other words, it poses challenges/threats to the society and the environment. In moving in line with the goals of sustainable development, businesses need to see that these challenges posed by their operations are properly dealt with. As they tackle the challenges, it is expected of them to disclose their efforts in form of reports for their stakeholders to see. Their remedial and protective actions disclosed in form of sustainable reporting have been observed to sustain businesses and also bring long term benefits/values to the businesses. Firm sustainability has to do with the Environmental, Social, Governance and Economic activities of businesses. However, most studies considers/focuses on the Environmental, Social and Economic aspects thereby neglecting the Governance aspect which is a very important aspect of firm sustainability reporting. Some of these studies are Ikor, et al (2022); Gaurav & Ashu, (2021); Amadiogwu, (2021); Ohaka& Obi, (2021); Ighosewe (2021); Umar, Mustapha & Yahaya, (2021); Nzekwe Okoye & Amahalu, (2021); Agbata, Eze & Uchegbu, (2021); Syder, Ogbonna & Akani, (2020); Syder & Ogbonna, (2020); Ofoegbu & Asogwa, (2020); Giron, et al (2020); Madaleno& Vieira, (2020); Mutalib, Iriabije, Okon and Odumegwu (2020); and others.

Even though studies on sustainability reporting have gained wide coverage in research especially in some sectors such as Banking, Oil and Gas, Breweries, Consumer goods, Industrial goods, and so on. The situation of sustainability reporting in some other sectors cannot be established because researchers have not explored the situation of sustainability reporting in these sectors. Some of these sectors in Nigeria are Agricultural sector, Insurance sector, Information and technology sector. Among these, the Agricultural sector has dearth of empirical studies more than the others as to the best of our knowledge. The study addressed the following specific objectives:

- i. Determine the effect of Environmental Reporting on the performance of quoted Agricultural firms in Nigeria.

- ii. Examine the effect of Social Reporting on the performance of quoted Agricultural firms in Nigeria.
- iii. Ascertain the effect of Governance Reporting on the performance of quoted Agricultural firms in Nigeria.
- iv. Find out the effect of Economic Reporting on the performance of quoted Agricultural firms in Nigeria.

1.0 Research Hypotheses

The study established four hypotheses in line with the objectives which are presented in their null forms as follows

H0₁: The effect of Environmental Reporting on the performance of quoted Agricultural firms in Nigeria is not significant.

H0₂: The effect of Social Reporting on the performance of quoted Agricultural firms in Nigeria is not significant.

H0₃: The effect of Governance Reporting on the performance of quoted Agricultural firms in Nigeria is not significant.

H0₄: The effect of Economic Reporting on the performance of quoted Agricultural firms in Nigeria is not significant.

2.1 Conceptual Review

2.1.1 Sustainability Reporting- Sustainability reporting is the disclosure and reporting of environmental, social and governance (ESG) goals in addition to firms' advancement in the direction of such goals (Boston College Center for corporate citizenship, 2022). According to Sampson (2021), sustainability reporting also known as non-financial reporting is non similar to financial reporting or firms' annual reports but a report on the non-financial condition such as environmental, social and governance which relate to sustainable developments. Croner-i (2022) states that sustainability reporting includes environmental performance reporting as well as other wider facet of a company activities such as social, economic and governance performance. Sustainability reporting is the means through which a firm communicates its performance and impact of its environmental, social and governance practices/activities to its stakeholders. It ensures transparency on the business risks and opportunities, thus every stakeholder can view performance further than the profitability (EcoVaadis, ND). Sustainability reporting is a component of non-financial risk report form where companies make visible their environmental and social activities as well as list precautionary actions which they will use in reducing medium and long-lasting risks (Sphera, 2020). Sustainability reporting according to Internal Finance Corporation (ND), is the practice of communicating he environmental, social, economic and governance performance of companies to their stakeholders involving the customers, partners, employees, financiers, shareholders, associations, community, press, NGOs, government and suppliers. The Guideline of Global Reporting Initiative –GRI (2016) defines sustainability reporting as the practice that measures, discloses and makes a company accountable to its shareholders and other stakeholders for their performance in the direction of achieving the Sustainable Development Goals.

2.1.2 Environmental reporting- is the reporting of the environmental performance of companies (Croner-I, 2022). Similarly, Eiti (2021) defines environmental reporting as the disclosure of information on how the environmental impacts of the extractive firms are managed and monitored. Gray (2005) defines environmental reporting as the activity of

preparing, presenting and communicating information on companies' dealings with the earth. Environmental reporting is a reporting that combines with social, and governance reporting in producing a single report known as ESG report (ACCA, 2012). In the Nigerian context, government made several efforts in protecting the environment through some legislations, some of which are; the Environmental Impact Assessment (EIA) Act (Cap E12 LFN 2004) which establishes an all-purpose standard, processes and techniques for assessing the impact of the environment on all the segments (Sodipo, Omofuma & Nwachi, 2023). The Harmful Waste (Special Criminal Provisions etc.) Act (Cap H1 LFN 2004) is also an environmental law in Nigeria. Its provisions ensure that harmful wastes are not carried, deposited or dumped on the land, and regional water. (Sodipo, Omofuma & Nwachi, 2023). The National Environmental Standards and Regulations Enforcement Agency (Establishment) Act 2007 (NESREA) is also one of the regulatory agencies on environment in Nigeria. The agency uses preventative actions in securing compliance with pertinent statutory requirements and licensing provisions however, it uses its enforcement power in situations of no voluntary compliance (Sodipo, Omofuma & Nwachi, 2023).

2.1.3 Social reporting- is the reporting of some important, describable sphere of organization activities which have social impacts. It is also the measuring and reporting of internally or externally information which concerns the impacts of company activities on the society. The aim of this reporting is to measure the positive and negative impacts of business activities on the firm as well as on affected people (Kaur, ND). Social reporting is an account of the social profile of companies which helps them to provide a pane on how they perceive their social risks and opportunities in the situation of their business practices. It involves measurement, describes performance and is a recurring process (Boston College Center for Corporate Citizenship, ND). Social reporting is also defined by Mishra (2014) as the measuring and reporting of the social performance of companies. It shows the impact of company activities on the society.

2.1.4 Corporate governance report- also known as annual corporate report is a statement of corporate governance process and compliance, information on board composition, statements on performance of companies, information about compliance and conformance with best practices for good corporate governance. The report includes a statement of disclosure of the companies' governance procedures and compliance. It discloses the principles and codes which guides procedures of companies. Disclosure statements often show how powers are distributed between chairman of the board and the Chief Executive Officer (Nicholas, 2022). Governance reporting is a managerial tool that assists those in governance level in gain the support of the highest level of executives for their programs (Gartner Research, 2010). Governance report is a report that provides in-depth account of the development of companies on specific conformity initiatives or efforts (Diligent, 2019).

2.1.5 Economic reporting- is a report that provides quantifiable evidence of companies' positive economic impacts on their stakeholders. The report focuses on the economic aspects (Chase, 2021). The economic dimension of sustainability focuses on companies' impacts on the economic condition of the stakeholders as well as economic scheme at local, national and international levels. GRI 201 focuses on the economic performance which comprises the economic value generated and distributed by firms, the firms' defined benefit plan obligations, financial assistance from government and the financial implications of climate change. (GRI – 201, 2016).

Figure 2.1: Conceptual Framework of the Study Variables



2.2 Theoretical Framework

The study was anchored on stakeholders' theory. The reason for anchoring it on Stakeholders' theory as its main theory is because stakeholders' theory seeks for the best interest of all the corporate stakeholders and as the stakeholders demand that their organizations should be practicing sustainability activities and should disclose these in their sustainability reporting, these are also geared towards the best interest of all the corporate stakeholders.

2.2.1 Stakeholders' Theory- The stakeholders' theory was propounded by Richard Edward Freeman in 1984. The theory assumes that the corporate stakeholders which comprises the shareholders, employees, managers, financiers, suppliers, government, media, customers, host communities and so on demand that their organizations are socially, environmentally and economically responsible as there is a market premium that is associated with these (Agbata, Eze & Uchegbu, 2021). Putting the overall interest of all the stakeholders into consideration brings long term benefits for the companies and also sustains them.

Stakeholders' theory is related to this study because it seeks for the best interest of all the corporate stakeholders and as the stakeholders demand that their organizations should be practicing sustainability activities and should disclose these in their sustainability reporting, these are also geared towards the best interest of all the corporate stakeholders as it shows that the organization is moving in the direction of achieving the goals of sustainable development. Moving in this direction gives firms the opportunity to drive improvement and innovation, which is beneficial not only to the company but also to the stakeholders.

2.3 Empirical Review

Connelly and Limpaphayom (2004) studied "environmental reporting and firm performance. Evidence from Thailand". Unique data set from Thailand institute of Directors' corporate Governance benchmark survey was used. Result shows no significant association between environmental reporting and accounting performance. This implies that good environmental practices have no negative effect on short term profitability.

A research on "the effect of sustainability reporting on financial performance: An empirical study using listed companies" was carried out by Reddy and Gordon (2010). The sampled size comprised 68 firms quoted on New Zealand and the Austrian Stock Exchanges. The Event

Study Method was used. Regression analysis was also used in analyzing data. Findings indicated that sustainability reporting shows statistically significant effect on abnormal returns of the Australian firms and the CSR aspects of sustainability reporting is significant in the abnormal returns of the New Zealand firms.

Asaolu, Agboola, Ayoola and Salawu (2011) researched on “sustainability reporting in the Nigerian Oil and Gas Sector”. The purpose was to assess the current level of sustainability reporting in line with international best practices. 6 major oil and gas multinationals operating in Nigeria were sampled. Data were collected from content analysis of domestic and international financial statements, separate sustainability reports and other triple bottom line reporting disclosures. Findings showed that all surveyed multinational fared well under the organizational profiles, strategy, reports and governance criterion with the exception of governance. In the environmental performance indicator measure, all the sampled firms disclose environmental performance indicators in generally in their international reports. However, their domestic affiliates do not produce reports on their environmental performance. Based on the findings, the paper recommended that in consideration of the importance of oil and gas to Nigerian economy, a compulsory sustainability reporting structure that complies with international best practices as carried out in France, Germany and South Africa should be domesticated for multinational oil and gas firms operating in Nigeria since multinationals operating in the Nigerian oil and gas sector have not been adhering to international practices on the issue of sustainability reporting.

“The effect of corporate sustainability reporting on firm valuation” was carried out by Bartlett (2012). The study used data from the Roberts Environmental Center at Claremont Mckenna College. Sustainability Pacific Scoring Index (SPSI) scores of 2008 & 2009 were examined for 10 different industries, from the metal sector to pharmaceutical industry. Analysis was done for 62 firms using financial data collected from Wharton Research Data Services (WRDS) COMPUSTAT database. The period covered was 2006 – 2010. Findings showed that in each regression, book value and net income were statistically significant at the 1% level.

Barleft (2012) researched on “the effect of corporate sustainability reporting on firm valuation”. Normal sustainability reporting scoring method was used in examining the influence of sustainability reporting on company value. Linear information model was used in accordance with Ohlson 1995. Finding disclosed that superior corporate sustainability reporting has positive relationship with improved company value, although the degree of the effect drastically reduced in the recession period.

Eccles, Loannou and Serafeim (2012). Researched on “the impact of corporate sustainability on organizational processes and performance” 180 US firms were match-sampled. Companies that willingly adopted sustainability practices in 1993 were regarded as high sustainability firms while those that did not adopt the practices were regarded as low sustainability firms. It was found out that high sustainability firms significantly perform more than low sustainability firms in the long term when assessed on stock market and accounting performances.

“Corporate sustainability and corporate financial performance: The Indian Context” was carried out by Ghosh (2013). The study examined firms’ definite features that impel companies in India to superior sustainability performance and reporting measured using their presence in a new sustainability indicator established in India in 2008, such as ESG, S&P India Index. The study was conceptualized in India and the sample comprised top 200 National Stock Exchange firms as at 31st March 2012 by market capitalization. Results showed that large firms, with fewer leverage which are more of group companies, have higher R&D and advertisement expenses, operates in environmentally sensitive industries, have the possibility of being

superior in sustainability. Such superior sustainability performance results in superior financial performance obtained through quantitative measures of firm performance.

Aggarwal (2013) studied “sustainability reporting and its impact on corporate financial performance: A literature review”. The paper examined the impact of sustainability reporting on corporate financial performance through review of extant literature. The study considered various researches conducted over the last decade for examining the relationship. It was found that the results were inconsistent, mixed and frequently contradicts one another as association ranges from positive to negative to statistically insignificant, based on the measures of sustainability reporting, financial performance, sample composition, time-period and control variables used. It was discovered that most of the reviewed papers suggested positive association. The researcher recommended that firms should adopt sustainability reporting within the best possible time to avoid being sanctioned. Companies should endeavor to subject their sustainability reports to be guaranteed by credible assurance providers such as KPMG, Ernest & Young and so on, in order for the stakeholders to view them as credible reporters.

“Sustainability reporting among Nigeria Food and Beverage firms” was studied by Muhammad (2014). The study aimed at assessing sustainability reporting among food and beverage firms in Nigeria. A sample of 6 firms was randomly selected from the companies quoted on the NSE which represents 50% sample. Secondary data was used which were obtained from the annual reports and accounts of the sampled companies for cross sectional analysis. Sustainability reporting of firms was measured using content analysis and regression analysis was used to determine the predictors of the disclosure. Results of the analysis revealed that sampled companies showed a little evidence of sustainability reporting although not significant as it merely consisted approximately 2% of the annual reports entire disclosures. Disclosures are determined by the size of firms and it tends to vary inversely with the size of the firms.

Kusuma and Koesrindartoto (2014) studied “sustainability practices and financial performance: empirical evidence from Indonesia”. The purpose of the study was to find the association between sustainability practices and financial performance of Indonesia firms. Environmental, Social and Governance indicators were used to measure the level of sustainability practices while financial ratios were used to measure financial performance. Findings showed that a good number of firms practice sustainability disclosure. Findings also showed that only few firms have reduced level of sustainability practices. The study recommended that government should design the guideline for sustainability disclosure such as Financial Service Council (FSC) and ACSI-Austrian Council of Super Investors.

“The effect of social and environmental accounting and reporting on the financial performance of company listed on the Nairobi securities exchange (NSE)” was researched by Odhiambo (2015). The population was made up of 64 firms listed on the NSE. Total population count was used, content and regression analysis were adopted in data analysis. Secondary data gathered from the audited reports and accounts of the selected companies were used. Result showed that social & environmental accounting and reporting are associated with financial performance of firms quoted on the NSE.

“The relationship between corporate sustainability reporting and profitability and shareholders fund in Nigerian Banks” was carried out by Nwobu (2015). The aim was to empirically examine the association between sustainability reports, profitability and shareholders fund. Content analysis methodology was employed. Data were extracted from the annual reports of banks. The population comprised 15 banks quoted on NSE. Eight banks were selected to represent the sample size and the study covered 4 years from 2010-2013. Findings showed that the sampled banks practiced sustainability reporting in the periods covered by the study. A small positive association of 0.28 and 0.18 were found between sustainability reporting index

and Profit After Tax (PAT), and sustainability reporting index and shareholders fund respectively.

Tarmuji, Maelah and Tarmuji (2016) studied “the impact of environmental, social and governance (ESG) on economic performance: Evidence from ESG score”. Non financial firms from Malaysia and Singapore were sampled during 2010-2014 from data-stream data base. Panel data were used. Descriptive statistics and linear regression technique were used in data analysis and hypotheses testing. It was found that social and governance practices have significant impact on economic performance.

“The impact of sustainability reporting on company performance: The Philippine perspective” was studied by Ebdane (2016). The paper examined the total sustainability reporting and the specific performance measures such as economic, social and environmental disclosures on performance of firms that report their sustainability practices based on GRI practices. Finding revealed that sustainability disclosure has effect on ROA but not on ROE. On individual basis, economic, social and environmental practices have no effect on ROE and ROA. But company age and size as control variables in combination with sustainability reporting affects firm performance.

Whetman, (2017) researched on “the impact of sustainability reporting on firm profitability.” 95 publicly companies trading in difference sectors in the USA were sampled during 2015-2016. Cross sectional data were used. Profitability was proxy using ROA, ROE and profit margin while corporate sustainability reporting was proxy as a dummy variable. Regression model was also used. Finding showed that sustainability reporting positively and significantly affects ROE, ROA & Profit Margin in the subsequent year.

Kuzey and Uyar (2017) studied “determinants of sustainability reporting and its impact on firm value: Evidence from the emerging market of Turkey” 297 firms in Turkey were sampled. The aim was to ascertain whether sustainability reporting is value relevant or not. Findings show there is an increasing knowledge of GRI based sustainability reporting among the sampled companies and an increasing trend in quality of reports. It was concluded that sustainability reporting is value relevant in the sampled area.

Loh, Thomas and Wang (2017) researched on “Sustainability Reporting and Firm Value: Evidence from Singapore listed companies”. Five hundred and two (502) firms quoted on the SGX Main board were sampled. Secondary data were obtained from the financial statements of the sampled firm. Regression analysis was adopted and finding showed that sustainability reporting has positive relationship with the market value of the sample firms.

“The effect of sustainability reporting disclosure based on Global Reporting Initiative (GRI) G4 on company performances (A study on companies listed in Indonesia Stock Exchange)” was studied by Einder (2017). The research was conducted on the entire firms quoted on the Indonesia Stock Exchange from 2014 to 2015 as the population. Purposive sampling procedure was used in determining the sample size. Secondary data was used and analysis was done using multiple linear regression technique with the aid of SPSS version 22. Finding disclosed that economic dimension of sustainability reporting positively affects Tobin’s Q but environmental & social dimensions of sustainability reporting have no effect on Tobin’s Q.

Zyadat (2017) studied “the impact of sustainability on the financial performance of Jordanian Islamic Banks”. The paper covered a period of 7 years from, 2008 to 2014. Data were gathered from the audited annual reports and accounts, as well as sustainability reports of the sampled banks. Content analysis was used in extracting the sustainability reporting data. Descriptive statistics and multiple regression technique were adopted in data analysis and hypotheses

testing respectively. It was discovered that sustainability reporting indices have statistically significant effect on ROA & EPS in the sampled banks but not on ROE. The sampled Islamic banks in Jordan were advised to improve their interest on sustainability as well as issue sustainability reports to find out whether their business goals conform to that of the society & environment.

Chang, Gerab and Toste (2017) researched on “the quality of sustainability reports and corporate financial performances (CFP): Evidence from Brazilian listed companies” the sample was made up of all companies quoted on the ISE during 2008-2014. Multiple regression method was used. Result revealed that Accounting and Marketing based variables are not associated with reporting quality, though the disclosure quality improved during the period of study, but the scores were low. This finding is same with economic, environmental and social reporting.

“The impact of sustainable manufacturing practices on sustainability performance: empirical evidence from Malaysia” was studied by Abdul-Rashid, Sakundarini, Raja Ghazilla and Thursasmy (2017). The study examined the association of sustainable manufacturing practices ((SMP), sustainability performance (SP), environmental, social and economic performances. Survey method was used and questionnaire was 443 ISO 1400 1 certified Malaysian manufacturing firms. Structural equation modeling was employed in evaluating the association of SMP with sustainability performance. Result shows that Malaysia manufacturing firms pay great attention in production bound as they implement SMP.

“Effect of sustainability accounting and reporting on financial performance of firms in Nigeria Brewery sector” was studied Nnamani, Onyekwelu and Ugwu (2017). The paper employed ex post facto research design. Secondary data were used which were obtained from the financial statements of the sampled brewery firms. 3 major quoted brewery companies in Nigeria were sampled due to their dominance of the brewery industry over the years thus ensuring availability of data. The study covered a period of 5 years from 2010-2014. Data were analyzed using Ordinary Linear Regression (OLR). The paper revealed that Total equity to Total Assets (TETA) ratio has no significant effect on Return on Assets (ROA) of firms on the brewery sector. Furthermore, Total Personal Cost to Turnover (TPCT) ratio has no positive relationship with ROA of firms in the brewery sector. Based on the results it was recommended that firms should make adequate investment of their revenue on sustainability activities. The Financial Reporting Council (FRC) of Nigeria and other accounting regulating bodies should provide a template that will guide companies in reporting their sustainability activities. They should also make sustainability reporting mandatory; penalties for non-compliance should be clearly stated and enforced on defaulting firms to deter others.

“Disclosure of corporate sustainability performance and firm performance in Asia” was a research conducted by Laskar and Gopal Maji (2018). Data on sustainability reports and annual reports of 111 companies in Asia were gathered. Content analysis was used in calculating the sustainability scores of the sampled companies. Panel data regression model was also used. Results indicated that there is a positive effect of corporate sustainability performance on MBR. Moreover, corporate sustainability disclosure level and quality are important in improving firms’ value of the advanced and not yet advanced nations, and the effect of level and quality of corporate sustainability performance on company performance is more perceived in advanced nations than in developing nations.

Uwalomnwa et al (2018) studied “sustainability reporting and firm performance: A Bi-directional approach”. The population comprised all Deposit Money Banks (DMBs) listed on the Nigeria Exchange Group. Judgmental sampling was used and the period of the study was 2014-2016. Data were collected from the published financial statement and separately

presented sustainability reports of the sampled DMBs. Content analysis was coded to help in obtaining the sustainability disclosure indicator. Data analysis was done using panel regression method. Results showed that sustainability reporting significantly and negatively associates with Market price per share (MPS) suggesting that investors are not interested in sustainability but on the returns in their investments. Sustainability reporting positively but significantly associates with Book value per share. Sustainability reporting proxy with sustainability disclosures index do not significantly affect the performances proxies used apart from revenue generation (log rev) and MPS.

Asuquo, Dada and Onyeagaziri (2018) determined “the effect of sustainability reporting on corporate performance of selected quoted brewery firms in Nigeria”. Secondary data obtained from the annual reports of the sampled companies were used. 3 firms in the brewery sector were selected. Analysis of data was done using the One-Way Analysis of Variance. The study covered a five-year period from 2012 to 2016. Finding showed that Economic performance, Environmental performance and Social performance disclosures significantly affects ROA of the sampled brewery companies in the NSE.

Laskar (2018) researched on the “impact of corporate sustainability reporting on firm performance: an empirical examination in Asia”. 111 non-financial firms from Japan, India, South Korea and Indonesia were sampled from 2009-2014. Content analysis using 0 and 1 was employed in calculating the disclosure score of sustainability practices in accordance with GRI guideline. Logistic regression analysis was used and results show that sustainability reporting significantly and positively associate with company performance. The effect of sustainability reporting on company performance is perceived greatly in advanced nation compared to developing nation in Asia.

“The effect of sustainability reporting on financial performance with good corporate governance as a moderating variable” was researched by Clarisse and Rasmini (2018). Financial companies were used and data were collected from the published sustainability reports of the selected companies between 2013 to 2016. These financial firms who also were involved in the corporate governance perception index were also sampled. Moderated regression analysis was also used. Findings revealed that social and environmental performance disclosure positively and significantly affect financial performance. However economic performance disclosure negatively and significantly affects financial performance. Good corporate governance quality reduces the influence of economic and environmental performance disclosure on financial performance. It was also unable to moderate the influence of social performance disclosure on financial performance.

Alshehhi, Nobanne, & Khare (2018) examined the “impact of sustainability practices on corporate financial performances: literature trends and future potential”. Literature on the impact of corporate sustainability on corporate financial performance was analyzed. One hundred and thirty-two research works from high quality journals were examined. It was found that 78% of the publications establish positive association between corporate sustainability & financial performance. Deviations in research methods and variables measurements results in the differing views in the association. It was recommended that there is need to improve unity in comprehending the association between corporate sustainability practices and financial performance.

“The effects of corporate governance on environmental sustainability reporting: Empirical evidence from South Asian countries” was studied by Masud, Nurunnabi & Bae (2018). Three South Asian nations which include; Bangladesh, India and Pakistan and 88 quoted firms’ sustainability reporting during 2009-2016 from the GRI data base were sampled. Ordinary least square regression techniques were use in hypotheses testing. Finding showed that

environmental sustainability reporting performance (ESRP) is positively associated with foreign and institutional ownership, board independence and size. It also has significant relationship with director share ownership. However, it does not associate with family ownership, female directorship, CSR and environmental committees.

“Sustainability disclosures and market value of firms in emerging economy: Evidence from Nigeria” was studied by Emeka-Nwokeji and Osisoma (2019). Population was made up of 120 non-financial companies quoted on the Nigerian Exchange Group from which 93 companies were selected. The ex-post facto research method was used. Data were obtained from secondary source in the selected companies published financial statement. The period of the study was 2006 – 2015. Analysis of data was done using descriptive statistics, as well as correlation & principal component analyses. Hypotheses testing were done using pooled ordinary least square regression. Results revealed that environmental disclosures and corporate governance disclosures significantly and positively affect market value of the same sampled firms. Social disclosures negatively and insignificantly affect firms’ market value. Consequently, it was concluded that total sustainability disclosures significantly and positively affect firm value. The researchers’ recommendation encouraged firms to promote strong sustainability measures in their corporate reporting.

De.Silva (2019) studied “Sustainability Reporting and its impact on financial performance: A study of the Sri Lankan financial Sector”. A disclosure index from the guidelines of GRI consisting of 119 parameters were used in evaluating the reporting contents of the quoted firms in the banking and financial sectors. The financial statement of the selected firms formed the source of data collection. Analysis of data was done in the quantitative means through the use of SPSS ver. 6. Finding shows no significant difference in sustainability reporting of quoted firms in the banking and financial sectors. Moreover, there is no significant difference between G4 framework discourse and GR1 guidelines.

Johari and Komathy (2019) researched on “Sustainability reporting and firm performance: Evidence from Malaysia”. The study was based on a sample of 100 companies picked in line with good disclosure in the fiscal year of 2016. Data were analyzed using regression analysis. Result shows that sustainability reporting has positive relationship with ROA and EPS but sustainability reporting was measured as dummy variable where its existence/practice in the sampled companies is scored 1 and non-existence is scored 0. Sustainability reporting has no significant effect on ROE and DPS. The researchers concluded that a relationship exists between sustainability reporting and performance of Malaysian quoted firms. It was recommended that future researchers should do a comparison of Malaysian quoted firm with other nations to find out the differences in corporate performances of the firms in the countries.

“Effect of sustainability reporting on corporate performance of quoted oil and gas firms in Nigeria” was studied by Ezeokafor and Amahalu (2019). Time series and cross-sectional analysis were employed for the period of 2011-2017. The ex-post facto method was used and data were obtained from secondary sources such as, fact books and audited financial statements of the sampled companies. Pearson correlation and multiple regression analysis were employed in analyzing data. Outcome revealed that economic, social and environmental performance significantly and positively affects ROE, Net Profits Margin and Earnings per share. Companies were encouraged to use standard sustainability indicators as it will help them to focus more on the environmental concerns.

“An empirical study on the impact of sustainability reporting on firm value was a study carried out by Nguyen (2020)”. The study explored the relationship between sustainability reporting and firm value in order to ascertain the value relevance of sustainability practices. 97 big quoted German companies were sampled between 2013-2017. Multiple regression method was used.

Result revealed that sustainability reporting practices based on GRI index are significantly and negatively connected with firm value.

“Impact of sustainability reporting on corporate performance: evidence from Nigeria Stock Exchange” (NSE) was researched by Mutalib, Iriabije, Okon and Odumegwu (2020). The paper examined the influence of sustainability reporting on ROE, ROA, EPS and NPM of Nigerian quote firms. Ex post facto method was used. 64 firms were sampled out of a population of 76 quoted non-financial firms. Source of data was secondary. T-test statistics was adopted in hypothesis testing. Result revealed that sustainability reporting has positive impact on ROA, ROE, EPS and NPM of the sampled firm. The adoption of this reporting system was encouraged for firms, to enable disclosure of social environmental and economic issues that with help investors in their decisions.

Madaleno and Vieira (2020) studied “corporate performance and sustainability: Evidence from listed firms in Portugal and Spain. The period of the study was 2010 to 2017. Generalized Method of Moments (GMM) was used. Econometric model was used in highlighting the real implications of gender corporate governance indices and the plan to use indices for the market and accounting based performance measurement. Outcome of the study revealed that availability of women as board members improved financial performance and sustainability performance and it is greatly perceived in the market-based measurement. Sustainability ideas also enhance financial performance.

“Sustainability reporting and firms’ economic performance: evidence from Asia and Africa” was researched by Giron, Kazemikhasragh, Cicchiello, and Panetti, (2020). Data were gathered from the data base of GRI sustainability disclosure, Orbis and Bureaus Van Dijk. Two logit and one regression models were used. 366 African & Asian firms that resolved the SDG issues in their sustainability reports of 2017. Findings show that number of women directors for manufacturing firms has the relationship with sustainability reporting adoptions and external assurance. Improved economic performance is associated with firms in the manufacturing sector. However, board of directors’ ages has no effects on using sustainability reporting.

Ofoegbu and Asogwa (2020) researched on “the effect of sustainability reporting on profitability of quoted consumer goods manufacturing firms in Nigeria”. The paper examined how social, environmental and economic disclosures affect the profitability of consumer goods firms quoted in Nigeria. The Population comprised 23 quoted consumer goods manufacturing firms in Nigeria. The researchers used judgmental sampling procedures in selecting 15 companies. The period of the study was 2008 to 2018. The ex-post facto research method was used; thus secondary data were used which were obtained from financial statement of the sampled firms. Content analysis & multiple regression analysis were adopted in analyzing data. It was discovered that economic and social performance disclosures have non-significant positive effect on EPS & ROA. However, Environmental performance disclosures significantly and positively affect EPS. The paper concluded that sustainability reporting has positive & significant effect on sampled firms’ profitability. The Recommendation was for firms to always publish useful information on sustainability because it enhances profitability.

Syder and Ogbonna (2020) studied “Sustainability Accounting Disclosure and Market Value Added of quoted oil and gas companies in Nigeria”. The paper used cross-sectional and ex-post facto method. Nine firms listed in the Nigerian Exchange Group (NEG) formed the population. Audited financial statements of the sampled firms from 2009 to 2018 were used in gathering date. Analysis of data were done using Autoregressive Distributed Lag bound test, descriptive statistics, model estimations, diagnostic and multiple regression analyses. Result shows that expenditures on employees’ trainings, environmental compliance and community developments positively and significantly impact on market value added of the sampled firms.

It was concluded that sustainability accounting information has influence on market value added of the oil and gas firms quoted in the Nigeria Group (NEG). Management of the sampled firms were encouraged to concentrate more in practicing sustainability accounting to continue to achieve the benefits which is creating value financially.

“The effect of sustainability accounting report on shareholder value of quoted oil and gas companies in Nigeria” was research carried out by Syder, Ogbonna and Akani (2020). The paper used cross-sectional and ex-post facto research design. Nine firms listed in the Nigerian Exchange Group (NEG) formed the population. Audited financial statements of the sampled firms from 2009 to 2018 were used in gathering date. Analysis of data were done using Autoregressive Distributed Lag bound test, descriptive statistics, model estimations, diagnostic and multiple regression analyses, Result revealed that expenditures on employee training and community development positively and significantly affect shareholders’ value added, but expenditure on environmental compliance did not affect shareholders’ value added. The researchers made conclusion that sustainability accounting report significantly affects shareholders value in the listed Nigeria oil and gas companies, though the extent of the effects depends on the real practice of sustainability accounting by the organizations.

Agbata, Eze and Uchegbu (2021) studied “Corporate sustainability Reporting (CSR) and Corporate Financial Performance of Brewing Firms quoted on the NSE”. The paper investigated the effect of CSR (evaluated using GRI variables) on ROE, Tobin’s Q & Asset Growth of listed brewing companies. The ex-post facto research method was used. The period of the study was 2014-2018. Total population count was employed thus the entire 5 companies in that brewery sector were used. Descriptive and regression analyses were adopted in analyzing data. Result revealed that CSR significantly affects ROE and Tobin’s Q. However, it has non-significant effect on asset growth of the sampled firms. In the recommendation, financial reporting council of Nigeria was advised to make sustainability reporting mandatory for all listed companies in Nigeria in order to access the quality of corporate governance, in addition to managing companies strategically towards sustainable future for the purposes of achieving sustainability reporting benefits.

“Effect of sustainability reporting on financial performance of quoted industrial goods companies in Nigeria” was studied by Nzekwe, Okoye and Amahalu (2021). The paper covered the period of 2008-2014. Eleven industrial goods firm were selected from the population of 15 quoted companies in that ‘sector using purposing sampling procedure. Panel data collected from the financial statements of selected companies were employed. The ex-post facto research design was also adopted. Descriptive statistics, Person correlation coefficient, panel lest square regression, Granger causality test in addition to Hausmann test were adopted in data analysis and hypothesis testing. Finding revealed that environmental reporting, social reporting and economic reporting have significant positive effects on cash value added of the sampled firms. It was recommended that environmental policies are to be promoted by regulation in order to facilitate the elimination of energy or resources wastages by way of technological innovations.

Umar, Mustapha and Yahaya (2021) research on “sustainability reporting and financial performance of listed consumer goods firms in Nigeria”. The sample size comprised 26 consumer goods companies quoted on the Nigeria Exchange Group. The research was based on correlation design. Secondary source of data gathered from the published financial statement of the sampled companies from 2009 to 2018 were used. Data analysis was done using multiple regression method in addition to diagnostic and post estimation tests. Analysis outcome revealed that social and environmental performance significantly and positively affect ROA and ROE. Nevertheless, Economic performance Ofoegbu and Asogwa (2020) researched on “the effect of sustainability reporting on profitability of quoted consumer goods manufacturing firms in Nigeria”. The paper examined how social, environmental and economic disclosures

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"The effect of sustainability accounting report on shareholder value of quoted oil & gas companies in Nigeria" was research carried out by Syder, Ogbonna and Akani (2020). The paper used cross-sectional and ex-post facto research design. Nine firms listed in the Nigerian Exchange Group (NEG) formed the population. Audited financial statements of the sampled firms from 2009 to 2018 were used in gathering date. Analysis of data were done using Autoregressive Distributed Lag bound test, descriptive statistics, model estimations, diagnostic and multiple regression analyses, Result revealed that expenditures on employee training and community development positively and significantly affect shareholders' value added, but expenditure on environmental compliance did not affect shareholders' value added. The researchers made conclusion that sustainability accounting report significantly affects shareholders value in the listed Nigeria oil and gas companies, though the extent of the effects depends on the real practice of sustainability accounting by the organizations.

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"Effect of sustainability reporting on financial performance of quoted industrial goods companies in Nigeria" was studied by Nzekwe, Okoye and Amahalu (2021). The paper covered

the period of 2008-2014. Eleven industrial goods firm were selected from the population of 15 quoted companies in that 'sector using purposive sampling procedure. Panel data collected from the financial statements of selected companies were employed. The ex-post facto research design was also adopted. Descriptive statistics, Pearson correlation coefficient, panel least square regression, Granger causality test in addition to Hausman test were adopted in data analysis and hypothesis testing. Finding revealed that environmental reporting, social reporting and economic reporting have significant positive effects on cash value added of the sampled firms. It was recommended that environmental policies are to be promoted by regulation in order to facilitate the elimination of energy or resources wastages by way of technological innovations.

Umar, Mustapha and Yahaya (2021) research on "sustainability reporting and financial performance of listed consumer goods firms in Nigeria". The sample size comprised 26 consumer goods companies quoted on the Nigeria Exchange Group. The research was based on correlation design. Secondary source of data gathered from the published financial statement of the sampled companies from 2009 to 2018 were used. Data analysis was done using multiple regression method in addition to diagnostic and post estimation tests. Analysis outcome revealed that social and environmental performance significantly and positively affect ROA and ROE. Nevertheless, Economic performance significantly but negatively affects ROA and ROE. Conclusion was made that Sustainability reporting is crucial for financial performance of firms. Company managers were advised to show more disclosure of their social and environmental performance.

"Corporate Sustainability disclosure and the Nigerian Industrial/Consumer Goods sector's performance: A panel data approach" was studied by Ighosewe (2021). Ten Industrial consumer goods companies in those sectors were sampled between 2010 to 2019. Content analyses inconsistent with the GRI were used in extracting data from the annual reports of the sampled companies. GRETTEL software was used in analyzing data. Findings show that R & D disclosure significantly enhance Tobin's Q, whereas Corporate Social responsibility lowers Tobin's Q but not significantly. Moreover, employee disclosure, firm sizes and environmental disclosures significantly lower Tobin Q. It was recommended that government should provide policies on compulsory implementation of sustainability reporting by all Nigeria quoted firms. Corporate stakeholders should join hands in promoting sustainability reporting. Ahmad, et al (2021) studied "Influence of environmental, social and governance reporting on firm value: Malaysian Evidence". Sixty-five quoted firm in Malaysia were sampled. Data were gathered from the annual reports and accounts of the sampled firms from 2017 to 2019. Multiple regression was used in data analysis. Findings indicated that environmental activities and governance activities are associated with Tobin Q. However, social activities of the sampled firms have no association with Tobin Q.

Ohaka and Obi (2021) examined "Sustainability Reporting and corporate performance: evidence from listed companies in Nigeria". The ex-post facto method was used. The population comprised 126 non-financial firms listed on the Nigeria Exchange Group out of which 96 were selected. Secondary data was used. The period of the study was 2002-2016. The Pearson product moment correlation analysis was adopted in hypothesis testing. Result disclosed that environmental expenditure has positive impact on profitability (profit). It was recommended that management should stick to the regulation on environmental best practices and invest in eco-friendly technologies.

Amadiogwu (2021) studies "effects of sustainability reporting on listed manufacturing firms in Nigeria" secondary data obtained from the annual reports and accounts of the selected firms were used. The period was 2013-2018. Finding shows that economic, social and environmental performance disclosures do not significantly affect ROA of the sampled quoted Nigerian manufacturing companies.

“Does sustainability performance impact financial performance? Evidence from Indian service sector firms” was studied by Gaurav and Ashu (2021). The study examined the effect of firms’ sustainability performance on the financial performance of service sector firms quoted on the Bombay Stock Exchange. Finding indicated that environmental performance is significantly and negatively associated with ROA and ROCE of the sampled firms. Social performance is significantly and negatively associated with ROE. However, combining environmental, social and governance performance has significant negative impact on ROA and ROCE.

Ikpor, et al (2022) researched on the “drivers of sustainability accounting and reporting in emerging economies: Evidence from Nigeria”. The study examined elements that drive sustainability reporting of firms in Nigeria as a developing nation. Secondary data obtained from the published financial statements and sustainability reporting of the 50 big firms quoted on the Nigerian Exchange Group was used. The period of the study was 2015-2020. Fixed effect panel regression was used. Outcome of the research disclosed that firm size, profitability, ownership structure, listing age, leverage and audit type is the factors that drive sustainability reporting of the sampled companies. The 1st and 2nd factors in addition to being audited by the Big 4 auditing companies significantly and positively relates with sustainability reporting. However, the 3rd & 5th factors have negative effect on sustainability reporting of the sampled companies. It was also discovered that banks & oil & gas companies disclose sustainability reporting more than other Nigeria companies.

“Impact of sustainability reporting on financial performance of selected quoted companies in Nigeria” was studied by Oden (ND). Data were collected from the annual reports and accounts of the sampled companies. A total of 10 companies were sampled. The study covered a 5-year period from 2012 to 2016. Panel Least square was used in data analysis. Results revealed that expenditure on economic and environmental activities have positive and significant impact on Price Earnings Ratio (PER) of the sampled companies. Expenditure on social activities has positive and weak impact on PER. It was concluded that sustainability reporting practices strongly contributes on the financial performance of the sampled Nigeria listed companies.

3. METHODOLOGY

The study use *ex post facto* research design. This research design is suitable for this study because the data used have already occurred before the research began and they were devoid of the researcher’s intrusion. This is in line with Salkind (2010) that *ex post facto* is for investigations that commence following the occurrence of the fact and there was no interfering of the researchers. The study was conducted in Nigeria on quoted Agricultural firms using data that were collected from the fact book of Nigerian Exchange Group. The Agricultural sector was chosen because there is dearth of research on the subject matter in that area. (See paragraph 3 of the statement of problem). Population of the study comprised all the five (5) Agricultural firms quoted on the Nigerian Exchange Group as at 31st December 2021. Judgmental sampling technique was used to select four Agricultural firms which have complete data. Ella Lakes Plc was dropped because it does not have up to date data as at 31st December 2022. Consequently, the sample size was four (4) Agricultural firms. Secondary data which were gathered from the annual reports and accounts of the selected companies and Nigerian Exchange Group fact book (2021) were used. Collected data were analyzed using descriptive statistics and multivariate regression analysis with the aid of STATA software version 14. The pre- regression diagnostic tests of descriptive statistics were explained using mean, standard deviation, minimum and maximum scores. Other pre-regression diagnostic tests include test for normality of data and correlation analysis. The Post regression diagnostic test of multivariate regression analysis involves Pool OLS, Robust Regression, Variance Inflation Factor – VIF (for multicollinearity) and Heteroskedasticity.

3.1 Model Specification

The study adapted Agbata, Eze and Uchegbu (2021)

The adopted model is as stated below:

$$FP = \alpha + \beta_1 NL_DEVG + \beta_2 NL_DEVD + \beta_3 NL_FARG + \beta_4 EPE + \beta_5 NCEL R + \beta_6 NL_BFTE + \beta_7 NCLR + \varepsilon \text{ (Agbata, Eze \& Uchegbu, 2021).}$$

The adapted model is modified as follows:

Model 1: Return on Assets (ROA) Model

Functional Form: ROA f (ENR, SOR, GOR, ECR, EPS, MAC)

Econometric Form of the model is stated as follows:

$$ROA_{it} = \alpha_0 + \beta_1 ENR_{it} + \beta_2 SOR_{it} + \beta_3 GOR_{it} + \beta_4 ECR_{it} + \beta_5 EPS_{it} + \beta_6 MAC_{it} + \varepsilon_{it} \dots \dots \dots \text{ equation (1)}$$

Model 2: Economic Value Added (EVA) Model

Functional Form: EVA f (ENR, SOR, GOR, ECR, EPS, MAC)

Econometric Form of the model is stated as follows:

$$EVA_{it} = \alpha_0 + \beta_1 ENR_{it} + \beta_2 SOR_{it} + \beta_3 GOR_{it} + \beta_4 ECR_{it} + \beta_5 EPS_{it} + \beta_6 MAC_{it} + \varepsilon_{it} \dots \dots \dots \text{ equation (2)}$$

Model 3: TOBIN's Q (TBQ) Model

Functional Form: TBQ f (ENR, SOR, GOR, ECR, EPS, MAC)

Econometric Form of the model is stated as follows:

$$TBQ_{it} = \alpha_0 + \beta_1 ENR_{it} + \beta_2 SOR_{it} + \beta_3 GOR_{it} + \beta_4 ECR_{it} + \beta_5 EPS_{it} + \beta_6 MAC_{it} + \varepsilon_{it} \dots \dots \dots \text{ equation (3)}$$

Where:

ROA, EVA and TOBIN's Q = Dependent Variables

ENR, SOR, GOR, and ECR = Independent Variables

EPS and MAC = Control Variables

α_0 = Intercept

β = Explanatory Variable

ε_{it} = Error term

it = Time

ROA= Return on Assets

EVA = Economic Value Added

TBQ = Tobin Q

ENR = Environmental Reporting

SOR = Social Reporting

GOR = Governance Reporting

ECR = Economic Reporting

EPS = Earnings per Share

MAC = Market Capitalization

3.2. Measurement of Variables

Table 3.1 below shows how the variables to be used in the study were measured.

Table 3.1 Measurement of Variables of the Study

INDEPENDENT VARIABLES	ACRONYM	MEASUREMENT
SUSTAINABILITY REPORTING:		
Environmental Reporting (GRI 300)	ENR	GRI Disclosure 307-1: “Logarithmic transformation of expenditures on disposal, treatment, sanitation, and clean up, plus total monetary value of significant fines for non-compliance with environmental laws and /or regulations, and total number of non-monetary sanctions”. (GRI 201: Economic Performance 2016)
Social Reporting (GRI 400)	SOR	GRI Disclosures 401-2 and 419-2: “Logarithmic Transformation of Life insurance, health care, disability & invalidity coverage, parental leave 65 (parental leave is the leave granted to men & women employee on the grounds of the birth of a child), retirement provisions, stock ownership, plus total monetary value of significant fines in the social and economic area, and total number of non-monetary sanctions(GRI 201: Economic Performance 2016)
Governance Reporting (GRI 102, No 4)	GOR	Gender of the Chief Executive Officer (CEOG =1 when there is a female CEO), gender of the Chief Financial Officer (CFOG =1 when there is a female CEO) gender of CEO x Gender CFO (CEO*CFO when there is both a female CEO and CFO), proportion of female CEO on the board + committees (CEOp = CEO*WOB) proportion of female CFO on the board + committees (CFOp = CFO*WOB), women on the Board of Directors + Committees on the Board of Directors + Committees (WOB) and the log of the number of members of the Board Committee (LNBMC). (Masud, Nurunnabi & Bae, 2018).
Economic Reporting (GRI 200)	ECR	GRI Disclosure 201-1: “Logarithmic transformation of net sales (sale of products/services) plus revenues from financial investments and sale of 66 assets, less logarithmic transformation of operating costs, employee wages & benefits, payments to providers of capital, payments to government by country, and community investments, plus logarithmic transformation of tax relief & tax credits, subsidies, awards, royalty holidays, financial assistance from Export Credit Agencies (ECAs), financial incentives, other financial benefits received or receivable from any government for any operation, investment grants, research and development grants, and other relevant types of grants” (GRI 201: Economic Performance 2016)

DEPENDENT VARIABLES	ACRONYM	MEASUREMENT
FIRM PERFORMANCE:		
Return on Asset	ROA	$\frac{\text{Net Income}}{\text{Total Assets}}$ (Hargrave, 2022)
Economic Value Added	EVA	$\frac{\text{Net Income}}{\text{Shareholders' Equity}}$ (ICAN SFM, 2014)
Tobin's Q	TBQ	$\frac{\text{Total Assets} + \text{Market Capitalization} - \text{Net worth}}{\text{Total Assets}}$ (Hargrave, 2022)

3.3 Control Variables

Earnings per Share (EPS) and Market Capitalization are introduced as control variables to help in controlling the model.

3.4 Decision Rule

Reject the null hypothesis and accept the alternate if the p value is equal to or less than the significant value of 5%, otherwise reject the alternate hypothesis.

4. DATA PRESENTATION, ANALYSIS AND DISCUSSION OF RESULTS

4.1 Descriptive Statistics Analysis

The study examines the descriptive statistics for both the explanatory and dependent variables of interest. Basically, each variable is examined in terms of the mean, standard deviation, maximum and minimum. Table 4.1 displays the descriptive statistics for the study.

Table 4.1: Descriptive Statistics

VARIABLES	MEAN	STAN. DEV.	MIN.	MAX.	NO OBS
ROA	3.95	12.71	-18.21	29.16	40
EVA	-0.00	0.14	-0.28	0.26	40
TBQ	1.64	1.86	0.49	12.69	40
ENR	0.01	0.03	0	0.13	40
SOR	0.023	0.13	0	0.50	40
GOR	0.36	0.17	0	0.63	40
ECR	6.71	0.81	4.1	7.68	40
EPS	3.21	5.69	-0.38	25.4	40
MAC	6.98	0.85	5.64	9.23	40

Source: Authors' computation (2023)

Table 4.1 shows the descriptive statistics of this study. The table shows that the dependent variable of firm performance when measured in terms of return on asset (ROA) has mean of 3.95 with a standard deviation of 12.71. The result implies that for every 1unit of asset employed in the business, the business will generate about ₦12.71K. Furthermore, the study finds that the mean of firm performance when measured in terms of economic value added (EVA) was -0.00 and standard deviation of 0.14. In the same vein, the mean of firm performance when measured in terms of Tobin Q was 1.63 with a standard deviation of 1.86. In the case of the independent variables, the study shows that the mean of environmental reporting index (ENR) was 0.01 with a standard deviation of 0.03. This implies that on the average, about 1% of the firms under study disclose information related to environmental reporting. The mean of social reporting index (SOR) was 0.26 with a standard deviation of

0.13. This also implies that on the average, about 26% of the firms under study disclose information about their social activities. Furthermore, the table shows that the mean of governance reporting (GOR) was 0.36 during the period under study with a standard deviation of 0.17. The result shows that about 36% of the firms in our sample disclose information about their corporate governance. For the variable of economic reporting (ECR), the table shows that it has a mean of 6.71 with a standard deviation of 0.81. In the case of the control variables, the result from the descriptive statistics shows that the mean of earnings per share (EPS) was 3.21 and a standard deviation of 5.69. Similarly, the study finds that the mean of market capitalization (MAC) was 6.98 during the period under study with a standard deviation of 0.85.

4.2 Normality Test

When testing for normality, probabilities greater than 0.05 indicate that the data are NORMAL. In contrast, if the probabilities are less than 0.05, the data are NOT NORMAL.

Table 4.2: Test for Data Normality

VARIABLES	Z	PROB>Z
ROA	1.337	0.09064
EVA	0.958	0.16912
TBQ	6.815	0.00000
ENR	6.023	0.00000
SOR	1.033	0.15069
GOR	1.286	0.09925
ECR	4.248	0.00001
EPS	5.520	0.00000
MAC	2.418	0.00779

Source: Authors ‘computation (2023)

Table 4.2 reveals the normality test of the data using the Shapiro Wilk test. The table shows that the dependent variable of firm performance when proxy in terms of return on asset has a z-statistics from the Shapiro-Wilk test as 1.337 with a Probability of Z-statistics as 0.09064. The table also shows that the dependent variable of firm performance when proxy in terms of economic value added has a z-statistics from the Shapiro-Wilk test as 0.958 with a Probability of Z-statistics as 0.16912. This implies that the dependent variable of firm performance when measured in terms of return on asset and economic value added are normally distributed since the probability of the z-statistics as seen in table 2 are insignificant at neither 1% nor 5% significant level. However, the result from table 2 shows that the dependent variable of firm performance when proxies in terms of Tobin Q has a z-statistics from the Shapiro-Wilk test as 6.815 with a Probability of Z-statistics as 0.00000. The result indicates that the dependent variable of firm performance is not normally distributed when measured in terms of Tobin Q since the probability of the z-statistics as seen in table 2 is significant at 1% level. In the case of the independent variable, the result shows that environmental reporting index ($\{Z=6.023; p\text{-value: } 0.00000\}$) and economic reporting index ($\{Z=4.248; p\text{-value: } 0.00001\}$) are not normally distributed since the probability of the z-statistics as seen in table 2 are significant at 1% and 5% level respectively. However, the independent variables of social reporting index ($\{Z=1.033; p\text{-value: } 0.15069\}$) and governance reporting index ($\{Z=1.286; p\text{-value: } 0.09925\}$) are normally distributed since the probability of the z-statistics as seen in table 2 are insignificant at neither 1% nor 5% significant level. For the control variables, the result shows that earnings per share has a z-statistics from the Shapiro-Wilk test as 5.520 with a Probability of Z-statistics as 0.00000. Similarly, the table shows that market capitalization has a z-statistics from the Shapiro-Wilk test as 2.418 with a Probability of Z-statistics as 0.00779. The results

imply that both control variables are not normally distributed since the probability of the z-statistics as seen in table 2 are significant at 1% and 5% level respectively.

4.2 Data Analyses

To examine the effect of sustainability reporting on the performance of firms in Nigeria, the study carried out a pool ordinary least square (OLS) regression and proceeds to check for inconsistencies with the basic assumptions of the pool OLS regression. These diagnostics tests include test for multicollinearity as well as test for heteroscedasticity. However, the study first tests for the association between the independent variables and the dependent variables employed in the study using the Spearman Rank correlation.

4.2.1 Correlation Analysis

Correlation is a statistical tool that helps to measure and analyze the degree of relationship between two variables. It quantifies the degree and direction to which two variables are related. Correlation does not fit a line through the data points. In statistics, the value of the correlation coefficient varies between +1 and -1. When the value of the correlation coefficient lies around ± 1 , then it is said to be a perfect degree of association between the two variables. As the correlation coefficient value goes towards 0, the relationship between the two variables will be weaker. Usually, in statistics, we measure three types of correlations: Pearson correlation, Kendall rank correlation and Spearman correlation. Pearson correlation is widely used in statistics to measure the degree of the relationship between linear related variables. Kendall rank correlation is a non-parametric test that measures the strength of dependence between two variables. Spearman rank correlation test does not assume any assumptions about the distribution of the data and is the appropriate correlation analysis when the variables are measured on a scale that is at least ordinal. In this study, the Spearman rank correlation is employed since the data employed does not come from a normal distribution. The result obtains from the Spearman correlation is presented in table 4.3.

Table4.3: Correlation Analysis

VARIAB	ROA	EVA	TBQ	ENR	SOR	GOR	ECR	EPS	MAC
LES									
ROA	1.0000								
EVA	0.9800	1.0000							
TBQ	0.6253	0.6187	1.0000						
ENR	0.0894	0.1395	0.1988	1.0000					
SOR	0.7172	0.6932	0.3992	0.1547	1.0000				
GOR	0.6091	0.5515	0.2870	-0.2017	0.6632	1.0000			
ECR	0.7895	0.7757	0.5131	0.2684	0.7809	0.4592	1.0000		
EPS	0.9328	0.9186	0.5408	0.1590	0.8458	0.7071	0.8422	1.0000	
MAC	0.8455	0.8209	0.6727	0.1690	0.8731	0.6281	0.8809	0.8972	1.0000

Author’s computation (2023)

In the case of the correlation between the independent variables and dependent variables of the study, the above results of table 4.3 show that there exists a positive association between the independent variable of ENR and the dependent variable of firm performance when measured in terms of return on asset (0.0894), economic value added (0.1395), and Tobin Q (0.1988) during the period under study. In the same vein, the table shows that the independent variable of SOR also has a positive with the dependent variable of firm performance when measured in terms of return on asset (0.7172), economic value added (0.6932), and Tobin Q (0.3992) during the period under study. Furthermore, the result from the correlation table shows that there exist a positive association between the independent variable of GOR and the dependent variable of

firm performance when measured in terms of return on asset (0.6091), economic value added (0.5515), and Tobin Q (0.2870) during the period under study. The result also indicates that the independent variable of ECR has a positive association with the dependent variable of firm performance when measured in terms of return on asset (0.7895), economic value added (0.7757), and Tobin Q (0.5131) during the period under study. The control variable of earnings per share also appears to have a positive association with the dependent variable of firm performance when measured in terms of return on asset (0.9328), economic value added (0.9186), and Tobin Q (0.5408) during the period under study. Finally, the table also shows that the control variable of market capitalization has a positive association with the dependent variable of firm performance when measured in terms of return on asset (0.8455), economic value added (0.8209), and Tobin Q (0.6727) during the period under study.

4.2.2 Multivariate Regression Analyses

In this study, to examine the cause-effect relationships between the dependent variables and independent variables, the pool OLS regression is employed and then the study proceeds to validate the estimates of the OLS results. The results obtained from the regression are presented in appendix 3 and summarized as shown in table 4.4 below.

Table 4.4: Multivariate Regression Results

	ROA Model (Pool OLS)	ROA Model (Robust Regression)	EVA Model (Pool OLS)	EVA Model (Robust Regression)	TBQ Model (Pool OLS)	TBQ Model (Robust Regression)
CONS.	-84.026	-89.385	-0.996	-1.098	-15.464	-2566.061
	{0.000} ***	{0.000} ***	{0.000} ***	{0.000} ***	{0.000} ***	{0.000} ***
ENR	22.721	13.893	0.278	0.099	-17.027	-3.357
	{0.582}	{0.654}	{0.591}	{0.807}	{0.014} **	{0.000} ***
SOR	-46.707	-42.947	-0.567	-0.551	-5.488	-69.146
	{0.021} **	{0.006} **	{0.025} **	{0.002} **	{0.085}	{0.000} ***
GOR	16.173	19.455	0.149	0.174	-7.713	347.768
	{0.120}	{0.016} **	{0.250}	{0.148}	{0.000} ***	{0.000} ***
ECR	2.831	8.669	0.018	0.093	0.228	-61.105
	{0.178}	{0.000} ***	{0.484}	{0.000} ***	{0.493}	{0.000} ***
EPS	0.992	0.848	0.011	0.010	-0.055	-0.605
	{0.000} ***	{0.000} ***	{0.000} ***	{0.000} ***	{0.133}	{0.059}
MAC	10.265	5.248	0.132	0.075	2.872	-7.577
	{0.000} ***	{0.013} **	{0.000} ***	{0.019} **	{0.000} ***	{0.000} ***
F-Stat/W-Stat	22.44 {0.0000}	42.78 (0.0000)	17.59 (0.0000)	39.65 (0.0000)	17.65 (0.0000)	
R- Squared	0.8031	0.8031	0.7618	0.7618	0.7624	
VIF Test	3.42		3.42		3.42	
Hetero. Test	0.40 {0.5285}		1.88 {0.1701}		32.35 {0.0000}	

Note: (1) bracket {} are p-values; (2) **, ***, implies statistical significance at 5% and 1% levels respectively

Source: Researchers' computation (2023)

Table 4.4 above represents the results obtained from the multivariate regression for this study. The result indicates that the pool OLS regression had an R-squared value of 0.8031 when the independent variable of firm performance is proxy in terms of return on asset, 0.7618 when the dependent variable of firm performance is proxy in terms of economic value added, and 0.7624

when the dependent variable of firm performance is proxy using Tobin Q. The result implies that the independent and control variables of the study could explain 80%, 76%, and 76% of the systematic changes in the dependent variable of firm performance when measured in terms of return on asset, economic value added, and Tobin Q respectively. However, the unexplained part of firm performance has been captured in the error term. The result of the F-statistics {(22.44 in terms of return on asset, 17.59 in terms of economic value added, and 17.65 in terms of Tobin Q)} of the pool OLS regression model for the sample agricultural firms in Nigeria with their associated p-value of 0.0000 indicates that the pool OLS regression models on the overall are statistically fit at 1% level of significance and can be employed for statistical inferences. However, to further validate the estimates of the pool OLS results for the models of return on asset, economic value added, and Tobin Q, this study also tests for the presence of multicollinearity and heteroscedasticity which could possibly cause spurious results.

4.2.2.1 Test for Multicollinearity

Correlation is a problem when the independent variables are not independent. If the degree of correlation between variables is extremely high (perfect correlation), it can cause problems when you fit the model. Hence, multicollinearity occurs when the explanatory variables in a regression model are perfectly correlated suggesting a strong relationship between the independent's variables. In this study like in most other related studies, we employ variance inflation factor (VIF) technique to diagnose the presence or absence of multicollinearity. The result from the VIF test shows a mean value of 3.42 when the dependent variable of firm performance is measured in terms of return on asset, economic value added, and Tobin Q. Specifically, the result shows that the mean VIF is within the benchmark of 10 in line with the position of (Gujurati, 2004) indicating the absence of multicollinearity and further show that none of the independent variables should be dropped from the models respectively.

4.2.2.2 Test for Heteroscedasticity

The assumption of homoscedasticity states that if the errors are heteroscedastic then it will be difficult to trust the standard errors of the least square estimates. Hence, the confidence intervals will be either too narrow or too wide. We conduct this test by employing the Breusch Pagan module in Strata 14. The result shows a chi2 value of 0.40 with a p-value of 0.5285 for the return on asset model, chi2 value of 1.88 with a p-value of 0.1701 for the economic value-added model, and a chi2 value of 32.35 with a p-value of 0.0000 for the Tobin Q model. The result shows an insignificant p-value across the models indicating that the assumption of homoscedasticity of the pool OLS regression results have been violated only in the model of Tobin Q. Hence, the study re- specifies the model to control for this violation by employing the robust regression as recommended by (Greene, 2003).

4.3 Test of Hypotheses

In this study, the researchers test the hypotheses using the summary result of the robust regression as revealed in table 4.4 above and the main result in appendix 3.

Hypothesis 1: The effect of Environmental Reporting on the performance of quoted Agricultural firms in Nigeria is not significant.

The results obtained from the robust regression model of table 4.4 revealed that environmental reporting [coef. = 13.893 (0.654)] has an insignificant positive effect on firm performance at neither 1% nor 5% significant level when proxy in terms of return on asset. The study also shows that environmental reporting index [coef. = 0.099 (0.807)] has an insignificant positive effect on firm performance at neither 1% nor 5% significant level when proxy in terms of

economic value added. However, environmental reporting [coef. = -3.357 (0.000)] has a significant negative effect on firm performance at 1% significant level of listed agricultural firms in Nigeria during the period under study when proxy in terms of Tobin Q. Hence, the null hypothesis that environmental reporting has no significant effect on the performance of listed Agricultural firms in Nigeria is rejected. The result implies that environmental reporting index significantly decrease Tobin Q measurement of firm performance but insignificantly improves firm performance when measured in terms of return on asset and economic value added of listed agricultural firms in Nigeria during the period under study. This finding negates the stakeholders' theory.

Hypothesis 2: The effect of Social Reporting on the performance of quoted Agricultural firms in Nigeria is not significant.

The results obtained from the robust regression model of table 4.4 revealed that social reporting [coef. = -42.947 (0.006)] has a significant negative effect on firm performance at 5% significant level when proxy in terms of return on asset. The study also shows that social reporting [coef. = -0.551 (0.002)] has a significant negative effect on firm performance 5% significant level when proxy in terms of economic value added. Furthermore, social reporting [coef. = -69.146 (0.000)] has a significant negative effect on firm performance at 1% significant level of listed agricultural

firms in Nigeria during the period under study when proxy in terms of Tobin Q. Hence, the null hypothesis that environmental reporting index has no significant effect on the performance of listed Agricultural firms in Nigeria is rejected. The result implies that social reporting significantly decrease return on asset, economic value added, and Tobin Q measurement of firm performance of listed agricultural firms in Nigeria during the period under study. This finding negates the stakeholder's and legitimacy theories.

Hypothesis 3: The effect of Governance Reporting on the performance of quoted Agricultural firms in Nigeria is not significant.

The results obtained from the robust regression model of table 4.4 revealed that governance reporting [coef. = 19.455 (0.016)] has a significant positive effect on firm performance at 5% significant level when proxy in terms of return on asset. However, the study shows that governance reporting [coef. = 0.174 (0.148)] has an insignificant positive effect on firm performance at neither 1% nor 5% significant level when proxy in terms of economic value added. However, governance reporting index [coef. = 347.768 (0.000)] has a significant positive effect on firm performance at 1% significant level of listed agricultural firms in Nigeria during the period under study when proxy in terms of Tobin Q. Hence, the null hypothesis that governance reporting index has no significant effect on the performance of listed Agricultural firms in Nigeria is rejected. The result implies that governance reporting index significantly increase return on asset but insignificantly increase economic value-added measurement of firm performance. However, governance reporting index significantly improves firm performance when measured in terms of Tobin Q of listed agricultural firms in Nigeria during the period under study. This finding supports the stakeholder's and legitimacy theories.

Hypothesis 4: The effect of Economic Reporting on the performance of quoted Agricultural firms in Nigeria is not significant.

The results obtained from the robust regression model of table 4.4 revealed that economic reporting [coef. = 8.669 (0.000)] has a significant positive effect on firm performance at 1% significant level when proxy in terms of return on asset. Furthermore, the study shows that economic reporting [coef. = 0.093 (0.000)] has a significant positive effect on firm performance

at 5% significant level when proxy in terms of economic value added. However, economic reporting [coef. = -61.105 (0.000)] has a significant negative effect on firm performance at 1% significant level of listed agricultural firms in Nigeria during the period under study when proxy in terms of Tobin Q. Hence, the null hypothesis that economic reporting index has no significant effect on the performance of listed Agricultural firms in Nigeria is rejected. The result implies that economic reporting index significantly increases return on asset and economic value added. However, economic reporting significantly decreases firm performance when measured in terms of Tobin Q of listed agricultural firms in Nigeria during the period under study. This finding supports the stakeholder's and legitimacy theories.

5. CONCLUSION AND RECOMMENDATIONS

Conclusion

Based on the findings of this study, it is concluded that environmental reporting significantly decreases Tobin Q measurement of firm performance but insignificantly improves firm performance when measured in terms of return on asset and economic value added of listed agricultural firms in Nigeria during the period under study. Furthermore, social reporting significantly decreases return on asset, economic value added, and Tobin Q measurement of firm performance of listed agricultural firms in Nigeria during the period under study. The study concludes that governance reporting significantly improves firm performance when measured in terms of ROA and Tobin Q of listed agricultural firms in Nigeria during the period under study. The study also concludes economic reporting significantly increases return on asset and economic value added. However, economic reporting index significantly decrease firm performance when measured in terms of Tobin Q of listed agricultural firms in Nigeria during the period under study.

Recommendation

Based on the findings of this study, the following recommendation are carefully made

1. The cost of environmental reporting should be minimized as the study shows it is reducing the performance of the firms under study.
2. Policies on social reporting should also be reevaluated as the study shows it is negatively affecting the performance of the firms under study.
3. It is recommended that corporate management should not just be after the reporting of corporate governance mechanisms but to also ensure that they are correctly applied and thus restoring the eroded investors' confidence and improving overall performance in terms of profitability, value added, and market value.
4. Valuable financial, material, and human resources should be channelled on policies that relates to improving economic reporting if the desire is to gain improved return on asset and economic value added.

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