

SUSTAINABILITY REPORTING AND FIRMS' VALUE IN NIGERIA: MODERATING ROLE OF RESEARCH AND DEVELOPMENT EXPENDITURE: A CONCEPTUAL REVIEW

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Abstract

This study aims to review the moderating effect of research and development expenditures on the relationship between sustainability reporting and firm value of non-financial firms in Nigeria from 2017 to 2024. This study adopted literature survey research design as previous research on the area were examined. The reviews shows that the influence of sustainability reporting on firms' value varies across the sectors, while companies like oil & gas and manufacturing firms benefit most from environmental reporting, other service-based industries like telecommunications gain more from the social disclosure. The review further reveals that while sustainability reporting positively influences firms' value, R&D expenditures could align sustainability efforts and enhance communication to stockholders. The paper therefore recommends that government should make sustainability practices mandatory among the companies in Nigeria.

Keywords: Firm's value, Economic Reporting, Social Reporting, Environmental Reporting

INTRODUCTION

Share price most at times portray a true reflection of companies' value. It is a good indication that signifies the value of corporation as a whole. High stock price go a long way in increasing firm value. High firm value boosts investors' confidence in the company's current and future performance (Hadiati & Wahyudyatmika, 2023). Firm value is the market price of a company's shares created by buyers and sellers through transactions. The stock market price is considered as an actual representation of the real value of a company's asset. It is one of the parameters that investors consider in deciding which firm to invest in as it is tied to stock price. According to Hidayat (2016), an excellent corporate value is determined by solutions to environmental challenges that affect business and the community surrounded. Also stakeholder theory shows that the market value of an enterprise largely depends on the ability to meet up with the stakeholders' requirements (Shakil, 2021). Therefore, the primary factor influencing the welfare of shareholders or company owners is the firm's dignity. By boosting the shareholders' welfare, the firm's value will improved. This necessitates the need for managers to go extra miles toward putting in place policies that have the potential to increase the firm's value (Nurhayati et al 2021). Sustainability reporting is among those policies that can enhance corporate value and also increase openness, accountability and stakeholder confidence (Li et al., 2018). Revealing sustainability information does not only improve business performance but also reflect in the firm value in a long run as firms with greater transparency often stimulate the interest of investors the most (Chen & Xie 2022).

Despite the enormous benefits of sustainability, many companies especially in developing countries are only concern with profit making thereby neglecting the effect of their activities on environment within which they operate (Astari et al., 2023). This can be witness from many incidents of environmental deteriorations and social deprivation issues that are considered unsuitable to some extent. The consequential effect of such activities is increase in severity of global climate change, environmental degradation and social unfairness that sparked concern for a more sustainable society which have become a key factor constraining sustainable economic development (Else et al., 2022; Gu & Wang., 2022; Higgins et al., 2020; Yin et al., 2023). Based on this understanding, investors and other stakeholders are now not only interested in the financial reports that showcase company profits but also interested in the environmental, social and economic efforts (Lee & Isa, 2023). The sustainability reports detail the economic, environmental and social consequences of the actions of company. By publishing sustainability reports, the company demonstrates its commitment to maintaining environmental balance and sustainability (Baba & Baba, 2021), as well as minimizing social inequalities and community economic welfare, so that the community will have a positive perception of the company's ability to provide reciprocal relationships with the environment (Astari et al., 2023).

Sustainable development is one of the most important challenges confronting humanity today. Investors and other stakeholders seek a comprehensive perspective of the business through corporate reporting. Stakeholders seek information that will allow them to properly evaluate a company's entire economic value. They need more and detailed information on the present and anticipated future, rather than merely the company's historical economic state (Emeka et al., 2019). It is the growing pressure and demand for such information especially the positive and negative impacts of social and environmental actions that will contribute to sustainable development (Paolone et al., 2022). This singular act is making sustainability reporting a necessary practice, particularly among listed entities (Slacik & Greiling, 2022). Sustainability reports are the necessary information being released by companies or businesses to explain the economic, environmental, and social implications of their operations. The report will also discuss corporate culture and governance, as well as its relationship to the company's commitment and strategies toward maintaining the triple bottom line (people, planet, profit) (Hadiati & Wahyudyatmika, 2023).

Environmental sustainability is concerned with reducing the negative impact of entities on the ecology as a result of business activities (Zhou et al., 2022). Implementation of technological innovation promotes the environmental performance of enterprises. Scholars believe that investing in Research and Development (R&D) will increase opportunity and corporate profit (Zuo et al., 2019). Technological innovation activities can reduce production costs and improve production efficiency (Liu et al., 2020). Also, when companies increase their research and development efforts by bringing more technology, they can quickly seize new market, which will reflect in their operational and financial performance (Xu et al., 2019). R&D does not only help companies gain a leading position in the market competition but help the country in the international market (Zhou et al., 2022). Therefore, investing in research and development promotes innovation in sustainable practices, allowing companies to develop new technologies and procedures that minimize environmental effects. This innovation can improve sustainability activities through which firms are then encourage to smoothly reports on, thereby enhancing the companies' sustainability disclosure and winning stakeholders trust which could improve firms value (Nyereugwu & Ugonma, 2020; Olutola, 2022; Hassan & Musa 2022).

Nevertheless, economic, social and environmental sustainability main target is to make a company sustainably developed through eco-friendly, social responsible and ensuring transparency. Although sustainability reporting has become more important over a long period of time, yet the quality of studies on the relationship between sustainability reporting with firm value remain incomplete (Nguyen, 2020). A study by Duan et al (2023) focused on the investment in R&D, innovation-driven policies, and the relationship between competitiveness and technological innovation. The study affirms that there could be a connection between sustainability performance and research & development input in manufacturing firms hence, recommended incorporating the research and development expenditures for future study. this suggests the research gap for the present study. Similarly, A study conducted in China by Kong et al (2023) reveal the vacuum in methodological gap in examining the moderating effect of technological innovation through R&D expenditure on environment, social, and governance (ESG) performance and firm value. However, the study only focused on domestic pharmaceutical companies in central and southern Africa. The study therefore recommended that future studies should look beyond one sector and expand the geographical scope beyond central and southern Africa so as to be able generalized the findings globally. It is based on these deficiencies, the present study seeks to bridge the existing gaps by examine the impact of sustainability reporting on firm value of non-financial firms in Nigeria: moderating effect of R&D expenditures from the period 2017 to 2024.

LITERATURE REVIEW

2.1 Concept of Firms Value

The concept of firm value in some instances varies from one literature to another depending on the various interpretations or definitions accorded to it. Some studies viewed firm value as an economic measure which reflects the market value of a business which can be determined using market value of all outstanding shares of a firm (Kurshev & Strebulaev, 2015). Rajhans and Kaur (2013) also suggest that, firm value can be ascertained by multiplying a company's total number of shares outstanding by the market price. However, the accounting net worth or book value of a firm is the most easily and readily accessible measure of firm value due to its availability in company's annual reports and accounts (Fitri et al., 2021). The capitalized value of projected future earnings is another measure of corporate worth (Atanda et al., 2021). Miller and Modigliani (1961) observed that, while four distinct methods of capitalization can be used to measure firm value, all of them produced the same valuation when markets are perfect, people are completely rational, and the future is known with certainty. Consequently, the limitations of using the methods lie in satisfying these assumptions. Moreover, capital market based measure of firm value is Tobin's Q. It measures how investors perceive a company's market value in relation to its book value. Tobin's Q is the ratio of the market value of equity (price at the conclusion of the financial year multiplied by the number of shares outstanding) plus book value of debt (total assets minus book value of equity) in relation to assets (Emeka-Nwokeji, and Osisioma, 2019; Albuquerque, et al., 2013).

2.2 Sustainability Reporting in Nigeria

The Nigerian Securities and Exchange Commission (SEC) addressed the Sustainability Issues in Nigerian Code of Corporate Governance (2011) [Paragraphs 28.1 and 28.3(a) to (i)]. In Nigeria, the Nigerian code of corporate governance (2011) as disclosed by the Securities and Exchange Commission (SEC), specifically made emphasis on sustainability issues in part D [Paragraph 28.1 and 28.3 (a) to (i). paragraph 28.3 precisely stated that: "The Board should

report annually on the nature and extent of its social, ethical, safety, health and environmental policies and practices" (2011 Securities and Exchange Commission Code). The Code went on to state that all issues in the environmental reports shall be classified into [Ph. 28.3(a) to Ph. 28.3(i)] (Haladu & Salim, 2017):

- a) Company's business principles and Codes.
- b) Options with the most environmental benefits or least environmental damages.
- c) Workplace accidents, fatalities and occupational & safety incidents.
- d) Company's policies, plans and strategies for HIV/AIDS and other serious diseases on employees.
- e) Number and diversity of staff training and development.
- f) Conditions and opportunities for handicapped and physically disabled individuals.
- g) Nature and extent of social investment policies.
- h) Disclosure of firm's corruption and other related issues, policies and degree of compliance with policies.
- i) The nature and extent of employment and gender equality and policies.

2.2.1 Categories of Sustainability Reporting

There are basically three categories of sustainability reporting. These are economic sustainability, environmental sustainability and social sustainability.

2.2.1.1 Economic Sustainability

The Economic sustainability depicts the movement of capital among various stakeholders as well as the organization's key economic impacts on society as a whole. The economic aspect of sustainability comprises activities like economic performance, market presence, indirect economic impacts and procurement practices, economic prosperity, profit-making, attaining competitive advantage, and sustaining the overall economic value of the corporation (Haladu & Salim, 2017; Shad et al. 2019).

2.2.1.2 Environmental Sustainability

The environmental sustainability is concerned with the company's impact on living and non-living natural systems such as land, air, water, and ecosystems (GRI, 2013). Environmental sustainability according to Haladu and Salim (2017) include the effects of energy consumed, water used, gas emissions, and effluents and pollutants expelled. Environmental sustainability also include biodiversity, transportation, product and service related impact as well as environmental compliance and spending. For environmental reporting, the following major points are expected to be revealed or disclosed: Energy, Water, Carbon emissions, Waste management Compliance, Products & service stewardship.

2.2.1.3 Social Sustainability

Social sustainability has to do with specifying and managing both positive and negative impacts of systems, processes, organizations and activities on people and social life (Kosmopoulos, 2024). Social sustainability is an aspect of corporate sustainability plan and a critical component of a community's wellbeing and longevity. However, companies are encouraged to submit all main metrics in this scenario for social sustainability in order to increase transparency and commitment. According to GRI (2011), these include issues concerning human rights; anti-

corruption behavior; business ethics; political contributions. Social sustainability also encompasses lobbying and advocacy, employment practices, non-discrimination policy, labor and industrial relations, employees' safety and training, local employment opportunities, training and education.

2.3 Concept of Research and Development Expenditure

Research and development activities which is commonly referred to as "R&D," is a critical components of company's initiatives to improve its knowledge base and eventually create, acquire, and incorporate innovation into its products and processes. R&D is basically creative process carried out by competent and qualified people from wide range of disciplines. However, like any other business activities, research and development is a capital intensive that requires money and other resources that could be employed for other projects. Thus, it is a process that must be managed and businesses must devise ways that are best suited to the task (Alan, 2023). Amount of expenses incurred on R&D activities by a firm is considered as R&D expenditures and also investment instrument that will increase the value of the firm in the long-run (Anidebe et al., 2021).

2.4 Empirical Review

In the past, several studies were conducted to examine the relationship between sustainability reporting and firms' value. Among others, Bartlett (2012) examine the effect of corporate sustainability reporting on firm valuation, the study found that there a positive correlation between sustainability reporting and firm value. A similar study was conducted by Burhan and Rahmanti (2012) on non-financial companies listed on the BEI of Indonesia between the periods of 2006- 2009. The findings revealed that the sustainability disclosure on firm value is mostly carried out in manufacturing and mining companies and that the sustainability reporting had effect on firms performance. In Japan, Saka and Oshika (2014) conducted a study on the effect of environmental disclosure of carbon emission on corporate value. The outcome indicates a positive relationship between environmental disclosure of carbon and corporate value. Also, Fazzini and Maso (2016) conducted a study on the effect of environmental disclosure on companies' information that has value relevance to companies in Italy and found that the disclosure significantly affects the companies' value.

Moreover, Haladu and Salim (2017) examine sustainability reporting by firms in Nigerian economy by specifically focusing on social versus environmental disclosure. The study found that the present trend of reporting sustainability information disclosure under both social and environmental reporting is encouraging, given that disclosure on sustainability concerns in Nigeria is optional (voluntary). However, firms in environmental sensitive industries are reporting more sustainability activities than expected. A related study conducted by Lawrence et al., (2017) empirically investigates the relationship between sustainability and firm value of listed companies in Singapore. The result of the study reveals that, sustainability reporting is positively related to firm value. Similarly, Diantimala (2018) examined the Mediating effect of sustainability disclosure on the relationship between financial performance and firm value using the listed companies in Jakarta Islamic Index (JII) from 2013-2015. The result of the study showed that, sustainability disclosure significantly increases firm value. This implies that the higher the level of sustainability disclosure among the listed companies the better the firms' value in Jakarta. Uwuigbe et al. (2018) on their own part investigate the bi directional relationship between sustainability reporting and firm performance of Nigerian listed Deposit Money Banks (DBMs) for the period 2014-2016. The study used panel data regression to

analysed the data. The findings indicate sustainability had a negative relationship with market value of the share price of banks in Nigeria.

More so, [Loh and Tan \(2020\)](#) investigate the impact of sustainability reporting on brand value of firm in Singapore. The study examined 100 leading brands by sustainability information using GRI index as benchmark. The result of the study suggests that, sustainability reporting had positive impact on brand firm value. [Nguyen \(2020\)](#) conducted a study on the impact of sustainability reporting on firm value of 97 listed companies in Germany. The research used data of the companies from 2013 to 2017 also adopted multiple regressions. The findings of the study suggest that, the relationship between sustainability disclosure and firm value is negative. Besides, [Fitri et al. \(2021\)](#) investigate the relevance of sustainability report disclosure in non-financial companies listed on Indonesian stock exchange from 2016-2018. Using a sample of 19 non-financial companies, the study found empirical evidence of insignificant relationship sustainability reporting and firm value. Also, [Fatai et al. \(2021\)](#) conducted a study on the effect of sustainability reporting on firm value of deposit money banks. The study used information extracted from published annual reports and accounts of the banks for the periods of 2014-2018. The study adopted panel data analysis with specific emphasis on fixed-effect regression. The empirical evidence pointed out that, sustainability reporting have significant negative effect on firm value, suggesting that, banks with high overall sustainability disclosure tend to have low firm value.

Furthermore, [Ikpor et al. \(2022\)](#) investigate factors driving the choice of sustainability in an emerging market economy context. The data were extracted from annual reports and sustainability global reports using the 50 large companies listed on Nigerian exchange group for the period 2015-2020, the study employed panel data research design. Finding from the study reveals that, sustainability disclosure can influence several internal factors of companies in Nigeria. The findings also show that banking and oil and gas industries in Nigeria take sustainability reporting more seriously than any other industry. Also, [Akprorien et al. \(2022\)](#) examine the relationship between corporate sustainability efficiency and market value of listed deposit money banks in Nigeria. The study used secondary data obtained from audited annual reports of listed banks in the Nigerian exchange group for the period of 2017-2020. The findings show that even though economic, environmental and social dimensions of sustainability are significant and positively related to firms' value, but there is no significant relationship between corporate sustainability efficiency and market value. Lastly, [Onoh et al., \(2023\)](#) examine the effect sustainability reporting practice on firm value of listed oil on gas companies in Nigeria. The data extracted from published annual reports and accounts of companies were analysed using descriptive, correlation and multiple regression analyses. The result of the analysis shows that while environmental sustainability disclosure had significant effect on firm value, the economic sustainability reporting had a negative significant effect on the value of the firm.

2.5 Theoretical Review

Given the complexity and voluntary nature of sustainability reporting, some scholars believe it is difficult to explain the phenomena with a single theory ([Bream et al., 2016](#); [Abba, 2022](#)). Accordingly, the two most widely used theories in explaining the impact of sustainability reporting on firm value include stakeholder theory and legitimacy theory.

2.5.1 Stakeholder Theory

Stakeholder theory advocates that firms should disclose sustainability information in order to meet up with the expectation of various stakeholders (Freeman, 1984). The theory focuses on the concept that, in addition to shareholders, there are other groups to which a company owes responsibilities. This refers to individuals or organizations who have an interest in the company and whose behaviors can impact or are influenced by the company's decisions (Gold & Taib, 2021). Beyond the shareholders and leadership of the organisation, there are other people who have a stake in the company's actions. To this end, stakeholders must be informed about the social, environmental, and economic consequences of the company's activities being that stakeholders are implicitly obligated to alter the company's behavior (Abba, 2022).

2.5.2 Legitimacy Theory

The legitimacy theory suggests that firm reveals specific information as a way of aligning with societal norms and maintain its legitimacy (Suchman, 1995). Specifically, legitimacy theory posits that organizations must demonstrate actions aligned with societal values and expectations to maintain public support and positive reputation. This theory suggests a social contract exists between organizations and community, where the organization fulfills societal expectations in exchange for right to operate.

2.6 Research Framework

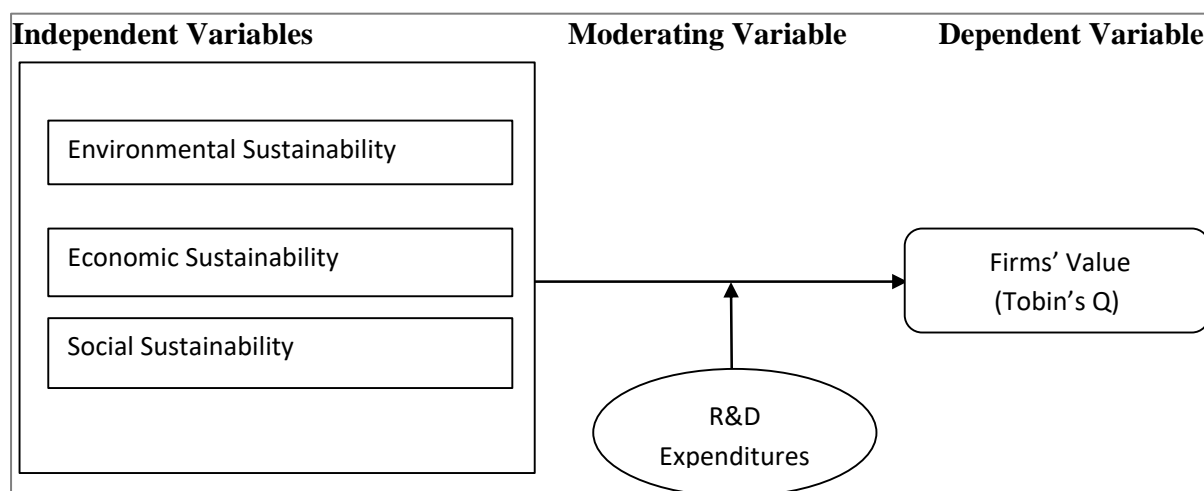


Figure 1: Conceptual framework on the role of R&D expenditures in moderating the relationship between sustainability reporting and firms' value.

Figure 1 presents the proposed framework for this study. The research framework is developed in line with theoretical gaps found in prior studies. Firms' value is the dependent variable. Sustainability reporting is the independent variables including environmental sustainability, economic sustainability and social sustainability. The moderating variable of this study is research and development expenditures. Besides, despite the relevancy of the assumptions in the above theories, the two theories alone could not explain the moderating role of R&D expenditure on the relationship of sustainability reporting and firm value. The present research is therefore intended to address such drawback by reassessing the applicability of these theories within the context of Nigeria, and also incorporate the resource based theory that suggests firm through its unique resources stands a chance to gain a competitive advantage over others. Based

on this, the present study considers stakeholder, legitimacy and the resource based theory to be the underpinning theories.

METHODOLOGY

In this section methods used in the prior studies on sustainability reporting and Firms' Value in Nigeria was examine. This study reviewed previous work methods and adopted literature survey design targeted population and sample size, methods of data collection and tools of analyses were mostly inferential statistics and regression analyses. However, a number of studies reviewed used panel data research design and considered number of companies for period of the study. While, few studies used cross sectional research design (survey) by considering number of companies for a particular period of time (Pulife, et al., 2020; Magara, et al., 2018 in Kenya). The tool of analysis commonly used in prior studies is regression analysis as revealed by about 95% of the articles reviewed.

CONCLUSION

This study provides a theoretical framework on how research and development expenditures will strengthen the relationship between sustainability reporting and firm value. The inclusion of this moderating variable is considered necessary given the conflicting findings identified in the previous studies. Even though, the result shows that sustainability reporting on firms' value varies from one sector to another depending on the nature of their operations, for instance considering the substantial vulnerability to climate related hazards, oil and gas and manufacturing firms could benefit the most from environmental reporting whereas, service-based industries like telecommunications etc may gain more benefit from social disclosure. Hence, incorporating R&D expenditures as moderator would revamp the relationship between sustainability reporting and firms' value thereby improving the reporting quality, accuracy as well as good shareholders' engagement.

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