

**EFFECT OF SUSTAINABILITY REPORTING AND
TECHNOLOGY ON THE PERFORMANCE OF NIGERIA
PUBLIC ENTERPRISES**

Okeke, Raphael Chukwuma¹, Ochie Chijioke², Orafu Ebere Benedeth³

Department of Accountancy^{1,2,3}, School of Financial Studies, Federal Polytechnic Oko, Anambra, Nigeria

Ppeterbruno500@gmail.com⁽¹⁾
07036407428

Abstract: This study examined the effect of Sustainability Reporting and Technology(SRT) on the performance of Nigeria public enterprises. It ascertains the surrogates on Return On Asset (ROA) and effects of Economic, Social and Environmental performances disclosures on Return on Asset (ROA) of public enterprises in Nigeria. Obviously companies could extend their strategic policies and sustainability reporting practices in order to meet the environmental and social needs of the both current and future stakeholders. The issue of sustainability reporting has gained wide supports in recent times due to the increasing awareness that the activities of most organizations have adverse effects on the current and future ecosystems, societies, and environments. The main objectives of this study was to investigate the effect of sustainability Reporting and technology on the performance of Nigeria public enterprises' Return on Assets (ROA) which were listed on Nigeria Stock Exchange (NSE). The researcher utilized secondary data collected from the annual financial report of individual companies selected for the study, content analysis and Website of Nigeria Stock Exchange (NSE). The multiple regression models were applied in analyzing the data collected. Also, the hypotheses formulated were tested and result obtained according to each variable and proxy. Recommendations were offered for improvement on the current sustainability standards which should be in line with the country's specific social and environmental challenges while the implementation should rather be obligatory than voluntary to remove the conservativeness of some companies towards social and environmental sustainability reporting in Nigeria.

Keywords: Sustainability Reporting, Return on Asset (ROA), Stakeholders, Environmental disclosure, Social disclosure, Public enterprises, Global Reporting Initiative (GIR).

Introduction

Sustainability is currently a burning issue and a major cause of concern across the globe (Priyanka, 2013). Until the late 1980's, business leaders typically employed the term "sustainability" to mean a company's ability to increase its earnings steadily. Today, the concept of corporate sustainability' encompasses every dimension of the business environment, including social, economic and natural resource utilized by the firm. According to global reporting organization. A sustainability report is a report published by a company or organization about the economic, environmental and social impacts cause by its everyday activities. A sustainability report also presents the organization's values and governance model, and demonstrates the link between its strategy and its commitment to a sustainable global economy. Sustainability reporting can help organizations to measure, understand and communicate their economic, environmental, and social and governance performance and then set goals and manage change more effectively.

A sustainability report is a key platform for communicating sustainability performance and impact, whether positive or negative. Enterprise performance is a composite assessment of how well an organization execute on its most important perimeters, typically financial, market and shareholder performance. The overall objective of any organization is to consistently grow and survive on a long term basis. Most managers are also aware that their organisations are part of a large system which has profound direct and indirect influence on their

operations. This implies that if these organisations must effectively and efficiently meet their objectives, they should properly adapt themselves to their environments.

According to Meyer (2007), "accounting plays a significant role within the concept of generating and communicating wealth of companies". Financial statements still remain the most important source of externally feasible information on companies. Nevertheless, in the wake of the recent accounting scandals and economic meltdown where billions of naira of investment and retirement wealth have disappeared, the very integrity and survivability of the sustainability reporting of this service has been called to question.

Adapting organizations (especially firms) to their environments signifies a reciprocal or symbiotic relationship between the 'duos' as typified by systems model of viewing business. In considering the current environmental crisis, businesses must give more to their environments. The environment in which businesses operate is on unsustainable course. We are now faced with serious challenge of environmental changes such as global warming, health care and poverty. This situation is similar to what Welford (2017); described as tangible environmental crises (serious water shortage across around the world, global food insecurity and decline in fish catches).

According to Vlek and Steg (2017), Ezeabasili (2019), as human population continue to grow, material consumption intensifies and production technology further expands there is a steady decline in the quantity and quality of environmental resources. There is continuing concern about nature fragmentation and loss of biodiversity, shortages in freshwater availability, over-fishing of the seas, global warming, extreme weather events, air pollution, water pollution, environmental noise and utter neglect and disregard for the protection of the immediate environment, much more the future environment.

This type of environmental unsustainability associated with continuously rising demand and a shrinking resource base, now spills over into social and economic instability. Following from the above, therefore, many are looking to business to be part of the solutions. For instance, Welford (2017) maintains that business seems content to see the natural system on the planet disintegrating, people starving and social structures falling apart. Indeed the expectations of corporate responsibility in areas such as environmental protection, human rights, human capital, and product safety are rising rapidly. Key stakeholders such as shareholders, employees, and financial institutions want business to be responsible, accountable and transparent. Many people argue that the growing social injustice experienced by ever larger numbers of people, and the growing damage to the ecosphere, are as the result of a dominant -and almost unquestioned objective of maximizing economic growth. In these terms economic growth (characterized by energy and material-intensive production and exploitative social relations) is socially and environmentally unsustainable.

Unerman et al (2007), Opined that these issues by business leaders help companies to mitigate risks, protect corporate brand and gain competitive advantage while helping to reduce poverty and improve the quality of life for many. Therefore, if business as a whole operates in a manner which causes damage to the society and thereby causes a break down in the social harmony necessary to provide a stable context for operation, then such business activities are neither economically nor socially sustainable. It is against this background that the motivation behind this study is rooted. As explained in the previous pages, corporate sustainability comprises of three elements namely; economic, environmental and social sustainability and this study adopted two of the

components (social and environmental sustainability). The justification is that economic component has the same proxy with the financial performance used.

Objectives of the study

The broad objective of this study is to investigate the effect of Sustainability Reporting and technology on the performance of Nigeria public enterprises. Specifically, this study sought to:

1. Find out the effect of Sustainability reporting surrogate on return on asset.
2. Ascertain the effect of economic performance disclosure on return on asset of an enterprise.
3. Find out the effect of environmental performance disclosure has on enterprise's return on asset.
4. Ascertain the effect of social performance disclosure on return on asset of an enterprise.

Research Questions

The following research questions and null hypotheses were raised in order to address the aforementioned objectives:

1. What is the effect of Sustainability reporting surrogate on return on asset?
2. What is the effect of economic performance disclosure on return on asset of enterprise?
3. What effect does environmental performance disclosure have on enterprise return on asset?
4. What is the effect of social performance disclosure on return on asset of an enterprise?

Research Hypotheses

H₀₁: The sustainability reporting surrogates prediction or influence on companies' performance is not significant.

H₀₂: Economic performance disclosure has no significant effect on company's performance.

H₀₃: Environmental performance disclosure has no significant effect on the performance of a company.

H₀₄: Social performance disclosure has no significant effect on company's performance.

Conceptual Framework

Concept of Enterprise

An enterprise is a large-scale organization with a composite structure. Enterprise companies often have multiple divisions, each with its specialized function. For instance, a multinational corporation may have a marketing department, manufacturing infrastructure, legal team, and resources for launching new projects (Deephouse and Suchman, 2018). Also enterprise is an organization, especially a business, especially one that will earn money: commercial enterprises don't forget this slogan we're here to make money. An enterprise refers to a business or

organization that operates with a specific goal or purpose, often involving economic activity (Dixon, Milton, and Woodhead, 2015).

Characteristics of Enterprise

1. Economic Activity: Enterprises engage in economic activities, such as production, distribution, and exchange of goods and services.
2. Organization: Enterprises have a structured organization, including management, employees, and resources.
3. Goals and Objectives: Enterprises have defined goals, objectives, and strategies.
4. Innovation and Risk: Enterprises often involve innovation, entrepreneurship, and calculated risk-taking.
5. Sustainability: Successful enterprises aim for long-term sustainability.

Categories of Enterprises

1. Private Enterprise (Business): Profit-driven, privately owned. (Ibeto, Dangote Dentata and sawoe)
2. Public Enterprise (Government-owned): Provides public goods and services.
(Water corporation electricity)
3. Non-Profit Enterprise: Focuses on social or charitable causes.
4. Social Enterprise: Combines social and economic objectives.
5. Cooperative Enterprise: Member-owned, democratic control.

Concept of Technology

Technology is machinery and equipment that uses the application of scientific knowledge in a particular area for practical purposes, using technical processes, methods, or knowledge with, a function, purpose, or benefit, to improve human life. Technology is the application of conceptual knowledge to achieve practical goals, especially in a reproducible way.

According to Brammer and Pavelin (2018), the word technology can also mean the products resulting from such efforts, including both tangible tools such as utensils or machines, and intangible ones such as software. Technology plays a critical role in science, engineering, and everyday life. Technological advancements have led to significant changes in society. The earliest known technology is the stone tool, used during prehistory, followed by the control of fire — which in turn contributed to the growth of the human brain and the development of language during the Ice Age, according to the cooking hypothesis. The invention of the wheel in

the Bronze Age allowed greater travel and the creation of more complex machines (Branco and Rodrigues, 2018). More recent technological inventions, including the printing press, telephone, and the Internet, have lowered barriers to communication and ushered in the knowledge economy. While technology contributes to economic development and improves human prosperity, it can also have negative impacts like pollution and resource depletion, and can cause social harms like technological unemployment resulting from automation. As a result, philosophical and political debates about the role and use of technology, the ethics of technology, and ways to mitigate its downsides are ongoing (Cong and Freedman, 2018).

Concept of Sustainability Reporting

Sustainability Reporting is a broad term generally used to describe a company's reporting on its economic, environmental and social performance. It can be synonymous with triple bottom line reporting. (Corporate Sustainability reporting and sustainable development reporting are becoming more specific in meaning and therefore subsets of Sustainability reporting (KPMG, 2008). According to parliament of Australia (2010), Sustainability reporting involves companies and organizations demonstrating their corporate Sustainability through measuring and publicly reporting on their economic, social and environmental performance and impacts. GRI (2011) defines Sustainability reporting as the practice of measuring, disclosing and being accountable to internal and external stakeholders for organizational performance towards the goals of sustainable development. Sustainability reporting is the incorporation of the environmental, societal and economic aspects of an organization to the reporting and communication to the interested parties. The most solid reason for the initiation of such reporting is due to the stakeholder pressure and coercive pressures upon the organizations. This reporting is mainly used as a communicating mode to the wider stakeholder--base of the organization. Sustainability reporting is closely related with corporate social responsibility reporting. It has a voluntary character. Social responsibility reporting refers to the measurement and communication of information about company's effect on employee welfare, the local community and the environment. Information on company welfare may involve working conditions, job security, equal opportunity, workforce diversity and child labour. Environmental issues may include the impact of production process, products and services on air, water, land, biodiversity, and human health (Gentry, 2007). However, corporate social responsibility focuses only on environmental and social disclosure, while the concept of sustainable development tied in sustainability reporting involves broader area that covers environmental, social and economic performances. As the campaign of sustainable development has been on increase, many corporate non-financial reports, corporate social responsibility reports, now have been re-packaged as sustainability report (Lopez, Garcia & Rodriguez, 2007). According to Sridhar (2012), regardless what drives companies to produce sustainability reports and the facts that they are not a mandatory report in most countries, these documents are being integrated in the culture of big companies over time. In fact, the ability to build a performance appraisal system and information management system that provides information about the balance of social, environmental and financial information is essential to maintain the company's culture of sustainability (Rahardjo, Idrus, Djumilah and Siti, 2013). Sustainability reporting boosts investors' confidence and gives companies the leverage to choose their partners wisely. It also garners employ entrust and loyalty, increases access to capital and leads to reduction in waste. It is a virtuous cycle where one sustainable activity benefits the next and keeps the wheel turning.

Standards and Guidelines on Sustainability Reporting

A number of standards, guidelines and organizations are crucial in the development of sustainability reporting. Muller (2011) identifies these guidelines as emanating from the Carbon Disclosure Project (CDP), International Standards Organization (ISO), Global Reporting Initiative (GRI), Greenhouse Gas Protocol (GGP) and United Nations Global Compact (UNGC). Also, assurance of sustainability disclosures and reporting is overseen by accounting firms namely big four -Klynveld Peat Marwick Goerdeler (KPMG), PricewaterhouseCoopers (PwC), Ernst & Young, Deloitte. Also Accountability principles and International Federation of Accountants (IFAC) and other consultants who are not accounting firms are not left out.

The Global Reporting Initiative (GRI) is a leading organization in the field of corporate reporting poised with a mission to promote the use of sustainability reporting by government, business and not-for-profit organizations; thereby contributing to sustainable development. The latest reporting principles and standard disclosures of the GRI (G4) were issued in July 2013 (GRI, 2013). Previous guidelines are the G3.1 (issued in 2011), G3 (issued in 2006), G2 (issued in 2002) and the 2000 guidelines. The G3.1 guidelines issued in 2011 classify the standard sustainability disclosures along three lines namely strategy and profile, management approach and performance indicators. Based on Global Reporting Initiative (2011), organizations are supposed to declare the level to which they adhere to the guidelines when they report.

Performance of Public enterprise

The subject of corporate performance has received significant attention from scholars in the various areas of business and strategic management (Jat, 2006). It has also been the primary concern of business practitioners, managers and entrepreneurs in all types of organizations because corporate performance is essential as exemplified in high performance organizations which are success stories because of their perceived effectiveness and efficiency in managing their operations and their positive contributions to the well-being of their stakeholders. Whereas, low performance organizations are not, owing to their lack of such essential attributes. Performance is however, a difficult concept, in terms of definition and measurement. It has been defined as the end result of activity, and the appropriate measure selected to assess corporate performance is considered to depend on the type of organization to be evaluated and the objectives to be achieved through that evaluation. According to Encyclopedia of

Business (2011) performance measures can be grouped into two basic types: those that relate to results (outputs or outcomes such as competitiveness or financial performance) and those that focus on the determinants of the results (inputs such as quality, flexibility, resource utilization, and innovation). This suggests that performance measurement frameworks can be built around the concepts of results determinants. On the other hand performance measurement systems are considered information systems that are used to evaluate both individual and organizational performance. Until recently, companies concentrated on the use of financial performance measures as the foundation of performance measurement and evaluation purposes. According to Lin and Liu (2005), in business management, financial ratios are usually one of the indicators used to evaluate a firm's performance. Generally, the financial information of a company's business operations will be reported in the yearly financial statements, and a financial ratio simply constitutes one item divided by another in the financial statement.

Financial ratios can be viewed as a preliminary reference for the analysis of the business performance. Ratios relate one set of values to another, with the resulting quotient serving as a measure, a standard or a norm by which performance is judged.⁹ Traditionally, the measurement of an enterprise performance usually employs the financial ratio method, because it provides a simple description about the firm's financial performance in comparison with previous periods and helps to improve its performance of management. The measures of firm performance are usually ratios fashioned from financial statements or stock market prices, such as industry-adjusted operating margins or stock market returns. Glautier and Underdown (2001) maintains that there are two aspects of a company's financial performance of interest to investors. First, its financial performance may be assessed by reference to its ability to generate profit. This agrees with Pandey (2005) assertion that it is assumed that profit maximization causes the efficient allocation of resources under the competitive market conditions, and profit is considered as the most appropriate measure of a firm's performance. Hill and Jones (2009) also assert that the key measure of a company's financial performance is its profitability. Thus, ratios of financial efficiency in this respect focus on the relationship between profit and sales and profit and assets employed. Second, the company's financial performance may be assessed in terms of the value of its shares to investors. In this way, ratios of financial performance focus on earnings per share, dividend yield and price/ earnings ratios.

The ratios used to measure the overall profit performance of a firm are termed profitability ratios. This maintains that profitability ratios are determined on the basis of either sales or investment. The ratios are aimed at bringing to light the profitability of a firm's operation, the management efficiency as measured by the returns on capital employed and the intensity of capital usage - the rapidity with which invested capital is turned over.

Return on Assets (ROA) represents the amount of earnings (before interest and tax) a company can achieve for each naira of assets it controls and is a good indicator of a firm's profitability. According to Hagel, Brown and Davison (2010) ROA explicitly takes into account the assets used to support business activities. It determines whether the company is able to generate an adequate return on these assets rather than simply showing robust return on sales. Asset-heavy companies need a higher level of net income to support the business relative to asset light companies where even thin margins can generate a very healthy return on assets. Using ROA as a key performance metric quickly focuses management attention on the assets required to run the business.

Economic Performance Indicators in Nigeria enterprise

The economic dimension of sustainability concerns the organization's impacts on the economic conditions of its stakeholders and on economic systems at local, national and global levels. The economic indicators illustrate flow of capital among different stakeholders and main economic impacts of the organization throughout society. Disclosures are to be made on market presence and indirect economic impacts as well. There are four core economic performance indicators that should be disclosed. They include: i. Direct economic value generated and distributed, including revenues, operating costs, employees compensation, donations and other community investments, retained earnings, and payment to capital providers and governments, ii. Financial implications and other risks and opportunities for the organizations activities due to climate change, iii. Significant; financial assistance received from government, iv. Policy, practices and proportion of spending on locally-based supplies on significant locations of operations.

Environmental Performance Indicators in Nigeria enterprise

The environmental dimension of sustainability concerns is an organization's impacts on living and non-living natural systems, including ecosystems, land, air and water. Environmental indicators cover performance related to inputs (e.g., material, energy, water) and outputs (e.g., emissions, effluents, waste). In addition, they cover performance related to biodiversity, environmental compliance and other relevant information such as environmental expenditure and the impacts of products and services (SRG, 2011). There are seventeen core environmental performance indicators that should be disclosed. Amongst them are:

1. Materials used by weight or volume
2. Percentage of materials used that are recycled input materials
3. Direct energy consumption by primary energy source
4. Indirect energy consumption by primary source
5. Total water withdrawal by source
6. Location and size of land owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected area
7. Description of significant impacts of activities, products, and services on biodiversity in protected areas and areas of high biodiversity value outside protected areas.
8. Total direct and indirect greenhouse gas emissions by weight.
9. Other relevant indirect greenhouse gas emissions by weight
10. Emission of ozone-depleting substances by weight.

Social Performance Indicators in Nigeria enterprise

The social dimension of sustainability concerns the impacts an organization has on the social system within which it operates. The indicators surround labor practices, human rights, society and product responsibility (SRG, 2011). There are thirty-one core social performance indicators that should be disclosed. Amongst them are:

- i. Total workforce by employment type, employment contract and region, broken down by gender.
- ii. Total number and rate of new employee hires and employee turnover by age group, gender and region.
- iii. Return to work and retention rates after parental leave, by gender, iv. Rates of injury, occupational diseases, lost days and absenteeism and

number of work related fatalities by region and gender.

- v. Education, training, counseling, prevention, and risk-control programs in place to assist workforce members, their families, or community members regarding serious disease.
- vi. Average hours of training per year per employee by gender, and by employee category,
- vii. Ratio of basic salary and remuneration of women men by employee category, by significant locations of operations,
- vii. Percentage of operations with implemented local community engagements, impact assessments, and development programs,
- viii. Percentage and total number of business units analysed for risk related to corruption.
- ix. Total number of incidents of discrimination and corrective actions taken.
- x. Total hours of employee training on policies and procedures concerning aspect of human rights that are relevant to operations, including the percentage of employees trained.
- xi. Operations with significant potential or actual negative impacts on local communities.

Public Enterprise's Performance

According to business dictionary, performance is the accomplishment of a given task measured against present known standards of accuracy, completeness, cost and speed. In a contract, performance is deemed to be the fulfillment of an obligation in a manner that releases the performer from all liabilities under the contract. A performance measure is a quantifiable indicator used to assess how well an organization or business is achieving its desired objectives. Many business managers routinely review various performance measure types to assess such things as results, production, demand and operating efficiency in order to get more objective sense of how their business is operating and whether improvement is required. An organizational performance is an analysis of a company's performance compared to goals and objectives. Within corporate organizations, there are three primary outcomes analyzed: financial performance, market performance and shareholder value performance (in some cases, production capacity performance may be analyzed). Financial performance is a subjective measure of how well a firm can use assets from its primary mode of business and generate revenues. This term is also used as a general measure of a firm's overall financial health over a given period of time and can be used to compare similar firms across the same industry or to compare industries or sectors in aggregation. (Investopedia, LLC,2016).

Return on Asset (ROA)

The dependent variable used as a measure of company performance is return on asset (ROA). Return on asset is one of profitability ratios which measures the income or operating success of a company for a given period of time (Weygandt, 2007). In addition, ROA is known as the variable to measure economic performance and more related to efficiency compared to Return on Equity (Lorenzo, 2009). Return on asset is an indicator of how profitable a company is

relative to its total assets. ROA gives an idea as to how efficient management is at using its assets to generate earnings. (Investopedia, LLC, 2016). Lopez, Garcia and Rodriguez (2007) opined that accounting based measures are preferable used to measure organization's performance because the audited accounting data is likely to be authentic and credible and is not influenced by market perception or speculations, and is thus considered less noisy in comparison to market based indicators like stock returns, share prices etc. The formula of ROA: ROA= Net Profit/Total asset

Global Reporting Initiative (GRI)

Global Reporting Initiative (GRI) is a network-based organization that has pioneered the development of the world's most widely used sustainability reporting framework. Sustainability reports based on the GRI framework can be used to benchmark organizational performance with respect to laws, norms, codes, performance standards and voluntary initiatives; demonstrate organizational commitment to sustainable development; and compare organizational performance. GRI promotes and develops this standardized approach to fulfill demand for sustainability information. As economy globalizes, new opportunities to generate prosperity and quality of life that are arising are accompanied by new risks to the stability of the environment. According to Global Reporting Initiative (2011), there is a contrast between the improvement in the quality of life and alarming information about the state of the environment and the continuing burden of poverty and hunger on millions of people. It raises an issue about how to create new and innovative choices and ways of thinking. New knowledge and innovation in technology, management, and public policy are challenging organizations to make new choices in the way their operations, products, services and activities impact the earth, people and economics. It is the Global Reporting Initiative's mission to fulfill this need by providing trusted and credible framework for sustainability reporting that can be used by organizations of any size, sector or location. Sustainability reports based on GRI reporting framework disclose outcomes and results that occurred within the reporting period in the context of the organization's commitments, strategy, and management approach. The GRI reporting framework is intended to serve as generally accepted framework for reporting on an organization's economic, environmental and social performance.

GRI (3.1) Disclosure Index

The disclosure quality of sustainability reporting is obtained from annual data disclosed by the company. In the standard GRI version 3.1 performance indicators are divided into three categories namely economic, environmental and social. Social indicators are further categorized by labour, human rights, society and product responsibility. Each category includes a disclosure on management approach and a corresponding set of core and additional performance indicators.

The core options contain the essential elements of a sustainability report. It provides a background against which an organization communicates the impacts of its economic, environmental and social and governance performance, and can be applied by any organization regardless of their size, sector or location. An organization should report on core indicators unless they are deemed not material on the basis of the GRI reporting principles. In measuring sustainability performance disclosure in total, the maximum core index which should be disclosed is 55. In partial, the maximum core index for economic performance disclosure, environmental performance disclosure and social performance disclosure are 7, 17 and 31 respectively. If a company discloses items in accordance with GRI indicators, it will be scored 1, while the companies not disclosed of GRI items will be given a score of zero (0). Index score = n/k Where; n = number of index which is fulfilled by the company k = the maximum index which should be fulfilled by the company.

Theoretical Framework

Legitimacy Theory

According to legitimacy theory there is a contract between an organization and society which states that an organization owe the society an obligation to disclose the activities within the society and this makes them disclose these activities.

Deegan (2000) states that legitimacy theory asserts that organizations continually seek to ensure that they operate within the bounds and norms of their respective societies, that is they attempt to ensure that their activities are perceived by outside parties as being legitimate. Legitimacy theory relies upon the notion that there is a "social contract" between the organization in question and the society in which it operates. The concept is used to represent the multitude of implicit and explicit expectations that society has about how the organization should conduct its operations. It is assumed that society allows the organization to continue operations to the extent that it generally meets their expectations. Legitimacy theory emphasizes that the organization must appear to consider the rights of the public at large, not merely those of its investors. Failure to comply with societal expectations may lead to sanctions being imposed by the society. According to this perspective, a company would voluntarily report their activities if management perceived that those activities were expected by communities in which it operate. The legitimacy theory states that in order to maintain its business activities, companies need to behave as to what is expected from society (O'Donovan, 2002). The company's need to legitimate its activities drive companies into making sustainability reports, as the information disclosed in these documents is important to change society's perception towards the company (Deegan, 2002). Cho and Patten (2007) also support the argument that companies use disclosure as a legitimizing tool. Hedberg and Malmborg (2003) have found in their empirical evidence from Sweden companies, that they produce corporate sustainability reports to seek organizational legitimacy. They were particularly interested in reporting their environmental and ethical/social statistics to their financiers.

Stakeholder Theory

This theory was propounded by Edward Freeman. According to business dictionary, the stakeholder theory was first proposed in the book strategic management: A stakeholder approach by R. Edward Freeman and outlines how management can satisfy the interest of stakeholders in a business. The basis of stakeholder theory,

defines stakeholders as "any group or individual who can affect or is affected by the achievement of the firm's objectives". Primary stakeholders include employees, owners (which include shareholders), consumers, government bodies, the community and silent stakeholders. Silent stakeholders include the environment and future generations who need other bodies to represent them (Francisco and Zahir, 2014). According to Freeman (2009), a successful business cannot exist in a vacuum. It requires that there be investors to give them money, customers to buy their goods and services, employees to serve the customers, suppliers to sell them the goods that they will sell, and a community within which they can thrive. If any of these groups are absent, the business cannot be successful. The stakeholder theory presumes that the values of the companies are an important factor as how they do business, so they need to explicitly alert its stakeholders of those values in order to build a meaningful relationship between them (Freeman, Wicks & Farmer 2004). Grey, Kouhy and Laversl (1996) said that companies use the sustainability report to shape stakeholders opinion in a positive way, opening doors for them to keep conducting their business activities. This work is anchored on legitimacy theory as it believes that companies will need an environment to operate before thinking of relating with its stakeholders. According to the theory there exists a social contract between an organization and the society and the organization's need to legitimate its activities drive them into making sustainability reports.

Empirical Framework

Adams, Thornton and Sepehri (2010), conducted a research on the impact of the pursuit of sustainability on the financial performance of the firm from 2008 to 2009 using Dow Jones Sustainability Nigeria Index (DJUSI) to proxy sustainability against growth in stock price. The study concluded that corporate sustainability label has no statistically significant impact on the financial performance of firms and that it does not result in higher stock prices or enhanced returns to shareholders in the short run although the study suggested a longer study covering 5-10 years to gauge the long term impact of sustainability on stock price performance. The study also stated that sustainability efforts can be employed to build brand loyalty and corporate reputations in the long term which should be positively correlated to long term shareholder wealth maximization.

Pieter, Merwe and Panagiotis (2011) in investigating the This research is on the Impact of Sustainability Reporting on Corporate Performance of Selected Quoted Companies in Nigeria. The specific objectives of this research is to ascertain the level of impact of sustainability reporting on Return on equity, Return on assets, Earnings per share and Net profit margin of companies listed on the Nigerian Stock Exchange. This research employed ex-post facto design. The sample for the study was made up of 64 companies selected from 76 non financial companies quoted on the Nigerian Stock Exchange. This research utilized secondary data. A model specification based on regression model was used. The statistical technique employed in testing the hypotheses was the student t - test statistic. Findings from this study show that Sustainability Reporting impacted positively on financial performance of quoted companies in Nigeria Stock Exchange. Companies are therefore encouraged to adopt this reporting system in order to account for its social, environmental and economic values which serve as tools for investment decision making.

A study conducted on the impact of sustainability reporting on company performance by Annisa and Wiwin (2012), covered 32 companies listed on Indonesia stock exchange for the period 2006-2009. The independent variables; sustainability reporting, economic performance disclosure, environmental disclosure and social

disclosure were measured by means of disclosure index. Sustainability reporting guidelines from Global Reporting Initiative (GRI) was used as the basis of calculating the index score while return on assets was used to proxy performance. The study generalized that sustainability reports influences company's performance. Further analysis of the study showed that only social performance disclosure influences ROA while economic performance disclosure does not influence company's performance. According to the study, social performance disclosure does significantly influence company's performance.

Onyinyechi and Ihendinihu (2016), carried out a study on the effect of sustainability reporting on company's performance using twenty selected Nigerian companies over the period of five years with GRI index as proxy for sustainability and return on asset as a measure for performance. The specific objectives include determining the effect economic, environmental and social performance disclosures have on return on asset. The study utilized secondary data obtained from annual reports of the companies under study. The hypotheses developed for this study were tested using multiple regression analysis via SPSS version 23.0. The study revealed that economic performance disclosure and environmental performance disclosure have no significant effect on return on asset while social performance disclosure has significant effects on company's performance. In conclusion for every increase in economic, environmental and social performance disclosure, there is a positive insignificant, negative insignificant and positive significant effect respectively on return on asset. The study therefore recommended that mandatory localized reporting framework in line with international best practices should be put in place to encourage sustainability reporting.

Summary of Review of Related Literature

This chapter explored in depth the literature on the effect of Sustainability Reporting and technology on the performance of Nigeria public enterprises. This was done under three broad headings viz: Conceptual framework, Theoretical framework, and Related Empirical Studies. Under conceptual framework, the concepts on the subject of the study (effect of Sustainability Reporting and technology on the performance of Nigeria public enterprises.) were discussed. The review defined and examined the genesis of effect of Sustainability Reporting and technology on the performance of Nigeria public enterprises. It discussed the Concept of Enterprise, Concept of Technology and Concept of Sustainability Reporting.

The review looked at two theories under theoretical framework. Legitimacy Theory According to legitimacy theory there is a contract between an organization and society which states that an organization owe the society an obligation to disclose the activities within the society and this makes them disclose these activities, Stakeholder Theory, This theory was propounded by Edward Freeman. According to business dictionary, the stakeholder theory was first proposed in the book strategic management. Thus, none of the studies in the literature reviewed was carried out in the present study area. This study therefore serves as a reference material to the future researchers, managers and governments in the area. Hence, the present study tends to ascertain the effect of Sustainability Reporting and technology on the performance of Nigeria public enterprises. This is the gap identified, which this study will attempt to fill.

Methodology**Research Design**

This is the specification of methods and procedures for acquiring the information needed for the research. Ex-post facto research design was used. This study is historical in nature and it covers ten years annual report of companies under study starting from 2011 to 2020. This study was done in Nigeria and it covers a 1 year period from 2011 to 2020.

Population of the study

The population of this study was made up of twenty (20) giant listed companies in Nigeria. They include:

1. Dangote Cement Plc
2. Zenith Bank Plc
3. Nigerian Breweries Plc
4. First Bank Plc
5. United Bank of Africa
6. First City Monument Bank
7. Unilever Nigeria Plc
8. Cadbury Nigeria Plc
9. Stanbic IBTC
10. Access Bank Plc
11. Union Bank of Nigeria Plc
12. Guinness Nigeria
13. Flour Mills of Nigeria Plc
14. Guaranty Trust Bank Plc
15. Lafarage Cement WAPCO Nigeria Plc
16. Total Nigeria Plc
17. Unilever Nigeria Plc
18. PZ Cussons Nigeria Plc United Bank of Africa
19. UACN

20. Nestle Nigeria Plc

For the purpose of this study, data were obtained from the company's websites and published annual report of the companies under study. The technique used in analyzing the formulated hypotheses for the study is the multiple regression technique done with the aid of SPSS (Statistical Package for Social Sciences) version 23.0. The study also used GRI 3.1 to analyze economic, environmental and social performance disclosure index. In doing this, content analysis was used to extract data from Global Reporting Guideline.

Sample and sampling Techniques

Due to the fact that our population is not large we therefore adopt the whole companies as our sample size.

Data Analysis and Results

Answers to Research Questions This section answers our research questions.

Research Question one: What is the effect of Sustainability reporting surrogate on return on asset?

Table1: The model summary of Return on Assets (ROA) and economic performance disclosure.

Model	R	R ²	Adj.R ²	Std. Error of the Estimate
0.1	0.327	0.107	0.077	0.084477

Source: Researcher's computation using SPSS version-23.

From Table 4.1.1 shows the model summary, the co-efficient of determination (R²) is .107, and the adjusted co-efficient (Adj R²) is .077. Because multiple linear regression was used in the analysis of this study, the researcher used the Adjusted co-efficient of determination (Adj.R²) .077. Thus, this shows that about 7.7% change in return on asset can be explained by Sustainability Reporting surrogates. The remaining 92.3% may be explained by the error or stochastic term.

Research Question Two: What is the effect of economic performance disclosure on enterprise's return on asset?

Table 2: The effect of coefficient of economic performance disclosure on Return on Asset.

	Standardized Coefficients
	Beta
(constant)	-.006
Economic Performance Disclosure	.053

Source: Researcher's computation using SPSS version-23.

The standardized co-efficient established the nature of effect economic performance disclosure has on Return on Assets (ROA). The co-efficient of the*-explanatory variable (economic Performance Disclosure) is .053, thus; the beta -weight shows that there is positive effect of economic performance disclosure on return on assets [$\beta = 0.53$ or 5.3%]. This implies that for every one additional change in economic performance disclosure it will lead to 5.3% increase in overall companies' financial performance (i.e. return on asset). Can we conclude that this is significant? This prompts us to test of hypothesis.

Research Question Three: What effect does environmental performance disclosure have on enterprise return on asset?

Table 3: The effect of coefficient of Environmental Performance disclosure on Return on Asset.

	Standardized Coefficients
	Beta
(constant)	-.006
Economic Performance Disclosure	-.033

Source: Researcher's computation using SPSS version-23.

The standardized co-efficient determines the type of influence environmental performance disclosure has on Return on Assets (ROA). The co-efficient of the regressor (environmental Performance Disclosure) is -0.033, thus; the beta weight shows that there is negative effect of environmental performance disclosure on return on assets [$\beta = -0.33$ or -3.3%]. This implies that for every one marginal change in environmental performance disclosure it will lead to 3.3% decrease in, overall companies' financial performance (i.e. return on asset). Can we conclude -that this is significant? This prompts us to test of hypothesis.

Research Question Four: What is the effect of social performance disclosure on enterprise return on asset?

Table 4: The effect of coefficient of Social performance disclosure on Return on Asset.

	Standardized Coefficients
	Beta
(constant)	-.006
Economic Performance Disclosure	.315

Source: Researcher's computation using SPSS version-23.

The effect of the co-efficient determines the type of the influence Social performance disclosure has on Return on Assets (ROA). The co-efficient of the explanatory variable (Social Performance Disclosure) is 0.315, thus; the beta weight shows that there is positive effect of social performance disclosure on return on assets [$\beta = .315$ or 31.5%]. This implies that for every one marginal change in social performance disclosure it will lead to 31.5% increase in overall companies' financial performance (i.e. return on asset).

Test of Hypotheses

H01: The sustainability reporting surrogates prediction or influence on companies' performance is not significant.

Table 5: Showing the ANOVA table for Sustainability Reporting effect on Return on Asset (ROA).

	R	Adj.R	Sum of Squares	Df	Mean Square	F	Sig
Regression	.107	.077	.078	3	.026	3.622	.016
Residual			.649	91	.007		
Total			.727	94			

Source: Researcher's computation using SPSS version-23

The ANOVA table is used to test the overall significance of the model from the value of the t-statistics. The F-statistics is 3.622 with the probability value (Pvalue) of .016, because this is less than 5% level of significance, the study rejects the null hypothesis and accept the alternate hypothesis and concludes that sustainability reporting has significant effect on companies' financial performance (i.e. return on assets) of the selected quoted companies [$F(3, 91) = 3.622$ (Adj. R² = .077; $p \leq .05$)].

Table 6: Showing the co-efficient table for sustainability reporting surrogates effect on Return on Assets (ROA).

	Standardized Coefficients Beta	T	Sig
(Constant)	-.006	-.197	.844
Economic Perf. Dis.	.053	.455	.650
Environmental Perf. Dis.	-.033	-.290	.772
Social Perf. Dis.	315	2.794	.006

Source: Researcher's computation using SPSS version-23.

The results of the co-efficient establish the nature of the impact of sustainability reporting surrogates effect on Return on Assets (ROA). The co-efficients of the explanatory variables that is, economic, environmental and social performance disclosures are 0.053, -0.033, and 0.315 respectively, the impact from the model of. the study is thus; $ROA_{it} = \beta_0 + \beta_1 ECODIS_{it} + \beta_2 ENVIDIS_{it} + \beta_3 SOCIDIS_{it} + \epsilon_{it}$ Transform we: $ROA_{it} = -.006 + 0.053 ECODIS_{it} - 0.033 ENVIDIS_{it} + 0.315 SOCIDIS_{it} + \epsilon_{it}$. This equation shows that there is negative and positive effect of sustainability reporting on companies financial performance (i.e. return on assets) [$(\beta=.315; p=.006)$. The beta values show the level of contribution of the independent variables on the dependent variable

(ROA). The result shows that there is linear relationship between one of the explanatory variables and the dependent variable [$F(3, 91) = 3.622$ (Adj. $R^2 = .077$; $p \leq .05$)].

H₀₂: Economic performance disclosure has no significant effect on company's performance.

Table 7: Showing the co-efficient table for Economic performance disclosure effect on Return on Assets (ROA).

	Standardized Coefficients Beta	T	Sig
(Constant)	-.006	-.197	.844
Economic Perf. Dis.	.053	.455	.650

Source: Researcher's computation using SPSS version-23

The beta weight [$(\beta = .053; p = .650)$] shows that there is insignificant positive effect of Economic performance disclosure on return on assets. The beta values show the level of individual contribution of the explanatory or independent variables (ECODIS) on the dependent variable (ROA). The result shows that Economic performance disclosure had impacted on return on assets to the tune of 5.3% (i.e. 0.053), on the other hand, for every increase in Economic performance disclosure, there is an insignificant positive increase in return on assets to the tune of 5.3% (i.e. .053). Therefore, we accept the null hypothesis and reject the alternate and conclude that Economic performance disclosure has no significant effect on company's financial performance [$(\beta = .053; p = .650)$].

H₀₃: Environmental performance disclosure has no significant effect on the performance of a company.

Table 8: Showing the co-efficient table for Environmental performance disclosure effect on Return on Asset (ROA).

	Standardized Coefficients Beta	T	Sig
(Constant)	-.006	-.197	.844
Economic Perf. Dis.	-.033	-.290	.772

Source: Researcher's computation using SPSS version-23.

The results of the co-efficient establish the nature of the impact of Environmental performance disclosure effect on Return on Assets (ROA). The co-efficient of the beta (β) is -0.033ENVIDIS, this shows that there is an insignificant negative effect of Environmental performance disclosure on return on assets [$(\beta = -0.033; p = .772)$.- The beta values show the level of individual contribution or prediction of the independent variables (ENVIDIS) on the regressed variable (ROA). The result shows that Environmental performance disclosure had impacted on return on assets to the tune of -3.3% (i.e. -0.033), on the other hand, for every increase in Environmental

performance disclosure, there is an insignificant negative decrease in return on assets to the tune of 3.3% (i.e. 0.033). Therefore, we accept the null hypothesis and reject the alternate and conclude that Environmental performance disclosure has no significant effect on company's financial performance [$\beta=-0.033$; $p=.772$].

H04: Social performance disclosure has no significant effect on company's performance.

Table 9: Showing the co-efficient table for Social performance disclosure effect on Return on Assets (ROA).

	Standardized Coefficients Beta	T	Sig
(Constant)	-.006	-.197	.844
Economic Perf. Dis.	.315	2.794	.006

Source: Researcher's computation using SPSS version-23.

The results of the co-efficient establish the nature of the impact of Social performance disclosure effect on Return on Assets (ROA). The co-efficient of the explanatory variable is 0.315, the impact from the social performance disclosure of the study is thus; [$(\beta=.315$; $p=.006$]. This equation shows that there is significant positive effect of Social performance disclosure on return on assets [$\beta=.315$; $p=.006$].

The beta values show the level of individual contribution of the independent variables (SOCIDIS) on the dependent variable (ROA). The result shows that Social performance disclosure had impacted on return on assets to the tune of 31.5% (i.e. 0.315), on the other hand, for every increase in Social performance

disclosure, there is a significant positive increase in return on assets to the tune of 31.5% (i.e. 0.315). Therefore we reject the null hypothesis (HO) and accept (Ha) the alternate and conclude that social performance disclosure has significant positive effect on company's financial performance, that is, return on asset [$(\beta=-.315$; $p=.006$].

Discussion of Findings

The study found that economic performance disclosures indicators of the companies studied has insignificant effect on their performances. This is in agreement with the study carried out by Pieter, Merwe and Panagiotis (2011) in South Africa covering the year 2002-2009. The study concluded that though some evidence indicates that companies that disclose sustainability reports may experience better economical performance, statistical analysis could not confirm a definite positive relationship between sustainability reporting and economic performance. In a similar study by Annisa and Winwin (2012), on 32 Indonesia companies found that economic performance disclosure does not influence company's performance.

The study shows that environmental performance disclosure indicators have insignificant effect on the performance of companies. This is in agreement with the research result of Annisa and Wiwin (2012) in studying 32 Indonesia companies covering the period 2006-2009 found that environmental performance disclosure does not influence company's performance. This study also shows that there exist a significant effect

between social performance disclosure indicators and company's performance. This is in agreement with the findings of Annisa and Wiwin (2012) that social performance disclosure influences ROA.

From the study of the effect of sustainability reporting on company's performance, the following findings were made.

1. Sustainability reporting has a general significant effect on company's return on asset.
2. Economic performance disclosure has a positive insignificant effect on company's return on asset.
3. Environmental performance disclosure has a negative insignificant effect on company's return on asset.
4. Social performance disclosure has a positive significant effect on company's return on asset.

Implication of Findings

The findings of this study have some implications for companies. For instance, two of the findings of this study showed that environmental performance disclosure and economic performance disclosure had insignificant effect on return on asset of selected companies. This implies that a certain percentage of change on return on asset can be explained by environmental performance disclosure. It was also revealed that economic performance disclosure has an insignificant positive effect on return on asset. This implies that a change in return on asset can be explained by economic performance disclosure though insignificant. Companies should not relent on reporting on economic activities as it has a positive effect on return on asset and may become significant on the long run.

Recommendations

From the study, the following recommendations are made to enhance sustainability reporting.

1. Sustainability reporting should be encouraged and a regulatory body set up to see that company's include sustainability report in their annual report as the study has shown there is a significant effect of sustainability reporting on company's performance.
2. Companies should be encouraged to disclose economic performance as this may increase their performance in the long run.
3. Since companies have not been complying fully to international best practices, there should be mandatory localized environmental reporting framework in line with international best practices on issue of sustainability reporting.
4. Companies should maintain a good relationship with their employees, suppliers, local communities and others concerned and report this appropriately in their annual report as this has an effect on their performance.

Contribution to Knowledge

To the best of our knowledge this study has contributed to the body of existing literature by looking into the effect each of the component of sustainability: economic, environmental and social has on company's performance. The study also contributed to knowledge by finding out that economic performance disclosures has no significant effect on return on asset.

Suggestions for Further Study

Since we have different financial performance indicators, the researcher suggests that further studies should be carried out using other indicators such as return on equity, or a market performance indicator like market share. Further research can be carried on least performing companies covering same number of years or a broader number of years.

Conclusion

In this study, effort has been made to examine the effect of sustainability reporting on company's performance. The study has four specific objectives: to determine the effect economic, environmental and social performance disclosures have on company's performance. The study made use of secondary data. The study found that economic performance disclosure and environmental performance disclosure has no significant effect on company's performance while social performance disclosure has a significant effect on company's performance. Mandatory localized reporting framework in line with international best practices should be put in place to encourage sustainability reporting.

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