



ENVIRONMENTAL ACCOUNTING DISCLOSURE ON FINANCIAL PERFORMANCE OF QUOTED SELECTED FIRMS IN NIGERIA

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ABSTRACT

The study examined the effect Environmental Accounting Disclosure on market performance of quoted selected firms in Nigeria. The independent variables of this study are Environmental effluents and waste disclosure, environmental emissions disclosure, compliance to environmental laws, Employee health and safety disclosure and Environmental biodiversity Disclosure and dependent variable is market performance. The study adopted Ex-post facto research design. The population of this study consists of quoted companies listed under the non-financial sectors of Agricultural sector, Oil and Gas sector, Industrial goods sector and Conglomerates companies on the Nigerian Exchange Group as at 31st December, 2022. The study used 30 companies as sample size out of the total population. The study used secondary data, secondary data used were collected from annual financial reports of the sampled companies for ten years period spanning from 2013-2022. Robust Random Effect Model was developed to test the effect between dependent and independent variables. It was operated using EViews 12. The results of the Robust Random Effect Model revealed that, Environmental effluents and waste disclosure has a positive and significant effect on market performance of non-financial firms in Nigeria which was statistically significant at 5% level of significance, Similarly, a positive but insignificant effect was recorded against environmental emissions disclosure and market performance of quoted non-financial firms in Nigeria In the same vein, compliance to environmental laws and regulations disclosure has positive and significant effect on market performance of selected non-financial firms in Nigeria which was statistically significant at 5% level of significance, Conversely, Employee health and safety disclosure was found to have negative but insignificant effect on market performance of selected non-financial firms in Nigeria and Lastly, environmental biodiversity disclosure was found to have a negative but insignificant effect on market performance of quoted non-financial firms in Nigeria. The study It was concluded that the market based performance of firms in the non-financial sectors of the Nigerian exchange is affected by the expenditure incurred by corporations in biodiversity maintenance and Employee health and safety control measures. The study recommended that, Managers of firms should ensure that all the strict policies as regards to environmental effluents and waste disclosure are adhered to in the course of their operation, the management of non-financial companies in Nigeria should develop a positive disposition toward environmental emissions disclosure to restore and guarantee an increased return on market price even though it was found to have insignificant effect to their market performance, Non-financial firms should be encouraged to always comply with environmental laws and regulations to minimize litigation cost that will deplete their profitability base in order to boost their market performance, Managers of non-financial firms should pay less attention to all the strict policies as regards employees' health and safety disclosure in the course of their operation and Emphasis on environmental biodiversity disclosure should be minimized to increase market performance of selected non-financial firms in Nigeria.

Keywords: Environmental effluents and waste disclosure, environmental emissions disclosure, compliance to environmental laws and regulations disclosure, Employee health and safety disclosure, Environmental biodiversity Disclosure and Market Performance.



1.0 Introduction

Environmental accounting disclosure is an issue that has captured the attention of national and international, political and business leaders across the globe and the developed world. Unfortunately, Nwaigwe et al (2022) opined that businesses for many decades have ignored the impact of their activities on the natural and social environment in which they operated, unless it had direct repercussions on the profit and loss account. However, the neglect by business of the negative externalities arising from the pursuit of economic objectives along with various environmental abuses by non-financial firms have created less than positive attitudes amongst stakeholders towards business. This then risks a tarnished image for those firms not taking environmental issues seriously (Ofurum & Iwunna, 2022; Savage et al, 2019).

The performance of firms in terms of profitability largely depends on the nature of businesses they operate, and the possible legal, political and environmental regulations, which constitute an important item of public policy within the scope of their operation. In compatibility of the predetermined business goals, negative externalities are left on the environment and society. Such bad externalities include: environmental issues as degradation and pollution, social issue as dangerous openings and hazardous dangers, United Nations Children's Fund (2015) pointed that the environmental effect of firms action goes from environmental change to large scale level oil slicks to more limited size impacts related with operation-level pollution and waste. The use of natural resources and continuous emissions of greenhouse gases by industries around the world are on increase. This is traceable to industrial revolution of late 18th century where economic activities in many areas moved from agriculture to manufacturing. In line with this trend, the rapid increase in environmental effect has now caused companies to begin to integrate environmental aspects into managerial decisions at all levels (Ofurum & Iwunna, 2022; Votsi et al, 2017).

Nigeria as an emerging economy with its main stay been petroleum resources and other solid mineral endowments is faced with substantial environmental degradation in a bid to improve her economic base and the standard of living of her citizenry. Natural resources constantly explored and exploited by oil and gas companies are not without their imminent environmental impact such as emissions, hazardous waste, soil contamination, biodiversity loss (wildlife, agro diversity) and global warming. These natural resources are tapped to enhance economic development are finite and non-renewable in nature subject to diminution (Nwaigwe et al 2022; Ofurum & Iwunna, 2022; Savage et al, 2019; Beredugo & Mefor, 2012).

Moreover, quoted firms like oil and gas firms and manufacturers of industrial goods activities have culminated in altering environmental and biological makeup, leading to ecological damage, emissions, pollution and landscape destruction. Employee's health and safety is at stake due to interference with toxic substances. The environment is not spared of waste as a result of oil and gas operations thereby hampering environmental sustainability. Listing rules requires companies to disclose/report on their environmental footprints, health and safety strategies aimed at abating or mitigating employee work related accidents, waste management procedures/processes adopted to control or manage companies waste in order to reduce its impact on the environment and effort geared towards alleviating the standard of living of its host communities through the provision of infrastructural facilities and other basic amenities. These requirements are not met by most quoted firms and as a result, the business environment becomes volatile and uncondusive for businesses to thrive as these firms are perceived as environmentally unfriendly which impedes corporate image and adversely affects performance.

The motivation for the study arose out of the questions posed by alleged environmental abuses of multinational extractive companies who are charged with depleting non-renewable resources, and further harming the environment through air emission, discharge of liquid



effluents and generation of large volume solid waste. Sequel to the above, extant environmental literatures have documented studies on environmental accounting and performance but this study aims at contributing to literature by empirically analysing the relationship between environmental accounting disclosure and performance of listed firms in Nigeria. In such a context, it becomes pertinent to empirically find out if negative or positive corporate environmental behaviour effects on performance (Nwaigwe et al, 2022; Ofurum & Iwunna, 2022; Savage et al, 2019).

Again, environmental accounting disclosure for some period of time in Nigeria has been more of exploratory and descriptive and it only focused mainly on the phenomenon (Armayau, 2010) with majority of the prior studies focusing on the relationship between environmental disclosure and performance (Ezeokafor & Amahalu, 2019; Amahalu et al, 2018; Simerly 2018, Schaltegger & Wagner, 2014; Coleman, 2011) while some focused on oil and gas firms only, but this study shifted base by examining the effect of this environmental accounting disclosure on firm financial performance of selected quoted firms in Nigeria, cutting across different sectors, and extending the study to ten years period against what other prior studies did. Therefore, giving rise to knowledge gap.

Moreover, most studies that examined environmental accounting disclosures have been domiciled in developed countries with well embraced procedures, policies and regulations. Again, previous studies on the firm financial performance and environmental accounting disclosure have shown inconclusive findings. Few studies like Akinlo and Iredele (2015), Oyedokun et al (2019) studied corporate environmental disclosures and performance of quoted companies in Nigeria with divergent results. Some of the studies that examined the relationship between environmental management and firm performance found negative relationship. Such studies include Amacha and Dastane (2017); Nobanee and Ellili (2017); Ezejiofor et al, (2016); Olaoye and Adekanmbi (2018), Pincus et al, (2019); Crane, Matten and Moon, (2018); Agubosim et al, (2021). While others showed either inconclusive results or neutral effect (Nwaigwe et al, 2022; Ofurum & Iwunna, 2022; Savage et al, 2019; Klassen & McLaughlin, 2016; Makni et al, 2009). Similarly, many prior studies documented positive effect between environmental accounting and performance of firms. Such studies include Ezeokafor and Amahalu, (2019); Amahalu et al, (2018); Simerly, (2018), Schaltegger and Wagner, (2014); Nwaiwu and Oluka (2018); Mohamed (2018); Mayangsari (2018). The findings of these studies were uncertain and inconsistent thereby creating a gap in knowledge.

Therefore, the inconclusiveness on the research findings above could be caused by the varied research methods and measurements of environmental accounting disclosure (Moneva & Cuellar; 2009, Johnston; 2005, Sarumpaet et al 2017). Some studies have only used a small portion of environmental information components, such as information on water and air waste emissions (Johnston; 2005), sulphur dioxide (SO₂) emissions (Johnston et al; 2008) and carbon emissions (González-González, 2016) but this study shifted base by examining the effect of this environmental accounting disclosure on firm financial performance of all quoted non-financial firms in Nigeria, cutting across different sectors, and extending the study to ten years period against what other prior studies did. Therefore, giving rise to knowledge gap. These are the uniqueness of this study over other prior studies. Also, all the study reviewed none has been done in Nigeria selected firms to the best of the researchers' knowledge. Again, this study generated five different explanatory data sets (environmental effluents and waste disclosure, environmental emissions disclosure, compliance to environmental laws and regulations disclosure, employee health and safety disclosure, and Environmental biodiversity and deploying two different research methods (content analysis and ex post facto research design) to test five hypotheses. It was against this backdrop that the following objectives below were established to guide this study.

i.



- ii. Assess the effect of Environmental effluents and waste disclosure on market performance of quoted selected firms in Nigeria.
- iii. Investigate the effect of environmental emissions disclosure on market performance of quoted selected firms in Nigeria.
- iv. Determine the effect of compliance to environmental laws and regulations disclosure on market performance of quoted selected firms in Nigeria.
- v. Investigate how Employee health and safety disclosure affect market performance of quoted selected firms in Nigeria.
- vi. Evaluate the effect of Environmental biodiversity Disclosure on market performance of quoted selected firms in Nigeria.

2.0 Conceptual Review

2.1.1 Environmental Accounting Disclosure

There is no universal accepted definition of Environmental Accounting Disclosure. However, writers such as (Nwaigwe et' al 2022; Ofurum & Iwunna, 2022; Savage et' al, 2019; Al-Taher, 2011) state that, it is the process of communicating information relating to events and activities that are pertaining to the environment of a corporate entity to its stakeholders. Environmental disclosure encompasses disclosures relating to the behaviour towards its environmental impact, company's attitude, emissions, pollution, contamination, cleaning up (after pollution), re-landscaping or energy efficiency and effective utilization (that was not intended as an explicit economic message). According to Vande et' al (2014), environmental accounting disclosure (EAD), refers to the disclosure of financial and nonfinancial information of a public interest entity to both internal and external stakeholders embodied with the activities of economic, environmental and social dimensions with a picture of corporate position. In this respect, factors affecting environmental accounting disclosure can be classified into corporate size, industry, corporate profitability and leverage. Each of the aforementioned definitions has been crafted by writers based on the attributes of information and is dependent on the focus and direction of the research.

Environmental accounting disclosure is the process of communicating externally the environmental effects of organizations' economic actions through the corporate annual report or through a separate, stand-alone, publicly available environmental report. It tends to encompass reporting relating to environmental policies, impacts, processes and audits, environmental-related expenditures, the environmental benefits of products, and details regarding sustainable operations (Ahmed & Anifowose; 2017). Environmental accounting enables companies and other organizations to increase their public trust and confidence. This however will lead to fair assessment of the organizations. According to an environmental protection agency based in USA, environmental costs include costs of complying with environmental laws. The agency specifically stated that it includes environmental remediation disclosure, pollution control equipment disclosure and non-compliance penalty. Based on the meaning of environmental degradation, environmental accounting disclosure could also cover the disclosure incurred to prevent degradation, cost of re-stating the environment to its original state, cost of restoring depleted environment to its normal position. Disclosure is a means through which a company reports its environmental activities to the stakeholders (Kothari et' al 2019).

The narrative information can be used to convey objective, aspiration, management decision, addresses specific stakeholder concerns etc. Magara et' al, (2015) believe numerical disclosure can be used to report on those measures that can be usefully and meaningfully be conveyed in that way such as emission or pollution amount, resource consumers, land use etc. the reporting



of environmental cost can be direct or indirect. Direct environmental reporting measures only what is within the reporting entity while indirect measures report on the forward and back supply chains which the company has incurred in bringing the products from their origins to the market (Baboukardos, 2017). Thus, a full environmental reporting will include direct and indirect (though it is hard to measure environment impact outside the reporting entity under the Nigerian context) (Jerry et' al, 2014). Environmental cost is an issue that has captured the attention of national and international, political and business leaders across the globe and the developed world. The creation of wealth has led to various environmental impacts such as depletion of non-renewable resources, global warming, diminution of land resources, acidification, reduction of water resources and potential threats to health and safety of employees (Nwaigwe et' al, 2022; Ofurum & Iwunna, 2022; Savage et' al, 2019; Ezeokafor & Amahalu, 2019). Environmental Financial Accounting aims at the external reporting of environmental and financial benefits in the corporate environment or published annual reports. The EFA is partly governed by accounting standards issued by different professional bodies. For instance, traditional corporate financial statements usually include environmental remediation and liability issues linked to a company's activities.

2.1.2 Environmental Effluents and Waste Disclosure

Effluents are wastewater whether treated or untreated that flows out of a treatment plant, sewer or industrial outfall. They are generally referred to as wastes discharged into surface waters or liquid discharge (Naddeo & Liu, 2020). Waste is unwanted or unusable materials. Sean (2019) defined waste as any substance which is discarded after primary use, or is worthless, defective and of no use. Environmental waste disclosure is a disclosure on the control of emissions and effluents into environment. It constitutes the use of materials, processes, or practices to reduce, minimize, or eliminate the creation of pollutants or wastes. It includes practices that reduce the use of toxic or hazardous materials, energy, water, and other resources (Ijeoma, 2015). According to Ngwakwe (2018), waste produced by a process often has to be processed before being released to the environment. Some of the waste can be handled by the company itself, other waste is better handled by external waste treating companies. Handling of the waste causes environmental costs either way. The cost of waste transportation is also considered an environmental cost to include depletion of natural resources, noise and aesthetic impacts, residual air and water emissions, long-term waste disposal. In Nigeria, National Environmental Standards and Regulations Enforcement Agency (Establishment) Act 2007 & 2008, Environmental Impact Assessment Act 2004, Harmful Waste (Special Criminal Provision) Act 2004, Nuclear Safety and Radiation Protection Act 2007 etc. explicitly stated the compliance laws to be strictly adhered to by firms whose activities are indulged on environmental practices.

2.1.3 Environmental Emissions disclosure

Environmental emissions disclosure is a disclosure on the control of emissions and effluents into environment. It constitutes the use of materials, processes, or practices to reduce, minimize, or eliminate the creation of pollutants or wastes. It includes practices that reduce the use of toxic or hazardous materials, energy, water, and other resources (Ijeoma, 2015). According to Ngwakwe (2018), waste produced by a process often has to be processed before being released to the environment. Some of the waste can be handled by the company itself, other waste is better handled by external waste treating companies. Handling of the waste causes environmental costs either way. The cost of waste transportation is also considered an environmental cost to include depletion of natural resources, noise and aesthetic impacts, residual air and water emissions, long-term waste disposal. Environmental accounting helps to make decisions on identifying those responsible for the pollution stemming from commercial



activities and the estimated environmental effects and expenditures. In addition, environmental accounting produces information needed in planning to reduce environmental expenditures and different consumption structures (Gupta, 2018). This is associated with physical units / activities of the enterprise as well as monetary aspect (Jones et'al (2014). Moreover, environmental accounting helps in allocation of resource for environmental costs, cost measurement, integration of business decisions and providing information to the external environment (Di-Giuli & Kostovetsky, 2014).

To control emissions at low ebb, enterprises are required to formulate their vision depending on the concept of sustainability. Activities of enterprises with a sustainable business vision will contribute to the enterprise environment and development of the society in which it operates. However, in order to maintain these activities, environmental factors should be also taken into consideration. Today, assessment and management of environmental costs which constitute one of the major cost items within the scope of the sustainability have great importance for businesses (Deng et' al, 2013). The main objective of businesses to maximize profits in the short term and in the long term is to maximize firm value. However, from the operation results of an enterprise affect not only the owners and its partners, but also affect the community, various institutions and organizations. The activities of businesses are under pressure from these groups (Casadesus et al, 2019). Businesses need to consider not only the economic dimension of their activities but also need to consider the social and environmental dimensions.

2.1.4 Compliance to environmental laws and regulation disclosure

Compliance cost refers to all the expenses that a firm incurs in order to adhere to industry regulations. It simply means the monetary value of significant fines and total number of non-monetary sanctions for non-compliance with environmental laws and regulations. Compliance costs include salaries of people working in compliance, time and money spent on reporting, new systems required to meet retention and so on. These costs typically increase as the regulation around an industry increases (Caputo et'al, 2017). Compliance costs can be incurred as a result of local, national and international regulations, and they generally increase as a company operates in more jurisdictions. Global companies that have operations in jurisdictions all over the world with varying regulatory regimes naturally face much higher compliance costs than a company operating solely in one location (Will, 2018). Compliance cost is the total cost incurred by a firm to comply with applicable regulations. These regulations may cover such areas as tax reporting, environmental topics, transport, and finances. Compliance costs can include the following:

- i. Cost of the systems needed to collect information for compliance reporting.
- ii. Cost of the personnel needed to construct and monitor the compliance systems.
- iii. Cost to compile and issue reports.

Compliance costs can be so high in regulated industries that they represent a barrier to entry, which effectively creates an oligopoly. When this is the case, companies already competing in the industry may favour regulation in order to keep new entrants from appearing and increasing the level of competition. An organization operating in multiple jurisdictions may have to deal with a broader range of regulations, and so may incur higher costs than smaller competitors operating in fewer markets. This is a particular problem for organizations that operate internationally. Compliance costs are especially high for publicly held companies. These organizations have to maintain adequate control systems, while also producing a range of required reports for the Securities and Exchange Commission. These costs are so high that smaller organizations no longer find it cost effective to go public (Steven, 2019). In Nigeria, National Environmental Standards and Regulations Enforcement Agency (Establishment) Act 2007 & 2008, Environmental Impact Assessment Act 2004, Harmful Waste (Special Criminal Provision) Act 2004, Nuclear Safety and Radiation Protection Act 2007 etc. explicitly stated



the compliance laws to be strictly adhered to by firms whose activities are indulged on environmental practices.

2.1.5 Employee health and safety disclosure

Employee health and safety is the promotion and maintenance of the highest degree of physical, mental and social well-being of workers in all occupations (ILO/WHO). Occupational safety and health are of paramount importance for the social sustainability of personnel relations, for enterprises on all scales from the smallest holding to the largest factory or plantation, and for national economies. There is growing evidence that improving healthcare, fighting disease and increasing life expectancy are all essential for supporting economic growth and long-term business success. Neither development nor enterprises can be sustained when a high proportion of the population and the workforce suffer from poor health. A clean environment is important to health and well-being. Protecting and promoting human health requires primary health care –especially in rural areas –controlling communicable diseases and preventing health hazards originating in the working environment and from diets (see “Product safety and quality”). The health of employees has a direct impact on their productivity at all types of work (Nelson & Prescott, 2008).

Worldwide, more than 350,000 work-related fatal accidents and 2 million cases of work-related fatal disease occur each year. The number of non-fatal accidents (causing more than four days absence from work) is estimated to be 1,000 times higher (Al Tuwaijri, 2008). Beside the loss of work performance, the company sustains follow-on expenses for administration, recruitment and efforts for reintegration and due to loss of knowledge. The sustainability of the workplace should be improved by considering health and safety concerns in the physical and psychosocial work environment, including the organization of work and workplace culture, as well as personal health resources in the workplace. Furthermore, participation to improve the health of workers’ families and other members of the community is desirable (Burton, 2010). In the food and agriculture sectors, the occupational security and health situation is characterized by specific hazards and risks, with high numbers of incidences. Straining physical work, exposure to harmful substances (e.g. chemicals, pesticides and dust), work with machines, equipment and animals all can cause health problems and even death. Many enterprises in the sector are small and thus particularly suffer from absences from work and lack of resources to pay for health services or support. Working hours in the sector are often very long, especially in family enterprises and during the harvesting season, which can be critical for health and safety as well (see labour rights)

Social information such as employee health and safety disclosure describes a company’s achievements on social aspects of their employees within a certain period of time. Social aspects such as employee welfare, customer satisfaction, work accident rates, and customer complaint levels are other indicators besides financial indicators that can be sensitive information for stakeholders. Information asymmetry can be reduced through the disclosure of relevant information. Odua and Ikeh (2017) were of the opinion that one of the fundamental principles of workplace health and safety is risk assessment which identifies all the hazards and potential for harm whilst working. Employers must provide information and training on risk at work and on safe working practices. Employees on the other hand must comply with safety requirements at work and take all reasonable precautions to keep safe. Similarly, Adedilan and Alade (2013) argued that employees health and safety disclosure is one of the key disclosure relevant for environment accounting for stakeholders’ consumption. It is a disclosure on occupational injury and illness which is a matter of health, but they are also matters of economics, since they stem from work, and work is an economic activity. The economic perspective on employees’ safety and health encompasses both causes and consequences. The role of economic factors in the aetiology of workplace ill-health and the

effects this has on the economic prospects for workers, enterprises, nations, and the world as a whole. It is therefore a very broad perspective, but it is not complete, because neither the causation nor the human significance of Employee Health and Safety (EHS) can be reduced to its economic elements.

Employees' health and safety disclosure is measured using disclosure index adopted from the GRI as used in the study of Philips (2016), Smart (2015)

2.1.6 Market Performance

Market performance is company's ability to generate new resources, from day-to-day operations, over a given period of time and performance is gauged by net income and cash from operations. Market performance is a general measure of how well a firm generates revenues from its capital. It also shows firms overall financial health over a period of time, and it helps to compare different firms across the non-financial firms at the same time. The firm's financial performance generally can be recognized as its stability and profitability. The stability refers to its risk factors and profitability refers to its financial return. Market performance (MPERF) is a subjective measure of how well a firm can use assets from its primary mode of business and generate revenues (Shoukat & Nadeem 2014). Market performance is the measuring of firm's policy and operations in monetary form. Suka (2010) looked at financial performance as a subjective measure of how well a firm uses its assets from primary mode of business to generate revenue.

Financial performance usually measures the effectiveness or efficiency of a company's operation. It measures the profitability of companies using return on equity, assets, investment, and market value, using earnings per share. Many benefits are derived from information concerning an entity's financial performance. It helps users understand the returns generated from its economic resources, indicating how management has efficiently and effectively used them. It also shows the entity's capacity to generate cash flow from its operations instead of raising additional resources from investors and creditors. Financial performance refers to how well a company is doing or has met its set objectives. Every financial manager's fundamental duty is to maximize the stakeholder's wealth and increase the firm's value, which is possible and achievable when the firm's financial performance is improved. Financial Performance as a way of definition is a subjective measure of how well a firm can use assets from its primary mode of business and generate revenues. It is a process of measuring the results of a firm's policies and operations in monetary form. This study focuses on determining whether sustainability accounting will help to improve company's financial performance. In order to assess the financial performance of selected quoted firms, there are varieties of indicators which may be used. Some of the major market performance indicators include Earnings per Share (EPS), TobinQ, Market Share Price, Shareholders Value added etc. (Bagh et' al, 2017). This current study limits itself to only one market performance measures such as market share price as used by various scholars to measure the market based performance of quoted firms in Nigeria.

2.2 Theoretical Framework

2.2.1 Stakeholder Theory

Stakeholder theory was propounded by Edward Freeman in 1984. Stakeholder theory upholds that firms have accountability towards a broad range of stakeholders, apart from shareholders, that is customers, suppliers, employees, government, community, environment, lenders and future generation. The traditional definition of a stakeholder is any group or individual who



can affect or is affected by the achievement of the organization's objectives (Freeman 1984). The general idea of the stakeholder concept is a redefinition of the organization. In general, the concept is about what the organization should be and how it should be conceptualized. Friedman and Miles (2006) state that the organization itself should be thought of as grouping of stakeholders and the purpose of the organization should be to manage their interests, needs and viewpoints. This stakeholder management is thought to be fulfilled by the managers of a firm. The managers should on the one hand manage the corporation for the benefit of its stakeholders in order to ensure their rights and the participation in decision making and on the other hand, the management must act as the stockholder's agent to ensure the survival of the firm to safeguard the long term stakes of each group (Friedman & Miles, 2006). The basic proposition of the stakeholders' theory is that the success of firm depends on the successful management of all the relationships between the firm and the stakeholders. This term was originally introduced by Stanford Research institute (SRI) referring to those groups whose support is indispensable for the organizational existence (Freeman, 1983). These days, unfavourable environmental effect on economic development has become worrisome. The collective ecological footprint of the planets population is unsustainable and the current trends of growth and environmental degradation suggest we are going to encounter more problems in the future. Doorasam (2015), in his study believes that managers may not easily invest large amounts of money unless they are made to understand the amount of money they could save by adopting cleaner production techniques and technologies. This has great implication for the environment, and businesses which also make use of natural capital. Therefore, there is need for type of accounts which provide full measure of business performance and shareholder value creation, integrating economic, environmental and social factor into corporate behaviour with the aim of sustaining resources for future generation; hence the need for environmental accounting. Stakeholder theory looks at the relationship between an organization and others in its internal and external environment. It also looks at how these relationships affect the organizations and how the organization conducts its activities (Freeman 2004). Stakeholders can come from inside or outside of the stockholders, suppliers, non-profit community organizations, government, and the local community among others (Freeman, 2004; Freeman & Evan 1990).

2.3 Empirical Review

Recently, Zarefar et' al (2022) investigate the impact of sustainability reporting on firm performance. This paper also examines the moderating effect of family ownership on the relationship between sustainability disclosure and firm performance. The research sample consists of 850 primary and secondary sector companies listed on the Indonesian stock exchange between 2014 and 2020. This study generates its results using a panel model with Generalized Least Square (GLS) regression. This study concludes that sustainability disclosure has a positive impact on the financial performance of market and accounting-based companies. Additionally, family businesses strengthen the link between sustainability disclosure and firm performance.

Similarly, Ofurum and Iwunna (2022) evaluate the impact of environmental cost disclosure on the financial performance of oil and gas companies. The study used an ex-post facto research design and secondary data from companies' annual audited financial reports and the Department of Petroleum Resources (DPR) from 2008 to 2019. The study included 13 oil and gas companies listed on the Nigerian Stock Exchange and used a panel regression technique to estimate the study parameters. The results showed that waste management costs are positively and significantly related to the ROA of oil and gas companies in Nigeria. In addition, the study found that pollution control costs have a significant and negative impact on ROA. Consequently, the study concluded that environmental costs significantly impacted the financial performance of listed oil and gas companies during that period. Based on these findings, the study recommends that the management of oil and gas companies in Nigeria



develops a positive disposition toward waste management cost practice to restore and guarantee an increased return on equity, and stable and smooth operations, which will, in turn, improve return on assets, among others. All cited companies should be made more aware of the importance and need to disclose environmental costs to achieve greater voluntary disclosure

Shaikh (2022) attempted to bring quantitative evidence of a firm's sustainability reporting in terms of non-financial voluntary disclosures. The disclosures are made available through the annual report and Corporate Social Responsibility (CSR) and Global Reporting Initiatives (GRI) report. ESG score is a quantitative measure developed and disseminated by Bloomberg, covering about 120 Environmental, Social, and Governance aspects. The study's research problem is to examine the effects of non-market transnational sustainability strategy on firm performance. The study presents an analysis of nearly 510 firm's ESG scores across 17 countries for 2010–2018. The descriptive and inductive statistical analysis shows that ESG compliance is more pronounced in European companies. Simultaneously, Asian firms are more disciplined concerning the energy sector, and the Asia Pacific counterpart is more inclined toward technology firms. The study shows that GRI and non GRI companies differ significantly in their accounting performance (ROA and ROE) and market valuations (Tobin's-Q). The environmental dimension appears intimidating across accounting and market-based firm performance, while the social dimension contributes adversely, and governance positively affects operational efficiency.

Nwaigwe et' al (2022) investigated research in developing economies' context on the sustainability and firm value nexus and the dearth of studies on disclosure quality globally, available studies seem to have neglected the multidimensional nature of disclosure quality in measuring the construct. This paper was, therefore, designed to examine the effect of the extent and quality of sustainability disclosure on market value of firms. To achieve the study's objectives, 31 relevant sustainability performance indicator aspects were analysed for the 39 companies drawn from 9 sectors for the period 2010–2019. This result in 390 firm-year observations and 12,090 data points used to calculate unweighted sustainability extent and quality indices. Findings from regression analysis suggest a positive non-significant association between extent of sustainability disclosure and firm market value.

For instance, Agubosim et' al (2021) evaluate the relationship between environmental cost disclosure and profitability of firms in oil and gas industry in Nigeria. Panel data were collected from published annual reports of ten sampled companies for ten years spanning 2010-2019 based on data availability. Ex post facto design was used. Environmental costs were represented in terms of waste management cost, pollution control cost, fines and litigation cost and community development cost while return on assets was used as proxy to firm profitability. Pearson product moment coefficient of correlation and multiple regression analysis were used to analyse the data. Econometric result reveals that environmental cost has no significant effect on the performance of oil and gas firms in Nigeria.

Worimegbe and Oyewole (2021) assessed the level of environmental disclosure practice of manufacturing companies in Nigeria. Anchored on the legitimacy theory, the ex-post facto research design was adopted by the study. The sample was drawn from the population of sixty quoted manufacturing companies on the floor of the Nigerian Stock Exchange as at 31 December, 2017 using the judgmental sampling technique. The study variables were sourced from the annual reports and the stand-alone environmental reports of the selected companies from 2007-2017. The Global Reporting Initiative (GRI) environmental disclosure index was adopted in assessing the disclosure practice of the companies over the years. The findings showed that the environmental disclosure practice of the quoted manufacturing companies was low in the areas of material, energy, emissions, effluent and waste, water and biodiversity. The study further observed a non-significant statistical difference in the disclosure practice of manufacturing companies over the years ($t = -1.440, p = .223$). The study concluded that there



exists no significant difference in the level of environmental disclosure practice of manufacturing companies in Nigeria from 2007 to 2017.

Ekundayo and Josiah (2020) examined the underlying concepts, theoretical underpinnings, the existing definitions and empirical substantiations on environmental accounting Disclosure (EAD) that have been used in extant literature. The review also resolves the conundrum of the salient definitions of environmental accounting disclosure and environmental accounting from a standpoint of view with regards to the succinctly crafted views of proponents who informed the field. The review provides an extensive plethora of compendium of recent studies canvassed by different authors on various dimensions of environmental accounting disclosure (EAD) with an ardent focus on their surrounding controversies, contradictions and debates on these pertinent contemporary issues with regards to the findings of the research studies. Their study found that environmental accounting disclosure is a subject of multiple theories which may have resulted in the mixed results in extant literature between environmental performance, environmental disclosure and firm value. The study recommends that a proposition to further establish the nexus of theory and practice on environmental accounting disclosure (EAD) which should inform a broad range of audience in the business related fields such as industry chieftains, pedagogues, distinguished professors and environmental management consultants should be taken into paramount consideration in order to get them fully accustomed to the rudiments and pertinent issues on the intricacies involved in environmental accounting Disclosure (EAD)

Oshiole et' al, (2020) ascertained the effect of environmental cost disclosure on profitability of oil and gas firms listed on Nigeria Stock Exchange between 2010 and 2019. Eleven (11) listed oil and gas firms were purposively sampled. The proxies for environmental cost disclosure include waste management cost disclosure, employee health and safety cost disclosure and environmental remediation cost, while net profit margin was employed as profitability measure. Content analysis was employed while Pearson Correlation Coefficient and Panel Least Square (PLS) Regression analysis via STATA 13 statistical software were used to test the hypotheses of the study. The result of their study showed that waste management cost disclosure, employee health and safety cost disclosure and environmental remediation cost disclosure have a significant positive effect on net profit margin at 5% level of significance respectively. This study therefore recommends inter alia that since environmental cost is value relevant in making strategic business decision. Thus, oil and gas firms should constantly reposition their accounting system in order to provide information on environmental cost so that the true costs in an organization can be ascertained and properly allocated

Yang et; al (2020) examined the impact of environmental information disclosure on the value of listed manufacturing firms in China. Based on a panel dataset composed of the listed manufacturing firms in China during 2006–2016, their paper uses the difference-in-differences (DID) model and the propensity score matching (PSM) method to investigate whether the Environmental Information Disclosure Measure (for Trial Implementation; EIDMT) affected the value of a firm. The results show that EIDMT exerts a significant impact on the listed manufacturing firms' value. In consideration of the firm's ownership, EIDMT plays a more important role in the firm value of non-state-owned firms than state-owned firms. Furthermore, using a PSM–DID model for eastern, central, and western China, they found that EIDMT significantly affects the firm value in eastern and western China but has little impact on central China.

Syder et'al (2020) examined the effect of sustainability accounting report on shareholder value of quoted oil and gas companies in Nigeria using cross-sectional and ex-post facto research designs for their study. The population of their study was nine quoted companies on fact book of the Nigerian Stock Exchange (NSE). The study sample was purposively selected to include only those companies that operated both on upstream and downstream sectors of the industry. Secondary data were obtained from the annual corporate reports of the concerned companies

and Nigerian Stock Exchange from 2009 to 2018 by content analysis. Data analysis was with aid of E-view software version 7. It involved Autoregressive Distributed Lag (ARDL) bound test, descriptive statistic, model estimations and diagnostic analysis that adopted Augmented Dicky-Fuller Unit root test, error correction model and co-integration as well as multiple regressions. The findings of the study are: that employee training and community development expenditures had positive and significant effect on shareholder value added of the companies. However, the employee training and community development expenditures environmental compliance cost employee training and community development expenditures environmental compliance cost has no effect on shareholder value added. Predicated on these findings, it was concluded that sustainability accounting report has significant effect on shareholder value of quoted oil and gas in Nigeria, although the extent depends on the actual practice of the entity. It was recommended that the management of the oil and gas companies in Nigeria should pay adequate attention to the practice of sustainability accounting reporting because it is obvious that investments in sustainability performance which are communicated in sustainability accounting information report do not only increase expenditures but results in shareholder value creation

In a study by Setyahuni and Handayani (2020), they intend to extend prior developed market-based researches on the value relevance of non-financial information, which is reflected in Environmental, Social and Governance (ESG) disclosure, by examining the association between companies' financial performances and their non-financial performances. They used 281 firm-year observations of 34 public-listed firms in Indonesia during the period of 2012 - 2018. As the majority of prior studies have focused on the use of price model, we employ regression of both price and return models to assess the value relevance. They also analyse the value relevance of ESG disclosure on both aggregate and singular aspects. They employ sensitivity analysis to assess any differences in the value relevance of both models. The findings show that environmental, social, and ESG disclosure have significant impacts on share prices and stock returns, therefore they have value relevance in both price model and return model. Only governance disclosure has no effect on both share prices and stock returns. Our paper addresses an additional approach in assessing the value relevance of non-financial information. By incorporating two models, we provide a better understanding of the value relevance of ESG information. Our empirical evidence supports the process of developing sustainability reporting regulation in Indonesia regarding the value relevance of non-financial information.

3.0 Methodology

This study employed *ex-post facto* research design. This is because *ex-post facto* research design involves repeated observations of the same units (companies in this study) over a period of time. The study covered all the quoted firms in four sectors (Agricultural sector, Oil and Gas sector, Industrial goods sector and Conglomerates companies) duly quoted in Nigeria within the period of ten years from 2013 to 2022. We believe that this time period is particularly interesting because it falls within the period at which International Financial Reporting Standard (IFRS) were introduced and fully adopted in the country. The period was adopted to draw a reliable conclusion. Data collected in this study was analysed using content analysis and disclosure index which was subjected to preliminary and inferential analysis. Content analysis method is concerned with the number of words and sentences on particular information while disclosure index entails measuring the level of information reported in corporate reports using a set of pre-determined elements. Preliminary data analysis refers to use of descriptive statistics, correlation analysis and variance inflation factor in interpretation of data.

Table 3.7.1: Variables Definition and Measurement Units

Proxy	Variable Symbols	Variables Measurement
Independent Variable (Environmental Accounting Disclosure)		
Environmental Effluents and Waste Disclosure	EEWD	This was measured as a dummy variable where “1” is assigned to companies with sections in annual reports with total water discharge by quality and destination (G4-EN22), total weight of waste by type and disposal method (G4-EN23), energy and other environmental qualitative information and “0” otherwise
Environmental Emissions Disclosure	EEMD	This was measured as a dummy variable where “1” is assigned to companies with sections in annual reports with direct greenhouse gas emissions, energy indirect greenhouse gas emissions, emissions of ozone-depleting substances and other significant air emissions and “0” otherwise
Compliance to Environmental Laws and Regulations disclosure	CELD	This was measured as a dummy variable where “1” is assigned to companies with sections in annual reports with disclosure about monetary value of significant fines and total number of non-monetary sanctions for non-compliance with environmental laws and regulations and “0” otherwise
Employee health and Safety Disclosure	EHSD	This was measured as a dummy variable where “1” is assigned to companies with sections in annual reports with total Employee training and benefits, health and Safety standards, employee safety and research, pollutants and hazards Disclosure and “0” if otherwise.
Environmental Biodiversity Disclosure	EBDD	This was measured as a dummy variable where “1” is assigned to firms with sections in annual reports with operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas. Disclosure about description of significant impacts of activities, products, and services on biodiversity in protected areas and areas of high biodiversity value outside protected areas and “0” if otherwise
Dependent Variable (Market Performance)		
Market Performance	(MPERF)	This was measured as highest market price plus lowest market price during the year divided by two (2). That is average market price

Source: Researchers’ Compilations (2023)

3.1 Model Specification

This study adapted the model of Oshiole et’ al (2020): His original model was stated as follows:

$$NPM = \alpha + \beta_1 WMCD + \beta_2 EHSC + \beta_3 ENRC + \epsilon \dots \dots \dots 1$$

Where:

NPM = Net profit Margin, Employee health and safety cost (EHSC), Environmental remediation cost (ENRC)

The model was adopted from prior studies of Oshiole et; al (2020) whose model was stated above. Therefore, multivariate analysis was used by modelling financial performance (FPERF) as a function of explanatory variables. Consistent with previous studies, this model modifies and extends the model tested by Oshiole et’ al (2020) and panel least square was adopted for the purpose of hypothesis testing and was guided by the following linear model:

$$Y = F(X_1, X_2, X_3, X_4, X_5) \dots \dots \dots (1)$$

$$MPERF = F(EEWD + EEMD + CELD + EHSD + EBDD) \dots \dots \dots (2)$$

Putting it in testable form, thus we have

$$MPERF_{it} = \beta_0 + \beta_1 EEWD_{it} + \beta_2 EEMD_{it} + \beta_3 CELD_{it} + \beta_4 EHSD + \beta_5 EBDD_{it} + \mu_{it} \dots \dots (3)$$

Where

EEWD stands for Environmental Effluents and Waste Disclosure, EEMD connotes Environmental Emissions Disclosure, CELD stands for compliance to environmental laws and regulation disclosure, EHSD stands for Employee health and Safety Disclosure and finally EBDD means environmental Biodiversity Disclosure. $\mu_{i,t}$ = component of unobserved error term not captured by the explanatory variables of firm i in period t , β_0 = constant term

$\beta_1, \beta_2 \dots \dots \beta_5$ = are slopes to be estimated of firm i in period t , i = firm identifier (30 firms)

t = time variable (2013, 2014,2022) – (Ten Years).

The decision rule is to reject the null hypothesis if the calculated t value falls outside the critical values at 95% level of significance that is when the probability p -value is less than 0.05.

4.0 Data Presentation and Analysis

Table 4.1: Descriptive Statistics.

	MPERF	EEWD	EEMD	CELD	EHSD	EBDD
Mean	31.99963	0.605351	0.762542	0.953177	0.528428	0.715719
Median	8.600000	1.000000	1.000000	1.000000	1.000000	1.000000
Maximum	330.0000	1.000000	1.000000	1.000000	1.000000	1.000000
Minimum	0.180000	0.000000	0.000000	0.000000	0.000000	0.000000
Std. Dev.	55.40990	0.489595	0.426239	0.211613	0.500028	0.451827
Skewness	2.520467	-0.431082	-1.233966	-4.290252	-0.113897	-0.956474
Kurtosis	9.308168	1.185832	2.522671	19.40627	1.012972	1.914843
Jarque-Bera	812.3331	50.26356	78.71832	4270.600	49.83543	60.26019



Probability	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Sum	9567.890	181.0000	228.0000	285.0000	158.0000	214.0000
Sum Sq. Dev.	914936.7	71.43144	54.14047	13.34448	74.50836	60.83612
Observations	299	299	299	299	299	299

Source: researcher’s summary of descriptive result (2023) using E-view 12

The descriptive statistics result in table 4.1 above shows the mean values for each of the variables, their maximum values, minimum values, standard deviation and Jarque-Bera values which show the normality and nature of the data. The aim of the descriptive statistics was to describe the general distributional properties of the data, to identify any unusual observations or any unusual patterns of observations that may cause problems for later analyses to be carried out on the data. Thus, initial exploration of the data using simple descriptive tools was provided to describe and summarize the data generated for the study. The researcher sought to establish the central tendency and distribution of environmental accounting variables and market performance measured using the market price per share among the selected non-financial firms in Nigeria. The result provides some insight into the nature of the selected quoted non-financial firms from Nigeria Exchange limited that were used in the study. This section provides the descriptive statistics as per the objective of the study.

Firstly, market performance which was the dependent variable was measured as market share price with a mean value of #31.999 per shares of the firms selected. It was observed that over the period under review, the sampled firms have average positive market price of #31.99 per share in the market. Within the period under review, the firm’s shares were sold at a maximum share price of #330 and minimum share price of #18. The large difference between the maximum and minimum share price, indicates that the share price of the firms differs greatly among the firms selected and over the period under review, this shows that the firms are not homogenous. The standard deviation for share price was 55.409 suggesting considerable clustering of share price for the distribution around the mean value. The skewness for share price was 2.520 implying that the data on share price were skewed to the right hence most values were bunched to the left of the distribution. The kurtosis for share price was 9.308 that are greater than 3 hence the distribution is said to be leptokurtic hence it may have few outliers. The Jacque-Bera statistic value of 812.1101 alongside its p-value (p=0.000<0.05) indicates that the data satisfies normality.

The average mean for the involvement of non-financial companies towards environmental effluents and waste disclosure in Nigeria is about 60.55% at a maximum level of 1 and a minimum level of 0 being a dichotomous or dummy variable where 1 is assigned to companies with sections in annual report with water, energy, and waste disposal and 0 otherwise. This indicates that some companies do not disclose any of these environmental effluents and waste indices in their annual report while some are actively involving and disclosing majority of them. This implies that non-financial companies’ involvement in environmental effluents and waste disclosure was about 60.55% during the period of the study and the deviation from the mean is 0.489%. The value of skewness of -0.43 indicates that the data is negatively skewed and therefore conforms to the symmetrical distribution requirement. Moreover, the coefficient of Kurtosis 1.185 also indicates that environmental effluents and waste disclosure variable meet the Gaussian distribution criterion for normality and the Jacque-Bera statistic value of 50.26



alongside its p-value (0.0000) indicates that the data satisfies normality. It was also observed from the descriptive analysis that majority of the selected non-financial firms disclose sections in their annual report with water, effluents and waste disclosure information.

The descriptive results showed that the average emissions disclosure index for the 10 years period is 0.7625% (with minimum 0.0% and maximum 1) which is consistent with disclosure index by Omar et al. (2011) in conformity with the corporate performance. The finding shows that on average the sampled firms had above average disclosure score as measured using the index. The large difference between the maximum and minimum values indicates that the disclosure quality of non-financial companies selected differs greatly among the companies selected and over the period under review, this shows that the companies are not heterogeneous in nature. It can be deduced from the table that the mean disclosure score for emissions disclosure was 0.762 (76.2%) with a minimum score of 0.00 and a maximum score of 1 (100%). This implies that 76% of the firms engage in emissions disclosure to see if their market price will be improved. The data have a standard deviation of 0.426, this implies that the data in the sampled firms deviate from the mean by 42%. The skewness for emissions disclosure was -1.233 implying that data on emissions disclosure were skewed to the left hence most values were bunched to the right of the distribution. The kurtosis for emissions disclosure was 2.522 that is less than 3 hence the distribution is said to be platykurtic and having few outliers. The Jacque-Bera statistic of 78.71 alongside its p-value (0.0000) indicates that the data satisfies normality. The finding shows that on average the sampled firms had above average disclosure score as measured using the GRI index.

Compliance to environmental laws and regulations disclosure (CELD) has a mean score of 0.953 with a standard deviation of 0.211 for Nigeria non-financial firms; this implies that involvement of non-financial companies in Nigeria towards disclosing monetary value of significant fines and total number of non-monetary sanctions for non-compliance with environmental laws and regulations is about 95.3% at a maximum compliance degree of 100% and a minimum of 0%. On average, the compliance to environmental laws and regulations disclosure score of all companies is at 95.3%, with a minimum score of 0% and a maximum score of 1% being dummy variable of 1 and 0. It indicates that disclosure of monetary value of significant fines and total number of non-monetary sanctions for non-compliance with environmental laws and regulations among the companies is high. The skewness for compliance to environmental laws and regulations disclosure was -4.29 implying that data on compliance to environmental laws and regulations disclosure were skewed to the left hence most values were bunched to the right of the distribution. The kurtosis for compliance to environmental laws and regulations disclosure was 19.406 that are greater than 3 hence the distribution is said to be leptokurtic hence it may have few outliers. The Jacque-Bera statistic of 4270.600 alongside its p-value (0.000) indicates that the data satisfies normality.

Employee health and safety disclosure show an average mean value of 52.28% with a median value of 1. The minimum and maximum values of employee health and safety disclosure as measured by dichotomous variable are 0 and 1 respectively. This implies that the data in the sample firms deviate from the mean by 50%. The skewness for employee health and safety disclosure was -0.113 implying that data on employee health and safety disclosure were skewed to the left hence most values were bunched to the right of the distribution. The kurtosis for employee health and safety disclosure was 1.012 that is less than 3 hence the distribution is said to be platykurtic and having few outliers. The Jacque-Bera statistic of 49.83 alongside its p-value (0.000) indicates that the data satisfies normality

The descriptive results showed that the average environmental biodiversity disclosure index for the 10 years period is 0.7157% (with minimum 0.0% and maximum 1) which is consistent with disclosure index by Omar et al. (2011) in conformity with the corporate performance. The finding shows that on average the sampled firms had above average disclosure score as measured using the index. It can be deduced from the table that the mean disclosure score for

biodiversity disclosure was 0.715 (71.5%) with a minimum score of 0.00 and a maximum score of 1 (100%). This implies that 71% of the firms engage in biodiversity disclosure to see if their market price will be improved. The data have a standard deviation of 0.4518; this implies that the data in the sampled firms deviate from the mean by 45%. The skewness for biodiversity disclosure was -0.956 implying that data on biodiversity disclosure were skewed to the left hence most values were bunched to the right of the distribution. The kurtosis for biodiversity disclosure was 1.914 that is less than 3 hence the distribution is said to be platykurtic and having few outliers. The Jacque-Bera statistic of 60.26 alongside its p-value (0.0000) indicates that the data satisfies normality. The finding shows that on average the sampled firms had above average disclosure score as measured using the GRI index.

Generally, the JB Probability values of 0.0000 shows that all the variables are normally distributed at 1% level of significance. It is an indication that all variables are normally distributed. This means that there are no variables with outlier, even if there are, they are not likely to distort the conclusion and are therefore reliable for drawing generalization. This also justifies the use of panel least square estimation techniques. Hence, any recommendations made to a very large extent would represent the characteristics of the true population of study.

Table 4.2: Correlation Analysis Result

	MPERF	EEWD	EEMD	CELD	EHSD	EBDD
MPERF	1.000000					
EEWD	0.051845	1.000000				
EEMD	0.078666	0.160480	1.000000			
CELD	-0.156604	-0.049397	-0.049273	1.000000		
EHSD	0.074049	-0.282994	-0.117796	0.076049	1.000000	
EBDD	0.015462	0.380550	0.118766	-0.139683	-0.357716	1.000000

Source: researcher's summary of correlation result (2023) using E-view 12

The result of the correlation coefficient showed mixed correlation. This association identified buttresses the point that majority of our variables have positive relationship with varying degrees of direction. Furthermore, the strength of the relationship between variables measured by the Pearson product-moment correlation showed that the association between the variables is relatively small and was below the threshold of 0.80, suggesting the absence of the problem of multicollinearity in the predictor variables. In this section we present and discuss the Pairwise correlations among the variables of environmental accounting disclosure and market price per share of selected non-financial companies.

Table 4.3. Random Effect Regression Result

Cross-section random effects test equation:

Dependent Variable: MPERF

Method: Panel Least Squares

Date: 05/30/23 Time: 14:19



Sample: 2013 2022

Periods included: 10

Cross-sections included: 30

Total panel (unbalanced) observations: 299

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	49.76260	13.66146	3.642553	0.0003
EEWD	16.24192	6.813192	2.383893	0.0178
EEMD	1.247081	5.027211	0.248066	0.8043
CELD	23.96984	12.33228	1.943667	0.0530
EHSD	-0.231358	7.807405	-0.029633	0.9764
EBDD	-7.791076	8.000047	-0.973879	0.3310

Effects Specification

Cross-section fixed (dummy variables)

Root MSE	28.84256	R-squared	0.728139
Mean dependent var	31.99963	Adjusted R-squared	0.693126
S.D. dependent var	55.40990	S.E. of regression	30.69498
Akaike info criterion	9.795695	Sum squared resid	248736.1
Schwarz criterion	10.22886	Log likelihood	-1429.456
Hannan-Quinn criter.	9.969066	F-statistic	20.79655
Durbin-Watson stat	1.812615	Prob(F-statistic)	0.000000

Source: Researcher’s summary of regression result (2023)

From the result above, the study observed that the R. squared value was 0.728 (73%) approximately and R-squared adjusted value was 0.693 (69.3%). The value of R- squared which is the coefficient of determination stood at 73% approximately which implies that 73% of the systematic variations in individual dependent variables were explained in the model while about 27% were unexplained thereby captured by the stochastic error term. Again, the adjusted R-squared value which stood at 69.3% indicates that all the independent variables

jointly explain about 69.3% of the system variation in environmental accounting disclosure practices of our sampled non-financial firms in Nigeria over the 10years period while about 30.7% of the total variations were unaccounted for, hence captured by the stochastic error term. The R-squared adjusted value indicates that environmental accounting disclosure practices variables used in this study explained about 69.3% of the variation in market price per share of selected non-financial firms quoted in Nigeria Exchange limited. This reveals that about 69.3% of what happens in market price per share of firms can be attributable to the environmental accounting disclosure variables selected for the study while about 30.7% were unexplained. Moreover, the F-statistics value of 20.7965 and its probability value of 0.0000 shows that the variables used for the analysis were statistically significant at 1% level. This confirms the appropriateness of our model used for the analysis. The Durbin Watson statistics value of 1.812 reveals the absence of auto correlation and this means that the regression model is valid and can be used for statistical inference. Again, the Durbin Watson statistic of 1.812 showed that the model is well spread since the value is approximately 2 and that there have not been self or auto correlation problem and that error are independent of each other.

4.1 Discussion of Findings

H₀₁: Environmental effluents and waste disclosure has no significant effect on market performance of quoted non-financial firms in Nigeria.

From the regression result in table 4.3.2 above, it was discovered that environmental effluents and waste disclosure have a positive and significant effect on market performance having recorded a positive coefficient value of 16.24 and p-value of 0.0178 ($\beta_1 = 16.24$, $p = 0.0178 < \alpha = 0.05$). The coefficient value (β_1) was positive showing that environmental effluents and waste disclosure has a positive effect on market performance of listed non-financial firms in Nigeria. This means that a percentage increase in environmental effluents and waste disclosure will lead to a percentage increase in the market performance. This alternatively indicates that improvements in effluents and waste disclosure are most likely to translate in growth in the market price of non-financial firms in Nigeria. Hence when firms engage in actions that enhances effluents and waste disclosure, it increases their market prices by #16.24. The model infers that 1% increase in EEWD will exert 16.24% increase on market performance of listed non-financial firms in Nigeria. By implication, this suggests that additional effort geared towards disclosing environmental effluents and waste will lead to a more shareholders' value maximization via the share price. The t-value of 2.383 reveals that environmental effluents and waste disclosure has a very strong effect on market performance of selected firms. The probability value of 0.0178 further confirms that the effect of environmental waste cost disclosure on market performance in Nigeria is statistically significant at 5% level of significance.

H₀₂: Environmental emissions disclosure has no significant effect on market performance of quoted non-financial firms in Nigeria.

Based on the regression result on table 4.3.2 above, it was discovered that environmental emissions disclosure has a positive but statistically insignificant effect on market performance having recorded a positive coefficient value of 1.247 and probability value of 0.8043. This means that environmental emissions disclosure was positively and directly related to market performance of listed non-financial firms in Nigeria. By implication, this suggests that a percentage increase in environmental emissions disclosure maximizes shareholders wealth by 1.25% approximately. This implies that when firms engage in disclosing environmental emissions to avert crises, it will boost their performance via market price thereby maximizing the shareholders wealth creation.

H₀₃: Compliance to environmental laws and regulation disclosure has no significant effect on market performance of quoted selected firms in Nigeria.

The regression result in table 4.3.2 above revealed that compliance to environmental laws and regulations disclosure has positive effect on market performance of quoted non-financial firms in Nigeria having recorded a positive coefficient value of 23.969 and t-statistics value of 1.943 and a probability value of 0.0530 which is statistically significant at 5% level of significance. The study established that compliance to environmental laws and regulations disclosure has a positive statistically significant effect on market performance. The value β_3 was positive showing that compliance to environmental laws and regulations disclosure has a positive effect on market price of listed non-financial firms in Nigeria hence when companies compliance to environmental laws and regulations disclosure is increased by one naira saved on averted crisis, market price increases by 23.969%, indicating that the lower amount of money spent on violation of law cases, the more value is attributable to shareholders which automatically increases the firms market price, similarly, the more attention paid to compliance to environmental laws and regulations issues, the more value that goes to shareholders vice versa. However, the significant positive relationship between CELD and MPERF implies that a unit/one naira saved in compliance to environmental laws and regulations disclosure (CELD) will cause MPERF to increase by #23.969. This implies that the firms constantly strive towards betterment of these aspects and thereby perpetuate it into generating long term economic value for its shareholders, customers, employees, other associated persons and the society as a whole. Operations and actions must serve the underlying goal of enhancing overall shareholder value, over a sustained period of time. The t-value of 1.943 reveals that compliance to environmental laws and regulations disclosure has a strong effect on market price that increases shareholders' value maximization of selected firms and its effect is statistically strong enough to improve market performance.

Ho4: Employee health and safety disclosure has no significant effect on market performance of quoted selected firms in Nigeria.

The regression result above showed that employee health and safety disclosure have a negative effect on market performance having recorded a negative coefficient value of -0.231 and p-value of 0.9764 ($\beta_4 = -0.2313$, $p = 0.9764 \geq \alpha = 0.05$). The coefficient value β_4 was negative showing that employee health and safety disclosure has an inverse effect with market performance of listed non-financial firms in Nigeria. By implication, this means that when information about employee health and safety is fully disclosed, it involves a lot of capital outflow in doing that and this decrease the value of shareholders' wealth which negatively reflects in their market price. The model infers that 1% increase in employee health and safety disclosure will exert 0.231% decrease on market share price of shareholders of listed non-financial firms in Nigeria. By implication, this suggests that additional effort geared towards disclosing employee health and safety will lead to reduction in share price of the companies. That is to say that operations and actions of employee health and safety disclosure must serve the underlying goal of enhancing overall shareholder value by minimizing its disclosure, over a sustained period of time. The t-value of -0.0296 reveals that employee health and safety disclosure has a negative effect on market performance of selected firms but its effect is not statistically strong enough to improve shareholders' value hence a non-significant effect was documented.

Ho5: Environmental biodiversity disclosure has no significant effect on market performance of quoted selected firms in Nigeria.

The result of the analysis from the model above indicates that biodiversity disclosure negatively affects share price of non-financial firms in Nigeria. The result revealed that increase in biodiversity disclosure leads to decrease in share price of non-financial firms in Nigeria. This means that a 1% increase in compliance with full disclosure practices is associated with a

7.79% decrease in share price. By implication, this suggests that firms with less engagement in biodiversity disclosure are more likely to involve in maintaining high profitability index that automatically increases the share price. This could be as a result of heavy cost of maintaining the ecosystem as measures for the protection of biodiversity and ecosystems rips off, return on investment being estimated to be low on cost. This is because the services and costs for impacting them are externalized (see Holistic Management), there has been limited market incentives for the protection of biodiversity. It was evidenced that biodiversity has a negative but non-significant effect on share price value of non-financial firms in Nigeria. Signs and magnitude of biodiversity disclosure (EBDD) revealed a non-significant negative effect on the share price of selected non-financial firms in Nigeria, as indicated by a coefficient value of -7.791 with P-value of 0.3310 which is greater than 0.05 significance level. This implies that a unit decrease in environmental biodiversity of non-financial firms in Nigeria will induce a 7.79% improvement in the firm's share price which will automatically improve firms value. The result is in line with the Legitimacy theory. As a result of this insignificant effect documented, the null hypothesis was accepted.

4.2 Summary of Findings

Based on a sample of 30 selected companies from Nigeria Exchange limited for ten fiscal years from 2013-2022 and using five independent variables (EEWD, EEMD, CELD, EHSD and EBDD). The study found that:

- I.** Environmental effluents and waste disclosure has a positive and significant effect on market performance of non-financial firms in Nigeria which was statistically significant at 5% level of significance.
- II.** Similarly, a positive but insignificant effect was recorded against environmental emissions disclosure and market performance of quoted non-financial firms in Nigeria.
- III.** In the same vein, compliance to environmental laws and regulations disclosure has positive and significant effect on market performance of selected non-financial firms in Nigeria which was statistically significant at 5% level of significance.
- IV.** Conversely, Employee health and safety disclosure was found to have negative but insignificant effect on market performance of selected non-financial firms in Nigeria.
- V.** Lastly, environmental biodiversity disclosure was found to have a negative but insignificant effect on market performance of quoted non-financial firms in Nigeria.

5.1 Conclusion

The performance of firms in terms of value maximization objective largely depends on the nature of businesses they operate, and the possible legal, political and environmental regulations, which constitute an important item of public policy within the scope of their operation. The differences in the assessment of the firm financial performance of environmental accounting disclosure are also caused by differences in assumptions regarding environmental accounting disclosure, which are either seen as economic benefits or as costs that can reduce future earnings predictions. The nature of business a firm operates defines the risks attached to such business and risk constitutes a significant factor in the value of the firm. Sequel to the above, the thrust of this study was to ascertain the effect of environmental disclosure on market performance measured using share price of listed non-financial firms in Nigeria for a period of ten (10) years spanning from 2013 to 2022. Environmental disclosure which is the independent variable was captured using environmental effluents and waste disclosure, environmental emissions disclosure, compliance to environmental laws and regulations, Employee health and safety disclosure and Environmental biodiversity Disclosure

while market performance which served as the dependent variable was measured using market price. It was concluded that the market based performance of firms in the non-financial sectors of the Nigerian exchange is affected by the expenditure incurred by corporations in biodiversity maintenance and Employee health and safety control measures. However, when an individual component of environmental accounting disclosure is evaluated, environmental effluents and waste disclosure, and compliance to environmental laws and regulations disclosure have positive and significant effect, while others has less effect.

5.2 Recommendations

Based on the findings and conclusion of the study, the following recommendations were made as follows:

- I. Managers of firms should ensure that all the strict policies as regards to environmental effluents and waste disclosure are adhered to in the course of their operation while emphasis on them should be encouraged to boost value and market price of shares of non-financial firms in Nigeria.
- II. The management of non-financial companies in Nigeria should develop a positive disposition toward environmental emissions disclosure to restore and guarantee an increased return on market price even though it was found to have insignificant effect to their market performance.
- III. Non financial firms should be encouraged to always comply with environmental laws and regulations to minimize litigation cost that will deplete their profitability base in order to boost their market performance.
- IV. Managers of non-financial firms should pay less attention to all the strict policies as regards employees' health and safety disclosure in the course of their operation, in a bid to adding value to the organization at large even though it was found to have insignificant effect to their market performance.
- V. Emphasis on environmental biodiversity disclosure should be minimized to increase market performance of selected non-financial firms in Nigeria.

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