European Journal of Accounting, Auditing and Finance Research
Vol.12, No. 8, pp.,34-56, 2024
Print ISSN: 2053-4086(Print),
Online ISSN: 2053-4094(Online)
Website: https://www.eajournals.org/
Publication of the European Centre for Research Training and Development-UK

Environmental Stewardship and Financial Risk Disclosure of Listed Industrial Goods Firms in Nigeria

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doi: https://doi.org/10.37745/ejaafr.2013/vol12n83456 Published August 17, 2024

Citation: Emenyi E.O. (2024) Environmental Stewardship and Financial Risk Disclosure Industrial Goods Companies in Nigeria, *European Journal of Accounting, Auditing and Finance Research*, Vol.12, No. 8, pp.,34-56

ABSTRACT: *This study examined the effect of environmental stewardship on financial risk disclosure of listed industrial goods firms in Nigeria. The specific objectives include; to examine the effect of water protection stewardship on financial risk disclosure of listed industrial goods firms in Nigeria; to evaluate how air protection stewardship affect the quality of financial risk disclosure of listed industrial goods firms in Nigeria and to assess the effect of Land protection stewardship on financial risk disclosure of listed industrial goods firms in Nigeria. The study used ex-post facto research design. Findings revealed that; there is a negative and significant relationship between air protection stewardship and the financial risk disclosure of industrial goods companies in Nigeria; there is a positive impact of water protection disclosures stewardship on the financial risk disclosure of industrial goods companies in Nigeria and the result of the analysis showed a beta coefficient of 0.072 for land protection stewardship disclosure. This implies that 7.2% of the variation in financial risk disclosure in the industrial goods companies is accounted for by land protection stewardship disclosures. Based on the findings of the study, it was concluded that the effect of environmental stewardship on financial risk disclosure of the industrial goods companies in Nigeria is significant. Based on the findings of the study, the following recommendations were made; the management of the industrial goods companies should disclose their water protection stewardship activities in their financial statement. This will boast the confidence of all stakeholders in the industrial goods sector; the amount of disclosures on the land protection stewardship activities of the firms should be increased as this will increase the financial risk disclosure of the selected industrial goods firms and the companies should put in place adequate cost control mechanism to ensure air protection stewardship cost does not significantly deplete the financial risk disclosure of the industrial goods firms in Nigeria.*

KEYWORDS: environmental stewardship, financial risk disclosure, industrial goods companies, Nigeria

INTRODUCTION

Unprecedented global environmental threats have increased the strategic importance of environmental stewardship practices into the operations of any business unit (Haque & Ntim, 2020; Okpo & Emenyi, 2023). The need to promote improved human-environment interactions through stewardship is ever pressing, which applies to terrestrial, marine, aquatic, and aerial environments in both rural and urban environments (Chapin, Gary and Carl, 2009). Many individuals, local communities, environmental

groups, and governments around the world are taking and promoting actions to steward the environment. The term environmental stewardship has been used to refer to such diverse actions as creating protected areas, replanting trees, limiting harvests, reducing harmful activities or pollution, creating community gardens, restoring degraded areas, or purchasing more sustainable products. It is applied to describe strict environmental conservation actions, active restoration activities and/or the sustainable use and management of resources. Environmental stewardship is a commitment of responsibility to help manage and protect our natural resources as well as our ecosystems in a sustainable manner. This is to ensure their availability for upcoming future generations. These natural resources include air, water, plants, land, and animals. This concept stresses the key relationship people have with their natural environment, as it seeks to articulate the respect for interdependent relationship in ways that strives to meet today's global environmental challenges towards the general environmental wellness. Environmental stewardship is the responsibility for environmental quality shared by all those whose actions affect the environment.

In Nigeria for instance, one sector of the economy that has attracted a lot of public outcry on issues relating to environmental concerns is the manufacturing sector. Though a major source of revenue to the Nigerian State, their activities are often associated with severe health implications and environmental degradation which in recent past have caused nagging social disputes and disruption of some multinational companies economic activities (Uwaoma & Ordu, 2016). The concerns are been heightened due to stakeholders and host community's increased awareness of environmental degradation issues such as air and water pollution from heavy industrial machines, lack of clean-fresh water, lack of sea foods due to oil spill.. The need for sustainable environmental cost management in the industries goods firms has thus become the concern and focus of most nations and responsible corporate managements the world over. Organizations are now expected to be able to demonstrate that they are aware and addressing the impact of their operations on the environment and society in general (Okpo et. al., 2024).

Some research have addressed the need for corporate organisations to develop environmental stewardship and disclose same in their annual reports in spite the inadequacy eroding conventional accounting practices to track the process (Bassey, Effiok and Eton. 2013). Never the less, human activity on daily basis exposed the earth to heavy threat and further harm social economic and bio-physical components in the long run if not urgently addressed. In Nigeria, the Environmental Impact Assessment (EIA) Act of 1992 and other environmental laws subjected companies to comply with and ensure a healthy and secured environment while maximizing profit. The assumption behind the enactment of the EIA is to ensure a comprehensive inclusion of individuals and communities at risk of potential environmental damage in dialogue and for companies to ensure prevention of environmental damages as whereas potential harmful activities (Simeon & Essien, 2021). Over time, extraction of brewing components for production of the finished product have far reaching visible and socio-economic impacts, activities that have resulted in altering environmental and biological make-up, emission, pollution and land scape destruction. Besides, there are other cost usually proposed by companies to resettle affected host community and carrying out remediation works after extraction of mineral resources as required in listing rules aimed at abating employee work related accident. However, in evaluating management performance through independent assessment and their compliance with relevant environmental laws, it is pertinent to evaluate companies activities on

employee health, quality of air discharged, activities of the host communities, environmental regulations and quality of material mixed as it affect economic, social and environmental variables (Okpo, et. al., 2023). Extant literature have documented studies on environmental stewardship and financial risk disclosure but there have been scanty research to provide linear relationship between the dependent and independent variables, thereby creating a gap this research intend to fill. It is against this backdrop that this study considers the joint effect of environmental stewardship and financial risk disclosure on profit measures of listed industrial goods firms in Nigeria.

The principal objective of this study was to examine the effects of environmental stewardship on financial risk disclosure of listed industrial goods firms in Nigeria.
The specific objectives of the study are:

i. To examine the effect of water protection stewardship on financial risk disclosure of listed industrial good firm in Nigeria
ii. To evaluate how air protection stewardship affect the quality of financial risk disclosure of listed industrial good firms in Nigeria.
iii. To assess the effect of Land protection stewardship on financial risk disclosure of listed industrial goods firms in Nigeria

Conceptual framework

Environmental Stewardship

Environmental stewardship account for the responsibility for environmental quality shared by all those whose actions affect the environment. This sense of responsibility is a value that can be reflected through the choices of individuals, companies, communities, and government organizations, and shaped by unique environmental, social, and economic interests (Smith, 2003; Okpo, 2021). It is also a behavior, one demonstrated through continuous improvement of environmental performance, and a commitment to efficient use of natural resources, protection of ecosystems, and, where applicable, ensuring a baseline of compliance with environmental requirements. Environmental stewardship is not a new phenomenon. In fact, it has deep and diverse roots in our country. From farming to hunting, from conservation practices to spiritual beliefs, one can find an appreciation for natural resources and the valuable services they provide in many diverse settings. As we explore how to become a more sustainable society, it is clear that environmental stewardship can help preserve natural resources and achieve sustainable outcomes.

Determinants of environmental disclosure by corporations has been increasing steadily in both size and complexity over the last two decades (Smith, 2003). Research attention over the years has attempted to understand and explain this area of corporate reporting which appears to lie outside the conventional domains of accounting disclosures. The evolving challenge in contemporary business firms is the need to reconfigure their performance indices to incorporate societal and environmental concerns as part of the overall objective of business. Environmental reporting provides a strategic framework for achieving this holistic re-appraisal of corporate performance. Although it is not a new concept, environmental disclosures remain an interesting area of discourse for academics and an intensely debatable issue for business managers and their stakeholders. According to Deegan and Rankin (1996) & Akpan & Simeon, (2021) Corporate environmental reporting refers to the way and

manner by which a company communicates the environmental effects of its activities to particular interest groups within society and to society at large. Companies through the process of environmental communication may seek to influence the public's perception towards their operations. They attempt to create a good image (Deegan and Rankin, 1999). The increasing demand for companies to be socially responsible seems to have witnessed considerable perceptual divergences especially within the context of the stakeholder-shareholder debate. The idea which underlies the "shareholder perspective" is that the only responsibility of managers is to serve the interests of shareholders in the best possible way, using corporate resources to increase the wealth of the latter by seeking profits. In contrast, the "stakeholder perspective" suggests that besides shareholders, other groups or constituents are affected by a company's activities (such as employees or the local community), and have to be considered in managers' decisions, possibly equally with shareholders. By reporting environmental information, a firm addresses the information needs of stakeholders and provides a basis for dialogue between the firm and its stakeholders. As a critical avenue of stakeholder management, environmental reporting shapes external perceptions of the firm, helps relevant stakeholders assess whether the firm is a good corporate citizen, and ultimately justifies the firm's continued existence to its stakeholders.

Air protection stewardship:
Air protection stewardship includes only those procedures that may have a positive effect on the air quality and may additionally increase the profit of investors. Environmental stewardship are important for the preservation of all segments of the environment. The level of vulnerability of each of them, as well as human needs, dictates the need for stewardship in their preservation. Investing in natural infrastructures brings multiple benefits, and the main ones are associated with environmental protection (Smith, 2003; Akpan & Simeon, 2021).

Water Protection stewardship:
Water protection stewardship includes only those methods that may have a positive effect on the water quality and may additionally increase the profit of investors. Environmental stewardship are important for the preservation of all segments of the environment. The level of vulnerability of each of them, as well as human needs, dictates the need for stewardship in their preservation. Investing in natural infrastructures brings multiple benefits, and the main ones are associated with environmental protection (Smith, 2003).

Land Protection stewardship:
Land protection stewardship includes only those ways that may have a positive effect on the land quality and may additionally increase the profit of investors. Environmental stewardship are important for the preservation of all segments of the environment. The level of vulnerability of each of them, as well as human needs, dictates the need for stewardship in their preservation. Investing in natural infrastructures brings multiple benefits, and the main ones are associated with environmental protection (Smith, 2003).

Types of Environmental Stewards
According to Walker, Brian, and David, (2006), there are 3 types of environmental stewards: doers, donors, and practitioners. Doers go out and help the cause by taking action. For example, the doers in an oil spill would be the volunteers that go along the beach and help clean up the oil from the beaches. A donor is the person that financially helps the cause. They can do anything from donating their money,

to hosting public events to raise funds. They are typically governmental agencies. Lastly there are practitioners. They work on a day-to-day basis to steer governmental agencies, scientists, stakeholder groups, or any other group toward a stewardship outcome. Together these 3 groups make up environmental stewards and with the help keep the ecosystem running healthily. Anybody can be an environmental steward by being aware and knowledgeable of the world around them and making sure they do as little as possible to negatively impact our world. Without these groups it would be hard to get any sort of sustainability in our increasingly industrially based world (Okpo, 2021).

Environmental Stewardship Principles

Walker, Brian, and David, (2006), identified the basic principles of environmental stewardship.

(i) Sustainability - Incorporate a long-term vision that maintains, improves, and enhances social, ecological, and economic viability, and meets long-term objectives with minimal maintenance under existing and expected future climate conditions.

(ii) Early and Integrated Environmental Planning - Integrate environmental planning and communications internally and with resources agencies and stakeholders to provide project cost savings, increase environmental benefits, and support environmental compliance and permitting early and consistently through the project planning and design phases.

(iii) Multiple Ecological Benefits - Integrate environmental planning to provide multiple ecological benefits such as dynamic and more natural hydrologic and geomorphic processes; habitat quantity, diversity, and connectivity; increased native and listed species populations; biotic community diversity; multiple ecosystem services; and climate change adaptation.

(iv) Multiple Geographic Scales and Time Frames - Integrate ecosystem functions at multiple geographic scales (including regional, landscape, or river corridor and local project levels) and over multiple timeframes (near to long-term). Consider the need for regional solutions while being sensitive to the environment and specific local conditions.

(v) Variety of Approaches - Use a variety of approaches and analyses for achieving goals and multi-benefit objectives, such as structural and nonstructural approaches for incorporating, maintaining or restoring system-wide river and landscape ecosystem functions as integrated design parameters for projects.

(vi) Inclusive Cost - Benefit Analyses - Identify costs and benefits for the full spectrum of impacts over the entire life of a project, such as operations and maintenance; public safety; public resources, including environment and agriculture; and systems reliability, for more comprehensive evaluation of project alternatives.

(vii) Science-based Solutions, Ecological Monitoring, and Adaptive Management - Use structured monitoring and adaptive management to achieve goals based on the best available science, and continually improve the scientific basis of planning and management decisions. Develop evaluation criteria to document project performance and guide adaptive management decisions.

In all, the concept of environmental stewardship goes a long way in reducing cost, benefiting the environment and even uniting staff members. Staff members have that feeling of belonging and attachment to a larger and global organisation. It makes a business a valued part of a society of supporters, thereby increasing their customer base. It creates a solid image for the company by letting its potential customers to know that they do not care about profit alone but has the betterment of the environment at hand too (Okpo, et. al., 2023).

Patterns of Environmental Reporting

Environmental accounting reporting consists of two patterns namely; mandatory and voluntary reporting.

(i) Mandatory reporting are those pieces of information appearing in the reports in accordance with certain regulations imposed upon them by government or authorized and recognized body. This enables companies to disclose a certain degree of information and a basic standard for disclosing that information, therefore, a comparison among different companies' report would be possible. As stated by Deegan, Rankin and Voght (2000), arguably, stakeholders have a right to know about the social and environmental implications of an organization's operation at all times-not just when Management has been shocked into action by legitimacy-threatening events. Regulation might be necessary to ensure that this right to know is satisfied.

(ii) Voluntary reporting approach makes sure that corporation will meet the requests of their stakeholder without any legislative instructions (Maltby, 2004). Deegan and Rankin (1999) & Okpo & Emenyi, (2023) found that voluntary environmental disclosures are considered in the decision-making process of several user groups of annual reports. Researchers in the voluntary disclosure field have argued that companies do not provide such disclosures to satisfy the user's right to know but as a means to which the organization will be deemed legitimate by society and subsequently reap the rewards of such legitimacy (Guthrie and Parker, 1989; Deegan and Rankin, 1997 & Okpo, et. al., 2024). It was found that companies are willing to disclose larger proportion of positive information within a voluntary reporting framework. Companies continue to use greater levels of self-puffery within a voluntary reporting than within a mandatory reporting environment and suggests that stakeholders may be more likely to receive information that is less favourable to the corporation and potentially more decision useful to stakeholder within a legislated disclosure environment.

Environmental Performance Indicators

Environmental performance indicators (EPIs) are becoming increasingly important at company level. This is due to the heightened level of awareness and increased pressure from stakeholders demanding for companies to report on the impact of their environmental activities. Bartolomeo (1995) defines environmental performance indicators as the quantitative and qualitative information that allow the evaluation, from an environmental point of view, of company effectiveness and efficiency in the consumption of resources. It is a tool that provides a wider holistic approach essential for ecological management and sustainability reporting.

An EPI indicator can also be defined as a measurable quantity or parameter established from observable or calculable quantities. An environmental indicator is one that is supposed to reflect in various ways the different impacts of an activity on the environment and the efforts made to reduce them. In their strictest sense, environmental performance indicators (EPIs) reflect the environmental efficiency of a production process involving quantities of inputs and outputs (Simeon & Essien, 2021). In order to accomplish their purpose in an appropriate way, EPIs have to possess several characteristics that can be related to the structuring of objectives. For practical purposes, desirable EPI characteristics can be listed as follows (ISO, 1997; Skillius and Wennberg, 1998; ISO, 2007; Okpo, et. al., 2023):

i) **Relevance***:* Indicators must provide information that responds to company's and stakeholders' needs. Every indicator contributes to fulfil one or several objective(s) with which it is linked. The relevance criterion implies simplicity in the interpretation and comprehension of indicators. In order to be relevant, an EPI should adequately reflect the relationship between a company and the environment, among others, through input and output flows. Finally, an EPI should result from an agreement among stakeholders (users), as to its validity and utility.

ii) **Accuracy of Analysis:** This criterion means that indicators should be based on sound theoretical foundations, both in scientific and technical terms. This implies that they should be objective and unambiguous, in order to guarantee, on the one hand, a fair and synthetic representation of the situation or phenomenon under consideration, and on the other hand, the coherence of indicators in time and space, to allow for comparison, monitoring, and identification of trends.

iii) **Measurability***:* This characteristic pertains to the data that are the basis for constructing an indicator. Such data should be immediately available or accessible with a reasonable cost/benefit ratio. An indicator should be sensitive to the data; i.e., for a slight variation of the observed process, the indicator must show a variation with acceptable response of time and extent of occurrence. Measurability also pertains to the form of EPIs. These could be quantitative or qualitative as the case may be.

iv) **Comparability:** This is an important objective in the use of EPIs. Namely, EPIs should allow one to fulfill one or several of the following functions: (1) monitoring the evolution of performances of a given unit process, plant, company, sector over time; and (2) comparing several plants of a given company that perform the same kind of production.

Theoretical Framework

Stakeholders Theory

Freeman and Reed (1983) have identified stakeholders as "the groups who have an interest in the actions of the corporation. In a follow up study, Freeman (1984) revisited stakeholder theory and redefined stakeholders as any individual or group who has an interest in the firm because he (or she) can affect or is affect by the firms activities. Carroll (1999) has defined stakeholders as any individual or group who can affect or is affected by the actions, decisions, policies, practices, or goal of the organization. Stakeholders can be identified by the legitimacy of their claims which is substantiated by a relationship of exchange between themselves and the organization, and hence stakeholders include stockholders, creditors, managers, employees, customers, suppliers, local communities and the general public. Stakeholder theory suggest than an organization will respond to the concerns and expectations of powerful stakeholders and some of the response will be in the form of strategic disclosures Stakeholders theory provides rich insights into the factors that motivate managerial behaviour in relation to the social and environmental disclosure practices of organizations. Previous social and environmental accounting research which utilized these theories indicate that organizations respond to the expectations of stakeholders groups specifically and generally to those of the broader community in which they operate, through the provision of social and environmental information within annual reports.

Legitimacy Theory

Legitimacy was exposited by Dowling and Pfeffer in 1975 and the theory is commonly described as the analogy between an organization's worth and that of the bigger social system of which the organization is a subset. Legitimacy theory is a perception that the activities of an organization are pleasing and accurate within a socially constructed belief system and definition. According to Dowling and Pfeffer (1975) firms should seek to establish synergy between the social standards associated with or implied by their actions and the norms of acceptable behaviour in the bigger social system of which they are a component. From the legitimacy point of view, firms willingly report on environmental information to confirm that they are in compliance with the prospect and values of the society within which they function. Guthrie and Parker (1989) argue that if the legitimacy justifications are accurate, then the company's reporting policies will respond to the environmental procedures.

Deegan and Rankin (1996), on the other hand, suggested that societal prospect no longer rests upon just making a profit but has been expanded to inculcate safety and health of workers and host communities. In agreement with Dowling and Pfeffer (1975), legitimacy approach aids in the analyzation of a firm's behaviour. This is because legitimacy is essential to the firms, limitations made compulsory by norms, values, and reactions taken with respect to the surroundings. Legitimacy holds that organizations search to guarantee that they function within the norms and bounds of the society. Society prospects have changed to the expectation of businesses to make provisions to prevent environmental damages physically, to guarantee the well-being of the employees, and the host communities where their production take place and where wastes are dumped (Tinker and Niemark, 1987).

To establish and maintain companies' legitimacy, organizations should disclose all the positive and negative impacts caused by the environment to the stakeholders and within a social system that associates with norms and values. According to Richardson (1987), social values provide a means that links to economic actions of the environment not in a steady state, but that variable in nature.

Construction companies' legitimacy will boost the image of the organization through the use of symbolic action in the communication. Companies' image will unite the organisations' methods of operation, goals and output. In the legitimacy gap, the performance of an organization does not match the expectations of stakeholders for an informed decision.

Additionally, it is also relevant for re-strategizing on the establishment and maintenance of legitimacy of an organization through a meticulously induced procedure to propel desired public opinion about a phenomenon. Therefore, this theory is observed as not fully developed for an explanation for the disclosure of environmental accounting information.

Voluntary Disclosure Theory

Voluntary disclosure theory is relatively associated with the agency theory, and the proponents are Brammer and Pavelin (2008). Voluntary disclosures are prerequisite for the removal of information asymmetries between an organization and stakeholders in the operational environment. This theory establishes a threshold on the level of disclosure of information. It makes a forecast on the outcome of firms that are responsive to being a good corporate firm that reports on their environmental engagement and performances. Brammer and Pavelin, (2008) affirmed that inherent information risk to investors

can be adequately minimized through voluntary disclosure. Highlights on environmental fines and penalties as well as activities carried out on environmental restoration and waste management among others constitute voluntary disclosure that can position and endear an organization to stakeholders for a job well-done, thereby leading to a competitive advantage. It represents transparency and the achievability of sustainable development to the country. This is because it portrays the organization as being environmentally conscious of resource usage and environmental degradation.

It is expected that the absence of voluntary disclosure on environmental performance would indicate inferior environmental strategic adoption or usage (Clarkson *et al.*, 2008).

Empirical Framework

Kelly & Florence (2014) examined environmental management and sustainable development in the Niger Delta region of Nigeria. The specific objectives of the study were to investigate the relationship between commitments by Federal Government to environmental management policies and sustainable development, and to assess the relationship between true development agenda and sustainable development. The study adopted a survey design. The data were obtained from both primary and secondary sources. The primary data were collected from focus group discussions without evidence of the publication; the secondary data were obtained from relevant textbooks, journals, and other documents. The findings of the study showed that environmental management policy gaps, inadequate commitment to the implementation of environmental policies, poor environmental management practices as well as weak development agenda are constraining factors to sustainable development in the Niger Delta. The study recommended that agenda that is environmental, socially and economically benign and synthetic and integrated environmental management principles and practices that are in tandem with sustainable development should be made and implemented.

Kwazo, Muhammad, Tafida, & Mohammed (2014) investigated Environmental Impact of Technologies and found out that technologies have affected society and its surroundings including the environment in some ways. They found out that in many countries, technologies have helped to develop more advanced environmental problems including global warming. Many technological processes produce unwanted by-products, known as pollution, and depleted natural resources, to the detriment of earth's environment. He recommended that there is need to promote environmentally sound practices globally by strictly adhering to a green environment and there is a need for the implementation of environmental-wide green procurements strategies concerning technologies acquisition, use, and disposal. Some studies have been carried out by industry, organizations, and researchers exploring the idea of ICT contribution to solving environmental problems.

Ingram & Frazier (1980) examined the association between the content of corporate environmental disclosure and corporate financial performance. The study was concerned with a lack of corporate social responsibility disclosures in annual reports due to their voluntary nature. The authors scored environmental disclosures in 20 pre-selected content categories along four dimensions; evidence, time, specificity, and theme. Ingram and Frazier (1980) proxied environmental performance by a performance index devised by the Council on Economic Priorities (CEP), a non-profit organization specialising in the analysis of corporate social activities. Forty firms were selected from the 50 firms

that were monitored by the CEP. Regression results indicated no association between environmental disclosure and environmental performance.

In Malaysia, Trotman & Bradley (1981) using the content analysis technique examined the association between social sustainability reporting and characteristics of companies. Findings from the study suggest that a positive relationship exist between firms' financial leverage and the extent of voluntary disclosure. However, findings from related literatures by Chow & Wong-Boren (1987), Ahmed & Nicolls (1994) and Mohamed & Tamoi (2006) found no statistical relationship between financial leverage and voluntary disclosure.

Deegan (1994) has conducted a study on the incentives of Australian firms to provide environmental information within their annual reports voluntarily. Using a political cost framework, hypotheses were developed which link the extent of environmental disclosures with a measure of the firm's perceived effects on the environment. A sample of 197 firms was obtained from Australian Graduate School of Management annual reports file for the year 1991. The results indicate that firms which operate in industries which are perceived as environmental damaging are significantly more likely to provide positive environmental information within their annual reports than are other firms.

Gamble, Hsu, Kite and Radtke (1995) investigated the quality of environmental reporting practices and annual reports of 234 companies in twelve industries in the United States, between 1986 and 1991. An instrument was designed to measure the content of environmental disclosures, and descriptive reporting codes were used, based on the manner in which the sample firms disclosed environmental information. Companies in the sample were from industries thought to have the greatest potential for environmental impact; oil and gas chemicals, plastics, soap, detergent and toilet preparations, perfume, petroleum refining, steel works and blast furnaces and hazardous waste management. The main findings were that certain industries, for example petroleum refining, hazardous waste management and steel manufacturing were judged to have provided the highest quality of disclosures in annual reports.

Bewley and Li (2000) examine factors associated with the environmental disclosures in Canada from a voluntary disclosure theory perspective. The authors measure environmental disclosures by 188 Canadian manufacturing firms in their 1993 annual reports using the Wiseman index. A firm's pollution propensity (i.e., environmental performance) is proxied by their industry membership and by whether they report to the Ministry of Environment under the National Pollution Release Inventory program. The study finds that firms with more news media coverage of their environmental exposure, higher pollution propensity, and more political exposure are more likely to disclose general environmental information, suggesting a negative association between environmental disclosures and environmental performance.

Belal (2001) surveyed CSR disclosure practices in Bangladesh. Imam found that the level of such disclosures was very poor and inadequate. Belal examined the annual reports of 30 companies listed on the Dhaka Stock Exchange. He found that though 97 percent of companies made some form of CSR disclosure, the volume disclosed was very low. The disclosures were largely descriptive in nature, and emphasized 'good news'. Only one instance of 'bad news' disclosure was found (Belal, 2001).

Sarumpaet (2005) using a sample size of 252 listed companies in Indonesia, investigated the relationship between financial performance and environmental reporting. It concluded that that financial performance had no significant relationship with environmental performance. Other studies by Fiori, Donato & Izzo (2008), Teresa (2006), and Hull & Rothenberg (2009) consistently found no statistical relationship between financial leverage voluntary environmental disclosures. They opined that the financial health profile of a company to a large extent will determine the extent to which corporate environmental disclosure.

Ofoegbu (2016) investigated the corporation's environmental accounting information disclosure in the manufacturing firms in Nigeria. The researcher used ex-post facto and content analysis research design for 10 quoted selected manufacturing firms from 2008-2014. The annual reports were used in the study and findings showed that the company's financial performance has a significant impact on the quality of environmental accounting information disclosure of companies. However, the size of the firm had no impact on the quality of environmental accounting information disclosure.

Onyali *et al.,* (2014) in their study on consideration of the practice of environmental information disclosure of selected manufacturing firm in Nigeria. They adopted content analysis in analyzing the financial reports of the studied firms with respect to their environmental disclosure practices. Furthermore, a survey statistics were carried out to find out whether the practice of environmental disclosure in Nigerian companies has improved. In the findings, it was discovered that the practice of environmental disclosure in Nigerian companies is still in the elementary stage and contains little or no monetary data.

Cna *et* ., (2013), carried out research on "the impact of environmental cost on corporate performance: A study of oil firms in Nigeria". The study's main objective was to investigate environmental cost impacts on the corporate performance of oil firms in the Niger Delta States. The methodology adopted was a field survey involving a sample of 12 oil firms. Findings revealed that the practice of sustainability in business and company's performance is significantly related. In its recommendations, the study opines that a well-articulated environmental costing system should be developed by the management of oil firms in the Niger Delta States in order to assure a crisis-free working atmosphere by managers and this will lead to staff maximum productivity as well as improve companies performance.

Anyanwu (2015), in an empirical study titled "Environmental Management Accounting Techniques and Quality Financial Reporting" undertook to assess and explain the level to which environmental reporting disclosures quality take place in listed firms in Nigeria. The study as well identified and discussed the likely basis for the quality of reporting level. The study adopted a descriptive statistical research method. It revealed that firms in Nigeria are stepping up in environmental disclosures compared to what it was five (5) years ago. In addition, the study disclosed that greater parts of the firms are reporting on environmental accounting information voluntarily. The study concluded that many firms in Nigeria do not efficiently disclose environmental matters. The companies that disclosed on few environmental accounting information are inconsistent. The study recommended that Nigerian firms have to do more to show their seriousness in improving environmental pollution by means of

better quality disclosures in the financial reports of companies to build healthier value for all stakeholders.

Noodezh and Moghimi (2015), carried out a study on environmental costs information disclosure in the company's accounting systems. The study was aimed at examining the extent to which companies evaluate and report the negative environmental waste. The study adopted a descriptive statistical research method. The study revealed that the greater part of firms is not keen on reporting the information related to environmental accounting information components in their financial reports. This is because they consider that its disclosure would impose financial commitments on them. The study recommended that firms' managers should disclose environmental accounting information as a means of lifting a company's prestige and environmental reputation and legitimating their activities for effective and efficient decision making.

METHODOLOGY

Ex-post facto research design was used in the study. The choice of this design was based on the fact that it is not possible to directly manipulate or control any of the independent variables, inferences about the variables are made, without direct intervention from independent and dependent variables. The research design was adopted to allow a complete assessment of the environmental stewardship and financial risk disclosure of quoted industrial goods companies in Nigeria. The population of this study will consists of 13 listed Industrial goods companies that are listed on the Nigerian Exchange group between 2018 and 2022.

From the population of 13 quoted Industrial goods companies listed on the Nigerian Exchange group between 2018 and 2022. Sample size will be determine, using Yamene (1967) formula as follows:

$$n = \frac{N}{1 + N(e)^2}$$

Where:
n = the sample size
N = the population
e = error term (5% on the basis of 95% confidence interval)
Thus,

$$n = \frac{13}{1 + 13(0.05)^2}$$

$$n = 12.5 \text{ or } 13$$

Because of lack of availability of information in the financial reports of the companies, only 6 Industrial goods companies was considered for the study. Purposive sampling technique was used for the study. The technique enhances selection of Industrial goods firms that disclosed environmental stewardship strategies related information. The sample companies are: BUA Cement, Dangote Cement PLC, Lafarge Africa PLC, Meyer PLC, Berger Paints PLC and Premier Paints.. This selection is based on the nature in which companies report on the environmental stewardship and most importantly

availability of the annual reports on the web over the period of the study. Secondary data was the main source of data for the study. The data is obtained from financial reports and accounts of companies selected for the study. The other relevant data for this study was collected from various books, journals, magazines, and websites.
Data from financial reports was obtained through an in-depth examination with contents analysis method.

Identification and Measurement of the Variable
Identification and measurement of the variable consists of dependent variable and independent variable.

Dependent variable
The dependent variable in this study is financial risk disclosure. This is measure using return on assets (ROA) model. Therefore, the financial risk disclosure (FRD), which is the dependent variable in this study, is measure using the Return on assets (ROA) model. The model is stated as follows:

FRD_{kt} = ROA_{kt}, ---------- (1)

Where:

FRD_{kt} = The Financial risk disclosure characteristics of financial reports for Industrial goods firm k in year t
ROA_{kt} = Return on assets for Industrial goods firm k in year t

Independent variable
The Independent variable in this study is Environmental Stewardship which is being measure using its components; Air protection stewardship (APS), Water protection stewardship (WPS) and Land protection stewardship (LPS). Thus, the other equation is stated as follows:

ROA_{kt} = $f(APS_{kt}, WPS_{kt}, LPS_{kt},)$ ---------- (2)
ROA_{kt} = The Return on asset of financial reports for Industrial good firm k in year t
API_{kt} = Air protection stewardship for Industrial good firm k in year t
WPI_{kt} = Water protection stewardship for Industrial good firm k in year t
LPI_{kt} = Land protection stewardship for Industrial good firm k in year t
e_t = Error term in year t.

Model specification

Multiple Linear Regressions
The linear models for multiple-regression is expressed as follows:

$ROA_{kt} = \beta_o + \beta_1 APS_{kt} + \beta_2 WPS_{kt} + \beta_3 LPS_{kt} + e_t$

Where:

$\beta_1, \beta_2, \beta_3, \beta_4$, = coefficient.
β_o = Constant
ROA_{kt} = Return on assets for Industrial good firm k in year t
APS_{kt} = Air protection stewardship for Industrial good firms k in year t

WPS_{kt} = Water protection stewardship for Industrial good firms k in year t
LPS_{kt} = Land protection stewardship for Industrial good firms k in year t
e_t = Error term in year t.

Method of Data Analysis

Descriptive and inferential statistical methods was used to analyzed the data in the study. The descriptive statistics such as one sample T-test, tabulation and percentages was used in summarizing the information as well as their perceptions on the environmental stewardship Correlation and Multiple regressions technique was adopted as inferential statistics, to determine whether a relationship exists between the environmental stewardship and financial risk disclosure of Industrial goods firms in Nigeria. The data for the dependent and independent variables was extracted from the financial reports using contents analysis method and collated with the aid of Microsoft Excel and SPSS software.

DATA PRESENTATION, ANALYSIS AND FINDINGS

Data Presentation

The study had three independent variables and one dependent variable. The independent variable was air, water and land stewardship. The dependent variable was financial risk disclosure which was proxied by return on assets. The descriptive statistics of the data set is presented in Table 4.1 of the study.

Descriptive Statistics

The descriptive statistics include the mean, median, standard deviation of the data set.

Table 4.1 Descriptive Statistics

	N Statistic	Minimum Statistic	Maximum Statistic	Mean Statistic	Std. Deviation Statistic	Skewness Statistic	Std. Error	Kurtosis Statistic	Std. Error
APS	30	1.00	2.00	1.4217	.49683	.323	.264	-1.943	.523
WPS	30	4.00	9.00	7.2289	1.75531	-.664	.264	-.879	.523
LPS	30	.00	3.00	1.6265	.97168	-.162	.264	-.923	.523
ROA	30	-404.10	148.37	2.1178	58.11138	-4.423	.264	29.899	.523
Valid N (listwise)	30								

Source: Researcher's Computation (2024)

The financial performance (ROA%) had a minimum value of -404.10% and a maximum value of 148.37% with a mean value 2.11%. The mean value implies that for every one naira invested in the assets of the industrial goods firms, a return of 2.11% is expected. The maximum value implies that the highest return that the shareholders can obtain from the companies was 148.37%.

The average air protection stewardship by the selected companies was 7 while the maximum value was 9. The minimum value was 4. There was a total of 12 air protection stewardship disclosures that were expected from the industrial goods companies.

The water protection stewardship disclosures incurred stood at an average value 1.42 while the maximum and minimum values were 2 and 1 respectively. There was a total of 2 water stewardship disclosures that were expected from the industrial goods companies.

The land protection stewardship disclosure had a minimum value of 0 which means some of the companies did not disclose their land protection stewardship information. The maximum disclosure was 3 and the average disclosure stood at 1.62 respectively. There was a total of 11 land protection stewardship disclosures that were expected from the industrial goods companies.

Model Evaluation

The suitability of the data set and the data set was assessed as followings;

Normality

It is assumed in regression analysis that each mean is distributed normally. The test the normality of the data set, Kolmogorov- Smirnov and Shapiro Wilk statistics were carried out and the result presented in Table 4.2.

Table 4.2 Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
APS	.380	30	.000	.627	30	.000
WPS	.272	30	.000	.821	30	.000
LPS	.216	30	.000	.878	30	.000
ROA	.330	30	.000	.558	30	.000

a. Lilliefors Significance Correction

Source: Researcher's Computation (2024)

Autocorrelation

Autocorrelation is a correlation between a particular observation and values that precede and succeed it. The CNLRM assumes that such autocorrelation does not exist in the disturbance of the mean. Autocorrelation is detected and measured by Durbin-Watson (D) statistics. Durbin Watson value will approach zero, if the residuals are not correlated, the value of Durbin Watson will be close to 2, if there is negative autocorrelation. Durbin Watson can be greater than 2 and could even approach its maximum value of 4. However, Field (2009) suggest that value less than 1 and more than 3 are definite cause for concern. Thus, Durbin-Watson statistics for this study was 1.576 which are not less than 1 or more than 3.

Multicollinearity

The CNLRM assumes that there is no multicollinearity among the independent variables included in the model. It means that there does not exist 'perfect' linear relationship among some or all independent variables of the regression model. Kvanli pavur and Guynes (2000) suggest that if correlation is larger (above 0.8) then variance inflationary factor (VIF) will be large (greater than 10) when the maximum VIF is larger than 10, a commonly used procedure is to conclude that severe multicollinearity exist in the sample data. In this study, none of the results show VIF of larger than 10. The VIF values for the independent variables were as shown in Table 4.5; air protection disclosures (1.000), water protection stewardship disclosures (1.010) and land protection stewardship disclosures (1.597).

Test of Hypotheses

Table 4.3 Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.532[a]	.283	.251	.49528	1.408

a. Predictors: (Constant), APS, WPS, LPS
b. Dependent Variable: LOGROA

Source: Researcher's Computation (2024)

Table 4.4 ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	6.398	3	2.133	8.694	.000[b]
	Residual	16.190	26	.245		
	Total	22.589	29			

a. Dependent Variable: LOGROA
b. Predictors: (Constant), APS, WPS, LPS

Source: Researcher's Computation (2024)

Table 4.5 Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-.165	.312		-.530	.598		
	APS	-.666	.178	-.584	-3.752	.000	.448	2.231
	WPS	.267	.064	.745	4.182	.000	.342	2.926
	LPS	.041	.079	.072	.518	.606	.568	1.760

a. Dependent Variable: LOGROA

Source: Researcher's Computation (2024)

Hypothesis One

The null hypothesis one states that there is no significant effect of air protection stewardship disclosure on return on assets of listed industrial goods firms in Nigeria. Based on the decision rule of the study, the null hypothesis one of the study is rejected and the alternate accepted because the p-value of 0.000 shown in Table 4.5 is less than 0.05. The null hypothesis is further rejected because the t-cal value of 3.752 is greater than the critical value of t which was 1.989.

Hypothesis Two
The null hypothesis two states that there is no significant effect of water protection stewardship disclosure on return on assets of listed industrial goods firms in Nigeria. Based on the decision rule of the study, the null hypothesis two of the study is rejected and the alternate accepted because the p-value of 0.000 shown in Table 4.5 is less than 0.05. The null hypothesis is further rejected because the t-cal value of 4.182 is greater than the critical value of t which was 1.989.

Hypothesis three
The null hypothesis three states that there is no significant effect of land protection stewardship disclosure on return on assets of listed industrial goods firms in Nigeria. Based on the decision rule of the study, the null hypothesis three of the study is accepted and the alternate rejected because the p-value of 0.000 shown in Table 4.5 is less than 0.05. The null hypothesis is further rejected because the t-cal value of 3.752 is greater than the critical value of t which was 1.989.

DISCUSSION OF THE FINDINGS

The result of the analysis showed a beta coefficient of -0.584 for air protection stewardship disclosures. This implies that -58.4% of the variation in financial risk disclosure in the industrial goods companies is accounted for by air protection stewardship disclosures. This result means that more disclosures on air protection stewardship activities will decrease the financial risk disclosure of the selected companies. The result also suggests that disclosures on protection activities have negative impact on the financial risk disclosure of the selected industrial goods firms. In essence, air protection stewardship disclosures as critical component of environmental reporting decreases the financial risk disclosure of the selected industrial goods firms.

The result of the analysis showed a beta coefficient of 0.745 for water protection stewardship disclosure. This implies that 74.5% of the variation in financial risk disclosure in the industrial goods companies is accounted for by water protection stewardship disclosures This result means that more disclosures on water protection stewardship activities will increased the financial risk disclosure of the selected companies. The result also suggests that water protection stewardship disclosures have positive impact on the financial risk disclosure of the selected industrial goods firms. In essence, water protection stewardship disclosures as critical component of environment reporting depletes the financial risk disclosure of the selected industrial goods firms.

The result of the analysis showed a beta coefficient of 0.072 for land protection stewardship disclosures. This implies that 7.2% of the variation in financial risk disclosure in the industrial goods companies is accounted for by land protection stewardship disclosure. This result means that more land protection stewardship disclosures will increase the financial risk disclosure of the selected companies. The result also suggests that land protection stewardship disclosures has a positive impact on the financial risk disclosure of the selected industrial goods firms. In essence, land protection stewardship disclosures as critical component of environmental reporting increases the financial risk disclosure of the selected industrial goods firms.

The result of the analysis showed an adjusted R-square of 0.251 for environmental reporting. This implies that 25.1% of the variation in financial risk disclosure in the industrial goods companies is accounted for by environmental stewardship disclosures. This implies that the combined influence of air, water and land protection stewardship disclosures on the financial risk disclosure of selected oil firms in Nigeria is 25.1%.

In summary. the results show that air protection stewardship disclosure have negative influence on the financial risk disclosure while water and land stewardship disclosures also affect financial risk disclosure positively. This means that as air protection disclosures stewardship increases the financial risk disclosure of the companies decreases significantly. On the other hand, as water and land protection stewardship disclosures increases the financial risk disclosure of the selected firms will also increase.

SUMMARY, CONCLUSION AND RECOMMENDATIONS

Summary of the findings

i. There is a negative and significant relationship between air protection stewardship and the financial risk disclosure of industrial goods companies in Nigeria
ii. There is a positive impact of water protection stewardship on the financial risk disclosure of industrial goods companies in Nigeria
iii. The result of the analysis showed a beta coefficient of 0.072 for land protection stewardship. This implies that 7.2% of the variation in financial risk disclosure in the industrial goods companies is accounted for by land protection stewardship.

Conclusion

This study analysed the effect of environmental stewardship on financial risk disclosure from the perspective of air, water and land protection stewardship activities. Based on the findings of the study, it can be concluded that the effect of environmental stewardship on financial risk disclosure of the industrial goods companies in Nigeria is significant.

Recommendations

Based on the findings of the study, the following recommendations were made by the researcher;

i. The management of the industrial goods companies should disclose their water protection stewardship activities in their financial risk disclosure. This will boast the confidence of all stakeholders in the industrial goods sector
ii. The amount of disclosures on the land protection stewardship activities of the firms should be increased as this will increase the financial risk disclsoure of the selected industrial goods firms.
iii. The companies should put in place adequate cost control mechanism to ensure air protection stewardship cost does not significantly deplete the financial risk disclosure of the industrial goods firms in Nigeria.

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