

Environmental Cost Disclosure and Corporate Performance of Quoted Foods and Beverages Firms in Nigeria

Egbunike, Patrick A.; Odumodu, Mary Theresa C.

Department Of Accountancy, Nnamdi Azikiwe University, Awka, Nigeria

ABSTRACT

This study determined the effect of Environmental Cost Disclosure and Performance of Quoted foods and beverages firms in Nigeria. Ex post facto research design and content analysis was adapted for the study. Sample size of nine (9) Foods and Beverage firms were used from twelve (12) Foods and Beverage firms. Data for the study were collected from the audited accounts of the sampled Food and Beverage firms in Nigeria from 2010 to 2019. Formulated hypotheses were tested using multiple linear regression analysis with the aid of E-view 9.0. Environmental restoration cost and environmental pollution control cost has no significant effect on firm's return on assets. Therefore, recommended that the implementation of greener technique, that is, environmental restoration enhanced mark-up to protect the environment and increased firms' return on assets.

KEYWORDS: *Environmental Cost Disclosure, Performance, and Return on assets*

How to cite this paper: Egbunike, Patrick A. | Odumodu, Mary Theresa C. "Environmental Cost Disclosure and Corporate Performance of Quoted Foods and Beverages Firms in Nigeria" Published in International Journal of Trend in Scientific Research and Development (ijtsrd), ISSN: 2456-6470, Volume-5 | Issue-5, August 2021, pp.897-908, URL: www.ijtsrd.com/papers/ijtsrd44971.pdf



IJTSRD44971

Copyright © 2021 by author (s) and International Journal of Trend in Scientific Research and Development Journal. This is an Open Access article distributed under the terms of the Creative Commons Attribution License (CC BY 4.0) (<http://creativecommons.org/licenses/by/4.0>)



INTRODUCTION

Earth environment is a rich heritage handed over to us by previous generations. The present civilization has involved us in varied activities. Many of these activities generated waste with potential constituents. The ultimate disposal of the waste lead to environmental pollution in many parts of the world, the magnitude of pollution of the environment has already reached an alarming level (Pramanil, Shiland Das, 2007). During the fifties and sixties of the 9th century people all over the world become more concerned about the quality of their environment. Dimowo (2010) observed that companies like conglomerate firms in pursuit of profits can do great social harm and the environment suffers, thus, there is an emphasis for a meeting point between corporate objective of profit maximization and the need for environmental management. In this regard, the need for environmental cost has become the concern and focus of nations and responsible corporate managements (Okoye & Ngwakwe, 2004). Environmental Management Systems (EMS) have emerged as a means to systematically apply business

management to environmental costs to enhance a firm's long-run financial performance by developing processes and products that simultaneously improve competitive and environmental performance.

In Nigeria for instance, one sector of the economy that has attracted a lot of public outcry on issues relating to environmental is the manufacturing sector. Though a major source of revenue to the Nigerian State (e.g. the oil and gas industries), 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 being 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, and the likes. The need for sustainable environmental cost management in the manufacturing industries 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 (Uwuigbe & Jimoh, 2012).

Environmental Cost Disclosure (ECD) systems have the dual purpose of managing and improving the financial and environmental performance of an entity. Application of ECD, which integrates two of the main principles of sustainable development – environmental and economics, can help to significantly improve corporate decision-making (UNSD, 2003). Burritt, Hahu, Schaltegger (2001), affirmed that ECD can generate information about the use of resources with environmentally related impacts and affects the financial position and performance of organization.

Government programmes and policies can play an important role in encouraging and motivating businesses to adopt ECD systems as an integral part of a firm's management accounting practices, such that all project costs (including social and environmental costs) become clearly articulated, fully inventoried and properly allocated over the life of an investment (UNDESA; 2001). The fact that environmental costs are not fully recorded often leads to distorted calculations for improvement options. Studies on environmental accounting over the past years have shed light on the lack of information reaching top management (Rappaport and Maclean, 1998) and therefore environmental costs often goes unrealized by corporate decision makers.

Consequential effect on corporate organizations may result in incurring future capital expenditure and cash flows which may impinge on going concern as balance sheet secured loans may not be secured after all if land values for instance are affected by environmental factors. Also, the limited awareness of environmental costing principles and methodology has become an important issue to be addressed (Bassey, Oba & Onyiah, 2013).

Thus, some companies have started to develop integrated and complete management accounting systems, specifically taking into account the environmental impacts of their activities. Environmental management accounting allows for a better integration of the environmental information into the existing accounting systems.

As it explicitly treats environmental costs and tracks environmental information, ECD --highlights hidden environmental costs and benefits (Jasch 2003). Nevertheless, little is known about ECD since the

prior studies are dominantly prescriptive, often focusing on one specific ECD tool or managerial aspect of the organization. Accounting is now facing the challenge to account for the environment not only through its traditional role of recording and reporting financial information, but also through its role to manage environmental performance.

Being a subset of environmental accounting, Environmental Cost Disclosure (ECD) is regarded as an extension of conventional cost accounting, and it is the focus of this research. By and large, for the purpose of this study, ECD is seen as the generation, analysis and use of monetary and physical (or financial and non-financial) environment related information in order to improve organizational financial and environmental performance (Bartolomeo et al. 2000). In addition to social pressure, accounting, especially environmental costs are critically important to form this environmental awareness. In the 1970s, environmental accounting has gained increasing significance, particularly in Western countries. The Environmental Accounting research has focused on "Sustainable Development" and aimed to provide balance between economy and ecology (Lazol, Muğal & Yücel, 2008).

Most of the studies that examined the relationship between environmental management and firm performance, some reported a negative relationship between environmental management and firm performance, While Okoye and Ezejiofor (2013); Nwaiwu and Oluoka (2018); Mohamed (2018); Mayangsari (2018); Okafor (2018); and Onyali, Okafor and Egolum (2014) that better environmental performance positively impact business value of an organization even though that environmental disclosure practices of firms in Nigeria is still ad hoc. Going further, several reasons could be attributed to these observed inconsistencies in prior studies. A look at the previous studies particularly those by Nigerian authors shows a large domination of samples comprising only of a single sub-sector with the most current data being that of 2014 (Nnamani, Onyekwelu & Ugwu, 2017). The findings of these studies were uncertain, besides few research of this nature focused on those costs incurred by these entities in maintaining their environment where they operate as well, the extent firm's reports on environmental issues in order to effect on their performance. Against the backdrop, there is need to establish the extent firm's disclosure environmental issues in their audited reports and account was limited in Nigeria.

The main objective of this study is to determine the effect of environmental cost disclosure on performance of quoted foods and beverages firm in

Nigeria. Specifically, the objectives of the study are to;

1. Determine the extent to which environmental restoration costs affect performance of quoted foods and beverages firms in Nigeria.
2. Ascertain the extent to which pollution control costs affect performance of quoted foods and beverages firms in Nigeria.

Review of Related Literature

Environmental Cost Disclosure (ECD)

Environmental costs consist of environmental measures and environmental losses. They include cleanup costs, costs of recycling materials or conserving energy, closure costs, capital expenditure and development expenditure. These costs are incurred in preventing, reducing or repairing damage to the environment and conserving resources. However, environmental losses are costs, which bring no benefits to the business. These include fines, penalties, compensation, and disposal losses relating to assets which have to be scrapped or abandoned because they damage the environment (Wright & Noe, 2006). Accounting for environmental costs though, the issues of environmental and social reporting are not explicitly provided for in the companies and allied matters act, has been catered for by both local and international standards like ISAR, Global reporting Index (GR). Corporate performance is no longer seen simply as being equivalent to and consequently measurable in terms of profitability alone. Information on the accounting for environmental costs is now required. Each types of cost are to be considered as it arises so as to accord it the appropriate treatment in line with Generally Accepted Accounting Principles (GAAP5) (Nwaiwu & Oluka, 2018).

Information generated through ECD can either be in monetary or physical terms. Correspondingly, the United Nations Division for Sustainable Development (UNSD, 2001) states that: The general use of ECD information is for internal organizational calculations and decision making. ECD procedures for internal decision making includes both physical procedures for material and energy consumption, flows and final disposal, and monetized procedures for costs, savings and revenues related to activities with a potential environmental impact. Accordingly, an adequate accounting system that considers both environmental and economic impacts is important in assisting companies to fulfill their environmental management tasks (Burritt, Hahn & Schaltegger, 2001).

ECD can be defined as the generation and analysis of both financial and non-financial information in order to support internal environmental management

processes (Shane, 2005). It is complementary to the conversional financial management accounting approach, with the aim to develop appropriate mechanisms that assist in the identification and allocation of environment-related costs (Bennett & James, 1998). The major areas for ECD application include; in the assessment of annual environmental costs/expenditures, product pricing, budgeting, investment appraisal, calculating costs, and savings of environmental projects, or setting quantified performance target. Besides being a tool for reporting environmental costs to external stakeholders, the ECD has an internal company-level function and focus (Jasch, 2003; Lange & Alferi, 2004).

ECD is as wide-ranging in its scope, techniques and focus as normal management accounting. Burritt, Hahn and Schaltegger (2001) stated: 'there is still no precision in the terminology associated with ECD. They viewed ECD as being an application of conventional accounting that is concerned with the environmentally-induced impacts of companies, measured in monetary units, and company-related impacts on environmental systems, expressed in physical units. ECD can be viewed as a part of the environmental accounting frame work and is defined as 'using monetary and physical information for internal management use (ACCA, 2007). ECD encompasses environmental reporting which is the disclosure of information in the published annual report or elsewhere, of the effect that operations of the business have on the natural environment.

Setthasakko (2010) documented that environmental management accounting is "a business tool that provides essential data for corporate environmental management ranging from simple to comprehensive methods that link physical and monetary information for decision making". Environmental accounting is an inclusive field of accounting and covers all areas of accounting that may be affected by organizational responses to the environment-related issues. According to Gray and Bebbington (2001), environmental accounting includes: Accounting for contingent environmental liabilities/risks. Accounting for asset re-valuations and capital projections as they relate to the environment Cost analysis in key areas such as energy, waste and environmental protection Investment appraisal to include environmental factors, development of new accounting and information systems to cover all areas of environmental performance, assessing the costs and benefits of environmental improvement programs, developing accounting techniques which express assets and liabilities and costs in ecological (non-financial) terms. Vasile and Man (2012) define

environment management accounting (ECD) as the process of identification, collection, calculation (estimation), analysis, internal reporting and use of cost information regarding materials and energy, and environmental costs within the decision process so as to adopt convenient decisions capable of contributing environmental protection. USEPA (2005) asserts that the term environmental accounting has many meanings and uses. It can refer to national income accounting, financial accounting, or internal business managerial accounting. National income accounting is a macroeconomic measure. GDP is an example and has been frequently used as a key measure of the society's economic wellbeing with the consideration of environmental depletion and degradation costs. In this context, environmental accounting has been termed 'natural resources accounting'. Financial accounting refers to the estimation and public reporting of environmental liabilities and financially material environmental costs based on generally accepted accounting principles (GAAP). Management accounting is the process of identifying, collecting, and analyzing environmental information primarily for internal purposes. Unlike financial accounting, which is ruled or governed by GAAP, management accounting practices and systems can be tailored to meet the needs of the business they serve. Deegan (2003) defined environmental accounting as a broader term that relates to the provision of environmental-performance related information to stakeholders both within and outside the organization. While environmental accounting can be 'corporate-focused', it should also be appreciated that environmental accounting can also be undertaken at a national or regional level. Howes (2004) opines that environmental accounting is all about the link between environmental and financial performance more visible, getting 'environmental sustainability' embedded within an organization's culture and operations and providing decision-makers with the sort of information that can help them to reduce costs and business risk and to add value. Environmental management accounting is viewed as an extension of conventional management accounting.

Operational Variables

1. Environmental Restoration

Environmental restoration is closely allied with (or perhaps sometimes used interchangeably with) ecological restoration or environmental remediation. In the U.S., remediation is the term used more in the realms of industry, public policy, and the civil services. Environmental restoration is a term common in the citizens' environmental movement.

In the 1987 edition of his book *restoring the Earth: How Americans are working to renew our Damaged*

Environment, scientific editor and writer John J. Berger defined environmental restoration (or "natural resource restoration") as follows:

"... A process in which a damaged resource is renewed. Biologically. Structurally. Functionally."

Although the international field of restoration is driven primarily by the non-profit, government and academic sectors, in the U.S and certain other countries (e.g. Australia, which has a robust mining restoration sector), there are active markets for ecological restoration.

2. Environmental Pollution Control

Environmental Pollution control is any action (large or small) that reduces the amount of contaminants released into the environment. By implementing P2 processes, fewer hazards will be posed to both public health and natural wellbeing.

Pollution is the contamination of air, soil, or water by the discharge of harmful substances. Pollution control is the reduction or elimination of pollution at the source (source reduction) instead of at the end-of-the-pipe or stack. Pollution control occurs when raw materials, water, energy and other resources are utilized more efficiently, when less harmful substances are substituted for hazardous ones, and when toxic substances are eliminated from the production process. By reducing the use and production of hazardous substances, and by operating more efficiently we protect human health, strengthen our economic well-being, and preserve the environment.

Source reduction allows for the greatest and quickest improvements in environmental protection by avoiding the generation of waste and harmful emissions. Source reduction makes the regulatory system more efficient by reducing the need for end-of-pipe environmental control by government.

NPPR supports multi-media P2 approaches which work to solve environmental problems holistically and do not only focus on pollution in a single medium (air, land, or water). Well-intentioned rules, regulations and solutions that are not multi-media sometimes exacerbate existing conditions by creating larger problems to other media that are not accounted for by a single media-specific solution. Many times this can result in the transfer of pollution from one medium to another. For example, in some cases, by requiring hazardous air emission controls for industrial facilities, other problems might result, such as pollutants being transferred to underground drinking water through the residual sludge.

Adopting pollution prevention practices and techniques often benefits industry by lowering a

company's operational and environmental compliance costs. By preventing the generation of waste, P2 can also reduce or eliminate long-term liabilities and clean-up costs. Furthermore, disposal costs are reduced when the volume of waste is decreased. This can also lead to a reduction in workplace exposures to hazardous materials which can affect workers' health and hence, their productivity.

Corporate Performance

There are various aspects of performance, each of which contributes to the overall performance in an organization. Despite the evolution of various available benchmarks and performance measurement, the answer to what is performance may still be hard to pin down. Hansen and Mowen (2005), states that firm performance is very essential to management as it is an outcome which has been achieved by an individual or a group of individuals in an organization related to its authority and responsibility in achieving the goal legally, not against the law, and conforming to the morale and ethic. Performance is the function of the ability of an organization to gain and manage the resources in several different ways to develop competitive advantage.

Hansen and Mowen (2005), states that firm performance is very essential to management as it is an outcome which has been achieved by an individual or a group of individuals in an organization related to its authority and responsibility in achieving the goal legally, not against the law, and conforming to the morale and ethic. Performance is the function of the ability of an organization to gain and manage the resources in several different ways to develop competitive advantage.

The main objective of financial performance measuring is to determine the operating and financial characteristics and the efficiency and performance of economic unity management, as reflected in the financial records and reports (Amalendu, 2010). Akinsulire, (2008) points out that no performance review is beyond dispute, for instance, reported profit is a matter of opinion. If income is to be measured in terms of the increase or decrease in the wealth of an enterprise, obviously some definitions of that stock of wealth is required. Pandy, (2003) measures wealth in three categories; as financial capital – the equity stake in an enterprise in money terms; real financial capital, the equity stake in an enterprise in real terms (the proprietary concept); operating capacity capital, the ability of the enterprise to maintain its ability to provide goods and services (the entity concept).

In addition, measuring performance is very important because it builds on the results, make different decisions in economic units. According to (Benjalux,

2006) performance measures are the life blood of economic units, since without them no decisions can be made. Financial performance Measure is one of the important performance measures for economic units. Financial performance measures are used as the indicators to evaluate the success of economic units in achieving stated strategies, objectives and critical success factors (Katja, 2009).

Return on Assets (ROA)

ROA gives profitability on assets of the firm after meeting all expenses and taxes. It measures the profit of the firm after tax for each dollar invested in assets (Horne & Wachowicz 2005). It is indicator of managerial performance. So, higher value of this ratio means better managerial performance (Ross, Westerfield & Jaffe 2005).

ROA can be increased by increasing profit margin or asset turnover.

$ROA = \text{Net Profit} / \text{Total Assets}$.

Empirical Review

Quite numbers of studies have been examined on environmental issues in relation with financial performance of corporate organizations. Nwaiwu and Oluka (2018) examined the effect of environmental cost disclosure and financial performance measures of quoted oil and gas companies in Nigeria. Time series data were collected from annual financial reporting and economic review of Central Bank of Nigeria; Pearson product moment coefficient of correlation and multiple linear regression analysis with the aid of special package for social sciences (SPSS) version 22. The econometric results reviewed adequate disclosure on environmental cost, compliance to corporate environmental regulations have positive significant effect on financial performance measures. Okafor (2018) ascertaining the effect of environmental costs on firm performance. To achieve this objective, the study made use of financial reports of Oil and Gas Companies quoted in the Nigerian Stock Exchange Market from years 2006-2015. Regression analysis was employed with the aid of Statistical Package for Social Sciences (SPSS). The results of the statistical analysis indicate that better environmental performance positively impact business value of an organization. Olaoye and Adekanmbi (2018) examined the impact of environmental management accounting practices and report on organization performance. The study made use of descriptive design survey type through structured questionnaire and the study employed stratified random and purposive sampling as sampling techniques. The findings of the study revealed that there is low present practice of environmental management accounting in South West Nigerian universities. Hengky, Charbel,

Ana, Samuel and Muhammad (2018) examined the effect of the combination of corporate environmental strategy, top management commitment, and environmental uncertainty, with a focus on the role of environmental Cost Disclosure (ECD), on corporate environmental performance. The empirical evidence shows that there is a positive and significant influence between those organizational resources (corporate environmental strategy, top management commitment, and environmental uncertainty) on the use of ECD, which in turn can improve the environmental performance of companies. Arshad (2018) assessed whether a company organization in Erbil, Kurdistan Region has an influence on profit. This study, based on 50 local and international firms located in Erbil, KRG, were given a questionnaire, which was answered, by either the CFO or the accountant of the firm. Companies can have flash on many important possible regulations such as raise awareness among people to use public transportation, also the environmental issues become crucial to humanity if forget about environment and do whatever needed then the results will be very bad. Mayangsari (2018) investigated the influence of environmental performance on the financial report integrity. The statistics used were primary data from interviews with senior members of the mining sector regarding environmental issues, as well as secondary data using Financial Report 2016. The samples were listed mining companies with semester data. This study employed KLD as a proxy for environmental performance, correlated with other variables regarding the integrity of disclosure. The outcome indicates that environmental issues will increase the integrity of financial reports. Amacha and Dastane (2017) examined the relationship between sustainability practices and firm performance in the Malaysian Oil and Gas sector. Their specific objectives were to conduct a data analysis to understand the relationship between environmental, social and governance performance and financial performance which was measured using EBIT, EPS and PE ratio. Secondary data sources as sourced from a sample size of 21 oil and gas firms from 2011 – 2013. With the aid of a multiple regression model run via SPSS 21, there result shows that the majority of oil and gas companies in Malaysia had poor performance in terms of sustainability disclosure. Nobanee and Ellili (2017) investigated the impact of economic, environmental, and social sustainability reporting on financial performance of UAE Banks in Abu Dhabi Securities Exchange and the Dubai financial market during the period 2003-2013. The study employed three sustainability disclosure dimensions including i) economic, ii) environmental

and iii) social dimensions against banking performance which they measured using ROE. Employing a panel data analysis technique, their results reveal that sustainability disclosures as well as economic, environmental and social disclosures have no significant effects on the banking performance of UAE banks, whether they are conventional or Islamic banks. Ezejiofor, John-Akamelu, and Chigbo (2016) assess the effect of sustainability accounting measure on the performance of corporate organizations in Nigeria. Ex post facto research design and time series data were adopted. Data for study was collected from annual reports and accounts of the company in Nigeria. Formulated hypotheses were tested using Regression Analysis with aid of SPSS Version 20.0. The study found that environmental cost does not impact positively on revenue of corporate organizations in Nigeria. Owolabi, Akinwunmi, Adetula & Uwuigbe (2016) examined the extent of sustainability reporting practiced by Lafarge Africa Plc. Content analysis was used to analyze the data extracted from their annual reports and the Global Reporting Initiative (GRI) G4 sustainability reporting guideline was used as a basis of assessment. The study found no disclosures on human rights issues, 3% environmental disclosures and an aggregate of 30% disclosure based on one hundred and sixty-nine indicators used. Malarvizhi and Ranjanni (2016) conducted a research to examine whether there is any significant relationship between Corporate Environmental Disclosure (CED) and firm performance of selected companies listed in Bombay Stock Exchange (BSE), India. They use content analysis methodology by developing an environmental disclosure index (EDI) and formulating hypotheses to test the association between firm performance and level of environmental disclosure. Results show there is no significant relationship between the level of environmental disclosure and firm performance. Ijeoma (2015) determined the role of environmental cost accounting towards environmental sustainability in Nigeria. The research instrument was randomly administered to 200 respondents from organizations in Nigeria: Agricultural/Agro-Allied, Breweries, Chemical and Paints, Health Care/Pharmaceutical and Oil Marketing companies. The findings of the study revealed that majority of the respondents agreed that business organizations in Nigeria have not being aware of environmental policies. It was also found that that there exists no significant difference on business organizations in Nigeria not being aware of environmental policies. Shehu (2014) examined the effect of environmental expenditure on the performance of quoted Nigerian oil companies,

within a period of twelve years (1999-2010) using selected firm financial statement of all quoted oil companies listed in the Nigerian Stock Exchange. The data was analyzed using multiple regressions, employing ROA and three independent variables; Cost of Environmental Remediation and Pollution Control (ERPC), Cost of Environmental Laws Compliance and Penalty (ELCP), Donations and Charitable Contributions (DCC). The result reveals that environmental expenditure has a significant effect on the performance of quoted oil companies in Nigeria. Mohammad, Sutrisno, Prihat and Rosidi (2013) examined stakeholder theory and legitimacy as well as eco-efficient related to effect of environmental accounting implementation and environmental performance and environmental disclosure as mediation on company value. Research results indicate that environmental accounting implementation is able to affect on company value, environmental information disclosure and on environmental information disclosure. Okoye and Ezeiofor (2013) ascertained the sustainability environmental accounting in enhancing corporate performance and economic growth. This study reviewed various forms including journal papers, articles and other relevant materials. This paper analyzed and tested two hypotheses with Pearson Product Movement Correlation Co-efficient. The study discovered that sustainable environmental accounting has significant impact on corporate productivity in order to enhance corporate growth. Onyali, Okafor and Egolum (2014) assessed the extent, nature and quality of environmental information disclosure practices of manufacturing firms in Nigeria. Content analysis was adopted in analyzing the annual report of the selected firms with regards to their environmental disclosure practices. This was done with the aid of questionnaire administered to 40 Chartered accountants. The study adopted one sample t-test in testing the formulated hypothesis. The findings of the study indicated that the environmental disclosure practices of firms in Nigeria is still ad hoc and contains little or no quantifiable data. Uwuigbe (2012) investigated the relationship between the financial performance of firms and the level of web-based corporate environmental disclosure among other objectives. The study provides analytical evidence that a positive association existed between the variable corporate environmental disclosure and Return on Assets, Return on Equity and Firm Size and they are all significant. The study further provides an insight to the fact that to a very great extent, the financial performance and the size of firms do plays a very significant role in or has a strong influence on the

level of web-based corporate environmental disclosure among the selected firms. Fisher-Vanden & Thorburn (2011) examined the valuation effect of voluntary corporate environmental initiatives on shareholders wealth using an event study approach. The study show that when firms announce their membership in the Environmental Protection Agency's Climate Leaders, a program intended to reduce greenhouse gas emissions, the announcement is met with negative abnormal returns.

Most of researchers have explored how the stringency of the environmental policy regime affects a company's ECD applicability and financial performance. Most of the studies which examined the relationship between environmental management and firm performance were inconsistent in their results. Excluding the fact that specifics country and other peculiarities may influence the outcome of studies conducted in both developed and developing countries because of divers' ways corporations respond to environmental and social concerns in different crimes. A look at the previous studies particularly those by Nigeria authors show a large domination of samples comprising only of a single sub-sector.

Methodology

Research Design

Due to the nature of the study, ex-post facto research design and content analysis data were adopted in collecting data from financial reports and accounts from 2010-2019. Ex-post facto research design was used to determine the effect of environmental cost disclosure and performance of quoted conglomerate firms Nigeria. Ex-post facto research design is used because the data already exist. The researcher therefore, has no intention of manipulating the data.

Population of the Study

The population of this study covered twelve Foods and Beverages quoted on the Nigerian Stock Exchange as at 2018. These Food and Beverages are as follows;

1. 7-Up Bottling Company Plc.
2. Cadbury Nigeria Plc.
3. Dangote Flour Mills Plc.
4. Dangote Sugar Refinery Plc.
5. Ferdinand Oil Mills Plc.
6. Flour Mills Nigeria Plc.
7. Foremost Dairies Plc.
8. National Salt Co. Nigeria Plc.
9. Nestle Foods Nigeria Plc.
10. Nigerian Bottling Company Plc
11. Northern Nigeria Flour Mills Plc.
12. Union Dicon Salt Plc.

Sample Size

As a result, the "purposive sampling technique was applied (Non-random sample). In this method, the sample is chosen based on what the researcher thinks is appropriate for the study. A total of nine (9) out of the twelve (12) companies were inevitably excluded during the data collection process due to incomplete data.

One of the limitations of this sampling technique is the possibility of being prone to researcher bias. Purposive sampling is based on the researcher. That means their conscious or unconscious bias goes into the data being collected. That bias may make the data seem to be valid, but it can also influence the data and provide false results.

Source of Data

To obtain reliable information that helped the researcher to ensure the effectiveness of the study in question, data were collected from only secondary sources. The study used secondary data extracted from the audited annual reports and accounts of the quoted Foods and Beverages firms in the Nigeria stock exchange. Panel data of six conglomerate firms for seven years were collected from the annual reports and accounts of Food and Beverage firms in Nigeria (2010-2019). The researcher collected data up to 2019. These data were considered useful because they have been audited and filed with NSE.

Method of Data Analysis

The statistical model chosen for the analysis is multiple regressions, with the aid of E-view 9.0 software. Three sets of hypotheses were advanced for confirmation in this study.

Decision Rule

The decision for the hypotheses is to accept the alternative hypothesis if the P-value of the test statistic is positive and significant at 5% significant level. P-value less than 5%, reject, P-value greater than 5% then do not reject.

Model Specification

The estimated model takes the following form:

$$ROA_{it} = a_0 + \mu_i + \beta_1 ENVRC_{it} + \beta_2 ENVPPC_{it} + \epsilon_{it} \quad (i)$$

$$ROA_{it} = a_0 + \mu_i + \beta_1 ENVRC_{it} + \epsilon_{it} \quad (ii)$$

$$ROA_{it} = a_0 + \mu_i + \beta_1 ENVPPC_{it} + \epsilon_{it} \quad (iii)$$

Where:

The dependent variable: Corporate performance (ROA) and

The Independent variables:

$ENVRC$ = environmental restoration costs

$ENVPPC$ = environmental pollution control cost

a_0 = slope of the model

β_1, β_2 = coefficient of parameters.

Data Presentation and Analysis

Data Analysis

Table 1: Descriptive Statistics

	ROA	ENVRC	ENVPPC
Mean	0.019100	1.500000	2.100000
Median	0.020500	1.500000	2.000000
Maximum	0.036000	3.000000	3.000000
Minimum	-0.015000	0.000000	0.000000
Std. Dev.	0.014012	1.080123	0.994429
Skewness	-1.340221	1.39E-17	-0.914695
Kurtosis	4.757035	1.870748	2.971468
Jarque-Bera	4.279977	0.531337	1.394783
Probability	0.117656	0.766693	0.497882
Sum	0.191000	15.000000	21.000000
Sum Sq. Dev.	0.001767	10.500000	8.900000
Observations	10	10	10

The above shows the mean of each variable, their maximum values, minimum values, standard deviation, skewness and Jarque-Bera (JB) Statistics (normality test). The results in the above table provided some insight into the nature of the selected Nigerian quoted firms that were used in this study.

Firstly, it was observed that on the average over the ten years periods (2010-2019), the sampled quoted firms in Nigeria were characterized by positive return on assets ($ROA = 0.019100$). Also, the large difference between the maximum and minimum value of the environmental protection cost = ($ENVPC$), pollution control cost ($ENVPPC$) show that the sampled quoted firms in this study are not dominated by firms with large equity share. Looking at the negative skewness, implies that the distribution has a long left tail.

Secondly, we also observed that the average $ENVRC$ value over the period was 1.50000, the maximum value was 3.0000 while the minimum stood at 0.0000. This shows that most quoted firms in Nigeria are with high market value or have more investment value. Lastly, in Table 1, the Jarque-Bera (JB) which test for normality or the existence of outlier or extreme values among the variables shows that all our variables are normally distributed and significant at 5% level and the result could be generalized. This also implies that a least square regression can be used to estimate the pooled regression models.

Table 2: Correlation Analysis Matrix

	ROA	ENVRC	ENVPPC
ROA	1.0000		
ENVRC	-0.0917718	1.0000	
ENVPPC	-0.1682602	-0.1551681	1.0000

The use of correlation matrix in most regression analysis is to check for multi-colinearity and to explore the association between each explanatory variable (ENVRC, ENVPPC and ENVPC) and the dependent variable (ROA). Table 2 focused on the correlation between return on assets measured as net income over total asset and the independent variables (ENVRC, and ENVPPC).

Finding from the correlation matrix table shows that all our independent variables, (ENVRC= -0.918, and ENVPPC = -0.168) were observed to be negatively and weakly associated with firm performance (ROA).

In checking for multi-colinearity, we notice that no two explanatory variables were perfectly correlated. This means that there is no problem of multi-colinearity between the explanatory variables. Multi-colinearity may result to wrong signs or implausible magnitudes in the estimated model coefficients, and the bias of the standard errors of the coefficients.

Testing of Hypotheses formulated

In other to examine the impact relationships between the dependent variable ROA and the independent variables (ENVRC, and ENVPPC) and to also test our formulated hypotheses, we used a pooled multiple regression analysis since the data had both time series (2010-2019) and cross sectional properties (9 foods and beverage firms). The pooled interaction based multiple regression results are presented and discussed in Table 3 below

Table 3: ROA Pooled Regression Results

Dependent Variable: ROA				
Method: Least Squares				
Date: 03/18/21 Time: 09:43				
Sample: 2010 2019				
Included observations: 10				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.009264	0.023955	0.386750	0.7123
ENVRC	-0.001541	0.004889	-0.315218	0.7633
ENVPPC	-0.002454	0.005313	-0.461818	0.6605
R-squared	0.168381	Mean dependent var		0.019100
Adjusted R-squared	-0.247429	S.D. dependent var		0.014012
S.E. of regression	0.015649	Akaike info criterion		-5.187617
Sum squared resid	0.001469	Schwarz criterion		-5.066583
Log likelihood	29.93809	Hannan-Quinn criter.		-5.320391
F-statistic	0.404946	Durbin-Watson stat		2.122361
Prob(F-statistic)	0.755121			

In Table 3, R-squared and adjusted Squared values were (0.168) and (-0.247) respectively. The indicates that all the independent variables jointly explain about 8% of the systematic variations in return on assets (ROA) of our samples firms over the ten years periods (2010-2019). The F-statistics (0.404) and its P-value (0.71) show that the ROA regression model is well specified, thereby, making the regression fit for prediction purpose.

Test of Autocorrelation: using Durbin-Waston (DW) statistics which we obtained from our regression result in table 3, it is observed that DW statistics is 2.122 and an Akaike Info Criterion and Schwarz Criterion which are -5.188 and -5.066 respectively also further confirms that our model is well specified. In addition to the above, the specific findings from each explanatory variable are provided as follows:

Hypothesis One

Ho: Environmental restoration cost has no effect on performance of quoted foods and beverages firms in Nigeria.

Environmental Restoration Costs (ENVRC), based on the t-value of -0.315218 and p-value of 0.7633, was found to have a negative influence on our sampled quoted firms and this influence was not significant as its p-value is higher than 0.05 values. This result, therefore suggests that we should accept our null hypothesis one which states that environmental restoration cost has no effect on performance of quoted foods and beverages firms in Nigeria. However, this result is not statistically significant and therefore should not be used for any policy consideration.

Hypothesis Two

Ho: Environmental Pollution control cost has no effect on performance of quoted foods and beverages firms in Nigeria.

Environmental Pollution Control Cost (ENVPCC), based on the t-value of -0.461818 and p-value of 0.6605 was found to have a negative influence on our sampled quoted firm performance and this influence was not significant since its p-value was more than 5%. This result therefore suggests that we should accept our null hypothesis two which states that environmental Pollution control cost has no effect on performance of quoted foods and beverages firms in Nigeria. However, this influence is not statistically significant and so, should be ignored.

Discussion of Results

Based on the outcomes from the hypotheses two shows that Environmental restoration cost has negative effect on performance of quoted foods and beverages firms in Nigeria but this was not significant. Environmental Pollution Control Cost has negative effect on performance of quoted foods and beverages firms in Nigeria but this was not significant. This finding agrees with Ezejiofor, John-Akamelu, and Chigbo (2016) whose study found that environmental cost impact positively on revenue of corporate organizations in Nigeria, also that environmental cost impacted positively on profit generation of corporate organizations in Nigeria, also Okafor (2018), who reported that better environmental performance impact positively on business value.

Dabbas and Al-rawashdeh (2012) revealed that there is a significant relationship between the costs of environmental activities, such as the provision of donations/establishes non-profit projects, support projects/charities and the profitability of industrial companies.

Also the finding of Wibowo (2012), show that there is positive impact of the social performance to the profitability of the firms. Amacha and Dastane (2017) on their result concluded that a strong and significant relationship exists between sustainability practices and financial performance of companies. Sayedeh, and saudah (2014), Lubomir and Dietrich (2009) on their analytical results indicate strongly that better environmental performance improves profitability by driving down costs more than it drives down revenues.

Conclusion, Recommendations

Conclusion

From the empirical results, Environmental Restoration Cost and Environmental Pollution

Control Cost have negative effects on performance of quoted foods and beverages firms in Nigeria but this effect was not significant. While Environmental Protection Cost disclosure has positive effect on performance of quoted foods and beverages firms in Nigeria but this was not significant. This indicates that continuous environmental evaluation handled in an acceptable way garners sales and therefore improved income. The implication is that the compliance to environmental laws enhances financial performance of the firm. Meanwhile, environmental related cost disclosure influence firm's positively and, hence, firms not significantly reported and discloses environmental related information, as environmental friendly organization enjoys high level of corporate cooperativeness.

Recommendations

Based on the finding of this study, the researcher recommends as follows:

1. That implementation of greener technique i.e environmental restoration enhanced mark-up to protect the environment and increased firms' return on assets.
2. That firms should make policies that will control environmental pollution in order to reduce cost.

References

- [1] Arshad S. A. (2018). Social and environmental accounting effect on companies' Profit (An empirical study of some companies in Erbil) *Account and Financial Management Journal* 3(7); (Page No.-1621-1633)
- [2] Amacha, E.B., & Dastane, O. (2017). Sustainability practices as determinants of financial performance: A Case of Malaysian Corporations. *Journal of Asian Finance, Economics and Business*, 4(2), 55-68.
- [3] Burriit L., Hahn T. & Schaltegger, S. (2002). Current practice in ECD-towards a comprehensive framework for ECD.
- [4] Bassey, E. B., Oba, U. E. U, & Onyah, G. E., (2013). An analysis of the extent of implementation of environmental cost management and its impact on output of oil and gas companies in Nigeria, (2001-2010) *European Journal of Business and Management* www.iiste.org ISSN 2222-1905 (Paper) ISSN 2222-2839 (Online) 5(1).
- [5] Bartolomeo, M, Bennett, M, Bouma, JJ, Heydkamp, P, James, P & Wolters, T. (2000). 'Environmental management accounting in Europe: Current Practice and Future Potential', *The European Accounting Review*, 9(1), 31-52.

- [6] Burritt, R, Hahn, T & Schaltegger, S (2001). 'An Integrative Framework of Environmental Cost Disclosure', in M Bennett, JJ Bouma & T Wolters (eds), *Environmental Cost Disclosure: Informational and Institutional Developments*, Kluwer Academic Publishers, Dordrecht, vol. 9, pp. 21-35.
- [7] Deegan, C (2003). Environmental management accounting: an introduction and case studies for Australia, Institute of Chartered Accountants in Australia, Melbourne.
- [8] Dimowo (2010). The relation between environmental performance and environmental disclosure: A research note. *Accounting, Organizations and Society* 27(8), 763-773.
- [9] Ezejiofor, R.A., Chitum, J.R., & Chigbo, C.E. (2016). Effect of sustainability environmental cost accounting on financial performance of Nigerian corporate organizations. *International Journal of scientific research and management*, 4(8), 4536-4549.
- [10] Fisher-Vanden, K., & Thorburn, K. S. (2011). Voluntary corporate environmental initiatives and shareholder wealth. *Journal of Environmental Economics and Management*, 62, 430-445. Retrieved June 16, 2016, from <http://ssrn.com/abstract=1324983>
- [11] Gray, R. & Bebbington, J. (2001). The valuation of assets and liabilities: environmental law and the impact of the environmental agenda for business, *The Institute of Chartered Accountants of Scotland, Edinburgh*.
- [12] Howes, R (2004). 'Environmental Cost Accounting: Coming of Age? Tracking Organizational Performance towards Environmental Sustainability', in A Henriques & J Richardson (eds), *The Triple Bottom Line: Does it All Add Up?*, Earthscan, London.
- [13] Hansen, D.R. & Mowen, M.M. (2005). Environmental cost management, *Management Accounting* 7, 490-526.
- [14] Hengky, L., Charbel J. C. J., Ana B. L.S. J., Samuel, F. W., & Muhammad S. (2018). Effects of environmental strategy, environmental uncertainty and top management's commitment on corporate environmental performance: The role of environmental management accounting. *Journal of Cleaner Production*. 297-306
- [15] Ijeoma N. B., (2015). The role of environmental cost accounting in environmental sustainability in Nigeria. *American journal of business, economics and management*. 3(6), 2015, pp. 395-407.
- [16] Jasch C. (2003). The use of environmental management accounting (ECD) for identifying environmental costs. *Journal of Cleaner Production* Vol. 11"
- [17] Lange, G. H, & Alferi A. (2004). Using environmental accounts to promote sustainable development: experience in Southern Africa"
- [18] Mohammad, I., Sutrisno, T., Prihat, A., & Rosid (2013). Effect of environmental accounting implementation and environmental performance and environmental information disclosure as mediation on company value. *International journal of business and management invention ISSN (Online): 2319 – 8028, ISSN (Print): 2319 – 801X* www.ijbmi.org 2(1).
- [19] Malarvizhi, P., & Ranjani, M. (2016). Link between corporate environmental disclosure and firm performance. Perception or reality? *Review of Integrated Business & Economic Research*, 5(3).
- [20] Mohamed, A E. (2018).The Effect of Environmental and Social Corporate Governance on the Financial Performance with Special Focus on the Egyptian Private Sector Companies within Egx30. *Journal of Accounting and Marketing*. 7(2).
- [21] Malarvizhi, P., & Ranjani, M. (2016). Link between corporate environmental disclosure and firm performance. Perception or reality? *Review of Integrated Business & Economic Research*, 5(3).
- [22] Mayangsari, S. (2018). Environmental performance and financial report integrity: challenges for the mining sector in Indonesia. The 4th International Seminar on Sustainable Urban Development. IOP Conf. Series: Earth and Environmental Science 106 012064 doi:10.1088/1755-1315/106/1/012064.
- [23] Nwaiwu, N. J. & Oluka, N. O (2018). Environmental cost disclosure and financial performance of oil and gas in Nigeria. *International Journal of Advanced Academic Research | Financial Management*, 4(2) ISSN: 2488-9849.

- [24] Nnamani, J.N., Onyekwelu, U.L., & Ugwu, O.K. (2017). Effect of sustainability accounting and reporting on financial performance of firms in Nigeria brewery sector. *European Journal of Business and Innovation Research*, 5(1), 1-15.
- [25] Nobanee, H., & Ellili, N., (2017). Degree of Corporate Social Responsibility Disclosure and its Impact on Banking Performance: Retrieved from https://www.researchgate.net/publication/317273740_Degree_of_Corporate_Social_Responsibility_Disclosure_and_Its_Impact_on_Banking_Performance.
- [26] __Responsibility_Disclosure_and_Its_Impact_on_Banking_Performance.
- [27] Nwaiwu, N. J. & Oluka, N. O. (2018). Environmental cost disclosure and financial performance of oil and gas in Nigeria. *International Journal of Advanced Academic Research | Financial Management* 4(2).
- [28] Owolabi, F., Akinwumi, T., Adetula, D., & Uwuigbe, U. (2016). Assessment of sustainability reporting in Nigerian industrial goods sector. 3rd International Conference on African Development Issues. Covenant University Press, 383-386.
- [29] Okoye, A. E., & Ngwakwe C. C. (2004). Environmental accounting: A convergence of antecedent divergence.
- [30] Okoye, P.V.C. & Ezejiofor, R.A.(2013). An appraisal of sustainability environmental accounting in enhancing corporate productivity and economic performance. *International Journal of Advanced Research* (2013), 1(8), 685-693.
- [31] Olaoye, F.O. & Adekanmbi, J.A. (2018). Impact of environmental management accounting practices and report on organization performance. *European Journal of Business and Management*, 10(12) ISSN 2222-1905 (Paper) ISSN 2222-2839 (Online) www.iiste.org
- [32] Okafor, T. G. (2018). Environmental costs accounting and reporting on firm financial performance: A Survey of quoted Nigerian oil companies. *International Journal of Finance and Accounting*, 7(1), 1-6.
- [33] Onyali, C. I., Okafor, T. G. & Egolum, P. (2014). An assessment of environmental information disclosure practices of selected Nigerian manufacturing companies. *International Journal of Finance and Accounting*, 3(6), 349-355.
- [34] Pramanik, A. K., Shil, O. H. & Das, A. B. (2007). *Environmental accounting and reporting*. New Delhi: Deep publication PVT. Ltd.
- [35] Shehu, U. H. (2014). Environmental costs and firm performance: evidence from quoted oil and gas companies in Nigeria. Shell Petroleum Development Company (SPDC), (1995). Shell and the Nigerian Environment. Public Affairs Department.
- [36] United Nations Division for Sustainable Development, UNDSO (2003). Improving Government's Role in the Promotion of Environmental Managerial Accounting, United Nations.
- [37] United Nations Division for Sustainable Development, UNDSO: (2003). Environmental management accounting, procedures and principles"United Nations".
- [38] United State Environmental Protection Agency (USEPA), (1995). An introduction to environmental accounting as a business management tool: key concepts and terms.
- [39] Uwuigbe, U., & Jimoh, J. (2012). Corporate Environmental Disclosures in the Nigerian Manufacturing Industry: A Study of Selected Firms. *An International Multidisciplinary Journal, Ethiopia* 6(3), 71-83.
- [40] Uwaoma, I., & Ordu, P.A. (2016). Environmental reporting in the oil and gas industry in Nigeria. *International Journal of Research in Business Studies and Management*, 3(11), 1-21
- [41] USEPA (2005). Sector Strategies - Performance Report, United States Environmental Protection Agency, viewed 12 December 2006, <<http://www.epa.gov/ispd/pdf/performancebw.pdf>>.
- [42] United Nations. (2001), Environmental management accounting procedures and principles, *Outlook* 145(12), 153.