

ENVIRONMENTAL ACCOUNTING AND FINANCIAL PERFORMANCE OF LISTED FOOD AND BEVERAGES MANUFACTURING FIRMS IN NIGERIA.

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Abstract

The aim of this study is to examine the relationship between Environmental Accounting and Financial Performance of Listed Food and Beverages Manufacturing Firm in Nigeria. A sample size of eight (8) listed Food and Beverages Manufacturing Firms in Nigeria whose data were available on Nigerian Stock Exchange (NSE) from 2000 to 2016 were studied. A descriptive statistics is used for the analysis. One-way Analysis of Variance (ANOVA) and One Sample t Test were the statistical tools used to test the hypotheses. Statistical Package for Social Sciences version 20 was used for the test of hypotheses. The findings of this study revealed that environmental accounting represented by environmental costs have significant effect on the net profit margin; but no significant relationship exists between earning per share and dividend per share. Also, waste management costs have effect on net profit margin, dividend per share and earnings per share. Based on the findings, the study concludes that environmental costs and waste management costs influence the performance of Listed Food and Beverages Manufacturing Firms in Nigeria. In view of the foregoing findings and conclusion, this study recommends that all concerned organizations should develop plans that will focus on minimizing the impact of their activities on the environment; professional bodies and government should established standard compliance audit and inspectoral programme that will regularly control the rate of devastation on the environment. Also, Nigeria should join the developed countries on campaign for environment preservation and compulsory disclosure of environmental costs management in the financial statements.

Keywords: Environmental Accounting, Financial Performance

Introduction

Financial performance can be described as the level of achievement or performance of a business, expressed in terms of overall profits or losses, return on investment, return on equity, earning per share, value added etc usually shown in the financial statements of an organization in order to enable the decision makers to assess the various financial, managerial decisions and actions taken within the period under consideration.

Evaluating the financial performance of a business allows decision-makers to judge the results of business strategies and activities in objective monetary terms. Wikipidia (2018) defined financial performance as the act of performing financial activity, the degree to which financial objectives are being accomplished and the process of measuring the results of firm's policies and operations in monetary terms. It is used to measure firm's overall financial health

over a given period of time and can also be used to compare the performance of the firm within its branches or between one period and another or similar firms across the same industry.

Musa, Peter and Bukar (2015) posit that companies are expected to prepare annual reports which disclose both qualitative and quantitative information about their operations and performance (economical, financial, social or otherwise) to be presented to their stakeholders (owners, shareholder, government, employee etc). The information content requirements of these stakeholders are diverse and as such firms must not only disclose information about their financial performance but prepare other reports as Environmental Accounting Reports Sustainability Report, Human Resources Accounting Report, Good Corporate Governance Report etc.

Environmental accounting is the identification, measurement and allocation of environmental costs, the integration of these environmental costs into business decisions, and the subsequent communication of the information to a company's stakeholders (Musa et al, 2015). Bareduga and Mefor (2013) define environmental accounting as a tool that provides reports for both internal use generating environmental information to help make management decisions on pricing, controlling overhead and capital budgeting; and it provides information for external use, disclosing environmental information to the public and to the financial community. In Nigeria, research previously conducted has shown that environmental accounting disclosure are voluntary and as a result of non-availability of either local or international standards to guide disclosure. Firms only disclose the information to conform to industrial practices, pressure from environmental activist and advocates, policy of firm, size and level of profitability etc.

Ezeagba, John-Akamelu and Umeoduagu (2017) states that the awareness of the environment and man's ability to cause damages started from fifties of the last century and has become increasingly unbearable recently. Many persons began to ask questions. Questions like " how many years will it take a mined area to recover?" how can we quantify the industrial impact on our environment? In 1972, a world conference was held in Stockholm where heads of state from all over the world came together for the first time to consider the state of the globe as a whole, which ultimately gave birth to special UN agency titled UN Environmental Program (UNEP) to deal with environment issues. In the mid-eighties, the world commission on environment and development (WCED), known as Brunt land commission was established by the UN. The commission published a report called our common future in 1987, with the proposed concept of sustainable development. This concept received worldwide acceptance and led to the convening of the UN conference on Environment and Development.(UNCED) in Rio de Janerio, Brazil in 1992, known as "EARTH SUMMIT". In this conference, the head of different states signed four agreed documents including AGENDA 21. The Agenda 21 contains a checklist of do's and don'ts to protect the environment through the next century. Particularly, the role of corporate entities in respect of overall management of the environment has been duly recognized in this conference (Enahoro, 2016).

According to Wikipedia (2018) Environmentalists agreed that it could be more cost efficient and beneficial for companies to acquire pollution prevention or clean technology than those of pollution lean-up. It is also observed that in environmental regulations there is a shift from command control approach to market- driven form in which pollution prevention alternative are replacing pollution leaning approach. It follows therefore that determining the

appropriate pollution prevention approach may lead to additional decisions to be taken by management. Such decisions may include selecting capital expenditure on environmental costs (Beloff and Heller 1996:5).

Environmental issues for purpose of economic and cost accounting have also been controversial even though the topic has been identified for discussions for the past four decades. This is because common criteria for value measurement of non-marketed, non-monetized resources and impact externalities have not been agreed. Previously, corporate organizations have ranked business considerations based on financial performance. Companies have also recognized all indirect expenditures as over heads without paying attention to the environment. Conventional accounting practice has not recognized environmental accounting for materials, water, energy and other natural resource usage. Besides, conventional accounting has not provided for such practice and particularly for accounting for impact on externalities.

According to Field and Field (2002), little was recognized of the environmental depletion and degradation to the environment until a few well-meaning people in the developed countries realized that it was no good having great corporate profits and material wellbeing if they come at the cost of large scale of the ecosystem by which we are nourished, it become clear that degradation, pollution and accelerated destruction of the ecosystem and the depletion of non-renewal environment biodiversity would soon become very dangerous to human existence. Field and Field (2013) conclude that 'what once were localized environmental impacts easily rectified have now become widespread effects that may very well turn out to be irreversible.

Environmental ethics and law, states that the world at large has need to evaluate, and assess the effect of accounting reporting for raw material, energy consumption and use of natural resources which have systematically depleted the environment. Besides the negative impact on the biodiversity through human and industrial activities and the nations need to protect the environment, have made for global regulations. These regulatory environmental law show ever require only voluntary disclosure in financial statements of environmental information industrial (Wikipedia, 2018).

The interest of recording and analyzing the impact of companies' activities as it effect the environment has become a big issue recently. This has led to a growing demand from different stakeholders for evaluation and measurement of company's impact on the environs and subsequently the disclosure of such information either voluntarily or compulsorily. Environmental accounting is an important tool for understanding the role played by the natural environment in the economy. It also provide data which highlight both the contribution of natural resources to economic well-being and the costs imposed by pollution, exploration and resource degradation.. Presently, Environmental accounting is in preliminary stage in Nigeria and there are several challenges on environmental accounting and reporting.

Some of the problems include; suitable approach, ignorance, lack of guideline, limited awareness of environmental costing principles and methodology. Since the scurrent requirement for reporting on environmental issues is voluntary, it is observed from most financial statements of corporate organizations that the disclosed information totally excludes environmental issues. At best where reported, are inadequate. Environmental disclosures have become critically important to an informed public and financial stakeholders. The difficulty of

evaluating environmental degradation is of a great challenge. This is particularly critical for the manufacturing sector which impact heavily on the environment in Nigeria.

Food and beverages manufacturing firms in Nigeria a sector which are recognized as contributing to the heavy degradation on the environment, energy consumption and use of natural resources which have systematically depleted the environment. This makes for relevance of this study. The questions which this study seeks to address are environmental accounting and its impact on the financial performance of listed food and beverages manufacturing firms in Nigeria. Most specifically, how it impact; net profit margin, earning per share EPS, and dividend per share? The answers to these questions are what this study is however set to proffer solution to.

In the light of the background of increasing environmental attention, the manufacturing sectors provided profound production major impact as identified in the environmental cost and environmental waste management. Though many research works have been made on environmental accounting and its relationship to other variables, this study seeks among other things, the influence of environmental accounting on the financial performance of listed manufacturing food and beverage firms in Nigeria. It is the hope of this research to bridge the existing gap and break the frontal of ignorance about the environmental accounting and financial performance of firms.

Literature Review

This study specifically reviewed the following theories:

Theoretical /Conceptual Framework.

Environmentalism theory

According to Wikipedia (2018), environmentalism or environmental rights is a broad philosophy, ideology and social movement regarding concerns for environmental protection and improvement of the health of environment, particularly as the measure for health seeks to incorporate the impact of changes to the environment on humans, animals, plants and non-living matter. Environmentalism advocates the preservation, restoration and improvement of the natural environment and may be referred as a movement to control pollution and protect plants and animal diversity. It is an attempt to balance relations between humans and the various natural systems on which they depend in such a way that all the component are accorded proper degree of sustainability. Though the exact measures and outcomes of this balance is controversial. This study anchored on this theory because it will encourage firms to carry out environmental practices.

Environmental Ethics and Law Theories

According to Wikipidia (2015), environmental ethics is a discipline in philosophy that studies the moral relationship of human beings to the value and moral status of the environment and its non-human contents. It covers the preservation of biodiversity as an ethical goal, and sustainability and climate change. Enahoro,(2015), on Environmental law, states that it is a collective term describing the network of treaties, statutes, regulations, and laws addressing the effects of human activities on the natural environment. The core environmental law addresses environmental pollution, and other natural resources such as forests, minerals, fisheries, etc.

Stakeholder Theories

Musa et al (2015) citing Donaldson and Preston (2009) state that Stakeholder's implies to persons that interact with the business environment. Those actors are as group are called stakeholders and can be investors, political groups, customers, communities, employer's trade association, suppliers and government. This stakeholder communication of influence is bidirectional. Others view stakeholder in this context as any identifiable group or individual who affect the achievement of any organization objectives.

Concept of Environmental Accounting

According to Malgorzata and Agmezka (2015) Environmental accounting is the identification, measurement and allocation of environmental costs, the integration of these environmental costs into business decisions, and the subsequent communication of the information to a company's stakeholders. Identification includes a broad examination of the impact of corporate products, services and activities on all corporate stakeholders. After companies identify the impacts on stakeholders as far as they can, they measure those impacts (costs and benefits) as precisely as possible in order to permit informed management decision-making. Measurements might be quantified in physical units or monetized equivalents. After their environmental impacts are identified and measured, companies develop reporting systems to inform internal and external decision makers. The amount and type of information needed for management decisions will differ substantially from that required for external financial disclosures and for annual environmental reports.

Organizations use environmental accounting for several reasons, including the following: to help managers make decisions that will reduce or eliminate their environmental costs; to better track environmental costs that may have been previously obscured in overhead accounts or otherwise overlooked; to better understand the environmental costs and performance of processes and products for more accurate costing and pricing of products; to broaden and improve the investment analysis and appraisal process to include potential environmental impacts; and to support the development and operation of an overall environmental management system.

According to Steele and Powell (2012), environmental accounting is an aspect of accounting which has to do with the identification, allocation and analysis, of material streams and their related money flows by using environmental accounting systems to provide insight in environmental impacts and associated financial effects. In his contribution, Peskin (1989) viewed environmental accounting as a tool that can be employed to determine less tangible and external costs for projects and activities, such as bio-diversity, human health and aesthetic values. It is also aimed at broader issues such as implementing sustainable business practice to conserve natural resources for future generations. Bennett and James (1998) also viewed environmental accounting as the generation, analysis and use of financial and non-financial information in order to optimize corporate environmental and economic performance and to achieve sustainable business. An important function of environmental accounting is to bring environmental cost to the attention of corporate stakeholders who may be able and motivated to identify ways of reducing or avoiding those costs while at the same time improving environmental quality (United State Environmental Protection Agency, 1995). According to the

International Federation of Accounts (1998), environmental accounting is the management of environmental and economic performance through the development and implementation of appropriate environmental-related accounting systems and practices. While this may include reporting and auditing in some companies, environmental accounting typically involves life cycle costing, full-cost accounting, benefits assessment, and strategic planning for environmental management.

Jasch (2003) viewed environmental management accounting as a combined approach which provides for the transition of data from financial accounting, cost accounting and material flow balances to increase material efficiency, reduce environmental impact, risk and reduce cost of environmental protection and this has a financial as well as physical component.

IAS 1 requires that all significant accounting policies should be disclosed in the notes to the financial statements. With the growing significance of environmental issues affecting many businesses, it is possible that reference will be needed to the way in which environmental liabilities and impaired assets have been treated. For enterprises operating in environmentally sensitive sectors, such as the chemical industry, or holding large land banks, the absence of a stated policy may be a cause for criticism. There are no requirements in IAS 1 that would result in the separate disclosure of environmental costs or liabilities.

Environmental Cost

Environmental costs are rarely disclosed separately, unless they represent an exceptional item, and there is often no reason to treat such costs in a different way from other costs. The recognition of environmental liabilities may require greater clarity in identifying and defining the underlying costs, since they often involve uncertainty as regards their timing and measurement. The disclosure of such information, together with an appropriate explanation, is likely to be expected by users in view of the increasing importance of the environment. Where environmental costs are disclosed, the way in which such costs are identified should also be explained, in order to ensure that comparisons between enterprises do not result in misleading conclusions.

IAS 1 also require the separate disclosure of environmental costs and liabilities where these are material to the enterprise, where the effect of the information on the financial position, performance and changes in financial position of the enterprise could influence the economic decisions of a wide range of users of the financial statements. Where environmental costs are separately disclosed, the accounting policies should state what these costs represent, the accounting treatment adopted and, in the case of environmental costs that are capitalized, whether the amount concerned is derived from an allocation of total costs, or is restricted to those costs that relate “wholly and exclusively” to environmental factors.

Empirical Review

The study of Nagle (2016), on environmental accounting reveals that corporate managers are placing high priority on environmental accounting. Environmental accounting as a prevalent subject in the international community is not yet a priority in Nigeria. Epstein (2017) explains pertinent aspect of environmental degradation and cost as those including emissions into the air, water and land. Also, aspects of untreated domestic waste outflows into rivers and costal oceans quantities of solid waste that must then be disposed of perhaps through land spreading or incineration. Pollution include airborne SO₂ emissions from power plants by stack-

gas scrubbing which leaves a highly concentrated sludge and degradation which incorporates midnight dumping, illegal dumping along the sides of roads or in remote areas. Field (2012) has done tremendous work on the economics of natural resources and in this instance explored the approach of benefit-cost analysis through discounting of future based input and output values of environmental projects and activities.

Ezeagba et al (2017) surveyed 8 listed manufacturing companies and analyzed the annual reports of these companies for the period. Findings from the study suggest firms' size as a factor influencing pollution control, as larger companies had better record than smaller firms. In line with this, Cowen *et al.* (1987) found that larger corporations tends to disclose more information because larger corporations are highly visible, make greater impact to the society, and have more shareholders who might be concerned with social activities undertaken by corporations. Ingram and Fraizer (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 Fraizer (1980).

Proxies' environmental performance by a performance index devised by the Council on Economic Priorities (CEP), a non-profit organization specializing in the analysis of corporate social activities. Forty firms were selected from 50 firms that were monitored by CEP. Regression result indicated no association between environmental disclosure and environmental performance disclosures in annual reports. Corell and Shapiro (1987) relied on the corporate stakeholder theory to argue that the value of a firm depends on both the cost of explicit claims such as wage contracts and implicit claims e.g. environmental responsibility. More environmentally friendly firms and consequently, would be likely to achieve better financial performance.

Ezeagba et al (2017) and a lot of other literature also found the complacency of Nigerian companies in various sectors to adopt environmental accounting practices. Beredugo and Mefor (2012) Also, the study found that environmental accounting disclosure improves certain measures of performance of selected food and beverage companies in Nigeria. Companies with better environmental accounting disclosures had higher financial performance. Earnings per Share and Return on Equity. This work is in agreement with the work of Klassen and Mclaughlin (1996); Wingard and Vorster (2001); Salama (2005); and Bassey et al (2013). The work of Clarkson et al (2011) also supports this as they found that the adoption of environmental accounting practices lead to increased resources and creation of new wealth.

However, Adeniran and Alade (2013) found negative relationship between environmental accounting practices and Earnings per Share. Environmental accounting disclosures did not have any relationship with Net Profit Margin and Return on Capital Employed. This implies that NPM and ROCE are significantly affected by other factors external to this study. In other words, a company's NPM and ROCE will not be affected even if that company does not practice environmental accounting. This is consistent with the findings of Horvathora (2010) when she analysed companies' environmental accounting practices and their financial performance using Pearson's correlation.

Moreover, Adeniran and Alade (2013) found positive relationship for Net Profit Margin and negative relationship between environmental accounting practices and ROCE. Yang et al (2011) also found negative relationship. The analyses of the data obtained showed that companies with better environmental accounting disclosures had higher Earnings per Share and Return on Equity. Mohamed (1999) investigated the effect of company size as indicated by firms assets and paid-up capital on corporate social environment accounting. Spicer (1978) suggested that firm size as factor influencing pollution cost control determination, as larger companies had better records in this regards than smaller firms. Manby (2003) studied Shell activities in Nigeria and corporate social responsibility and the Ogoni crisis. The study from its findings concludes that the level of corporate social responsibility in Ogoni-Land has been relative low compared with what they are getting from the area.

Environmental accounting affects the company's internal costs and encompasses costs to the society. Dierkes (2013), in his works condemn the whole essence of placing monetary value above other human virtues in environmental issues. He also recognized the absurdity of discounting and Discount enhancing future environmental impact on human values. From investigations with the Federal Ministry of Environment, EIA study conducted by the oil and gas (exploration and producing) and other companies having activities that impact on the environment has been accepted as a regulatory requirement in Nigeria. Achieving effective EIA is however froth with uncertainties in Nigeria since the objective estimation of input and output values is not so reliable. Besides, there is excessive fluctuation in the discount factor for purpose of benefit- cost analysis. Non-available market values for certain natural resources costs and benefits such as the fauna, fishing ponds or rivers, among others, makes it extremely difficult to place monetary value on the factors of measurement.

From the empirical studies above, it is evident that a limited number of studies looked at an appraisal of the environmental accounting on financial performance of the listed manufacturing food and beverage in Nigeria. Most researchers affirmed that there is a need for firms to do environmental accounting. And there is a relationship between environmental accounting and financial performance.

Periodization of Existing Literature

Some of the existing literature related to the study includes;

The concept of Environmental Management Accounting

Environmental Management Accounting (EMA), which is "an accounting approach that considers the financial impacts of environmentally related activity such as the implementation of environmental protection expenditure, costs of legislative compliance and investment. The costs are allocated and tracked to meet theory Organization's own business needs, mirroring the traditional management accounting techniques" (UK Environmental Agency, 2006). EMA is aimed at enabling to take corrective management actions to reduce environmental impacts and costs, and is therefore a tool for environmental cost control and management in order to positively correlate economic and environmental performance. Aert, Cormier and Magnam (2013) have defined environmental costs "as costs associated with the creation, detection, remediation and prevention of environmental degradation. They therefore, classify environmental costs into four categories of prevention costs, detection costs, internal failure costs and external failure costs.

Total quality Environmental management (TQEM)

Total quality Environmental management (TQEM) supports continuous improvement of corporate environmental performance. Given the importance of accurate cost of information in making decisions, the term environmental cost has been introduced into the vocabulary of environmental managers. During the environmental cost accounting cooperative benchmarking process, environmental costs was described severally as costs which have been incurred in order to comply with regulatory standards, costs which have been incurred in order to reduce or eliminate releases of hazardous substances, all other costs associated with corporate practices aimed at reducing environmental impacts and costs associated with not addressing these issues. It can therefore be deduced that:

Environmental Costs

Environmental costs are really a subset of the costs of operating a business. As environmental externalities become internalized, new costs emerge which must be captured by the cost accounting system so that product costs remain accurate enough to facilitate sound decision making. The magnitude of environmental costs is greatly underestimated, and their impact on product or process costs is often obscured through inaccurate overhead accounting. Environmental costs are often hidden in overhead and underestimated.

Decision-makers require precise information about the environmental costs of the Company's products, processes and activities. The USA Environmental protection agency views environmental costs as dependent on utilization of information in a company and the environmental costs can include conventional costs (raw materials and energy costs with the environmental relevance); potentially hidden costs which are captured by the accounting system but then lose their identity in overheads. Hidden costs are environmental costs that may be potentially unrecognized by managers because of their infrequent/episodic nature or because of their collection in company overhead accounts; *Hidden Cost* refer to regulatory compliance or other costs that are "hidden" or lumped into a general account. According to the U.S. EPA, *Potentially hidden costs* result from among other factors activities undertaken to comply with environmental law. These hidden costs are obscured in overhead accounts, making it impossible for managers to manage them effectively. Examples of hidden costs are: compliance reporting; legal support; waste management; sampling and testing; and monitoring. Typically, environmental costs and associated opportunities are buried in various overhead accounts. By distorting costing and pricing across the business, this practice can result in poor investment and strategic decisions.

On his part, Boje (1999) sees Environmental costs as costs relating to the use, release and regulation of materials in facility operations which comprises environmental management costs, opportunity costs, contingent costs and image costs. Environmental costs are categorized into waste and emission treatment, prevention and environmental management, material purchase value of non- product output, and processing costs of non- product output. Environmental costs are costs within internal management account or external financial accounts. Internal environmental costs are composed of direct costs, indirect costs and contingent costs. Direct costs are traceable to particular products, site, type of pollution or pollution prevention program; they are costs clearly and exclusively associated with a product

or service and treated as such in cost accounting system while indirect costs include costs such as environmental training, research and development, record keeping and reporting.

On the other hand, external costs are costs of environmental damage external to the firm; that is, all costs that are not accounted for as the direct costs of a particular process, system, product, or facility commonly pooled and allocated on the basis of some formula or are not allocated at all. These externalities include environmental degradation for which firms are not legally liable. Whereas internal costs can usually be estimated and allocated using the standard costing models available to the firm, the monetary equivalent values of external costs can be assessed by the economic methods that determine the maximum amount that people would be willing to pay to avoid the damage, or the minimum amount of compensation that they would accept to incur.

Given ever-changing environmental laws and the complexities of environmental management, proactive businesses recognize the need to integrate environmental considerations into decisions made *throughout* the organization. The challenge however lies in the identification and allocation of the environmental costs. Betianu (2005) warned that when environmental costs are not adequately allocated, cross subsidization occurs between products. In most cases, different products are made by different processes and each process tends to have a different environmental cost depending on the design of the process of production, and possible use of hazardous chemicals. As exemplified by Betianu (2005), in a facility with two processes, A and B that use the same number of direct labour hours for a batch of product, process A, however uses hazardous chemicals while process B does not. The facility incurs environmental costs from the use of hazardous chemicals in a number of ways: specification and procurement of the chemical which includes evaluation of material safety data sheets; design of the process to minimize worker exposure; shipping costs associated with transporting hazardous chemicals; monitoring, reporting and permitting to meet applicable regulations, employee training in handling and emergency response; storage and disposal costs; and liability for the chemical from purchase to grave. While not all costs can be correctly and unambiguously identified, it is imperative to collect data relevant to decision makers as fully as possible.

Full Environmental Cost Accounting

Full Environmental cost accounting refers to the addition of environmental cost information into existing cost accounting procedures and/ or recognizing embedded environmental costs and allocating them to appropriate products and processes. Full environmental cost accounting is a term often used to describe desirable environmental accounting practices. It refers to the allocation of all direct and indirect costs to a product or product line for the purposes of inventory valuation, profitability analysis, and pricing decisions. Hence, full environmental cost accounting embodies the same concept as full cost accounting but highlights the environmental elements. Since the early 1990s, concerted efforts have been underway through the United Nations Statistics Division, the European Union, the OECD, the World Bank, country statistical offices, and other organizations to standardize the framework and methodologies. The Institute of Management Accountants in its 1996 report showed that methods are now available to measure, report and manage current and future environmental costs and opportunities adding that some management tools and techniques can help

management isolate the sources and magnitude of previously hidden and misallocated environmental costs and facilitate better business decisions.

This system will be useful in allocating environmental costs to the products and processes that cause them and isolating nonstandard cost performance where it occurs. In their study, Muller *et al.* (2011) imputes a price on air pollution emissions equal to marginal damages in order to measure the externalities from air pollution. Lange (2003) highlighted four main observations regarding how useful environmental accounts are for policy:

1. Although some countries are using the environmental accounts quite actively, the accounts are still underutilized, especially in developing countries
2. No country has truly comprehensive environmental accounts
3. International comparisons are important, but not yet possible because of differences in methodology, coverage, environmental standards, and other factors
4. For a country to fully assess its environmental impact, it must have;
 - (a) Accounts for the trans-boundary movement into and out of the country of pollutants via air and water
 - (b) Accounts for its major trading partners to calculate the pollution and material content of products that it imports.

According to the Institute of management accountants, Organizations use environmental accounting: to help managers make decisions that will reduce or eliminate their environmental costs; to better track environmental costs that may have been previously obscured in overhead accounts or otherwise overlooked; to better understand the environmental costs and performance of processes and products for more accurate costing and pricing of products; to broaden and improve the investment analysis and appraisal process to include potential environmental impacts; and to support the development and operation of an overall environmental management system. Several studies in Europe have shown that the quantities of pollution exported and imported via air and water are very large; without accurate information about these quantities, the use of environmental accounts for policy will be limited (Lange, 2003). Incorporating environmental considerations into decision-making throughout the organization requires the combined skills of multiple disciplines, including environmental managers, economists, engineers, operations managers' planners, scientists, lawyers and management accountants.

Levels of Environmental Accounting

The uses of environmental accounting according to U.S EPA (1995) arise in three distinct levels, namely:

- i. **Managerial Accounting:** This is internal use of corporate organizations, division, facility, project or system. Managerial or management accounting here refers to the use of a set of cost and performance data about environmental costs, decisions and operations.
- ii. **Corporate Financial Accounting Reporting:** Corporate financial reporting is generally, regulated by the Securities Exchange Commission (SEC) and the Generally Accepted Accounting Principles (GAAP). Environmental accounting in this context refers to the estimation and reporting to the public and regulatory agencies of environmental liabilities and financial material environmental costs.

iii. System of National Accounts (SNA): The focus is the nation's macro-economic measures of the National Income Accounts in which economic indicators such as Gross Domestic Product are.

In the opinion Alert, Cormier & Magnam (2013) this concept suggests at least three important messages, firstly, improving ecological and economic performance which should be seen as complementary. Secondly, that improving environmental performance should not be viewed as charity and goodwill but a matter of competitive necessity.

Environmental financial accounting

Environmental Financial Accounting (EFA): It is the Financial Accounting with a particular focus on reporting environmental liability costs and other significant environmental costs. United Nations conference on trade and development (1998) defined environmental financial accounting as "environmental financial accounting deals with accounting for and reporting on environmental transactions and event that affect. Or likely to affect, the financial position of an enterprise. They stated further that one of the challenges of environmental financial accounting is to ensure that Environmental cost and liabilities are accounted for by following relevant standards or, in their absence, generally accepted accounting practices". Disclosure of information relating to environmental costs and liabilities is important for the purpose of clarifying or providing further explanation of the items included in the balance sheet or the income statement. Such disclosures can either be included in those financial statements, in the notes to the financial statements or, in certain cases, in a section of the report outside the financial statements themselves. In deciding on whether an item of information, or an aggregate of such items, should be disclosed, consideration should be given as to whether the item is material. In determining materiality, consideration would be given not only to the significance of the amount, but also to be disclosed (UNCTAD 1998).

Concept of Financial Performance

Financial performance can be described as the level of performance of a business over a specified period of time, expressed in the terms of overall profits and losses during the time. Evaluating the financial performance of a business allows decision-makers to judge the results of business strategies and activities in objective monetary terms. Wikipidia (2018) define financial performance as the act of performing financial activity, the degree to which financial objectives are being accomplished and the process of measuring the results of firm's policies and operations in monetary terms. It is used to measure firm's overall financial health over a given period of time and can also use to compare similar firms across the same industry.

According to Musa S.J et al (2015) companies are expected to prepare annual reports which disclose both qualitative and quantitative information about their operations and performance (economical, financial, social or otherwise) to be presented to their stakeholders (owners, shareholder, government, employee etc). The information content requirements of these stakeholders are diverse and as such firms must not only disclose information about their financial performance but prepare other reports as Environmental Accounting Reports Sustainability Report, Human Resources Accounting Report, Good Corporate Governance Report etc.

Measures of financial performance

Net Profit Margin

Net profit is widely accepted as the financial and operational performance (Glyn, Cornell, Samuels & Post –Keynesian, 2016). Net profit is a measure of probability that constitutes the sum left to a firm following the deduction of all of costs incurred in production of a good or service. Benninga (2014) describes net profit as a summary measure of the overall effectiveness of management because it reflects the quality of managerial decisions. Carey (1974) put forth findings that are in line with Benninga's (2014) position of the use of the net profit as a performance measure but acknowledges that the nature of a firm's business affects the choice of the metric to be used the use of net as opposed to gross profit is suggested by Haber and Reichel (2005) as a means of increasing the comparative value of analysis because net profits take into consideration the differences in inter-industry tax treatment at least within the national context. In the latter group, net profit was used as the most appropriate measure of enterprise performance especially in developing economies such as Nigeria where the metrics available for describing growth are still nascent (Mathuva, 2010).

The aforementioned studies honed in on performance from a quantitative analysis lens regressing various variables against net profit to make conclusions about the performance of small business earlier studies including Judge (1994) employed net profit to explore the relationship between organization size, board composition and financial performance. The study found that both correlates were related to net profit as a measure of financial performance.

Earnings per Share

Earnings per share are calculated in order to indicate each shareholder's proportionate share in the company's earnings. An absolute increase in net income is not, in itself, an adequate indicator because net income may go up as a result of increased investment. For example, a company may issue more shares for cash. The increased investment would be expected to generate additional earnings for the company, but for an individual shareholder, the real question is whether net income increased enough to compensate for the increased number of shares outstanding. If the proportionate increase in outstanding shares, then earnings attributable to each share will decline.

The Canadian Institute of Chartered Accountant (CICA) handbook recommends that companies report two EPS numbers, each based on different measures of earnings and outstanding shares. The first EPS statistic is basic earnings per share, calculated on; earnings before discontinued operations and extraordinary items, and net income. The EPS effect of discontinued operations and/or extraordinary items must also be shown separately. Basic EPS is useful for comparing a company's current performance with its past record. However, many companies have significant amounts of convertible securities and/or stock options outstanding which pose the possibility of potential substantial change in the corporation's capital structure. Therefore, in order to provide the basis for useful forward comparisons, diluted EPS must also be disclosed. Diluted earnings per share shows the maximum dilution to EPS that could occur of all potentially available common shares were issued that is, if all stock options were exercised, and all convertible debt and convertible preferred shares were converted to common shares.

$$\text{EPS} = \frac{\text{Total earnings}}{\text{Total number of share}}$$

Dividend per Share

Oxford living Dictionary (2015) defined dividend as a sum of money paid regularly (typically annually) by a company to its shareholders out of its profit (or reserves). Dividend per share (DPS) i.e the amount of dividends that the shareholders of a company receive on a per share basis. It is calculated using the total dividend paid out to shareholders over a fiscal year and the number of outstanding shares. Ambarish, John and Williams (1987) stated that dividend announcements can convey information about the firm's future cash flows generated by existing assets, or about new investment opportunities. Numerous studies have found evidence that valuable information is signaled through dividend adjustments whereas Grullon, Michaely and Swaminathan (2002); Sharma (2001); Amidu(2007); and several others contradicted the principle implication of dividend signaling model. For instance, more than two decades ago, Healy and Palepu (1988) attempted to measure the subsequent earnings performance of firms following dividend initiation and dividend omissions. They found that firms which initiate dividends experience higher growth in earnings in that year and the two subsequent years than similar firms from the same industry. They also found that the earnings changes following the dividend initiation or omission are positively correlated suggesting that the market perceived a more favorable signal for those firms that ultimately experienced more favorable earnings changes. Similarly, Carroll (1995) using quarterly data of 854 firms over the 1975-1984 periods found a significant positive relationship between earnings forecast revisions and dividend changes. More specifically, his results suggested that dividend increases were followed by an increase in future earnings and dividend decreases were followed by a decline in future earnings.

$$DPS = \frac{\text{total dividends paid out over a period of time} - \text{any special dividend}}{\text{Shares outstanding}}$$

Conceptual/Operational Framework

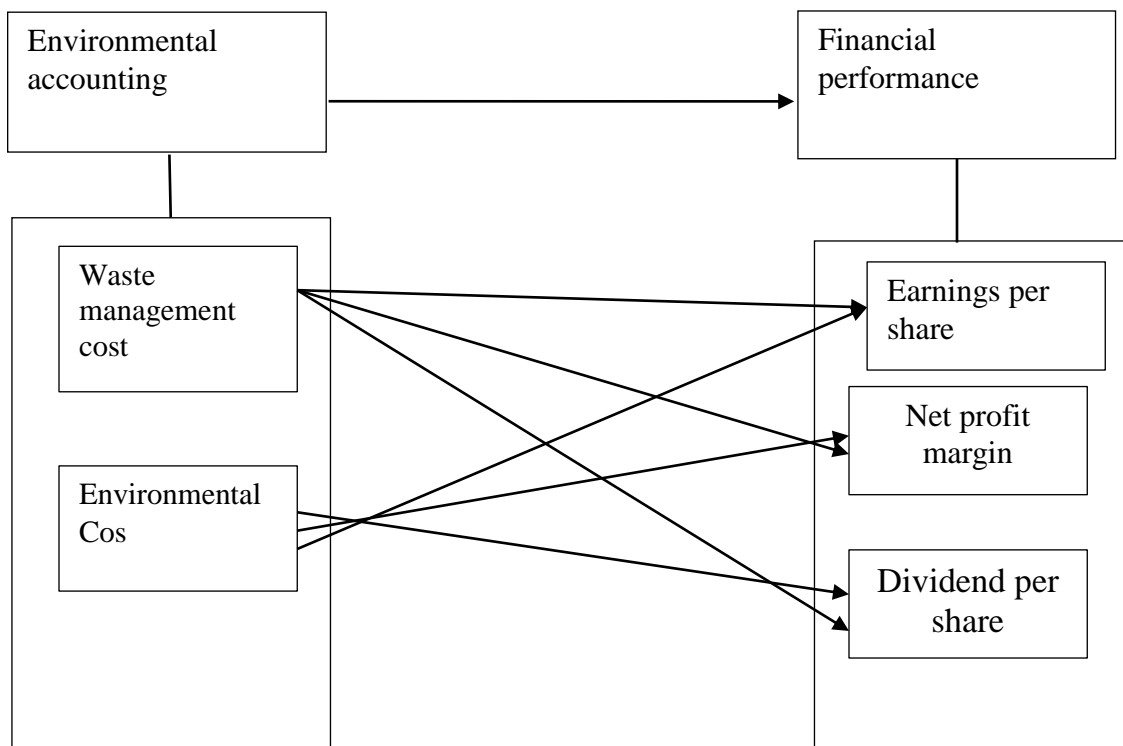




Figure 1.1 Environmental Accounting and Financial Performance

Research Methodology

This study was a survey study. The study concentrated on Green Accounting and profitability of listed food and beverages manufacturing firms in Nigeria. The research study will be conducted with a correlational research approach with green accounting as the independent variable while profitability as the dependent variable. Fundamentally, research design deals with the research units and how they will be employed within the research setting to yield the required data.

A cross-sectional survey of the quasi-experimental design was chosen for this study. The choice of this survey approach is because it scientifically looked at the situation on ground and will empirically analyze it to totally get result that can be attributable to the accessible population.

Population and Sampling Procedure

Baridam (2001) define population target population as the entire group of item which the researcher wishes to study or the entire population to which the study is applicable. Therefore, the population of this study comprised listed Food and Beverages Manufacturing Firms in Nigeria.

Sample Size

Since the population is not large, the researchers adopted a census study. The target population was the sample size. The sample size for the study was eight (8) listed Food and Beverages Manufacturing Firms in Nigeria which include, 7up Bottling Co. Plc, Flour Mill Plc, Nestle Nig. Plc, Cadbury Nig. Plc, Dangote Flour Mills, Dangote Sugar Ref. Plc, Honeywell F/Mill Plc And Nascon Plc.

Data Collection Procedure

The type of data used for this study is secondary data. The relevance data were collected from the financial statements of the listed firms in the Nigerian stock exchange from 2000 - 2016.

For effective data analysis and findings, a descriptive statistical analysis which comprises of percentages and tables was used. The researchers adopted multiple regressions in testing the hypotheses via the use of SPSS version 20.

Model Specification

$$Y = f(X1, X2)$$

Where Y is the dependent variable (Profitability) and (X1, X2) are independent variables – environmental accounting.

Therefore;

$$EPS = f(EC, WMC)$$

$$EPS = \beta_0 + \beta_1 EC + \beta_2 WMC + \epsilon \dots\dots\dots 11$$

$$DPS = f(EC, WMC)$$

$$DPS = \beta_0 + \beta_1 EC + \beta_2 WMC + \varepsilon \dots\dots\dots 111$$

$$NPM = f(EC, WMC)$$

$$NPM = \beta_0 + \beta_1 EC + \beta_2 WMC + \varepsilon$$

Where;
 EPS = Earnings per share
 WMC = waste management cost
 EC = environmental cost
 DPS = dividend per share
 NPM = net profit margin
 ε = error term
 β_0 = Constant or intercept
 $\beta_1\beta_2$ = Coefficient or slop

Decision Rule:

Reject null hypothesis when the significance value is less than 0.05% and accept the null hypothesis when the significance value is greater than 0.05%.

Presentations of Data

Descriptive Statistics

The descriptive statistics of the variables used within the scope of this study is presented in table 1. The data covers a period of nine years from 2000 – 2016

	N	Minimum	Maximum	Mean	Std. Deviation
Environmental cost	136	443269.00	22253031.00	4412334.2426	3870568.78443
Waste management cost	136	40000.00	6872991.00	979353.8603	1155133.13615
Earnings per share	136	.06	42.26	5.4497	8.80323
dividend per share	136	.05	50.00	2.6001	6.33734
Net profit margin	136	.00	1.00	.8351	.13976
Valid N (listwise)	136				

Environmental cost has an average of N4412334.2426 billion with a maximum of N22253031.00 billion and a minimum of N443269.00 billion while Waste management cost has an aggregate average of N979353.8603billion with a maximum of N6872991.00bilion and a minimum of N40000.00 billion. The average Earnings per share was 5.45% with a maximum of 42.26% and a minimum of .06%.dividend per share has an average of 2.60% with a maximum of 50% and a minimum of .05%.finally, Net profit margin has an average of .04% with a maximum of 1% and a minimum of .00%.

Data Analysis - Multiple Regressions

The study further moves to find the influence of the predictors on the criterion by carrying out a regression exercise as displayed below in table 4.2 which is a summary of the model estimate extracted from the SPSS statistic 20.0 outputs (see appendix 1-3).

Table 4.2: Extract of the Model Estimates

$$EPS = \beta_0 + \beta_1 EC + \beta_2 WMC + \epsilon$$

Variables	B	t	Sig.	R ²
EC	.114	1.343	.182	.118
WMC	.294	3.470	.001	
DPS = $\beta_0 + \beta_1 EC + \beta_2 WMC + \epsilon$11				
EC	.044	.516	.607	.087
WMC	.279	3.239	.002	
NPM = $\beta_0 + \beta_1 EC + \beta_2 WMC + \epsilon$1				
EC	.170	1.992	.048	
WMC	.224	2.621	.010	

Test of Hypotheses

Hypothesis one: (see appendix 3 coefficients). There is no significant relationship between environmental cost and net profit margin.

From the analysis above environmental cost (B= .170, t= 1.992, Sig. .048) positively and significantly relate with net profit margin. The significant level of 0.048 is less than 0.05%. The null hypothesis was rejected and the study concluded that there is significant relationship between environmental cost and net profit margin.

Hypothesis two: (see appendix 1 coefficients)

There is no significant relationship between environmental cost and earnings per share.

From the analysis above environmental cost (B= .114, t= 1.343, Sig. .182) positively but insignificantly influence earnings per share. The significant level of 0.182 is less great than 0.05%. The null hypothesis was accepted and the study concluded that there is no significant relationship between environmental cost and earnings per share.

Hypothesis three (see appendix 2 coefficients)

Ho₃: There is no significant relationship between environmental cost and dividend per share.

From the result above, environmental cost (B= .044, t= .516, Sig. .607) has a positive relationship with DPS, however, there it was not significant at 0.05% level of significant. This because the sig. = .607 is greater than 0.05%. The null hypothesis was accepted and the study concluded that: There is no significant relationship between environmental cost and dividend per share.

Hypothesis four (see appendix 3 coefficients)

Ho₄: There is no significant relationship between waste management cost and return on net profit margin.

The result revealed waste management cost (B = .224 t = 2.621 Sig. = .010) have a positive and significant relationship with earnings per share. The study therefore concluded that there is significant relationship between waste management cost and return on net profit margin. The null hypothesis was rejected.

Hypothesis five (see appendix 1 coefficients)

Ho₅: There is no significant relationship between waste management cost and earnings per share.

The result revealed waste management cost ($B = .294$ $t = 3.470$ $Sig. = .001$) have a positive and significant relationship with earnings per share. The study therefore concluded that there is significant relationship between waste management cost and earnings per share. The null hypothesis was rejected.

Hypothesis six (see appendix 2 coefficients)

Ho₆: There is no significant relationship between waste management cost and dividend per share

From the result above, waste management cost ($B = .279$, $t = 3.239$, $Sig. .002$) has a positive relationship with DPS and was significant at 0.05% level of significant. This because the $sig. = .002$ is less than 0.05%. The null hypothesis was rejected and the study concluded that there is significant relationship between waste management cost and dividend per share.

Discussion of Findings

The findings indicated that;

1. There is significant relationship between environmental cost and net profit margin.
2. There is no significant relationship between environmental cost and earnings per share.
3. ..There is no significant relationship between environmental cost and dividend per share.
4. There is significant relationship between waste management cost and return on net profit margin.
5. There is significant relationship between waste management cost and earnings per share.
6. There is significant relationship between waste management cost and dividend per share.

Conclusion and Recommendations

Based on findings that there is significant relationship between environmental cost waste management cost and net profit margin and earnings per share respectively this study concludes that environmental accounting impact or influences financial performance of listed Food and Beverages Manufacturing Firms in Nigeria.

More so it indicates that the explanatory variables are jointly significant at explaining or causing much variation in the independent variable environmental accounting representing by environmental cost and environmental waste management cost. The null hypothesis is therefore rejected, which mean that Environmental Accounting has significant relationship with the various variables used in measuring financial performance. It is also necessary to note that this relationship with the variables of financial performance is either positive or negative.

Recommendations

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

1. There should be an accounting standard for measuring, treatment and disclosure of firms' environmental practices. This will enhance proper environmental reporting.
2. Firms should adopt uniform reporting and disclosure standards of environmental practices for the purpose of control and measurement of performance.

3. Firms (especially smaller ones), should be encouraged to disclose their environmental practices in their annual reports to enhance their competitiveness which would subsequently lead to high corporate performance.
4. Top management should ensure that they comply with the environmental laws of the nation as it will go a long way in enhancing environmental sustainability.
5. Environmental disclosures should be made mandatory as a condition for determining firms true and fair view of corporate financial performance and position.

Contribution to Knowledge

This study provided empirical evidence among others on model specifications of the relationship between environmental accounting and financial performance of listed manufacturing food and beverages in Nigeria. This study has also contributed to knowledge by providing reference materials for researchers for further study in the related area of accounting.

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