Effect of Environmental Accounting and Financial Performance of Quoted Food and Beverage Companies in Nigeria

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ABSTRACT

This study examined the effect of environmental accounting on financial performance of quoted food and beverage companies in Nigeria. Cross sectional data were sourced from financial statement and annual reports of 10 quoted food and beverage firms from 2010 to 2019. Net profit margin, earnings per share and dividend per share were used as proxies for financial performance, while environmental cost and waste management cost were employed as proxies for independent variables. Ordinary Least Square method used to examine the extent to which environmental accounting affect the performance of food and beverage manufacturing firms. The regression coefficient found that environmental cost have positive and non-significant effect on net profit margin, earnings per share and dividend per share, while waste management cost have positive and significant effect on the net profit margin, dividend per share and earnings per share. The study concluded that environmental waste management had significant effect on financial performance of the quoted food and beverage companies in Nigeria. The study recommended that the management of the quoted food and beverage companies should invest more on environmental waste management practices to sustain and improve upon their current level of financial performance.

KEYWORDS: Dividend, Earnings, Environmental accounting, Financial Performance, Profit

I. 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 express on equity, earning per share, value added usually shown in the financial statement 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 (2021) 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 to compare similar firms across the same industry.

Musa, Peter and Bukar (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.

Environmental accounting is the identification, measurement and allocation of environmental cost, the integration of these environmental costs into business decisions and subsequent communication of the information to a company's stakeholders (Musa et al, 2015). Berdugo and Mefor (2012) define environmental accounting as a toll that provides reports for both internal use generating environmental information to help make management decisions on pricing, controlling overhead and capital budgeting and external use, disclosing environmental information is of interest 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) the awareness of the environment and man's ability to caused damages started 1950s and up to the last century and has become increasing demand recently, many persons began to ask questions. Questions like '' how many year 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 receive 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 the "Earth Summit''. In this conference, the head of different states signed four agreed document including AGENDA 21. The document 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, 2009).

According to Wikipidia (2021) 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 and in the opinion of shied (Heller & Beloff and 1995).

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 have not provided for such practice, and particularly for accounting for the impact of externalities.

According to Daferigha, E (2010) recognized 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. Deferigha, (2010) concluded 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 shows ever require only voluntary disclosure in financial statements of environmental information industrials (Wikipidia, 2021).

Statement of the Problem

The interest of recording and analyzing the impact of companies' activities as it effect to 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 environment accounting and reporting.

Some of the problems include; suitable approach, ignorance, lack of guideline, limited awareness of environmental costing principles and methodology. Since current 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. This study addressed the impact of environmental accounting on financial performance of quoted food and beverages manufacturing firms in Nigeria. Most specifically, how it impact; net profit margin, earning per share, and dividend per share.

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 quoted manufacturing food and beverage firms in Nigeria. It is the hope of this research to bridge the existing gap and break a frontal of ignorance about the environmental accounting and financial performance of firms.

Aim and Objectives of the Study
The main purpose of this study is to examine the relationship between environmental accounting and financial performance of quoted food and beverages manufacturing firm in Nigeria most specifically, the study aim achieve the following;
1.   To examine the relationship between environmental cost and net profit margin.
2.   To examine the relationship between environmental cost and earnings per share.
3.   To examine the relationship between environmental cost and dividend per share.
4.   To examine the relationship between waste management cost and net profit margin.
5.   To examine the relationship between waste management cost and earnings per share.
6.   To examine the relationship between waste management cost and dividend per share.

Research Questions
In order to achieve the aim and objectives of this study, the following research questions were raised:-
1.   To what extent does environmental cost relate to net profit margin?
2.   To what extent does environmental cost effect on earnings per share?
3.   To what extent does environmental cost relate to dividend per share?
4.   To what extent does waste management cost relate to net profit margin?
5.   To what extent does waste management cost impact on earnings per share?
6.   To what extent does waste management cost impact on dividend per share?

Research Hypotheses
The following null hypotheses were derived for the study;
Ho$_1$: There is no significant relationship between environmental cost and net profit margin?
Ho$_2$: There is no significant relationship between environmental cost and earnings per share.
Ho$_3$: There is no significant relationship between environmental cost and dividend per share.
Ho$_4$: There is no significant relationship between waste management cost and return on net profit margin.
Ho$_5$: There is no significant relationship between waste management cost and earnings per share.
Ho$_6$: There is no significant relationship between waste management cost and dividend per share.

Significance of Study
The result of this study would be highly useful to the business community, government, the management of food and beverage companies and future researchers. The investing public would appreciate the need for environmental accounting to sustain business growth and expansion. Also, it keeps them updated or informed of various companies that with the implementation of Environmental accounting. Regulator of companies, government can use the result of this study to strengthen the implementation of environmental accounting policies/guidelines of various companies. The study would also be useful to the management of various food and beverage companies. The management would identify the relevance of corporate governance dynamics in enhancing profitability of companies. Finally, the findings of this study could function as a basis for more future researches and as a reference in the academic sector.

Scope of the Study
The research adopted a census study. The study comprises of ten (10) quoted Food and Beverages Manufacturing Firms in Nigeria from population of 24 (twenty four) from the Nigeria stock exchange is from 2010 to 2019 which include, Champion Breweries Plc, Gunnies Plc, Nigeria Breweries Plc, Dangote Sugar

Refinery Plc, Flour Mill of Nigeria Plc, Honeywell Flour Mills Plc, National Salt Company Plc, Northern Nigeria Flour Mills Plc, Cadbury Nig. Plc, and Nestle Nigeria. Plc,

II.   LITERATURE REVIEW
Conceptual Framework
Concept of Environmental Accounting
According to Malgorzata and Agmezka (2015) Environmental accounting is the identification, measurement and allocation or 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 manages 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 account 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 (2008) 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.

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 system 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 items, 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 represents, the accounting treatment adopted and, in the case of environmental costs that are capitalized, where 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.

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 (2021) 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 performance but prepare other reports as Environmental Accounting Reports Sustainability report, Human Resources Accounting Report, Good Corporate Governance Report etc.

Concept of Financial Performance
Measures of financial performance
Net Profit Margin
Net profit is widely accepted as the financial and operational performance. 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. Fahmi,Irham.(2013) describes net profit as a summary measure of the overall effectiveness of management because it reflects the quality of managerial decision put forth findings that are in line with Fahmi,Irham.(2013 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 economics such as Nigeria where the metrics available for describing growth are still nascent.

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 (1998) 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 is 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 each. 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 item, 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 potentials substantial change in the corporation's capital structure. Therefore, in order to provide the basis for useful forward comparisons, diluted 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.

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

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 outstanding shares. 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 favourable 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.

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

Theoretical Framework
Environmentalism theory

       According to wikipidia, (2021) 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.

Environment Ethics and Law Theories

       According to Wikipedia, (2015) a revision of (2002), 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, (2009), on Environmental law, state 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 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.

Empirical Review

       The Study 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. Perkin & Delos (2001) 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 S02 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.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 quoted manufacturing companies and analyzed the annual reports of these companies for the period. Findings from the study suggest firm's 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. The association between the content of corporate environmental disclosure and corporate financial performance. 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. Carrol A.B (2001) 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);); and Bassey et al (2013). However, Berdugo et al (2012) 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 that analysed companies' environmental accounting practices and their financial performance using Pearson's correlation.

Moreover, Bassey et al (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 (2014) investigated the effect of company size as indicated by firms assets and paid-up capital on corporate social environment accounting. The firm size as factor influencing pollution cost control determination, as larger companies had better records in this regards than smaller firms. The corporate social responsibility and the Ogoni crisis. The study from the 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. Daferigha (2010), 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 Environmental, EIA study conducted by the oil and gas (exploration and producing) the other companies having activities that impact on the environment has been accepted as a regulatory requirement in Nigeria. Achieving effective estimation of input and output values is hot 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 was evident that a limited number of studies looked at an appraisal of the environmental accounting on financial performance of the quoted 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.

III. METHODOLOGY

Research Design

This study was a survey study. The research study was concentrated on environmental accounting and financial performance of quoted food and beverages manufacturing firms in Nigeria. The research study will be conducted with a correlational research approach with Environmental accounting as the independent variable while financial performance 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 be chosen for this study. The choice of this survey approach is because it will scientifically look at the situation on ground and will empirically analyze it to totally get result that can attributable to the accessible population.

Population and Sample Size

The target population of this study was the entire quoted companies in the food and beverage sector. However, the sample size includes ten (10) quoted food and beverages manufacturing firms in Nigeria which include, Champion Breweries Plc, Gunnies Plc, Nigeria Breweries Plc, Dangote Sugar Refinery Plc, Flour Mill of Nigeria Plc, Flour Mills Plc, Honeywell Flour Mills Plc, National Salt Company Plc, Northern Nigeria Flour Mills Plc, Cadbury Nig. Plc, and Nestle Nigeria. Plc,

Data Collection Procedure

The secondary means of data collection was adopted. The relevance data were collected from the financial statements of the ten sampled quoted food and beverage firms in the Nigeria Stock Exchange from 2010 – 2019.

Data Analysis Techniques

For effective data analysis and findings, a descriptive statistics which comprises of percentages and tables was used. The researcher adopted multiple regression techniques in testing the hypotheses assisted by the use of SPSS version 20 software.

Model Specification

Y = f(X1, X2)

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

As such;

Therefore;

$EPS = f(EC, WMC)$…………………………………………1

$EPS = \beta_0 + \beta_1 EC + \beta_2 WMC + \varepsilon$……………………2

$DPS = f(EC, WMC)$…………………………………………3

$DPS = \alpha_0 + \alpha_1 EC + \alpha_2 WMC + \mu i$…………………..4

$NPM = f(EC, WMC)$…………………………………………5

$NPM = \lambda_0 + \lambda_1 EC + \lambda_2 WMC + \sigma i$ ……………………6

Where;

EPS = Earnings per share

WMC = waste management cost

EC = environmental cost

DPS = dividend per share

NPM = net profit margin

E = error term

$\beta_1 \beta_2$ = Coefficient or slop

Decision Rule:

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

ANALYSIS AND DISCUSSION OF FINDINGS

This presents and analyses the data based on the model formulated in the previous chapter. The results are used to answer research questions, test hypotheses and draw conclusion on the effect of environmental accounting and financial performance of the quoted food and beverage firms.

Results of Analysis

Table 4.1: Regression Results on the Effect of Environmental Accounting on Net Profit Margin

Variable	Coefficient	Std. Error	t-Statistic	Prob.
The Pooled Effect Regression Results				
EC	-3.465310	6.122710	-0.565265	0.5732
WMC	1.821709	1.831709	0.991667	0.3239
C	0.111741	0.015433	7.240540	0.0000
R-squared	0.310908	Mean dependent var		0.115455
Adjusted R-squared	0.209698	S.D. dependent var		0.123249
S.E. of regression	0.123845	Akaike info criterion		-1.309732
Sum squared resid	1.472416	Schwarz criterion		-1.231092
Log likelihood	67.83175	Hannan-Quinn criter.		-1.277914
F-statistic	0.529377	Durbin-Watson stat		0.296784
Prob(F-statistic)	0.590681			
The Fixed Effect Regression Results				
EC	3.827310	6.042710	0.632157	0.5289

WMC	3.290309	3.052709	1.978947	0.0236
C	0.096402	0.016953	5.686549	0.0000

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.787374	Mean dependent var	0.115455
Adjusted R-squared	0.509916	S.D. dependent var	0.123249
S.E. of regression	0.102385	Akaike info criterion	-1.606947
Sum squared resid	0.911988	Schwarz criterion	-1.292387
Log likelihood	91.54387	Hannan-Quinn criter.	-1.479675
F-statistic	5.001059	Durbin-Watson stat	0.561566
Prob(F-statistic)	0.000005		

The Random Effect Regression Results

EC	2.521610	5.851810	0.430204	0.6680
WMC	2.569409	2.524209	1.014956	0.3127
C	0.100701	0.029037	3.468030	0.0008

Effects Specification

		S.D.	Rho
Cross-section random		0.078007	0.3673
Idiosyncratic random		0.102385	0.6327

Weighted Statistics

R-squared	0.216065	Mean dependent var	0.044328
Adjusted R-squared	0.204433	S.D. dependent var	0.101755
S.E. of regression	0.102031	Sum squared resid	0.999400
F-statistic	0.783722	Durbin-Watson stat	0.452948
Prob(F-statistic)	0.459603		

Unweighted Statistics

R-squared	0.204601	Mean dependent var	0.115455
Sum squared resid	1.495504	Durbin-Watson stat	0.281219

Correlated Random Effects - Hausman Test

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	6.319674	2	0.0069

Source: *Computed from E-view 9.0, 2021*

As the result found that the results of this test were significant (p-value = 0.0069). Hence, we reject the null hypothesis and conclude that the fixed effects model is the most appropriate of the three models.

Based on the validity of fixed effect model from the Hausman test result, the analysis of result is drawn from the fixed effect result. Evident from the result proved that 50.9 percent variation on net profit margin of the food and beverage manufacturing firms is traceable to variation on the independent variables in the study which are environmental cost and waste management cost. The f-statistic and probability validate the reliability of the model. The Durbin-Watson statistic proved the presence of negative serial autocorrelation. The regression coefficient found that environmental cost have positive and no significant effect on net profit margin of the food and beverage firms while waste management cost have positive and significant effect on the net profit margin.

Table 4.2: Regression Results on the Effect of Environmental Accounting on Earnings per share

Variable	Coefficient	Std. Error	t-Statistic	Prob.
			The Pooled Effect Regression Results	
EC	1.231807	7.150208	1.724126	0.0879
WMC	-2.111108	2.141807	-0.098440	0.9218
C	5.825837	1.803536	3.230231	0.0017
R-squared	0.332031	Mean dependent var		7.239394
Adjusted R-squared	0.211865	S.D. dependent var		14.55981
S.E. of regression	14.47318	Akaike info criterion		8.212306
Sum squared resid	20109.40	Schwarz criterion		8.290946
Log likelihood	-403.5091	Hannan-Quinn criter.		8.244124
F-statistic	1.588374	Durbin-Watson stat		0.939675
Prob(F-statistic)	0.209578			

The Fixed Effect Regression Results

EC	2.265308	6.096608	0.370633	0.7118
WMC	4.212407	3.083607	1.966545	0.0353
C	5.126870	1.708856	3.000177	0.0035

<div align="center">Effects Specification</div>

Cross-section fixed (dummy variables)

R-squared	0.553942	Mean dependent var	7.239394
Adjusted R-squared	0.497544	S.D. dependent var	14.55981
S.E. of regression	10.32060	Akaike info criterion	7.619373
Sum squared resid	9266.786	Schwarz criterion	7.933933
Log likelihood	-365.1590	Hannan-Quinn criter.	7.746645
F-statistic	9.821989	Durbin-Watson stat	2.010240
Prob(F-statistic)	0.000000		

<div align="center">**The Random   Effect Regression Results**</div>

EC	3.446708	5.993408	0.574383	0.5671
WMC	3.198907	2.774407	1.151870	0.2522
C	5.381001	3.957222	1.359792	0.1771

<div align="center">Effects Specification</div>

		S.D.	Rho
Cross-section random		11.43577	0.5511
Idiosyncratic random		10.32060	0.4489

<div align="center">Weighted Statistics</div>

R-squared	0.322066	Mean dependent var	1.987201
Adjusted R-squared	0.201693	S.D. dependent var	10.28791
S.E. of regression	10.28088	Sum squared resid	10146.87
F-statistic	1.083077	Durbin-Watson stat	1.796205
Prob(F-statistic)	0.342653		

<div align="center">Unweighted Statistics</div>

R-squared	0.000296	Mean dependent var	7.239394
Sum squared resid	20768.70	Durbin-Watson stat	0.904604

<div align="center">**Correlated Random Effects - Hausman Test**</div>

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	8.327499	2	0.0049

Source: *Computed from E-view 9.0, 2021*

As the result found that the results of this test were significant (p-value = 0.0049). Hence, we reject the null hypothesis and conclude that the fixed effects model is the most appropriate of the three models.

Also, based on the validity of fixed effect model from the Hausman test result, the analysis of result is drawn from the fixed effect result. Evident from the result proved that 49.9 percent variation on earnings per share of the food and beverage manufacturing firms is traceable to variation on the independent variables in the study which are environmental cost and waste management cost. The f-statistic and probability validate the reliability of the model. The Durbin-Watson statistic proved the presence of negative serial autocorrelation. The regression coefficient found that environmental cost have positive and no significant effect on earnings per share of the food and beverage firms while waste management cost have positive and significant effect on the earnings per share of the quoted food and beverage firms.

<div align="center">**Table 4.3: Regression Results on the Effect of Environmental Accounting on Dividend per share**</div>

Variable	Coefficient	Std. Error	t-Statistic	Prob.
	The Pooled	**Effect Regression Results**		
EC	1.013407	4.035608	2.502614	0.0140
WMC	1.388807	1.213107	1.141627	0.2564
C	1.904394	1.016061	1.874290	0.0639
R-squared	0.496762	Mean dependent var		3.737273
Adjusted R-squared	0.277945	S.D. dependent var		8.491426
S.E. of regression	8.153782	Akaike info criterion		7.064675
Sum squared resid	6382.480	Schwarz criterion		7.143315
Log likelihood	-346.7014	Hannan-Quinn criter.		7.096493
F-statistic	5.142153	Durbin-Watson stat		0.248190

Prob(F-statistic)	0.007560			
	The Fixed	**Effect Regression Results**		
EC	2.595508	2.532108	1.022622	0.3093
WMC	3.083207	1.283407	2.408515	0.0181
C	2.073879	0.710952	2.917045	0.0045
		Effects Specification		
Cross-section fixed (dummy variables)				
R-squared	0.773007	Mean dependent var		3.737273
Adjusted R-squared	0.744307	S.D. dependent var		8.491426
S.E. of regression	4.293781	Akaike info criterion		5.865425
Sum squared resid	1603.980	Schwarz criterion		6.179985
Log likelihood	-278.3385	Hannan-Quinn criter.		5.992696
F-statistic	26.93386	Durbin-Watson stat		0.851581
Prob(F-statistic)	0.000000			
	The Pooled	**Effect Regression Results**		
EC	2.934508	2.522308	1.163299	0.2476
WMC	2.933507	1.224407	2.392028	0.0187
C	2.082841	2.533693	0.822057	0.4131
		Effects Specification		
			S.D.	Rho
Cross-section random			7.709653	0.7633
Idiosyncratic random			4.293781	0.2367
		Weighted Statistics		
R-squared	0.287488	Mean dependent var		0.648399
Adjusted R-squared	0.268477	S.D. dependent var		4.430629
S.E. of regression	4.276663	Sum squared resid		1755.825
F-statistic	4.602028	Durbin-Watson stat		0.724925
Prob(F-statistic)	0.012344			
		Unweighted Statistics		
R-squared	0.261423	Mean dependent var		3.737273
Sum squared resid	6632.194	Durbin-Watson stat		0.201395
	Correlated Random Effects - Hausman Test			
Test Summary		Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random		7.314757	2	0.0082

Source: *Computed from E-view 9.0, 2021*

As the result found that the results of this test were significant (p-value = 0.0082). Hence, we reject the null hypothesis and conclude that the fixed effects model is the most appropriate of the three models.

Also, based on the validity of fixed effect model from the Hausman test result, the analysis of result is drawn from the fixed effect result. Evident from the result proved that 74.4 percent variation on dividend per share of the food and beverage manufacturing firms is traceable to variation on the independent variables in the study which are environmental cost and waste management cost. The f-statistic and probability validate the reliability of the model. The Durbin-Watson statistic proved the presence of negative serial autocorrelation. The regression coefficient found that environmental cost have positive and no significant effect on dividend per share of the food and beverage firms while waste management cost have positive and significant effect on the dividend per share of the quoted food and beverage firms.

Test of Hypotheses
Ho$_1$: There is no significant relationship between environmental cost and net profit margin

Table 4.4: Test of Hypothesis I

Level of significance	5%=0.025 using 2 tailed test
Number of observation	100
Critical probability	0.05 at 5 percent
Static probability	0.5289

Source: Output of E-view 9.0

From table 4.4, the coefficient of computed p-value of 0.5289 is greater than the critical p-value of 0.05, we accept null hypothesis that there is no significant relationship between environmental cost and net profit margin.

Ho$_2$: There is no significant relationship between environmental cost and earnings per share.

Table 4.5: Test of Hypothesis II

Level of significance	5%=0.025 using 2 tailed test
Number of observation	100
Critical probability	0.05 at 5 percent
Static probability	0.7118

Source: Output of E-view 9.0

From table 4.5, the coefficient of computed p-value of 0.7118 is greater than the critical p-value of 0.05, we accept null hypothesis that there is no significant relationship between environmental cost and earnings per share.

Ho$_3$: There is no significant relationship between environmental cost and dividend per share.

Table 4.6: Test of Hypothesis III

Level of significance	5%=0.025 using 2 tailed test
Number of observation	100
Critical probability	0.05 at 5 percent
Static probability	0.3093

Source: Output of E-view 9.0

From table 4.6, the coefficient of computed p-value of 0.3093 is greater than the critical p-value of 0.05, we accept null hypothesis that there is no significant relationship between environmental cost and dividend per share.

Ho$_4$: There is no significant relationship between waste management cost and return on net profit margin.

Table 4.7: Test of Hypothesis IV

Level of significance	5%=0.025 using 2 tailed test
Number of observation	100
Critical probability	0.05 at 5 percent
Static probability	0.0236

Source: Output of E-view 9.0

From table 4.6, the coefficient of computed p-value of 0.0236 is less than the critical p-value of 0.05, we accept alternate hypothesis that there is significant relationship between waste management cost and net profit margin.

Ho$_5$: There is no significant relationship between waste management cost and earnings per share.

Table 4.8: Test of Hypothesis V

Level of significance	5%=0.025 using 2 tailed test
Number of observation	100
Critical probability	0.05 at 5 percent
Static probability	0.0353

Source: Output of E-view 9.0

From table 4.8, the coefficient of computed p-value of 0.0353 is less than the critical p-value of 0.05, we accept alternate hypothesis that there is significant relationship between waste management cost and earnings per share.

Ho$_6$: There is no significant relationship between waste management cost and dividend per share.

Table 4.9: Test of Hypothesis VI

Level of significance	5%=0.025 using 2 tailed test
Number of observation	100
Critical probability	0.05 at 5 percent
Static probability	0.0353

Source: Output of E-view 9.0

From table 4.9, the coefficient of computed p-value of 0.0181 is less than the critical p-value of 0.05, we accept alternate hypothesis that there is significant relationship between waste management cost and dividend per share.

IV. DISCUSSION OF FINDINGS

The first hypothesis was formulated to study the relationship between environmental cost and net profit margin. the estimated regression model found that environmental cost have positive but significant effect on the net profit margin of the quoted food and beverage firms within the periods covered in the study. The regression coefficient indicates that a 1 percent increase on the variable can add 3.8 percent on the net profit margins of the quoted firms. The positive effect of the variable confirms our a-priori expectations and justifies theories such as legitimacy theory and in line with the objective of corporate social responsibility. Empirically, the finding confirms the findings of Epstein (1996)

The second hypothesis was formulated to study the relationship between environmental cost and earnings per share. the estimated regression model found that environmental cost have positive but significant effect on the net profit margin of the quoted food and beverage firms within the periods covered in the study. The regression coefficient indicates that a 1 percent increase on the variable can add 2.3 percent on the earnings per share of the quoted firms. The positive effect of the variable also confirms our a-priori expectations and justifies theories such as legitimacy theory and in line with the objective of corporate social responsibility. Empirically, the finding confirms the findings of Ezeagba et al (2017) who suggested firm's size as a factor influencing pollution control, Cowen *et al.* (1987) found that larger corporations tends to disclose more information

The third hypothesis was formulated to study the relationship between environmental cost and dividend per share. the estimated regression model found that environmental cost have positive but significant effect on the net profit margin of the quoted food and beverage firms within the periods covered in the study. The regression coefficient indicates that a 1 percent increase on the variable can add 2.5 percent on the dividend per share of the quoted firms. The positive effect of the variable also confirms our a-priori expectations and justifies theories such as legitimacy theory and in line with the objective of corporate social responsibility. Empirically, the finding confirms the findings of Ezeagba et al (2017) who suggested firm's size as a factor influencing pollution control, Cowen *et al.* (1987) found that larger corporations tends to disclose more information.

The fourth hypothesis was formulated to study the relationship between waste management cost and net profit margin. the estimated regression model found that environmental cost have positive and significant effect on the net profit margin of the quoted food and beverage firms within the periods covered in the study. The regression coefficient indicates that a 1 percent increase on the variable can add 3.3 percent on the net profit margins of the quoted firms. The positive effect of the variable confirms our a-priori expectations and justifies theories such as legitimacy theory and in line with the objective of corporate social responsibility. Empirically, the finding confirms the findings of Epstein (1996)

The fifth hypothesis was formulated to study the relationship between waste management cost and earnings per share. the estimated regression model found that environmental cost have positive but significant effect on the net profit margin of the quoted food and beverage firms within the periods covered in the study. The regression coefficient indicates that a 1 percent increase on the variable can add 4.2 percent on the earnings per share of the quoted firms. The positive effect of the variable also confirms our a-priori expectations and justifies theories such as legitimacy theory and in line with the objective of corporate social responsibility. Empirically, the finding confirms the findings of Ezeagba et al (2017) who suggested firm's size as a factor influencing pollution control, Cowen *et al.* (1987) found that larger corporations tends to disclose more information,.

The sixth hypothesis was formulated to study the relationship between waste management cost and dividend per share. the estimated regression model found that environmental cost have positive but significant effect on the net profit margin of the quoted food and beverage firms within the periods covered in the study. The regression coefficient indicates that a 1 percent increase on the variable can add 3.1 percent on the dividend per share of the quoted firms. The positive effect of the variable also confirms our a-priori expectations and justifies theories such as legitimacy theory and in line with the objective of corporate social responsibility. Empirically, the finding confirms the findings of Ezeagba et al (2017) who suggested firm's size as a factor influencing pollution control, Cowen *et al.* (1987) found that larger corporations tends to disclose more information.

V. CONCLUSION ANND RECOMMENDATIONS

Conclusion

This study examined the effect of environmental accounting on financial performance of quoted food and beverage companies in Nigeria. Cross sectional data were sourced from financial statement and annual reports of 10 quoted food and beverage firms from 2010 to 2019. Net profit margin, earnings per share and dividend per share were used as proxies for financial performance, while environmental cost and waste management cost were employed as proxies for independent variables. Ordinary Least Square method used to examine the extent to which environmental accounting affect the performance of food and beverage

manufacturing firms. The regression coefficient found that environmental cost have positive and non-significant effect on net profit margin, earnings per share and dividend per share, while waste management cost have positive and significant effect on the net profit margin, dividend per share and earnings per share. Overall, the study revealed that environmental waste management practice had significant effect on financial performance of the quoted food and beverage companies in Nigeria.

Recommendations
1. Government should make environmental reporting in annual reports compulsory since most organization hardly report their environmental activities in their report and corporate organizations on their part should ensure that they comply with the environmental laws of the nation as it will go a long way in enhancing their performances.
2. The study recommend the need for food and beverage companies to report environmental costs and liabilities in their annual statements as this will help to reduce the rate of risks of environmental liabilities and increase the value added by the companies in Nigeria.
3. Furthermore, functional and intractable environmental accounting units should be created by each food and beverage manufacturing firms to ensure that the companies maintain their guidelines in reporting environmental issues in their annual reports and accounts, this way stakeholders would access this information and even vouch for them as socially responsible and this could bring about more investors to the companies.
4. Companies should show fines and penalties paid by the company, environmental liabilities of the company, environmental provisions, and environmental costs capitalized in the notes to the accounts in their annual reports which is the performance indicators and non-financial indicators.

Contribution to Knowledge
This study examined the effect of environmental accounting and the financial performance of quoted food and beverage firms in Nigeria. Findings of the study have given insight to corporate managers on the relevant of environmental accounting as major determinants of corporate financial performance.

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