The Impact Of Environmental Accounting On Corporate Performance In Nigeria

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Abstract

Companies' approach to the environment is regarded as one of the major factors influencing corporate performance in Nigeria. The objective of this study is to investigate if there is any significant relationship between environmental accounting and corporate performance in Nigeria. The data for the study were collected from annual report and accounts of fourteen randomly selected quoted companies in Nigeria. The data were analysed using multiple regression analysis. The findings of the result show that there is significant negative relationship between environmental accounting and Return on Capital Employed (ROCE) and Earnings Per Share (EPS) and a significant positive relationship between Environmental Accounting and Net Profit Margin and Dividend Per Share. Based on this it was recommended that government should give tax credit to organizations that comply with its environmental laws and that environmental reporting should be made compulsory in Nigeria so as to improve the performance of organizations and the nation as a whole.

Keywords: Environmental Accounting, Corporate Performance, Corporate Report.

Introduction

The historical development of Accounting attests to the fact that Accounting is a product of its commercial environment and rooted in capitalist ideology. Accounting has scarcely dropped the vestiges of pacioli's commercial capitalist era. This disposition of accounting has meant that it destroys its habitat within the ecosystem to the extent that a wide rift now exists between accounting and its natural environment.

In the recent times there has been an increased awareness of the interaction between firms and environment in which they operate, this enlightenment has been sharpened by concerns about resources depletion, resources scarcity, environmental degradation and the activities of these firms that lead to the depletion of the ozone layer and thereby causing an imbalance in the environmental system. The increasing concern about environmental degradation, resources depletion and the sustainability of economic activity have made the development of Environmental accounting and reporting an area of significant interest in Nigeria. The success or failure of a company may be determined not only by the products or services it deals with but also by the complexity of it environment. Therefore the need for an empirically study to know the impact of environmental accounting on corporate performance in Nigeria.

Objective of the study

The main objective of this study is to investigate if there is any significant relationship between environmental accounting and corporate performance in Nigeria. To achieve this, other secondary objectives are to investigate if there is any significant relationship between environmental accounting and Return on Capital Employed (ROCE); Net Profit Margin (NPM) Divided per share (DPS) and Earnings Per Share (EPS**).**

Literature Review

Man is a rational and economic being, in a bid to make ends meet, man is seen to engage in a lot of activities. Some of these activities have positive effects on the environment, while other have negative effects which tend to bring about an imbalance in the ecosystem. (Emevon 2001). Odocha (2002) refers to the environment as:

(a) The Biosphere- which comprises of all living organisms i.e. plant and animal kingdoms;

(b) The Geosphere – which is made up of soils and rock bodies;

(c) The hydrosphere- Which is represented by all water masses ;

(d) The Atmosphere-comprising the air we breathe and the space above; and

(e) The Techno sphere- which represents man's creations.

Research carried out by the Federal Environmental Protection Agency (FEPA) as cited by Aina (1991) indicates that Nigeria is confronted by major environmental problems, the most important of them are;

Deforestation:- This results from continuous, unchecked felling of trees which causes loss of soil fertility.

Drought and desertification**-** Drought results in lack of water for plants and animals to survive. Desertification involves the loss of biological or economic productivity and complicity in croplands and pasture. This is the degradation of land in arid and dry sub-humid areas, resulting primarily from natural activities and influence by climatic variations.

Soil and coastal erosion:-Water and sea waves are the catalyst of erosion in the southern part and movement of the wind in the Northern part of the country.

Water Pollution: - **T**his is caused by illegal release of industrial liquid waste to streams, rivers and open drains.

Oil Pollution: - caused by oil transportation and exploration carried out in oil producing regions.

Water Hyacinth Invasion:- **T**his is a free floating plant which grows up to three feet in height. Its growth has a negative economic impact which includes the dogging of irrigation channels, loss of fishing areas and increases in breeding habitat available to disease transmitting mosquitoes and others.

Loss of biodiversity: - This is directly caused by fragmentation, degradation and loss of habitat; the over exploitation of natural resources; pollution and others.

Flooding: - This is the over flow of water over farmlands which, destroys crops and it is caused by inadequate drainage system in wet region of the country.

Industrial Pollution:- This include both solid and liquid waste pollution. In Nigeria, some industries do not dispose their solid waste properly and industrial liquid waste is still discharge in some cases into places that are harmful to their communities.

Land degradation:- Land degradation according to Wikipedia 2011 is a human induced of natural process which negatively affect the capacity of land function affectively within an ecosystem by accepting, storing and recycling water, energy, and nutrients. The causes of land degradation are identified as anthropogenic and mainly agricultural related. They include; land clearing and deforestation, agricultural depletion of soil nutrient, urban conversion, irrigation and pollution.

Environmental Accounting in Nigeria

Production activities within the environment have resulted to resources depletion and environmental degradation. These activities have further led to the depletion of ozone layer, thereby causing imbalance in the environmental system. Consequently, the increased concern about environmental degradation, resources depletion and the sustainability of economic activities has made Environmental Accounting and reporting an area of signification interest. In the recent times, in Nigeria, thus Environmental Accounting is a new concept that tries to recognize the side effects of production and consumption on the physical environment. (Adediran and Atu 2010) These effects of production and consumption should be recognized in the financial statements of organizations. In Nigeria, there are several statues regulating financial reporting of companies listed in the Nigeria Stock Exchange. Some of the statues are;-

1. Companies and Allied Matters Act 1990 as amended to date
2. Nigeria Accounting Standard Board (NASB), now Financial Reporting Council of Nigeria (FRCN)
3. Investment and Security Act 1999
4. Bank and other Financial Institutions Act 1991
5. The Insurance Act 1997

6. Security and Exchange Commission Law.

None of the professional bodies, regulatory agencies or statues regulating these companies have made the disclosed of environmental activities of companies mandatory.

The Federal Government on its part in trying to improve environmental disclosure by companies has formulated several environmental laws through the ministry of Environment and Natural Resources. These environment laws are aimed at;

1. Imposing restriction on the release of toxic substance into the environment.
2. Stipulating the requirement which industries and facilities generating waste must meet.
3. Requiring establishment to develop contingency plans for handling unusual and accidental discharge and developing strategies for waste reduction.
4. Making it mandatory for establishment to install facilities capable of reducing or eliminating pollution arising from their production activities.
5. Specifying the maximum limits of effluent parameter allowed to be discharged into the air, streams, rivers, drains and ground.

However, the problem with Nigeria is not the enactment of laws and regulations but implementation of the same.

Benefits of Environmental Accounting

Environmental costs are one of the many different types of costs businesses incur as they provide goods and services to their customers, and environmental performance is one of the many important measures of business success. Environmental costs and performance deserve management attention for the following reasons

a) Many environmental costs can be significantly reduced or eliminated as a result of business decisions, ranging from operational and housekeeping changes, to investment in “greener” process technology, to redesign of processes/products.
b) Environmental costs (and, thus, potential cost savings) may be obscured in overhead accounts or otherwise overlooked. This would result in wrong cost information and poor managerial decision and reporting.
c) Many companies have discovered that environmental costs can be offset by generating revenues through sale of waste, by-products or transferable pollution allowances, or licensing of clean technologies.
d) Better management of environmental costs can results in improved environmental performance and significant benefits to human health as well as business success.

e) Understanding the environmental costs and performance of processes and products can promote more accurate costing and pricing of products and can aid companies in the design of more environmentally preferable processes, products, and services for the future.

f) Competitive advantage with customers can result from processes, products, and services that can be demonstrated to be environmentally preferable.(INFORM; 1992).

Accounting for environmental costs and performance can support a company's development and operation of an overall environmental management system. Such a system will soon be a necessity for companies engaged in international trade due to international consensus standard ISO 14001, developed by the international organization for Standardization.

Environmental accounting therefore aims at achieving sustainable development, maintaining a favorable relationship with the community, and pursuing effective and efficient environmental conservation activities. The accounting procedure allows a company to identify the cost of environmental conservation during the normal course of business, identify benefit gained from such activities, provide the best possible means of quantitative measurement (monetary value or physical units) and support communication of its results.

The environment Accounting, when well handled can be of great benefit to both the individuals and the companies. Some of the benefits include;

1. It can bring about increased turnover for the companies due to enhanced company and product image.
2. Environmental accounting can make a company's share more attractive to investors due to enhanced company or product image and environmental risk rating.
3. Environmental Accounting can guarantee better access and terms from lending institutions due to favourable environmental risk incidents.
4. Environmental accounting ensures compliance with environmental laws which in turn will minimize its exposures to future financial loss arising from environmental incidents.
5. Environmental Accounting brings about an increase in the company's profile as a result of an increase in the area of environmental responsibilities.
6. Environmental Accounting can lead to new inventions because organizations can recycle what was formerly considered waste to invent new products. (Dorweiler 2002)

Environmental Reporting

Environmental reporting is in stages ranging from ad-hoc comment in the annual report to stand-alone environment reports. Environmental investments is no longer seen as an additional cost but they are seen as part of corporate social responsibility therefore, environmental reports are seen as necessary in communicating with stakeholders to address their environmental concerns.

Companies are realizing that it is their corporate responsibility to achieve sustainable development whereby they meet the present needs without compromising the ability of future generations to meet their needs. Economic growth is important for both shareholders and stakeholder alike in that it provides the condition in which protection of the environment can best be achieved. However, how many oil companies operating in the Niger Delta always include in their annual report, environmental report as part of their social responsibility? (Adediran and Atu, 2010)

Reasons for Companies to Report their Environmental Activities in Nigeria

There are several reasons environmental issues should be incorporated into the companies' Annual Reports. Some of them include;

1. Environmental Accounting may lead to the avoidance of penalty or fines imposed by Environmental Protection Agency in the countries where such legislation exists.
2. Environmental Accounting promotes research and development which will eventually translate into significant reduction in many environmental costs through the design of more environmental friendly production process. (Medley 1997)
3. Environmental Accounting can attract more investors because investors sometimes need information on environmental performance and expenditure to make decisions.
4. Environmental Accounting can promote more accurate costing and pricing of product.
5. Environmental Accounting may attract incentives from the government in form of tax reduction and subsidies.
6. Environmental Accounting can lead to the development of Environment Management System (EMS) which is necessary for companies engaged in International Trade. (Hutchinson 2002 and Lethmathe and Doost 2000).

Methodology

Data for this research study were secondary data generated from Annual Reports and Accounts of Fourteen (14) randomly selected companies quoted on the Nigerian stock exchange for the year 2010. The data were then analysed using multiple regression analysis through the use of econometric model specified below:

ENVC = f(ROCE, NPM, DPS, EPS,)

Where: ENVC, ROCE, NPM, DPS and EPS represent environmental cost of companies, Return on Capital Employed, Net Profit Margin, Dividend Per Share and Earnings Per Share respectively.

Specifying it in econometric form, we have;

$ENVC = + a_0 + a_1ROCE + a_2NPM + a_3DPS + a_4EPS + \mu_t$

Where ;a_α , a_1, a_2, a_3, a_4 and μ_t represent Intercept, Impact of Return on Capital Employed, Impact of Net Profit Margin, Impact of Dividend Per Share, Impact of Earnings Per Share and Error terms respectively.

The apriori expectation is that Environmental Accounting has a positive relationship with the Return on Capital Employed (ROCE), Net Profit Margin (NPM) Dividend Per Share (DPS) and Earnings Per Share (EPS) in the period under study. Amount spent by each company as their environmental cost was used as proxy for environmental accounting while Return on Capital Employed (ROCE), Net Profit Margin (NPM), Dividend Per Share (DPS) and Earnings Per Share (EPS) were used as proxy for corporate performance. ROCE is calculated using the formular. $\frac{profit\ before\ tax}{capital\ employed} x \frac{100}{1}$ while Net Profit Margin is $\frac{net\ profit}{Turnover/sales} x \frac{100}{1}$ DPS on the other hand is calculated using this formular (Igben 2004).

DPS is $\frac{Gross\ dividend - preference\ dividend}{No.of\ ordinary\ shares\ in\ issues\ and\ ranking\ for\ dividend} \frac{100}{1}$

EPS is $\frac{Profit\ after\ tax\ before\ extra\ ordinay\ items\ less\ preference\ dividend}{No.of\ ordinary\ shares\ ranking\ for\ dividend} x \frac{100}{1}$

The data obtained from the various financial statements are presented in a tabular form as shown in table 1 below:

Table 1: Variables from Companies' Financial Statements

NAME OF ORGANIZATION	ENVC (₦)	ROCE %	NPM %	DPS Kobo	EPS Kobo
Nigerian Breweries Plc	20,500,000	65	16	60	401
Seven-Up Bottling Company	18,400,000	18	4.5	55	399
Unilever Plc	12,000,000	76.8	8.9	45	1.11
Vitafoam Plc	9,400,000	76.5	3.6	50	82
Flour Mill of Nigeria Plc	18,400,000	34.8	6.2	45	537
Guinness Nigeria Plc	50,800,000	30.7	14.5	80	825
Starcomms plc	48,600,000	8.5	26.4	35	-111
Portland Paints Plc	5,400,000	42.5	5.5	25	33
Academy Press Plc	2,000,000	32.9	5.2	20	26
Juli Berger Nigeria Plc	500,000	17.6	14.98	20	20
Multi-Trex Integrated Foods Plc	1,500,000	27.6	1.3	15	2
Bolgases Nig. Plc	2,000,000	45.3	14.97	30	88
Avon Crown Plc	3,000,000	38.7	1.5	30	5
UBA Plc	30,900,000	29	25	65	305

Source: 2010 Financial Statements of Various Companies.

In analyzing the data presented in the above table, the ordinary least square regression method was used with the E-View (3.1) version. The result of the data analysis is presented below

Table 2: Result of data analysis

Variable	Coefficient	Std Error	t-Statistic	Prob.
ENVC	-8839618.	7143515.	-1.237432	0.2472
ROCE	-29963304	12083539	-2.479679	0.0350
NPM	84687728	33425646	2.533615	0.0320
DPS	73538730	15641413	4.701540	0.0011
EPS	-704576.8	377949.8	-1.864207	0.0952
R-squared	0.839161	Mean dependent var		15957143
Adjusted R-squared	0.767677	S.D. dependent var		16895549
S.E. of regression	8143643.	Akaike info criterion		34.93583
Sum squared resid	5.97E+14	Schwarz criterion		35.16406
Log likelihood	-239.5508	F-statistic		11.73912
Durbin-Watson stat	2.048640	Prob(F-statistic)		0.001282

Source: E-View output

From the result above, we can rewrite the regression equation as;

ENVC = 8839168 – 29963304ROCE + 84687728NPM + 73538730DPS - 704576.8EPS

T-Ratio = (-1.237432 (-2.479679) (2.533615) (4.701540) (-1.864207)

R-Squared = 0.839161 R-Bar Squared = 0.767677 S.E of Regression = 8143643 F-Stat = 11.73912 DW Statistic = 2.048640

From the result presented above, all the variables except Return on Capital Employed (ROCE) and Earnings Per Share (EPS) are in line with the apriori expectation. Also, we see that Environmental Accounting has a positive relationship with the Net Profit Margin (NPM) and Dividend Per Share (DPS) and a negative relationship with Return on Capital Employed (ROCE) and Earnings Per Share (EPS) in the period under study. Using the Co-efficient of variation from the model presented above, it will be observe that autonomous Environmental Accounting which is represented by Environmental Cost (ENVC) is a negative 8839618 when all other variables are held constant. Consequently, a unit change in Environmental Cost (ENVC) will lead to negative change of about 29963304 units in ROCE less the autonomous component provided all other variables are held constant. Also, a unit change in ENVC provided all other variables are held constant will have a positive change of about 84687728 units in NPM less the autonomous component.

Furthermore, a unit change in ENVC will lead to a positive change of about 73538730 units in DPS less the autonomous component. And a unit change in ENVC will lead to a negative change of 704576.8 units in EPS.

Using the T- Ratio to test for their statistical significance, we find out that only NPM and DPS variables are statistically significant. This is due to the fact that their observed T- values are positive and above the "rule of thumb of 2". The other variables are statistically insignificant because their observed t-values are either negative or far less than the 'rule of thumb' of 2. From the R- squared of 0.839161, the regression co-efficient indicates that about 83% of the changes in the dependent variable is explained by the changes in the independent variables. The F- value of 11.73912 indicates that the parameter estimate cannot be dismissed at 5% level of significance. This is due to the fact that the calculated F- value is more than the critical F-value. The D.W statistic of 2.048640 indicates the absence of auto – correlation since it is up to rule of Thumb of 2.

In the course of this research, some hypotheses were formulated and they include;

$Ho_{1:}$ There is no relationship between Environmental Accounting and Return on Capital Employed.

Ho_2: There is no relationship between Environmental Accounting and Net profit Margin.

Ho_3: There is no relationship between Environmental Accounting and Dividend Per Share.

Ho_4: There is no relationship between Environmental Accounting and Earnings per Share.

To test for the above hypotheses, we have to consider the test of significance which is the F-statistic. The tool of F-statistic helps in determining the overall joint significant of the explanatory (independent) variables on the dependent or explained variable. At 5% level of significance, F critical or F tabulated is 0.001 when comparing this with the calculated value from the above table, which is 11.73912. The decision rule is that, if the calculated value is greater than the tabulated, reject null hypothesis (H_0). Hence, the null hypotheses are rejected since f-cal (11.73912) is greater than the f-tab (0.001). It indicates that the explanatory variables are jointly significant at explaining or causing much variation in the dependent variable (Environmental cost). We therefore reject the null hypotheses, which means that Environmental Accounting has significant relationship with the various variables used in measuring corporate performance. It is also necessary to note that this relationship with the variables of corporate performance is either positive or negative.

Conclusion

Environmental costs cover all costs incurred concerning environmental protection such as emissions treatment as well as wasted material, capital and labour which so called 'non product output' as a result of inefficiency production activities. Different firms may consider different elements into environmental costs but it is important that all significant and relevant costs are incorporated for sound decision making purpose. The general picture, which emerges from current reporting, is that since the disclosures of environmental information are voluntary, there is a diversity of reporting practice. Large companies tend to report more environment information in their annual reports than the medium-scale businesses; and the disclosure, tend to be more qualitative than quantitative despite the fact that there is a significant relationship between environmental Accounting and Corporate performance.

Recommendations

Based on the findings of this study the following recommendations are made:

1. Government should make Environmental Reporting in annual reports compulsory since most organization hardly report their environmental activities in their report;.
2. Government agencies should give tax credit to organisations that comply with its environmental laws of the land which will encourage environmental reporting
3. 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.

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