ENVIRONMENTAL ACTIVITIES AND ITS IMPLICATIONS ON THE PROFITABILITY OF OIL COMPANIES IN NIGERIA

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Abstract:

The study examines the cost implications of environmental activities on the profitability of oil companies. Data for the study were collected from the internal management report and analyzed using the ordinary least square (OLS) method. The results revealed that there is a significant relationship between environmental activities and profitability. Proper management of environmental activities is therefore desirable if organizational profitability is to be sustained. It was recommended that Nigeria petroleum companies should show data on environmental expenditure, environmental cost charged to income in the account as well as details in the notes to the accounts. To enhance the effectiveness of the policy, separate accounts should be opened for environmental expenditures in order to facilitate the measurement and reporting of environmental expenditures and environmental performance of each company as well as the whole sector.

Key words: Environmental activities, Social cost, Social benefits and Environmental performance.

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1.0 Introduction:

There is a growing concern about the implications of environmental activities on the profitability of oil companies in Nigeria. In view of the individual importance of the environment and the continued survival of business organizations, attention is focused on the interplay of sustainability of the environment and profitability of corporate organizations. As Buskirk, Green and Rodgers (1998:260) opined "Our Environment… is the basic force shaping our activities, our institutions. What we do and must do. A man ignorant of his environment is a cripple incapable of making wise decisions, for inevitably environmental forms play a critical role in all affairs".

Until recently, environmental issues were largely ignored by both corporations and individuals (Murphy, 2003). Hazardous wastes and other such items were considered a necessary consequence of a growing economy. This view point has changed radically as more people now realize that the effects of waste products have serious and long term consequences for the ecosystem. Preserving a green environment, clean air, water and land are gaining greater importance than ensuring lower product prices for consumers and lower cost and consequently higher profits for business firms. Consumers are now more willing to pay for products that are environmentally friendly. This new mindset ultimately promotes sustainability of the environment. Sustainability here refers to the long term health of the global ecology; and sustainable environmental growth/benefit aims to meet the needs of the present without compromising the ability of future generations to meet their own needs. The major responsibility falls on the corporate organizations in our communities to ensure that the environment is treated as an integral part of the economic process and not as free goods (Awasthi, 2009).

However, it is important to note that any action taken to protect the environment has an underlying cost. And, just like any other cost, it will have implications for the success or failure of the organization. In cognizance of this, the study sought to identify the various environmental activities and establish how their costs affect the profitability of organizations. The study specifically examined the extent to which organizations in the oil and gas industry are responsible to their very stakeholders. According to Backman (2003), in the last two decades of the twentieth century, concern over corporate social responsibility and behaviour of companies

has gained currency and generated debate among various stakeholders. "The expected role of companies in terms of corporate social responsibility assumed new dimensions with the major issue which hinges upon the consideration as to whether, in the context of the prevailing memorandum of understanding (MOU) packaged between the company and the host community, the company should be burdened with additional responsibility which were not originally defined" (Babbie, 1990:89). This situation becomes more urgent in view of the fact that business firms are increasingly being required to take on additional responsibility in terms of securing a better environment and formulating and executing social-oriented programmes that would increase the net benefit of host communities while still meeting their stockholders' profitability expectation.

In order to assess the effort of companies towards the fulfillment of their commitment to the environment, environmental audit was used in this study as an instrument for highlighting contingent liabilities arising from environmental degradation. The overall emphasis is on environmental protection, and on the ability of the environmental audit to predict future liability for past as well as present and future activities in our environment.

In view of the foregoing, there is therefore an understanding that every interaction between the organization and its environment has an implied cost. This study seeks to establish the extent to which this cost affects profitability of organizations, especially in view of the going concern concept of accounting assumption that a business will continue in existence into the unforeseeable future, ceteris paribus.

In order to give direction to the study, the following hypotheses were formulated

1. H_o1: Environmental conservation costs do not have a significant effect on the profitability of oil and gas companies.
2. H_o2: Fines and penalties paid for non-compliance with environmental regulations have no significant effect on the profitability of oil and gas companies.
3. H_o3: Social costs do not have a significant effect on the profitability of oil and gas companies.

2.0 Literature review:

Owing to the varied and multi-faceted nature of the subject of environmental studies the world over, especially concerning it conservation and sustainability. Studies on them can be classified into several typologies, which among others includes analytical and descriptive studies; which analyze the different phenomenon that enhance conservation and sustainability in difference circumstances. This covers case studies whose focus is on the functional attribute of the economic environment and their relationship with both individuals and organizations in the environment; institutional studies which are concerned with their contribution to cost-efficiency and general text studies which analyze generally all aspect of environmental issues.

In essence, most studies are within the context of general text which when looked at, is not particularly the focus of this study except that an understanding of the general frame of organization – environmental exchange would enhance our appreciation of their effect on the profitability of organizations. This research will limit itself to the contextual issues on the subject while drawing lessons of experience from relevant studies for purpose of illustration and comparability. These studies are spread over the world in different circumstances, experiences etc which makes the study of environmental activities quite complicated even when such activities are examined within a set paradigms or conceptualization.

The United Nations Organization (UNO) has done tremendous work on the issue of environmental activities in the different aspect concerning it conservation, sustainability, management, protection, and control etc, and the overall impact in the world economy. Prominently the data presented by the United Nations relating to promoting the integrity of the natural environment for the present and future generation.

Substantial effort and resources have been deplored to ensure that our natural environment is not treated as a free good. These efforts and resources are supplemented generally by scholarly works by a number of environmentalists.

Arntzen (1997) who reviewed the report of the World Conference on Environmental Development (WCED, 1987 Brundtland Report) had this to say: “The concept articulated in Brundtland Report States, that if humans continue to produce or manufacture, exploit the natural resources and reproduce in numbers at the present rate, then they will narrow sharply chances of

prosperity, or even of safe and secure livelihood for the next and subsequent generations". In his opinion this basic assumption of sustainability implies that natural resources should be treated, as production factors, which needs to be used and maintained, first like any other man-made capital. Gilpin (1995) referred to this sustainability as the use of incremental increases without reducing the total physical stock of the environment. Hence, all development and exploration or exploitation activities must be carried out with due concern for the environment (Salamis, Akarakiri & Akinwumi, 2000).

In the view shared by Rilwani and Aziegbe (2001:141), he said, "World over, widespread concern has arisen about the nature of development. In the context of social and environmental, as well as economic consideration, development projects usually evaluated under the framework of cost benefit analysis". If the moral obligation of such programme and project to future generations are considered the analytical framework becomes increasingly complex. A fundamental response to these concerns and questions has been the concept of environmental management. This means the entire process of planning, managing and conserving the environment and natural resources (Eagles, 1984). In his summary on these issues, Rilwani, et al (2001) said environmental management is a set of activities and procedure, properly seen as the integral elements of the developmental process, aimed at ensuring that developmental activities affecting the environment:

(i) provides net benefit to society;

(ii) are sustainable;

(iii) Allows for continuation of valuable non-consumption uses of ecosystems.

Ozumba (1999) observed that the reverse had rather been the case over the years. He said that the environment is thus polluted improvised. Only a clean and safe environment can support life of the present generation and that of future generations. And that man and animal could be extinct if our environment is not preserved. At the fundamental level environment provides a biological, chemical and physical system that enables human life to exist (Smith, 2003). Due to increase in industrial expansion, activities and human population in the modern age, environmental resources and capabilities have increasingly been stressed beyond their limit.

Smith (2003) reported that destruction of forest and habitat is driving our estimated 100 species of flora and fauna to extinction every week. Indiscriminate expansion of industrial activities is damaging human health, so much so that today we have in our bodies close to 400 chemicals that would not have been there 50 years ago, simply because at that time they did not exist. World population is increase by close to a billion every year. He (Smith) observed that natural capital as distinct from man-made capital is the factor limiting the extent and quality of economic growth. Accordingly there is an urgent need to measure and assign values to the use of natural resources just as values were assigned to capital and labour in the years following the industrial revolution (Smith, 2003). Since natural capital is widely perceived as a scarce and limited resources, fresh investment should move towards it preservation, restoration and productivity (Wellford, 1995).

Environmental accounting is an important tool for understanding the role played by the natural environment in the economy. Environmental accounting provide data which highlight both the contribution of natural resources to economic well-being and the cost imposed by pollution or resources degradation (IUCN,1980). A company's attitude to the environment is likely to be seen as a benchmark of its commitment to innovation and good management (Ozumba, 1999). Companies setting the pace on environmental issues will be seen as the leaders of a corporate sector (Bailey, 1991). Environmental accounting specifically refers to the research or practice of accounting for an organizations impact on the natural environment (Gray, 2001).

According to (Crowther, 2000), environmental accounting should provide information to all of the organization's stakeholders. He said that a stakeholder of an organization is anyone who can influence or is influenced by the organization.

Smith (2003) provided a useful analysis of the concept of environmental reporting. According to him, in the past, environmental issues were often ignored by both corporations and individuals. Hazardous waste and other such items were considered a necessary cost of a growing economy. He said that times have changed, as people now realized the effect of waste products that potentially could damage .the environment. Most people now recognize that preserving clean air, water and land is more important than lower-cost products for consumers or higher profit for business.

The point to note here is that maintaining clean production does not undermine the profit objectives of a firm. That is why Eyre (1982) said whatever the objectives laid down for a firm, however, there is no doubt that the objective of profit must be recognized as being of prime importance because only from profit can come the financial resources to support more socially inclined objective. Profitability therefore becomes a major determinant for any decision on the type of economic venture or area an organization can concentrate its activities (Buskirk, 1976). He goes on to say that the profit system is closely parallel to the concept of free enterprise for profit is the driving force behind the free enterprise. Profit is the fuel that propels enterprise etc. This in other words means profit is the motivating goal to make organization perform certain functions. The argument is that the advocacy of the goal of profitability of the interplay of the environment-organizational exchange can only be effective if in the final analysis, the positive effects of the comparative advantage between them (environment and the organization) are spread even; but as at now the experience is that the obligation has not been reciprocated by the organization. This is disadvantageous to intergenerational equity (sustainability). The environment has to be treated as an integral part of the economic process and not treated as free goods (Awasthi, 2009).

2.2 Theoretical framework:

For the proper understanding of the background of this study, the stakeholder's theory was used.

2.2.1 The stakeholder's theory

According to Eyre (1982:180), "the rather simplistic view of management objectives put forward by economic theories has been challenged by sociologists and psychologists. The behavioural scientists contend that profit maximization alone is not, and cannot be the sole management objective". He went on to say that there is a believe that the employed manager hoped to satisfy his own personal benefit vis-à-vis the benefit of the organization. This implied that those saddled with the responsibility of formulating business objective (top management), should take into consideration the personal interest of the employed manager. There should be a

deliberate management policy to satisfy the benefit of the employees. This will undoubtedly motivate the employees to achieve the firm's objective.

Drawing from the above inference, it is pertinent to argue that today's concern should not only be on the employees, but on the entire stakeholders of the organization. To achieve this aim every organization should be able to know who its stakeholders are. This often includes, but not limited to suppliers of inputs, employees and trade union, members of local communities, society at large, and government. Different stakeholders have different rights of information. This right can be stipulated by law, but also by non-legal codes, corporate values, mission statements, and moral rights, the rights of information are thus determined by society, the organization and its stakeholders. Simply put, a stakeholder analysis needs to be carried out to identify the relevant parties that have a stake in the organization. They could be individuals, groups, or organization. In view of the growing concern about the impact of organizations on our environment as well as the importance of the environment to the different stakeholders including the organization, there is a great need for management objective to be given wider scope. Management overall attainment of objective should no longer be viewed in terms of how much it has satisfied the need of the internal members and perhaps the government; the local community must be taken into consideration.

To Buttress this point, behavioral scientists advance the stakeholders Theory. This theory states that "there are a number of interested parties to be considered in the formulation of objectives, and these extended widely to include not only shareholders and managers, but also other groups, such as workers, consumers, suppliers and local community" (Eyre, 1982: 185). Eyre in his submission concluded that this extended concern means that management objectives must be set to include the interest of all who are likely to be touched by the business activities of the firm. The emphasis is that interests of the stakeholders must be taken into account. In other words, if this policy is ignored or not given the attention it deserves, even the major objective of the organization being profit maximization will be adversely affected (Friedman, 1980).

In order to guard against this problem, it is expedient to identify the stakeholders of the organization and analyze their stake in the organization. (Cohen, Fink, Gadon, & Willits, 2001) advised that once all the possible stakeholders are identified, one should try to determine the following:

(a) What are their stakes in the organization?

(b) What are their needs/desire in relation to the organization and operation?

(c) What are their resources in relation to the attainment of organizational goal?

(d) Exactly how will they be affected by the organization?

(e) Is their co-operation/goodwill necessary, desirable, or important?

It is also necessary for the organization to analyze its role as well as relationship with the stakeholders, both individually and collectively. This will facilitate the setting out of healthy boundaries that will enhance effective and efficient operation (Cohen, et al. 2001). A successful implementation of this preliminary plan will help management set objectives that will fulfill their own interest as well as produce profit that will satisfy the owners. The profit that will satisfy the owners here may not be the maximum profit, but a sustainable profit. This means a profit that satisfies the long term expectation of the organization. Every plan for the attainment of the long-term goal of the organization should and must incorporate the resources needed to achieve the set goal. These include the corporate environment. A growing body of evidence suggests that, in many situations, improved environmental and social performance provides financial benefit (Repetto, 1989).

3.0 Methodology:

The study was largely exploratory in nature and approach. It requires the examination of relationship between environmental cost and profitability of companies in the oil and gas industry. The choice of the design was also informed by the complex relationship that exists between the research variables. The variables are not subject to manipulations.

The population for this study comprises the 54 oil and gas exploration companies operating in Nigeria made up of multinationals and local companies.

Ten of the oil and gas companies were randomly selected from the study population of 54. According to Balsely and Clover (1988), it is common in research studies to use 10 percent sample size, because sample size of 10 percent of the universe has been proved to be more than adequate in research projects. Ogolo (1996) corroborates this when he posits that where a

population is known, at least 10 percent of it constitutes a researchable sample. For this study ten companies where selected, amounting to 18.5% of the universe.

3.1 Model specification

The multi-dimensional nature of the problems requires the used of a multiple regression model which allowed the simultaneous investigation of the effects of the variables. The model is stated as thus:

Prof = f (ECC, FP, SC)

Mathematically stated as

$$Prof = a_o + a_1ECC + a_2FP + a_3SC + ei$$

Where

			Expected Signs
ECC	=	Environmental Conservation Cost	-
FP	=	Fines and Penalties	-
SC	=	Social Cost	-
Prof	=	Profitability	-
a_o	=	Unknown constant to be estimated	
$a_1 - a_3$	=	Unknown coefficient to be estimated	
e_i	=	Stochastic error term.	

$a_o, a_1, a_2, a_3 \geq 0$

4.0 Data analysis:

Table .1: Profit and environmental expenditure of oil companies

S/NO	Name of company	Profit after tax	Administrative expenses	Environmental conservation cost (ECC)	Fines & penalties (F&P)	Social cost (SC)
		N'000	N'000	N'000	N'000	N'000
1	TOTAL	4,675,121	5,780,150	1,912,060	982,626	867,023
2	SHELL	5,650,170	4,011,583	1,404,054	1,002,895	802,316
3	ADDAX	6,402,639	2,451,760	735,528	490,352	367,764
4	MOBIL	7,147,456	2,896,471	1,013,765	579,294	579,294
5	CHEVRON	7,906,196	1,615,150	403,788	242,273	242,273
6	ELF	651,760	975,200	243,800	126,776	195,140
7	TEXACO	3,085,475	1,845,010	369,002	276,752	461,253
8	AGIP	1,850,650	2,430,380	486,076	437,468	486,076
9	CONOIL	3,450,450	1,615,690	403,923	161,569	484,707
10	PHILIPS	2,370,195	1,935,250	387,050	290,288	290,288

Source: Various internal company management report, 2010

Table 2: Regression results of the relationship between the indices of environmental activities and profitability

DEPENDENT VARIABLE: Profitability (PROF)

VARIABLE	ESTIMATED COEFFICENTS	STANDARD ERROR	T-Statistic	P- Value
Constant	-1.695	670429.001	-2.528	.045
ECC	-3.410	1.056	-3.229	.018
FP	-7.903	1.552	-5.093	.002
SC	-8.977	2.830	-3.172	.019

R = .970

R-Square = .940

Adjusted R-Square = .911

SEE = 7.864

F – Statistic = 31.592

Durbin Watson Statistic = 1.323

The implication of these signs is that the dependent variable,profitability, is negatively influenced by Social Costs (SC), Fines &Penalties (FP) and Environmental Conservation Costs (ECC). This means that an increase in the independent variables will bring about a decrease in the dependent variable, profitability.

The coefficient of determination R-square of 0.94 implied that 94% of the sample variation in the dependent variable profitability is explained or caused by the explanatory variable while 6% is unexplained. This remaining 6% could be caused by other factors or variables not built

into the model. The high value of R-square is an indication of a good relationship between the dependent and independent variables.

The value of the adjusted R^2 is 0.911. This shows that the regression line captures more than 91.1% of the total variation in profitability caused by variation in the explanatory variables specified in the equation with less than 8.9% accounting for the error term.

Testing the statistical significance of the overall model, the F-statistic was used. The model is said to be statistically significant at 5% level because the F-statistics computed of 31.592 (p value = .000) is greater than the F-statistics table value of 4.76 at df1=3 and df2=6.

The test of autocorrelation using D.W test shows that the D.W value of 1.323 falls within the inconclusive region of D.W partition curve. Hence, it can clearly be concluded that there exists no degree of autocorrelation.

4.1 Discussion of findings

To properly place profitability, the dependent variable and its relationship with some of the macroeconomic variables, especially those considered being the major determinants of environmental activities; it became necessary to apply the ordinary least square technique to estimate the models. The ordinary least square is the best linear unbiased estimator because it has the minimum variance.

The coefficient of fines and penalties is negative. This implies that an increase in FP will reduce Profitability. This is in line with our econometric a-priori theoretical expectation. Specifically, the result shows that if all the explanatory variables are held constant a one per cent increase in FP can induced a 790.6 naira decrease in profitability. This finding on coefficient of fines and penalties obtained is in conformity with the provision of EAG (2005).

The coefficient of social costs is negative, meaning that there exist a negative relationship between social costs and profitability in Nigerian oil companies. This agrees with the findings of Eyre (1982).

The estimated coefficient of environmental conservation cost is negative. This shows that there exists a negative relationship between environmental conservation cost and profitability of

Nigerian oil and gas companies. Although the relationship is supported by the environmental sustainability theory, it is also a pointer to the fact that, profitability is made possible through ECC. This result is in line with the work of Spiceland, Sepe and Tomassini (2004).

5.0 Conclusion:

From the findings, it is concluded that organizations, particularly oil and gas companies that ignore their responsibility of proper management of environmental conservation cost stand the risk of losing income through the fines and penalties paid for such offenses. This avoidable expense could be averted if the necessary precautionary measures are taken on time. Besides, the actual fines and penalties, the effect of such negligence is depletion of the natural resources. The implication of this is that sustainable profit will be a mirage. This therefore means that fines and penalties reduce the profitability of organizations.

Social cost is as vital as all other liabilities of the organization, and it requires proper management. When the needs or rights of relevant stakeholders are met or guaranteed, a conducive environment is created for increased profitability of an organization. Where Nigerian oil and gas companies neglect their responsibility to the other stakeholders in the environment, the result is invariably a strained relationship between them. The implication of this is that the operation of the oil company will be adversely affected.

Generally, because there are no standard environmental accounting guidelines, Nigeria oil and gas companies do not show in their published annual account details of their financial commitment to the environment. This is a disservice to the users of the published annual report because such reports lack the critical information about important environmental expenditure.

In the modern globalized economy, policy makers, corporate executives, citizens of the country and environmentalists have become more concerned about sustainable development.

5.1 Recommendations/suggestion for further research

Based on the findings, the following recommendations were made:

(1) Nigerian oil and gas Companies should ensure proper management of environmental conservation costs to enhance their profitability. This should include, among other measures, the development of an environmental conservation cost budget as well as the facilitation of effective and efficient implementation.

(2) Oil and gas companies should ensure that expenditure on social costs reflect responsive social responsibility policy as dictated by international best-practice. Such a policy should be implemented effectively by the firms in order to meet stakeholders' expectations.

(3) Oil and gas companies should take all necessary measures to avoid the payment of fines and penalties. To ensure this, they should strictly comply with environmental regulations as specified by the regulatory agency of the oil and gas industry.

This study is by no means exhaustive in its investigation of the factors that affect profitability of oil and gas companies. It was an attempt to examine the possible relationship between environmental activities and the performance of the oil sector. The study has been limited by some factors chief of which is reluctance by respondents to disclose information. Hence, attempts should be made by other researchers to explore the subject deeper in order to facilitate development of appropriate standards for consolidated environmental accounting by oil and gas firms operating in Nigeria.

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