

ENVIRONMENTAL ACCOUNTING AND PERFORMANCE OF OIL SERVICING FIRMS IN DEVELOPING ECONOMY

BY

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ABSTRACT

This paper examined the impact of environmental costs on the profitability and performance of oil servicing firms in Nigeria with a view to access the attendant problems that often result from hosting communities in the Niger Delta Areas. Both primary and secondary data were sourced and analyzed with the use of descriptive statistical analysis. The results of OLS regression in relation to the impact of environmental costs on the profitability of the selected oil servicing firms and their host communities via fixed effect Model shows that ECV has a positive significant impact on profitability of oil servicing firms with (t- value = 1.97, p-value = 0.04) at 5% level of significance. The combined impact of the variables of environmental costs and firm's profitability showed a significant relationship in meeting with the host community's demands and as such financing damaged assets impacted significantly on the performance of these firms. The independent variables explains 86% of the firm's profitability while the error term is 14% at 5% level of relationship. Also, the coefficient of determination R^2 of 0.86 shows that environmental costs account for 86% of oil servicing firms expenditures annually while the overall impact of environmental costs on market value of selected oil firms is significant as (p-value = 0.0000). The result from the model showed the impact of each of the environmental cost variables on market value of each firm ($MV_{i,t} = 0.49 - 0.24(EPC) + 0.70(BK) - 0.27(WSM) + 0.03(AWR) + 0.10(ENP) - (0.13(CEL) + 0.31(ERD) + 0.06(SIZ) + \mu$). The study revealed that factors like energy policies, environmental research, social services and community developments services which are not well propagated were found to have significant impact on corporate environmental accounting and responsibilities of servicing firms to host communities. Based on this, the study concludes that proper accounting for environmental costs variables are necessary ingredient of predicting corporate existence of servicing companies in oil producing areas in developing Nations world over. The study further suggests that companies should ensure best practice in term of environmental matters and strive to ensure that appropriate environmental laws are obeyed.

Key Words: *Hosting Community, Environmental costs, environmental Accounting, geo-informatics*

INTRODUCTION

Generally, environmental accounting can be described as the identification, recording and reporting of costs incurred during the course of business operation in an environment. It relates to liability costs, social responsibility costs and waste disposal costs. It involves any other costs that arises from meeting challenges that usually ensued to a firm during the process of producing its products or services which invariably leads to crises due to utilization of environmental resources. It is obvious that company's activities usually impacts on environmental resources via air and water pollution, environmental degradation and the likes (James, 1998). In most cases, Environmental Assessment Information (EAI) covers explicitly or implicitly financial contents that is used as an input to a firm's decision – making. Product designs, financial analysis and facility management are the uses of environmental accounting data and it usually come into manifestation when cases of agitations for redress and payment for damages arose. Almost any type of information collected and analyzed by firms will suffix on this account, examples include input prices, technical and scientific studies that relate to production processes, physical outputs, legal, marketing and financial analyses but environmental costs are often discountenanced hence drastic reductions in profit reported for the year are very meagre..

Seetharaman, Mohammed, and Saravanan, (2007) opined that environmental accounting is used to asses full environmental costs that are associated with service activities and environment development. They also emphasized that environmental accounting can be used to track environmental performance of organization in more measurable manner. The key areas for monitoring are aggregated emission to air, water effluent discharge, soil contamination and boundary noise level. Any activities of a firm which constitute a barrier and which resulted to expenses to the firm is sufficiently taken care of by environmental accounting.

Environmental accounting is used to identify the benefits of enterprises gained as a result of the use of the assets already present in nature and the costs occurred as a result of this usage Bengü and Can(2009). Environmental accounting, which is also defined as “green accounting” in the literature (Alagöz and Yılmaz, 2001; Soylu and İleri, 2009; Memiş, 2009; Aymaz, 2009; Taşdemir, 2011; Akcanlı, 2010), is seen as recording

the impacts arising from environmental of a business. Accounting for this is a general term referring to combination of information and environmental costs in various accounting practices used for mutual relations between accountants and ecological awareness of the environment cost information or settled environmental costs, perhaps distribution of appropriate products, processes of activities in the environment field, related environmental policies and strategies of the organizations (Shapiro ,Stoughton, M., Graff, R., Feng, L. ., 2000). Environmental accounting, will ensures improvement of financial and non-financial accounting systems (Gray R.H., Bebbington, D.Walters., 1993). It would also take care of measurement of negative effects of the environment (; Güvemli and Gökdeniz, 1996; Alagöz and Yılmaz, 2001; Aymaz, 2009; Çalış, 2013). Recognition, monitoring and reporting of events in the financial nature related to the environment is also an inclusive factors of benefits derivable from the subject (Altuğ, 2008; Aslan, 1995; Alagöz and Yılmaz, 2001; Çalış, 2013; Haftacı and Soylu, 2008). It is also used to identify the effects of environmental issues on conventional accounting disciplines (Yakhou and Dorweiler, 2002.).

Determinants of Environmental Costs

.Statistics has shown that the impact of environmental costs on profitability and performance of oil servicing industries are predicated on energy policies, biodiversity, award receiving such as ISO 14001, environmental research and development. Other factors that contribute positively to the market value of the firm in most cases does not constitute huge expenses as the aforementioned. For instance Award Received (AWR) in form of environmental certification such as ISO 14001, Investment in Environmental Research and Development (ERD) brings about new ideas and innovations which will lead to increase profit for the firm but this is an intrinsic activities which features under overhead costs of the firm and as such could be budgeted for from beginning of the year. More so, these costs are not frequently incurred compared to cost of settling an erupted crises between host communities and environmental resources predators. Since it is obvious that firms' commitment to reducing the negative impact of companies' activities on Biodiversity (BIO) and cost-saving Energy policy (ENP) to

enhance firm profitability environmental cost accounting then becomes a necessity for oil companies as a prompt service to the community for mutual co- existence. Thus, any activity conducted by enterprises in their environments that leads to the emergence of environmental costs will qualify to be brought under environmental Accounting for purpose of generating useful information. Some of the environmental costs arise as a result of actions taken to protect the environment and occur as a result of the use of environmental resources. Another part of these costs arises due to environmental pollution caused by these companies.

THEORETICAL FRAMEWORK

Environmental accounting is a term with a variety of meanings. In many contexts, it is taken as the identification and reporting of environmental specific costs which can be divided into three different groups as follows: reduction costs, operating costs and damage costs (Kırlioğlu and Can, 1998.; Oflu and Kaya, 2010; Gül, 2005; Aslan, 1995.; Lutz and Munasingle, 1991; Çalış, 2013.). Environmental costs are the costs incurred by companies in order to protect the environment, prevent environmental problems and minimize the damages to the environment (Kılıç, 2008; Özbirecikli and Melek, 2002; Çalış, 2013.). According to another definition, reduction costs arise in order to meet the existing or future emission standards (Özbirecikli, 2002.).

Additionally, it is used to investigate and report the use of environmental resources and the probable effects arise as a result of the use of these resources (Gautam, 1997), definitions of environmental resources, costs, expenses and risks concerning various groups, private companies or special departments in these companies, projects or processes (Gale and Stokoe, 2001; Bengüand Can, 2009). The subjects of environmental accounting contain an extremely large area and the information obtained can help in enhancing decisions making of many users (government, business partner, business management, competitors, etc)

Environmental Accounting Practice 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, 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;-

- Companies and Allied Matters Act 1990 as amended to date,
- Nigeria Accounting Standard Board (NASB), now Financial Reporting Council of Nigeria (FRCN),
- Investment and Security Act 1999,
- Bank and other Financial Institutions Act 1991,
- The Insurance Act 1997 and
- . Security and Exchange Commission Law.

None of the professional bodies, regulatory agencies or statues regulating these companies have made the disclosure of environmental activities of companies mandatory. The Federal Government on its part in trying to improve environmental disclosure created several environmental laws through the ministry of Environment and Natural Resources.

Fundamental Approaches and theories

Physical approach and monetary approach are the two approaches often adopted in environmental accounting. The physical approach was suggested by the United Nations, a complete guides is to be prepared to show available resources within a country and the resources are classified according to its state and uses. With

this approach the environmental operations are presented in a physical terms, the current balance of the resources and the additions/deductions are recorded for financial reporting purpose. No monetary value is assigned according to this approach (Ahamed, 2002). The monetary approach emerged due to the fact that the physical approach does not fulfill the requirements of the environmental accounting. The physical approach is very important to get physical information about the resources which enables to prepare the environmental statistics and is considered the first step in the monetary approach. Despite the difficulties associated with the monetary approach, it gained a lot of interest since it enables users to know the profit and loss associated with environment operations and to get an environmental adjusted economic indicator (Hamid, 2002)

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Formation of Corporate Environmental Accounting

The following variables constitute the basis on which picking of environmental costs are based: Status, target Period, Scope of Aggregation, Content and Calculation Standards for Environmental Conservation Cost, Aggregation of Depreciation Cost and Standards for Booking Complex Costs,

2.1.7 Corporate Environmental Issues and Financial Statement

There is probably only one line of research which runs unbroken from the early interest in social accounting through to the current interest in environmental accounting. That line of research is that which investigates the statistical relationships of corporate environmental (and social) disclosures, corporate characteristics, environmental (and social) performance and financial performance. (See, for example, Freedman and Jaggi, 1986; 1988a; 1988b; Freedman and Stagliano, 1995; Freedman and Ullmann, 1986; and see Ullmann, 1985 for an early summary). This, almost uniquely, US research both draws from data which has not, until recently, been available in other countries and broadly maintains the positivist research paradigm which has been so influential in both the US and in other non-US schools influenced by the US traditions. The growth in both environmental awareness and the impact of environmental matters on the financial statements has tended to provide further impetus for research in this mould.

The dominance of a positive focus on, primarily, remediation and liability which appears to be so dominant in the US is just beginning to carry into research outside the US. However, given the generally low levels of financial disclosure on environmental matters in the financial statements in other countries, there is not yet a substantial body of evidence about such matters outside the US. So, it falls to researchers to try and abandon the most obvious aspects of positivism and try to research "absence" (Choudhury, 1988)- whether it be absence of accountants or accounting disclosures, for instance. But here again, we not only find an unwillingness or inability of accountants to take the initiative (see Bebbington et al, 1994; Wang et al., 1997; Guilding and Kirman, 1998; and see also Jaggi and Zhao, 1996) but an overwhelming reluctance in accountants to undertake actions for which there is no (as yet) formal accounting guidance (see, for example, Gray et al, 1998). As the regulation of environmental disclosure grows (as it has done in Sweden, Netherlands, Denmark and Korea, for example) we can hope to see more studies of environmental accounting in the financial statements and its effects. But this should not blind us to the peculiarities of a profession which only acts

The important issue for us, here, is whether or not the conventional measures of success (typically profit) are in conflict with environmental protection. As will have been apparent from the arguments considered above, there seems no doubt in our mind that profit as currently measured and sustainability is in profound conflict. This does not mean, necessarily, that all measures of profits need be in conflict or that it would not be possible to imagine a regulatory and fiscal structure within which profit as currently measured could not be in keeping with that sustainability. Our view is only that profit as currently measured demonstrates that conflict. Consequently, any research which appears to take the current form of financial statements as an unremarkable given, must (from this point of view) be demonstrating the managerialism which so concerns us.

Data Analysis and Results

This study was carried out among listed oil companies in Nigeria through consideration of their annual report from 2013-2017. Being Consciousness of environmental disclosure policies as well as compliance requirements, five (5) oil firms are purposively selected based on the availability of their annual report for the year 2013, 2014, 2015, 2016 and 2017 and the component of their environmental cost analyzed. The model used establishes that there is significant relationship between environmental costs and profitability of oil servicing firms and their performance enhancement in Nigerian.

Year	Oil Firms	Revenue	Gross Profit	Production/Env c ost/	PBIT	Tax	Profit/Year
2013	Mobil Oil	25168711	161752100	89935611	2687156	321442	1816012
2014	BOC Gas	1987524	1086392	1801132	131042	-	121192
2015	CAP Oil	840383577	14140549	826243028	20163619	3315	252723
2016	CON Oil	85023546	3286661	81736885	4280549	-	280529
2017	Seplat Oil	82832117	20583914	62248203	1258798	-	1258798

Source: Investment Times, 2017

There is a relationship between production cost and the attributable environmental cost which apparently affected the level of yearly reported profit. The table clearly showed that what constitute the expenses to that much were not often disclosed by oil industries since crises kept recurring between the host communities on which the so much reported in the financial statement ought to have been spent to averse any form of crises. The variables used are the corporate environmental reporting cost related data and profit margins before and after consideration of necessary environmental costs (EC).: Thus **performance Cost and** social cost are measured through **Return on Capital Employed, Dividend Per Share and Earnings Per Share** against Community development programmes undertaken by the firms during the period of study which could have effect on the result of statement of comprehensive income of the company. The above situation is represented by the model below.

$$P = \beta_0 + \beta_i SC + \mu$$

Where; P = Profitability,

β_0 = Regression constant,

β_i = Regression co-efficient\,

SC = Social cost and

μ = Error Term

The combined impact of the variables of environmental cost, firm size and profitability of firms as presented in Table 1 shows the relationship between oil servicing firms profitability and cost of maintaining the environment of during the operating year.

Table 1: Mean and Median Values Relationship of profitability and environmental costs.

	MV	EPC	ENP	BIO	WSM	AWR	ERD	CEL	SIZ
Mean	1.4732	0.7554	0.2832	0.6537	0.6392	0.1283	0.3849	0.0314	1949774
Median	1.1600	1.0000	0.00000	0.0000	0.0000	0.0000	0.0000	0.0000	4896443.
Maximum	12.570	3.0000	3.00000	3.0000	3.0000	3.0000	3.0000	3.0000	2.15E+0
Minimum	0.1200	0.0000	0.00000	0.0000	0.0000	0.0000	0.0000	0.0000	99836.00
Std. Dev.	1.0570	0.7794	0.63063	0.9772	0.9644	0.4520	0.7628	0.2341	3261639
Skewness	4.2503	0.7322	2.25131	1.2207	1.2275	3.6749	2.0496	8.8679	2.7048
Kurtosis	35.938	2.8430	7.32435	3.1352	3.1512	16.011	6.4214	91.4183	11.111
Beta-value	19913.8	37.326	670.671	102.89	104.11	3843.0	490.61	139945.3	1635.97
Probability	0.0000	0.0000	0.00000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sum	608.46	312.00	117.000	270.00	264.00	53.000	159.00	13.000	8.05
Sum Sq.	460.33	250.30	163.854	393.48	383.24	84.198	239.78	22.590	4.38E+1
Observation	413	413	413	413	413	413	413	413	413
Cross secti	50	50	50	50	50	50	50	50	50

Table 2: OLS Regression Result of environmental cost on the profitability of oil firms

Variables	Estimated coefficient	Standard error	T statistics	P value
R	R^2	Adjusted R squared	Standard Estimate of regression	
0.93	0.86	0.73	0.8183	

Source: Researchers computation, 2019

The results of OLS shows the impact of environmental cost on the profitability of the firms based on fixed

effect Model. $MV_{i,t} = 0.49 - 0.24(EPC) + 0.70(BK>) - 0.27(WSM) + 0.03(AWR) + 0.10(ENP)$

$$-0.13(CEL) + 0.31(ERD) + 0.06(SIZ) + \mu$$

Table 1 relates environmental cost variables to the profitability of the selected firms. The result of CED has a positive significant impact on profitability ($t = 1.97$, $p = 0.04$) at 5% level of significance. Firm size has no significant effect on the profitability. The overall impact of environmental cost on market value of quoted oil companies is significant as ($F = 0.0000$). The result invariably showed that cost of maintaining the environment of operation of oil firms is highly significant compared to other costs.

Conclusion

Based on the result of the analysis, it is certain that environmental cost is usually large especially when not incorporated in the budget of the company. It further explained that profitability of oil firms may not be sufficient to meet the huge expenses that often result when host community staged protest. It further revealed that factors like energy policies, award received, environmental research and development are areas where budget of the firms usually focused to in their budget at the expense of meeting community need which always attract huge costs of allowing peace instead of imbroglio that usually gulp the company resources extraordinarily.

Based on the above the study therefore suggests that oil servicing companies should ensure best practice in term of environmental matters; Government should strive to ensure that appropriate environmental laws were enacted and total compliance should be ensured so that oil companies and the host communities will see environmental benefits as their mutual responsibility.

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