

GREEN MANAGEMENT COST AND FINANCIAL PERFORMANCE OF LISTED FIRMS IN NIGERIA: OIL AND GAS INDUSTRY EXPERIENCE

SEGUN IDOWU ADENIYI

Nnamdi Azikiwe University, Nigeria
princesegadeniyi@gmail.com

HELEN OLUWATOYIN ADEBAYO
Federal Polytechnic, Nassarawa, Nigeria

Abstract

The study investigates the effect of green management cost on financial performance of listed firms in Nigeria: Oil and Gas industry experience. Expo – facta research design was used for the study. Population of the study consists of thirteen (13) oil and gas firms listed on the Nigeria Stock Exchange as at 31st December, 2018. We applied linear regression analysis with the aid of SPSS 20.0 software for the panel data in order to determine the relationship between the variables. the study observed that the expenses incurred by oil and gas firms on environmental protection do not significantly affect their profitability. The study recommends among others that

Oil and Gas listed firm continue to improve on protecting their green environment and it will boost their business sustainability drive. However, regulatory authority should mandate all oil and gas industry to protect their environments. Severe punishment should be awarded to firms that refused to protect their green environment

Keyword: green management cost, firm performance, oil and gas firms

JEL classification: G30, G32

1. INTRODUCTION

Oil and Gas industry have contributed immensely to the growth and economic development of Nigeria (NBS, 2017). The industry pursues her profit maximization motive with keen interest to satisfy their shareholders. However, their activities are directly and indirectly affecting the green

environment where they operate. The severity of environmental problems has its adverse effects on their employee welfare and other stakeholders' quality of life.

Measures are being taken both at the national and international level to reduce, prevent and mitigate the adverse effect of Oil and Gas on the green environments (GRI, 2002; GR1, 2006).

This has serve as a wakeup call to all Oil and Gas firms to protect both human and natural environments in which they are operating. Dimowo (2010) observed that companies in pursuit of profits can do great social harm and the environment suffers, thus, there is an emphasis for a meeting point between corporate objective of profit maximization and the need for environmental management.

It has been a great challenge that some of these firms do not show their willingness to spend the required amount for protecting the environment. Those firms may consider that the expenses toward the environmental performance are cost burdens to the firm while safety of human life can not be guaranteed and the natural environment is been destroyed daily. In this regard, the need for environmental cost has become the concern and focus of nations and responsible corporate managements (Adeniyi & Adebayo, 2018).

Few studies have argued in support of a positive association between green accounting and the level of profitability (Wiseman, 1982; Edwards, 1998; Agbiogwu, Ihendinihu & Okafor, 2016; Nnamani, Onyekwelu & Ugwu, 2017; however, there are still arguments to the contrary that green accounting negatively affects the level of profitability (Makori & Jagongo, 2013; Adekanmi, Adedoyin & Adewole, 2015; Dibia & Onwuchekwa, 2015).

The dissimilar findings may have led to inconclusive results with respect to green accounting and profitability indicators. This study has been motivated by the inconclusive nature of the studies carried out on green accounting and profitability indicators among listed oil and gas firms in Nigeria.

The specific objectives of this study are:

- i. To identify the degree of relationship between environmental protection cost and financial performance
- ii. To ascertain the degree of relationship between employee health and safety cost and financial performance

The study will be guided by the following null hypotheses:

- i. There is no significant relationship between environmental protection cost and financial performance.
- ii. There is no significant relationship between employee health and safety cost and financial performance

The study covers green management cost and financial performance of listed Oil and Gas firms in Nigeria between the period of 2010 to 2018.

2. REVIEW OF EMPIRICAL STUDIES

Peter, Sunday & Tarpang (2012) examines environmental costs and its implication on the returns on investment of selected manufacturing firms in Nigeria. The study used expo facto research design and sources her data through financial reports and accounts of the selected firms and interview conducted to capture vital information not shown on the face of the financial statements. The study covered the period of 2001 to 2010. The study found a significant relationship between return on investment and environmental cost.

This study used both secondary data and primary data in her methodology but interview conducted, that serve as primary data, is not reported in analysis. The methodology of the study could have been more robust if employed content analysis to extract data for environmental costs.

Makori & Jagongo (2013) examine the relationship between environmental accounting and profitability of selected firms listed in India. The study used expo facto research design. The study shows 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. This study the not specified the period covered for the investigation.

Adekanmi, Adedoyin & Adewale (2015) investigates the determinants of the socio-environmental accounting of the listed firms in Nigeria. The study collected secondary data from annual financial report and accounts of selected listed firms for the period 2005 to 2013. The data collected was analysed by using ordinary least square estimation technique. The study reveals that firm profitability affects environmental accounting. It shows that the level of cost incurred on environmental regulations have significant influence on profitability.

Ifurueze, Lydon & Bingilar (2013) examined environmental cost on the corporate performance of the oil companies in the Niger Delta Region of Nigeria. The study collected her secondary data from annual financial report and accounts of Oil and Gas companies. The study proxy corporate performance with return on equity and environmental cost with community development cost, waste management cost and the employee health and safety cost. The study discovered that environmental cost on employee health and safety is significantly related to corporate performance. While investment in Community Development and Waste Management costs are negatively related to return on total assets.

Vasanth, Selvam & Lingaraja (2005) analyses the impact of profitability on environmental performance of selected listed firms in India. The study depended on secondary data. The required data were collected from the annual financial statements of sample companies. The study used regression analysis to analyze her data. The study covered the period of 2004 to 2014. The results shows that the profitability variables like ROA, ROE, and ROS create the positive impact on energy intensity (proxy of environmental performance) of the sample firms. At the same time, one profitability variable such as ROCE recorded negative impact on environmental performance.

Shehu (2014) examines the effect of environmental expenditure on the performance of quoted Nigerian oil companies, within a period of twelve years (1999-2010) using selected firm financial statement of all quoted oil companies listed in the Nigerian Stock Exchange. The data was analysed using multiple regression, employing ROA and three independent variables; Cost of Environmental Remediation and Pollution Control (ERPC), Cost of Environmental Laws Compliance and Penalty (ELCP), Donations and Charitable Contributions (DCC). The result reveals that environmental expenditure has significant effect on the performance of quoted oil companies in Nigeria.

Nwaiwu & Oluka (2018) examines the effect of environmental cost and financial performance measures of quoted oil and gas companies in Nigeria. Expo facto research design was used for the study. The study covered 2011 to 2015. Environmental cost was proxies with waste management cost, environmental taxes and fines, laws and regulations, abatement cost. The data collected was analyzed using Pearson product moment correlation coefficient and multiple regression analysis with the aid of special package for social sciences version 24.0. The study shows significant positive relationship between environmental cost disclosure and financial performance measures of oil companies in Nigeria.

3. DESIGN AND METHODS

This study used expo – facto research design because Okoye & Adeniyi (2018) described the design as a means of extracting data that is already in financial reports and accounts of the sample population. However, the share holders have confirmed the authenticity of the information by approving the financial report during their annual general meeting. Secondary data was extracted from financial report and account through content analysis.

Population of the study consists of thirteen (13) oil and gas firms listed on the Nigeria Stock Exchange as at 31st December, 2018. Purposive sampling technique was used to select seven (7) Oil and Gas firms. The firms are: Conoil Plc, Eternal Plc, Forte Plc, Mobil Oil Nigeria/ 11 Plc, MRS Oil Nigeria Plc, Oando Plc, and Total Nigeria Plc. We used this sampling technique because of convenience in assessing these firms' financial reports for the period covered by this study.

Data was source from annual financial account and reports of firms, corporate websites of the firms and the Nigerian Sock Exchange Fact books. We applied linear regression analysis with the aid of SPSS 20.0 software for the panel data in order to determine the relationship between the variables.

Model specification

$$FinP = f(epc, ehs) \quad (i)$$

Below is the linear regression model guiding the research which is adopted from Creel (2010); Echave & Bhati. (2010) is modified by inserting the variables of this study.

Explicitly, the regression model is:

$$Npmit = \beta_0it + \beta_1 epcit + eij \quad (ii)$$

$$Npmit = \beta_0it + \beta_1 ehsit + eij \quad (iii)$$

General linear regression model which is adopted from Creel (2010); Nurkhin (2009) is modified by inserting the variables to test hypotheses.

Where:

Epc index is the total environmental protection cost disclosure in financial reports and accounts.

Ehs index is the total employee health and Safety cost disclosure in financial reports and accounts

Npm = Net Profit Margin

it = time period of study

$\beta > 0; r_2 > 0.$

β_0 = intercept

e_{ij} = error term

β_1 measure the effect of environmental protection cost and employee health and Safety cost on financial performance.

Variable measurement

Financial performance was proxy by net profit margin. Net profit margin is measured by dividing net profit by turnover, while environmental protection cost and employee health and Safety cost were measured by scoring index based on performance indicators selected from Global Reporting Initiative guidelines as applied in previous studies (Burhan & Rahmanti, 2012, Adeniyi & Adebayo, 2018).The global report initiatives (GRI) indicators are international rules that are widely recognized. Nurdin (2009) said that content analysis is very good to measure economic, social and environmental disclosure index.

In consistent with Al-Shammari *et al.* (2008); Aljifriet *et al.* (2014); Okoye & Adeniyi, (2018); each disclosure requirement mentioned in the global reporting initiative (GRI) is assigned an equal weight. Each disclosure is coded one (1) if the required disclosure was made and zero (0) if it was not.

4. DATA ANALYSIS AND RESULT

Hypothesis One

H_0 : *There is no significant relationship between environmental protection cost and financial performance*

H_1 : *There is significant relationship between environmental protection cost and financial performance*

Table 1a. ANOVA Result: environmental protection cost index on financial performance

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	25.175	1	25.175	.312	.601 ^b
1 Residual	403.889	5	80.778		
Total	429.064	6			

a. Dependent Variable: net profit margin

b. Predictors: (Constant), environmental protection cost

Table 1b. Regression coefficient for environmental protection cost index on financial performance

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-5.183	27.429		-.189	.858
1 environmental protection cost	.392	.703	.242	.558	.601

a. Dependent Variable: net profit margin

Table 1c. Model summary for environmental protection cost index on financial performance

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	Durbin-Watson
1	.242 ^a	.059	-.130	8.98765	.059	.312	1.791

Note: $r^2 = .059$, $f(1, 5) = .312$, $p = .601$

The f-ratio (.312) shows that the variable (environmental protection cost) is not the major determinant in explaining financial performance. Environmental protection cost is responsible for 5% variation in financial performance of selected Oil and Gas firms listed on the Nigerian Stock Exchange. The independent variable is not statistically significant because its significance value is 0.601, which means $P > 0.05$.

Decision:

Based on the analysis above, the alternative hypothesis (Hi) is rejected while null hypothesis (Ho) is accepted; which state that no significant relationship between environmental protection cost and financial performance

Hypothesis Two

H₀: There is no significant relationship between employee Health and Safety cost and financial performance

H₁: There is significant relationship between employee Health and Safety cost and financial performance

Table 2a. ANOVA Result: employee health and safety cost index on financial performance

Model	Sum of Squares	Df	Mean Square	F	Sig.
1 Regression	150.040	1	150.040	2.689	.162 ^b
1 Residual	279.024	5	55.805		
Total	429.064	6			

- a. Dependent Variable: net profit margin
- b. Predictors: (Constant), employee health and safety cost

Table 2b. Regression coefficient for employee Health and Safety cost index on financial performance

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	-12.323	13.910		-.886	.416
1 employee health and safety cost	.571	.348	.591	1.640	.162

- a. Dependent Variable: net profit margin

Table 2c. Model summary for employee Health and Safety cost index on financial performance

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	Durbin-Watson
1	.591 ^a	.350	.220	7.47026	.350	2.689	2.946

Note: $r^2 = .350, f(1, 5) = 2.689, p = .162$

The f-ratio (2.689) shows that the variable (employee Health and Safety cost) is not the major determinant in explaining financial performance among listed Oil and Gas firms in Nigeria. Employee Health and Safety cost explain 35% variation in financial performance experienced by listed Oil and Gas Firms in Nigeria.

The independent variable is not statistically significant because its significance value is 0.162 which means $P > 0.05$.

Decision:

Based on the analysis above, the alternative hypothesis (H_1) is rejected while null hypothesis (H_0) is accepted; which state that no significant relationship between employee Health and Safety cost and financial performance.

5. DISCUSSION, CONCLUSION AND RECOMMENDATIONS

Hypothesis One shows that the expenses incurred by listed Oil and Gas firms in Nigeria on environmental protection does not have any positive significant influence on their financial performance. The environmental protection cost shows only 5% variation in their financial performance. This result is consistent with Vasanth, Selvam & Lingaraja (2005), Makori & Jagongo (2013) who maintains that expenses incurred by oil and gas firms on environmental protection does not significantly affects their profitability.

Hypothesis two shows that there is no significant relationship between employee Health and Safety cost and financial performance among selected listed Oil and Gas Firms in Nigeria. This study reveals that Oil and Gas firms are not doing enough for the health and safety of their employees. This result is consistent with Adekanmi, Adedoyin & Adewole (2015); Dibia & Onwuchekwa,(2015) maintains that the expenses incurred by oil and gas firms on employee Health and Safety does not significantly affects their profitability.

Conclusion

In view of the findings of this study, the expenses incurred by oil and gas firms on environmental protection do not significantly affect their profitability. It shows that oil and gas firms in Nigeria are environmentally friendly and this have lead to reduction in communal dispute between the oil companies and host communities. It has promoted cordial relationship between the firms and other stakeholders. This conducive environment has helped the oil firms to maintain their level of profitability.

Expenses incurred by oil and gas firms on employee Health and Safety do not significantly affect their profitability. The shows that expenses incurred on employee Health and Safety as recorded in their annual financial reports and accounts may not likely include contract staffs that are working in the firms. However, this shows that firms investment on the welfare of their staff payoff for the company. There is a popular saying that "a health man is a wealth man". If the employee is healthy, it will transform to high profitability for the firm.

Recommendations

Based on the finding of this study, the following recommendations are made:

Oil and Gas listed firm continue to improve on protecting their green environment and it will boost their business sustainability drive. However, regulatory authority should mandate all oil and gas industry to protect their environments. Severe punishment should be awarded to firms that refused to protect their green environment

Oil and gas industry should improve on their welfare package for their employees. However, issue of contract staff should be reduced drastically because they are not well captured in firms welfare scheme. Regulatory authority should beam their search light to why there is influx of contract staff in oil and gas firm. The firm should be aware that an investment on their employee welfare will continue to improve the financial performance of their firm.

REFERENCES

- Adekanmi, A. D., Adedoyin, R. A., & Adewole, J. A. (2015). Determinants of socio-environmental reporting of quoted companies in Nigeria. *Journal of Research in Business, Economics and Management*, 4(4), 459-471.
- Adeniyi, S. I & Adebayo H.O. (2018). Effect of financial leverage on voluntary corporate social disclosure among listed firms on Nigerian Stock Exchange: A study of selected manufacturing firms. *Academic Journal of Economic Studies*, 4(3).
- Agbiogwu, A. A. Ihendinihu, J. U., & Okafor, M. C. (2016). Impact of environmental and social costs on performance of Nigerian manufacturing companies. *International Journal of Economics and Finance*, 8(9), 173-180.
- Aljifri, K., Alzarouni, A., Ng, C., & Tahir, M. I. (2014). The association between firm characteristics and corporate financial disclosures: Evidence from UAE Companies. *The International Journal of Business and Finance Research*, 8(2), 101- 123.
- Al-Shammari, B., Brown, P., & Tarca, A. (2008). An investigation of compliance with international accounting standards by listed companies

- in the Gulf Co-Operation Council member states. *The International Journal of Accounting*, 43(4), 425.
- Burhan, A. H., & Rahmanti, A (2012). The impact of sustainability reporting on company performance, *Journal of Economics, Business, and Accountancy Ventura* 15(2), 257 – 272.
- Creel, T.S. (2010), Environmental reporting practices of the largest US companies. *Management Accounting Quarterly*, 12(1), 13-19.
- Dibia, N. O., & Onwuchekwa, J. C. (2015). Determinants of environmental disclosures in Nigeria: A case study of oil and gas companies. *International Journal of Finance and Accounting*, 4(3), 145-152.
- Dimowo (2010). The relation between environmental performance and environmental disclosure: A research note. *Accounting, Organizations and Society*, 27(8), 763-773.
- Edwards, D. (1998). *The link between company environmental and financial performance*. London, UK: Earthscan Publications Ltd.
- Echave, J., & Bhati, S.S. (2010). Determinants of social and environmental disclosures by Spanish Companies. GSMI Third Annual International Business Conference (pp. 55-68). Michigan, USA: Global Strategic Management.
- Ifurueze, M.S.K., Lydon, M.E., & Bingilar, P.F. (2013). The impact of environmental cost on corporate performance: A study of oil companies in Niger Delta States of Nigeria. *Journal of Business and Management*, 2(2), 1-10.
- Makori, D.M & Jagongo, A. (2013) Environmental accounting and firm profitability: An empirical analysis of selected firms listed in Bombay Stock Exchange, India. *International Journal of Humanities and Social Science*, 3(8).
- Nnamani, J.N., Onyekwelu, U.L., & Ugwu, O.K. (2017). Effect of sustainability accounting and reporting on financial performance of firms in Nigeria brewery sector. *European Journal of Business and Innovation Research*, 5(1), 1-15.
- Nurdin, A. (2009). *Corporate governance dan profitabilitas: pengaruhnya terhadap pengungkapan tanggungjawab sosial perusahaan (Studi empiris pada perusahaan yang tercatat di Bursa Efek Indonesia)*. Universitas Diponegoro: Thesis.
- Nwaiwu, N.J & Oluka, N.O. (2018) Environmental cost disclosure and financial performance measures of quoted oil and gas companies in

- Nigeria. *International Journal of Advanced Academic Research / Financial Management*, 4(2).
- Okoye, E.I & Adeniyi, S.I (2018) Company age and voluntary corporate social disclosure in Nigeria: A study of selected listed manufacturing firms on the Nigerian Stock Exchange. *Academic Journal of Economic Studies*, 4(2).
- Peter, A.O, Sunday, A.E & Tarpang, A.T (2012). Environmental costs and its implication on the returns on investment: An evaluation of selected manufacturing companies in Nigeria. *Global Journal of Management and Business Research*, 12(7).
- Shehu, U.H. (2014). Environmental costs and firm performance: Evidence from quoted oil and gas companies in Nigeria. *Journal of Business and Management*, 3(1).
- Vasanth, V., Selvam, M. & Lingaraja, K. (2005) Impact of firms' profitability on environmental performance: Evidence from companies in India. *Mediterranean Journal of Social Sciences*, 6(1).
- Wiseman, J. (1982). An evaluation of environmental disclosures made in corporate annual reports. *Accounting, Organizations and Society*, 7(1), 53-63.