Effect of Environmental Cost on Financial Performance of Quoted oil and Gas companies in Nigeria

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Abstract

The study investigates the effect environmental cost on financial performance of oil and gas companies in Nigeria. In this study, we have selected the sample of seven (7) listed oil and gas companies at Nigeria stock change. The data was collected for two years each financial statements for the seven listed oil and gas companies 2017 and 2018. The study applied ordinary list sequeres and regression analysis in testing the formulated hypothesis. The study revealed that environmental costs have no significant effect on gross profit margin (GM) and environmental cost has significant effect on returned on capital employed. Based on the findings, the study recommends that management of oil and gas companies should continue to engage in incurring environmental costs accordingly as well, since they do not have any significant effect on financial performance.

Keywords: *Environmental cost, financial performance and return on capital employed*

Introduction

The issues associated with accounting for the environment have become relevant to business as environment pollution has become a more prominent problem throughout the world. Step are being taken as national and international level to promote the environment and reduce, prevent and mitigate the effect of pollution. The increasing of campaign on social responsibility of cooperate organizations cannot be over emphasized. It was noticed that environment practices in Nigeria have been often perceived as opportunity cost of economic growth. The believe of suitable development is beginning to influence the public policy. The implication on cooperative entities issues is to direct the cooperate objective to reflect their social responsibilities as regards to environmental accountability. The environmental accounting deals with both Economics and environmental information. The International Federation of Accountants(IFAC) as (as cited in

Uwuigbe,2011) defined environmental accounting as the management of environmental and economics performance through the development and implementation of appropriate environmental related accounting system ,Also environmental disclosures are discretionary, suggesting that companies exert unimaginable control over the preparation and disclosure of social and environmental information. Consequently, the implication is that most companies claim of meeting up its social and environmental responsibility through creative accounting in the financial statement. In the past, little was recognized of the environmental depletion and degradation to the environment until, some developed countries realized that it was not good having corporate profit without making adequate provision for cost management for ecosystem. It because noticed that degradation, pollution destroy the ecosystem. The profit maximization of company's objective should be managed with the environmental cost needs.

Statement problem

People are aware of the need to protect the natural resources of air, water, soil, and plant life that constitute the natural capital on which man depends. The environmental issues are important because absence of environmental protection may lead to destruction of ecosystem. The attitude of entities towards environmental liabilities has brought serious damage to our ecosystem. This has led to a growing demand from various stake holders for measurement of a company environment practice and environmental cost information disclosure needs of different stakeholders such as government investor, leaders and general public to level financial data on environmental performance of different organizations reported financial statements. However, the absence of comprehensive and verifiable information on environmental practices of entities may lead to situation where a entities can pollute the environment and reported to be more economic efficient than other entities that have incur cost to protect the environment. The study, seek to investigate whether the environment cost has effect on financial performance.

Objective of the study

The main objective of the study is to examine the effect of environmental cost on financial performance of quoted oil and gas companies in Nigeria. Other specific objectives include:

1. To investigate whether environmental costs have effect an gross profit margin of oil and gas companies in Nigeria.
2. To determine environmental costs have effect on return on capital employed of quoted companies of oil and gas companies in Nigeria.
3. To examine whether environmental costs have any influence on earing per share of oil and gas companies in Nigeria.

RECHEARCH QUESTIONS

From the stated objective, the following research question were formulated to guide the study.

1. Does environmental costs have any effect on gross profit margin of quoted oil and gas companies in Nigeria ?
2. Does environmental costs have any effect on return on capital employed of quoted oil and gas companies?

3. Is there any influence of environmental costs on earing per share of quoted oil and gas companies in Nigeria ?

RESEARCH HYPOTHESES

1. Environmental costs have no significant effect on gross profit margin of quoted companies in Nigeria.
2. Environmental costs have no significant effect on return on capital employed of quoted companies in Nigeria.
3. Environmental costs have no significant influence on earnings per share of quoted oil and gas in Nigeria.

Conceptual Frame work

The financial performance is measured from the information obtained from the company's published financial statement. It is formal records of a business financial activities. They provide an overview of a business profitability and financial condition in both short and long term. The performance is measured to give the account of stewardship by the management team to the shareholders. The key aspect of this involves measuring the profitability, market value and growth prospect of a company. Financial performance is an instrument indicator of entity’s financial health.

Gross Profit Margin

The gross Profit is one of the financial tools used to assess a company’s financial health and business model by revealing the amount of money left over from sales after deducting the cost of goods sold. It is the ration of gross profit to sales that is expressed as a percentage. Without an adequate gross margin it becomes difficult for a company to cover its operating expenses.

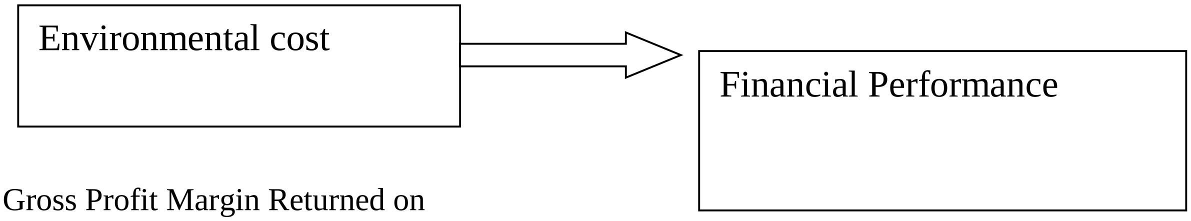
Return on the capital Employed

This is an accounting ratio that assesses or indicate the profitability of a company. The return on capital; is expressed as a percentage and calculated by dividing profit before interest and taxes by the capital employed.

Environmental Costs

Environmental Accounting deals with both economics and environmental information the International Federation of Accountants IFAC (As cited in Uwuigbe, 2011) defined environmental accounting as the management of environmental and economic performance through the development and implementation of appropriate environmental related accounting system and practice .Environmental cost however comprises of investment and expenses which relate prevention, reduction and avoidance of environmental impact and restoration following the occurrence of a disaster and other activities measured in Monetary terms

CONCEPTUAL MODEL



Gross Profit Margin Returned on

capital employed Earning pershare

Conceptual Model
Developed by researcher from net review
Theorical Frame Work
This study was anchored on Agency theory
Agency Theory
Agency theory was propounded by Jansen Meckling (1976) The theory suggests that existence of the contract and thus fiduciary relationship between two people, the principle and the agent. the theory stated that besides economic motive , there are other non-economic motives ,which takes into consideration economic ,ethical and social interest , the balance of which ensure economic growth and long term survival of the fact that firm make profit at the end of business does not necessary means that they exist to make profit . profit is just one of the signals of doing well, doing well extends to includes contribution to the well being of the society through efficient production of goods and services that meet societal need.
Empirical Review
Manrique and Marti-Ballester (2017) investigated the corporate environmental performance on of corporate financial performance during a global Financial crises. Data were sourced from the financial report of companies from 2008 be 2015,both developed and developing countries. The return on assets (ROA) was taken as dependent variable, cooperate environmental performance as independent variables which cash flow, current ratio, Leverage, Market share are control variables. The study indicated that the adoption of environmental practices significantly and positively affect the corporate financial performance in developed and developing countries. The study also revealed that there is a significant relationship between environmental accounting disclosures and return on equipped of selected companies
Also Ezejiofor Recheal and Chigbo(2016)carried out a study to examined the effect of sustainability accounting on the performance of corporate firms in Nigeria, The study employed ex-post-factor research design. The data were sourced from Annual reports. The regression statistical technique was adopted in testing the formulated hypotheses of the study. The study revealed that the environmental cost has no significant impact on the revenue of corporate firms. More so, the environmental cost significantly and positively influences the profit generation of corporate firms in Nigeria.
Jeroh and Okoro (2016) Investigated on the effect of environmental and dismantling cost on firms performance among the selected oil and gas companies in Nigeria. The selected oil and gas companies from 2008-20015 and were analysized via the via the ordinary least square The study observed that environmental and dismantle costs positively influenced the performance of a firm .

However, Ezeagba etal, (2017) examined the relationship between environmental accounting disclosures and return on equity of ten (10) food and beverage companies in Nigeria using published financial statement from 2006 to 2015. The study observed that there is a significant relationship between environmental accounting disclosures and return on equity of selected companies , Also the study revealed that there is a negative relationship between environmental accounting disclosures and return on capital employed and net profit margin.

Furthermore, Nwaiwu and oluka (2018) empirically investigation the effect of environmental costs disclosure on financial performance measures of quoted oil and gas companies in Nigeria. Time series data were sourced from annual financial report and economic review of central bank of Nigeria. The result reveled that adequate disclosure on environmental cost and compliance to cooperate environmental regulations have positive significance effects on financial performance (i.e earning Per share)

Ahmad et.al (2018) examine the relationship between environment accounting and non-financial from performance listed in Pakistan stock exchange. The study make use of nine (9) listed companies with annual financial data from 2006 to 2016. The result shown that there is significant positive relationship between environmental and firm size. In addition earning per-share, return on capital employed statistically turned out to be insignificant.

Huninun, Lindrianasari and Densiana (2018) investigated effect of environmental disclosure on financial performance, the study employed ordinary lest square (OLS) model.

Purposive sampling method was used to gather secondary data from manufacturing companies listed on the Indonesia Stock Exchange for 2010 – 2014. The study show that environmental performance and environmental disclosure positively significantly affect financial performance.

However, Agbiogwu et al (2016) examine the impact of environmental and social costs on performance of Nigerian manufacturing companies. The researcher employed t-test model on the formulated hypotheses. The secondary data were obtained from annual report of ten companies from 2014 selected randomly. The result show that environmental and social costs significantly affect net profit margin, earning per share and return of capital employed

Che-Ahmad et al (2015) investigated the effect of environmental accounting on the financial performance of firms in Nigeria. Across sectional research design was applied and data were collected from annual report of fifty (50) companies for the year 2012. The result of the study revealed that there is significant relationship between environmental accounting disclosure and firm financial performance.

Research Methodology

The research design employed for this study is cross-sectional research design. The quantitative data was obtained from the Nigerian stock exchange and audited financial statements of seven (7) selected oil and gas in Nigeria.

In this study environmental cost will be taken as independent variable and gross profit margin, return on capital employed and earning per share will be taken as dependent variables.

The study employed ordinary least squares. This is appropriate because it explain the relationship between scalar response (dependent variable) and one explanatory variable (independent ariable to hypotheses, the ordinary lest squares is expressed thus:

$Y = a \pm bx \pm E$

Where

Y= dependent variable (i.e gross profit margin: return on capital employed, earning per share)

X = Independent variable i.e environmental cost

a = intercept of the regression line i.e – $b\ddot{X}$

b = Slope coefficient i.ee $b = \frac{\sum (X-\ddot{X})(Y-\bar{Y})}{\sum (X-\ddot{X})^2}$

Coefficient of Correlation (r) = $\frac{\sum (X - \ddot{X})(Y - \bar{Y})}{\sqrt{\sum (X-\ddot{X})^2} \times \sqrt{\sum (Y-\bar{Y})^2}}$

Statistical Test of significance is /t/ = $\frac{r - p}{\sqrt{1-1^2}} x \sqrt{n-2}$

Degree of freedom df = N -2

The regression analysis was carried out at 5% level of statistical significance (2 – tailed test)

Table 1

Descriptive Statistics for Dependent variables

Gross profit margin (GPM) Ratio

	Eterna	Forte	Japaul	Mobil	MRS	Oando	Seplat	Total	Average
GPM (%)	1.84	8.41	-209.69	10.08	4.80	14.17	52.43	11.29	-13.33
Rank	7	5	8	4	6	2	1	3	
	>-13.33	<-13.33	<-13.33	<-13.33	<-13.33	<-13.33	<-13.33	<-13.33	<-13.33

Source: Researcher's computation 2019

Table 1 above present the gross profit margin 9GPM) ratio GMP ratio measures the amount of money left over from sales after deducting cost of gods sold. The means GPM score is 13.33% seplat, Onado, total, mobil, forte MRS and Eterna exceeded the means. This indicate that the companies managed their cost of sales.

Table Two

Return on Capital Employed (ROCE) Ratio

	Eterna	Forte	Japaul	Mobil	MRS	Oando	Seplat	Total	Average
ROCE (%)	1.84	5.07	-25.27	28.08	-5.11	8.57	15.44	49.01	11.79
Rank	3	6	8	2	7	5	4	1	
	>-13.33	<-11.79	<-11.79	<-11.79	<-11.79	<-11.79	<-11.79	<-11.79	

Source: Researcher's computation 2019

Table two from the computation show that the mean ROCE score sis 11.79% total, mobil, Eterna and Seplat exceeded the means score with return on capital employed (ROCE) ratio at 49.01%, 28.08%, 18.49% and 15.44%

Table three

Earnings Per Share(EPS) Ratio

	Eterna	Forte	Japaul	Mobil	MRS	Oando	Seplat	Total	Average
EPS (%)	0.08	0.64	-0.11	2.59	0.45	0.23	7.93	2.34	1.66
Rank	6	4	7	2	8	5	1	3	
	>1.66	<1.66	<1.66	<1.66	<1.66	<1.66	<1.66	<1.66	

Source: Researcher's computation 2019

The calculation EPS ratio shows a mean score of 1.66kobo and seplat, mobil and total exceed this average at 7.93kbo, 2.59 kobo and 2.34 kobo respectively. This show that higher earnings, strong financial position and reliable investment.

Table four

Environmental Cost (EC) Ratio

	Eterna	Forte	Japaul	Mobil	MRS	Oando	Seplat	Total	Average
EC (%)	0.03	1.63	0.07	0.01	0.00	8.22	0.09	0.23	1.29
Rank	6	2	5	7	8	1	4	3	
	>1.29	<1.29	<1.29	<1.29	<1.29	<1.29	<1.29	<1.29	

Source: Researcher's computation 2019

The table 4 present the environmental cost (EC) ratio measures investment and expenses that related to privation, reduction and avoidance of environmental hazards. The calculated EC show a mean score of 1.29kobo Oando and Forte exceeded this average at 8.2kobo and 1.63kobo respectively. Indicating that the companies incurred high environmental cost during 2018.

Pearson Correlation Coefficient Between GPM

The pearson correlation coefficient (r) between Gross Profit Margin (GPM) and Environment Cost (EC) is evaluated and shown in Table 4.5

Table 4.5: Pearson (r) correlation between GPM and EC

	X	Y	(X-Ẍ)	(Y – Ȳ)	(X-Ẍ) (Y – Ȳ)	$(X\text{-}\ddot{X})^2$	$(Y - \bar{Y})^2$
Eterna	1.8400	0.0300	15.1738	- 1.2550	-19.0431	230.2442	1.5750
Forte	8.4100	1.6300	21.7438	0.3450	7.5016	472.7928	0.1190
Japaul	-209.6900	0.0700	-196.3562	0- 1.2150	238.5728	3855.7573	1.4762
Mobil	10.0800	0.0100	23.4138	- 1.2750	-29.8526	548.2060	1.6256
MRS	4.8000	0.0000	18.1338	- 1.2850	-23.3019	328.8347	1.6512
Oando	14.1700	8.2200	27.5038	6.9350	190.7389	756.4590	48.0942
Seplat	52.4300	0.0900	65.7638	- 1.1950	-78.5877	4324.8774	1.4280
Total	11.2900	0.2300	24.6238	- 1.0550	-25.9781	606.3315	1.1130
	-106.6700	10.2800			260.0499	11123.5029	57.0822
	Ẍ=13.3338	Ȳ=1.2850					

Source: Researcher computation, 2019

$$r = \frac{260.0499}{\sqrt{11123.5029} \times \sqrt{57.0822}}$$

$$r = \frac{260.0499}{105.468 \times 7.5553}$$

$$r = \frac{260.0499}{796.84238}$$

$r = 0.3264$

$r^2 = 0.1065$ or approximately 11%

from the table 4.5 and the calculated r, there is moderate weak positive correlation between Gross Profit Margin (GPM) and Environmental Cost (EC).However, this relationship is not significant at 0.05 level (2-tailed) evidenced by the calculated r = 0.3264 being less than critical (or tabulated) r = 0.4973 at 14 df (i.e 8+8-2).

Pearson correlation coefficient between ROCE and EC

The pearson correlation coefficient (r) between return on capital employed (ROCE) and Environmental Cost 9EC) is evaluated and shown in table 4.6.

Table 4.: Pearson (r) correlation between ROCE and EC

	X	Y	(X-Ẍ)	(Y – Ȳ)	(X-Ẍ) (Y – Ȳ)	$(X-Ẍ)^2$	$(Y – Ȳ)^2$
Eterna	18.49	0.0300	6.7050	-1.2550	-8.4148	44.9570	1.5750
Forte	5.07	1.6300	-6.7150	0.3450	-2.3167	45.0912	0.1190
Japaul	-25.27	0.0700	-37.0550	-1.2150	45.0218	1373.0730	1.4762
Mobil	28.08	0.0100	16.2950	-1.2750	-20.7761	265.5270	1.6256
MRS	-5.11	0.0000	-16.8950	-1.2850	21.7101	285.4410	1.6256
Oando	8.57	8.2200	-3.2150	6.9350	-22.2960	10.3362	48.0942
Seplat	15.44	0.0900	3.6550	-1.1950	-4.3677	13.3590	1.4280
Total	49.01	0.2300	37.2250	-1.0550	-39.2724	1385.7006	1.1130
	94.2800	10.2800			-30.7118	3423.4850	57.0822
	Ẍ=11.7850	Ȳ=1.2850					

Source: Researcher computation, 2019

$$r = \frac{-30.7118}{\sqrt{3423.4850} \times \sqrt{57.0822}}$$

$$r = \frac{-30.7118}{55.5106 \times 7.5553}$$

$$r = \frac{-30.7118}{442.0651}$$

r = 0.0695

r^2 = 0.0695 or approximately 0.48%

From table 4. and the calculated r, there is very weal negative correlation between return on capital employed (ROCE) and Environmental cost (EC). However this relationship is not significant at 0.05 level (2-tailed) evidence by the calculated r = 0.0695 being less than critical (or tabulated) r = 0.4973 at 14 df (i.e, 8+8-2).

Pearson Correlation co-efficient between EPS

The pearson correlation coefficient (r) between Earnings Per Share (EPS) and Environmental Cost (EC) is evaluated and shown in Table 4.7.

Table 4: Pearson (r) correlation between EPS and EC

	X	Y	(X-Ẍ)	(Y – Ȳ)	(X-Ẍ) (Y – Ȳ)	$(X\text{-}\ddot{X})^2$	$(Y - \bar{Y})^2$
Eterna	0.0800	0.0300	-1.5763	-1.2550	1.9783	2.4847	1.5750
Forte	0.6400	1.6300	-1.0163	0.3450	-0.3506	1.0329	0.1190
Japaul	-0.1100	0.0700	-1.7663	-1.2150	2.1461	3.1198	1.4762
Mobil	2.5900	0.0100	0.9337	-1.2750	-1.1905	0.8718	1.6256
MRS	-0.4500	0.0000	-2.1063	-1.2850	2.7066	4.4365	1.6512
Oando	0.2300	8.2200	-1.4263	6.9350	-9.8914	2.0343	48.0942
Seplat	7.9300	0.0900	6.2737	-1.190	-7.4971	39.3593	1.4280
Total	2.3400	0.2300	0.6837	-1.0550	-0.7213	0.4674	1.1130
	13.2500	10.2800			-12.8199	53.8067	57.0822
	Ẍ=1.6563	Ȳ=1.2850					

Source: Researcher computation, 2019

$$r = \frac{-12.8199}{\sqrt{53.8067} \times \sqrt{57.0822}}$$

$$r = \frac{-12.8199}{7.3353 \times 7.5553}$$

$$r = \frac{-12.8199}{55.4204}$$

r = -0.2313

r^2 = 0.0535 or approximately 5%

From table 4.7 ad the calculated r, there is moderate weak negative correlation between earnings per share (EPS) and Environmental cost (EC). However, this relationship is not significant at 0.05 level (2-tailed) evidenced by the calculated r = 0.2313 being less than critical (or tabulated) r = 0.4973 at 14 df (i.e 8+8-2).

Test of Hypothesis

Hypothesis 1

Environmental costs have no significant effect on gross profit margin of quoted oil and gas companies in Nigeria.

Arising from the determination of the intercept of the regression line (a) and slope coefficient (b), the regression model is stated in a functional form thus GPM = 1.5971 + 0.0234EC +E. from the results of the computation, the regression coefficient (EC) is positive 0.0234 this means that a N1.00k increase in gross profit margin will result in a N=0.02kobo increase in environmental cost. The calculated /t/ = 0.8458 is less than the critical (or tabulated) / t /=2.447 (at 6df) hence the null hypothesis whih states that environmental costs have no significant effect on gross profit margin of quoted oil and gas companies in Nigeria is accepted.

Hypothesis 2

Environmental costs have no significant effect on return on capital employed of quoted oil and gas companies in Nigeria.

Arising from the determination of the intercept of the regression line (a) and slope coeeficient (b), the regression model is stated in a functional form thus ROCE = -1.1439 – 0.0090EC + E. From the results of the computation, the regression coefficient (EC) is negative 0.0090 this means that a =N=1.00k increase in gross profit margin will result in a =N=0.01kobo decrease in environmental cost. The calculated / t/ = 0.1706 is less than the critical for tabulated / t / = 2.447 (at 6 df) hence the null hypothesis which states that environmental costs have no significant effect on return on capital employed of quoted oil and gas companies in Nigeria is accepted.

Hypothesis 3

Environmental cost have no significant influence on earnings per share of quoted oil and gas companies in Nigeria.

Arising from the determination of the intercept of the regression line (a) and slope coefficient (b), the regression model is stated in a functional form thus EPS = 1.6797 – 0.2383EC + E. From the results of the computation, the regression coefficient (EC) is negative 0.2383 this means that a =N=1.00k increase in earnings per share will result in a =N=0.24kobo decrease in environmental cost. The calculated / t/ = 0.5986 is less than the

critical for tabulated / t / = 2.447 (at 6 df) hence the null hypothesis which states that environmental costs have no significant influence one earnings per share of quoted oil and gas companies in Nigeria is accepted.

Conclusion

The study investigates the effect of environmental cost on financial performance of the quoted oil and gas companies in Nigeria of seven listed oil and gas companies audited financial statements. It can be observed that from the above analysis the study concludes that environmental costs have no significant effect on financial performance of quoted companies in Nigeria.

Recommendation

Based on the findings from the study, the study recommends that management of oil and gas companied should continue to provide a conducive environment for the community where they operate their business. Since the environmental costs does not have a significant effect on the financial performance. The study also recommends that existing and potential investors in oil and gas companies in Nigeria should Ensure management engages on environmental friendly activities since it effect on return on investment.

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