Effect of Environmental and Social Cost on Financial Performance of Listed Pharmaceutical Companies in Nigeria

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Abstract

This study examined the effect of environmental and social cost on financial performance of listed pharmaceutical companies in Nigeria. The ex post facto research design was adopted for the study with a population of seven (7) listed pharmaceutical companies in Nigeria as listed by the Nigerian Exchange Group in 2022. Data were retrieved from the annual reports of the selected listed pharmaceutical companies for the period 2015 to 2021. Multiple regression (Ordinary Least Square) analysis was used to analyze the data gathered with the aid of Stata12 statistical software. The study revealed a negative and insignificant effect of employees benefits on net profit margin of listed pharmaceutical companies in Nigeria. Also, it revealed a positive and insignificant effect of donations and charitable gifts on net profit margin of listed pharmaceutical companies in Nigeria. The study recommended that listed Pharmaceutical companies introduce more employee benefits packages that will make the employees feel committed to deliver for improved productivity that will further boost net profit margin. Finally, policy makers should ensure complete adherence of environmental laws by Pharmaceutical companies in Nigeria especially those that contributes towards community development like donation and charitable gifts and which would go a long way in enhancing firm performance.

Keywords: *Environmental and Social Cost, Employee Benefits, Donations and Charitable Gifts, Financial Performance, Net profit Margin.*

1. Introduction

The primary aim of every business is to be a going concern. Therefore, managers and business owners are in desperate search for the appropriate strategies to employ to keep the company abreast with the current requirement for attaining competitive edge over competing firms in the industry and enhanced financial performance. Companies approach to the environment is regarded as one of the major factors influencing corporate performance in Nigeria. The increase in global environmental awareness and the campaign for sustainable economic development is redirecting the attention of business organizations towards environmental conservatism (Acti et al., 2013, Oluwafemi et al., 2018). The increasing concern about environmental degradation, resources depletion and the sustainability of economic activity has made the development of environmental cost accounting and reporting an area of significant interest in Nigeria.

Environmental and social cost are external cost resulting from the activities that impact the environment and society. These costs have monetary and legal implications for the overall sustainability of the business. According to Environmental Protection Agency (EPA, 1995), Environmental cost has at least two major dimensions: i it can refer solely to cost that directly impact a company's bottom line (here termed "Private cost") or ii. it also can encompass the cost to individual, society, and the environment to which a company is not accountable (here termed "social cost"). These environmental and social cost though necessary, have impacted on the bottom-line objective (financial performance) of companies that engage in them.

In Nigeria, the pharmaceutical sector is an essential player to the growth and welfare of the nation. Its activities have direct impact on the environment and much care should be taken to protect the environment from degradation. The negative impact of the production of pharmaceutical products on the natural environment is well known like the contamination of freshwater, surface water, ground water, soil and other environmental matrices. However, this remains largely unregulated, meaning the extremely toxic impact it has on both animal and humans continues with no clear end in sight. Though there have been several studies of the effect of environmental and social cost on firm's performance in different parts of the world (Agbo et al., 2017; Agbiogwu et al., 2016; Iheduru & Chukwuma, 2019; Oluwafemi et al., 2018; Yaakoo et al., 2021), these were not significant enough to ascertain the effect of environmental and social cost on the financial performance. therefore, this study examines the effect of environmental and social cost on the financial performance listed pharmaceutical companies in Nigeria.

Operational Framework

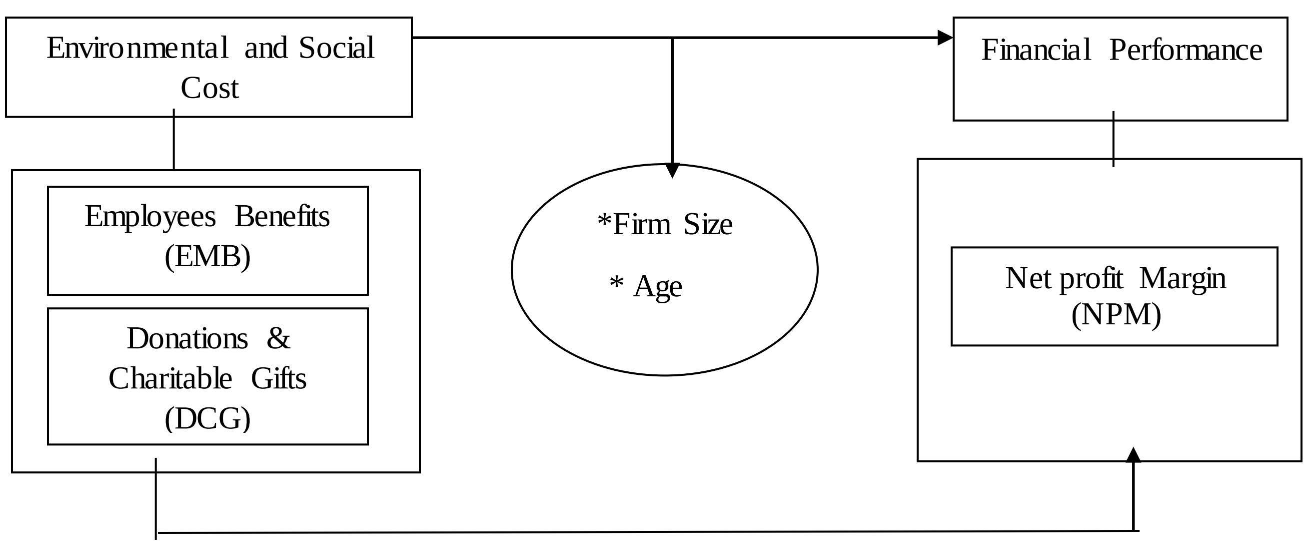

Figure 1: Operational Framework of Environmental and Social Cost and Financial Performance

The following research hypotheses were stated in a null form;

$H_0$1 There is no significant effect of employees benefit on net profit margin of listed pharmaceutical companies in Nigeria.

$H_0$2 There is no significant effect of donations and charitable gifts on net profit margin of listed pharmaceutical companies in Nigeria.

2. Literature Review

Environmental and Social Cost

Environmental and social cost are external cost resulting from the activities that impact the environment and society. Environmental and Social costs cover all cost; incurred concerning environmental degradation and depletion of natural resources. It involves management of environmental costs effectively presenting and disclosing environmental information in a suitable form (Iheduru & Chukwuma, 2019). In the view of Yaakoo et al. (2021), social cost is a facet of sustainability accounting that incorporates the cost a business incurs in connection with socially linked issues such as employee welfare packages, community involvement, and product/consumer related difficulties. According to Environmental Protection Agency (EPA, 1995), Environmental cost is broken into two major dimensions which are cost that directly impact a company's bottom line known as "Private cost" and also cost that impact the individual, society, and the environment to which a company is not accountable known as "social cost".

Financial Performance

Financial performance is a general measure of a firm's overall financial health over a given period. A high level of performance signifies that all its factors of production has optimally utilized efficiently and effectively. Financial performance indices are used to measure firm's overall financial health over a given period of time and can also be used to compare similar firms across the same industry or to compare industries or sectors in aggregation (Verma, 2021). Rong et al. (2019) asserts that a performing company is a company that creates value for its shareholders and this is realized when the return on equity is higher than the funding cost. Therefore, in the words of Kenton (2022), financial performance is a subjective measure of how well a firm can use assets from its primary mode of business and generate revenues.

Theoretical framework

The theoretical framework of this study is anchored on the legitimacy theory. The proponents of the legitimacy theory are Dowling and Pfeffer (1975). This theory is derived from the concept of organizational legitimacy which entails a condition or status which exists when an entity's value system is congruent with the value system of the larger social system of which the entity is a part. Legitimacy theory is essentially a system-oriented theory, in which an organization or company is seen as one component of a larger social environment. It can be used as a vehicle to construct a corporate strategy, especially about efforts to position themselves in the midst of increasingly advanced community environments. Thus, legitimacy is a potential benefit or resource for a company to survive (going concern). This implies that legitimacy is a company management system oriented towards alignment with the community (society), the Government, individuals, and community groups.

Also, this theory gives an insight to management on how to build a framework that will be responsive to the concerns of stakeholders who are being affected by unprecedented levels of environmental issues and change. For these reasons, this study adopts legitimacy theory as the theoretical perspective for the purpose of explaining the relationship between environmental cost accounting and financial performance.

Empirical Review

Yaakoo et al. (2021) examined the effect of social accounting on the financial performance of Nigeria's publicly traded manufacturing enterprises. A sample size of ten (10) listed manufacturing businesses on the Nigerian Stock Exchange were used and data for a period of 2012-2019 were extracted for the study. Panel data techniques, was used for data analyses. The study revealed that social accountability has a significant and positive effect on the return on equity.

Emeke et al. (2021) examined the effect of social and environmental disclosure on the performance of listed consumer goods producing companies in Nigeria. A sample size of 16 out of 20 companies listed as consumer goods sector was selected for the study. Multiple regression analysis was employed for data analysis. The study revealed that social and environmental disclosure had significant effect on return on assets while firm size and age had no significant control in the effect of social and environmental disclosure on ROA. The study concluded that social and environmental disclosure has significant impact on the performance of manufacturing companies in Nigeria.

Adekoya and Adeniji (2020) examined the impact of social costs on financial performance of listed firms in Nigeria. Ex-post facto research design was adopted for the study with secondary data sourced from the published annual reports of 52 firms for a period of 11 years (2008 to 2018), giving 572 firm-year observations. OLS random effects, fixed effects models and the Feasible General Least Squares (FGLS) regression were used for data analysis. The study revealed that social costs have a significant impact on the financial performance of listed firms in Nigeria.

Ayu et al. (2020) examined the impact of environmental and social costs disclosure on financial performance mediating by earning management. A quantitative research method was employed using primary data sources and collected from the employees of international energy corporations. Partial Least Squares (PLS) was used in data analysis. The study revealed that the environmental and social costs disclosure significantly affected financial performance.

Chiamogu and Okoye (2020) examined the extent to which environmental cost affects financial performance of oil and gas companies in Nigeria. Ex post facto research design was employed and data was obtained from annual reports and accounts for the periods 2011 to 2018. The hypotheses were tested using regression analysis. The results of the empirical data analysis revealed that community development cost and environmental remediation cost has positive significant effect on Tobin's.

Damamisau et al. (2020) evaluated the performance of the pharmaceutical industry on its social and environmental accountability for a period of 2009 to 2018. Data for the study was obtained from online Annual reports and accounts of sampled companies using modified word count content analysis of social and environmental disclosures. Collected data are analyzed and presented by means of descriptive statistics. The study revealed low level of social accountability devoted to issues of interest to primary stakeholders in the industry and absence of environmental accountability.

Iheduru and Chukwuma (2019) investigated the effect of environmental and social cost on performance of manufacturing companies in Nigeria. Fourteen (14) manufacturing companies in Nigeria were selected randomly as the population of the study. Multiple regression model was used in data analysis. The study revealed that there is significant negative relationship between environmental and social costs and financial performance (return on capital employed, earnings per share, Net Profit Margin and Dividend per Share).

Nuzula (2019) examined the effect of environmental cost on performance of Japanese firm. The study focused on chemical industry in Japan. Twenty-seven (27) listed chemical companies were selected for a period 2013-2015. Regression analysis was used to analyze the data gathered. The study revealed that environmental cost is negatively affecting ROA; environmental cost has no effect on ROE; environmental cost is negatively affecting NPM.

Oluwafemi et al. (2018) examined the nexus between environmental cost and financial performance of listed manufacturing firms in Nigeria from 2008 to 2016. A sample of 126 firm-year observations covering 14 manufacturing firms were used. The data extracted were analyzed using trend analysis graphs and panel least square method of regression. The study revealed a positive and significant relationship between Return on Equity (ROE), employee benefit and staff training. It also revealed a negative and insignificant relationship between Return on Equity (ROE) and donations.

Agbo et al. (2017) examined the effect of environmental cost on financial performance of Nigerian brewery. Data were obtained from the annual report of Nigerian brewery Plc for the period 2011 to 2015. Multiple regression was used for the analysis. The study revealed that both donation and medical expenses have a negative and insignificant relationship with return on assets (ROA) respectively. It further revealed that trainings, recruitment and canteen expenses (TRC) have a positive insignificant relationship with the return on assets of Nigerian brewery Plc.

Agbiogwu et al. (2016) examined the impact of environmental and social costs on performance of Nigerian manufacturing companies. Secondary data was sourced from ten (10) randomly selected firms' annual report and financial summary 2014. T- test was used for the analysis. The finding revealed that environmental and social cost significantly affect Net profit margin, Earnings per share and Return on capital employed of manufacturing companies.

3. Methodology

Ex-post facto research design was adopted for this study with a population of Seven (7) listed pharmaceutical companies in Nigeria as listed on the Nigerian Exchange Group in 2022. The entire population was used as the sample size of the study using the census approach. Data were retrieved from the annual reports of the listed pharmaceutical companies for the period 2015 to 2021. Multiple regression (Ordinary Least Square) analysis was used to test the formulated hypotheses computed with the aid of Stata12 statistical software.

Model specification

FP= f(EMB+ DCG+ FMS+ AGE+ μ)………………………(3.1)

NPM= f(EMB+ DCG+ FMS+ AGE+ μ)………………………(3.2)

Therefore, the model is

$$NPM_{it} = \alpha_0 + \alpha_1 EMB_{it} + \alpha_2 DCG_{it} + \alpha_3 FMS_{it} + \alpha_4 AGE_{it} + \varepsilon_{it} \text{----------} (3.3)$$

Operational Definition of variables

Net Profit Margin (NPM): Net profit margin is proxy by the percentage of profit a company produces from total revenue. It is expressed as;

$$\text{Net Profit margin} = \frac{\text{Profit After Tax}}{\text{Total Revenue}} * 100$$

Employee Benefits: it is measured as the total employees' benefits as reported in the financial statement of listed pharmaceutical companies.

Donations and Charitable Gifts: This was operationalized in terms of cost of donations, and charitable gifts carried out by pharmaceutical companies to the host communities in which they operate. This value is extracted from the annual report of the listed pharmaceutical companies.

Firm Size (FMS): It is measured as the natural logarithm of a number (LN) of total asset of the company as stated in the financial statement.

Age: It is the date of incorporation of the listed pharmaceutical companies.

4. Results/findings

Table 1: Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
emb	41	342420.9	643383.8	515	3080950
dcg	41	18367.93	63813.21	0	396180
npm	41	-19.26317	41.92351	-137.55	44.49
fmz	41	15.5122	1.306177	13	17
age	41	53.19512	17.86648	27	78

Source: Output from STATA version 12

The table 1 above shows that the average mean of employee's benefit (emb) generated by the sample firms is 342421 million with a minimum of 515 and maximum of 3080950 million, and a standard deviation of 643384. Table 1 also shows that the average mean of donation and charitable gifts is 18368 million with a standard deviation of 63813 and a minimum of 0 and maximum of 396180 million. Also, net profit margin (npm) has an average mean of -19.26 with a minimum of -137 and maximum of 44.5 %, and a standard deviation of 41.9. This shows that the net profit margin of sampled firm is poor. Furthermore, table 1 shows that the average mean of firm size (fmz) generated by the sample firms is 16 with a standard deviation of 1.31 and a minimum of 13 and maximum of 17. This shows that the sampled firms are the largest in the pharmaceutical industry. Also, the average mean of Age is 53years with a standard deviation of 17.8 and a minimum of 27 years and maximum of 78 years.

Table 2: Regression Result on $NPM_{it} = \alpha_0 + \alpha_1 EMB_{it} + \alpha_2 DCG_{it} + \alpha_3 FMS_{it} + \alpha_4 AGE_{it} + \varepsilon_{it}$ ---(3.3)

Source	SS	df	MS
Model	39873.9788	4	9968.49471
Residual	30429.2514	36	845.256982
Total	70303.2302	40	1757.58075

Number of obs =	41
F(4, 36) =	11.79
Prob > F =	0.0000
R-squared =	0.5672
Adj R-squared =	0.5191
Root MSE =	29.073

npm	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
emb	-9.10e-06	8.10e-06	-1.12	0.269	-.0000255	7.34e-06
dcg	.0000244	.0000724	0.34	0.738	-.0001225	.0001713
fmz	28.49694	4.475747	6.37	0.000	19.4197	37.57417
age	.5360791	.2944381	1.82	0.077	-.0610691	1.133227
_cons	-487.1636	77.14332	-6.32	0.000	-643.6175	-330.7097

Source: Output from STATA version 12

Hypothesis One

$H_0$1 There is no significant effect of employees benefit on net profit margin of listed pharmaceutical companies in Nigeria.

Table 2 above reveals that the Model is fit Prob>F = 0.0000 and that the independent variables in the model explains 57% of the variation in net profit margin. The table further revealed a negative and insignificant effect of employees benefits on net profit margin of listed pharmaceutical companies in Nigeria (p-value= 0.269). This implies that that a 1% increase in lease financing will bring about 9.10% decrease in net profit margin. This led to the acceptance of (**Ho1**) that there is no significant effect of employees benefits on net profit margin of listed pharmaceutical companies in Nigeria.

Hypothesis Two

$H_0$2 There is no significant effect of donations and charitable gifts on net profit margin of listed pharmaceutical companies in Nigeria.

Table 2 above reveals that the Model is fit Prob>F = 0.0000 and that the independent variables in the model explains 59% of the variation in net profit margin. The table further revealed a positive and insignificant effect of donations and charitable gifts on net profit margin of listed pharmaceutical companies in Nigeria (p-value= 0.738). This implies that that a 1% increase in donations and charitable gifts will bring about 0. .0000244 % increase in net profit margin. This led to the acceptance of (**Ho2**) that there is no significant effect of donations and charitable gifts on net profit margin of listed pharmaceutical companies in Nigeria.

5. Discussion of findings

The study revealed a negative and insignificant effect of employees benefits on net profit margin of listed pharmaceutical companies in Nigeria. This finding is in line with the finding of Damamisau et al. (2020) that revealed low level of social accountability devoted to issues of interest to primary stakeholders in the industry and absence of environmental accountability. It contradicts the finding of Agbiogwu et al. (2016) that concluded that environmental and social cost significantly affect Net profit margin of manufacturing companies. Also, it disagrees with finding of Oluwafemi et al. (2018) that revealed a positive and significant relationship between financial performance and employee benefit.

The study revealed a positive and insignificant effect of donations and charitable gifts on net profit margin of listed pharmaceutical companies in Nigeria. This finding is in line with the finding of Agbo et al. (2017) that revealed that both donation and medical expenses have a negative and insignificant relationship with financial performance of Nigerian brewery Plc. It is corroborated by the work of Oluwafemi et al. (2018) that revealed a negative and insignificant relationship between financial performance and donations. It contradicts the finding of Iheduru and Chukwuma (2019) that concluded that there is significant negative relationship between environmental and social costs and financial performance (Net Profit Margin).

6. Conclusion

Companies approach to the environment is regarded as one of the major factors influencing corporate performance in Nigeria. The increase in global environmental awareness and the campaign for sustainable economic development is redirecting the attention of business organizations towards environmental conservatism. Environmental and social cost are external cost resulting from the activities that impact the environment and society. These costs have monetary and legal implications for the overall sustainability of the business. Pharmaceutical companies therefore, employ suitable strategies to carry out its activities without endangering the environment. This has raised concern among scholars. Therefore, from the findings of this study, the study concluded that environmental and social cost has an insignificant effect on financial performance of listed pharmaceutical companies in Nigeria.

7. Recommendations

The following recommendations were made in respect to the above findings;

1. listed Pharmaceutical companies introduce more employee benefits packages that will make the employees feel committed to deliver for improved productivity that will further boost net profit margin.
2. Policy makers should ensure complete adherence of environmental laws by Pharmaceutical companies in Nigeria especially those that contributes towards community development like donation and charitable gifts and which would go a long way in enhancing firm performance.

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