CORPORATE SOCIAL RESPONSIBILITY ACCOUNTING AND FINANCIAL PERFORMANCE OF OIL AND GAS COMPANIES IN NIGERIA.

Prof. OGBONNA, G.N. (PhD, FCA)
Department of Accounting,
Faculty of Management Sciences,
University of Port Harcourt,
Nigeria,
E-mail: ogbonnagab@yahoo.com,

&

IGWE, CHRISTIAN CHUKWUMA M.SC. (UPH)
Department of Accounting,
Faculty of Management Sciences,
University of Port Harcourt,
Nigeria,
Email:christiancigwe@gmail.com

Abstract

This study evaluates the influence of corporate social responsibility reporting on firm performance as captured via their net profit margin and return on assets over the study period of 2012 to 2022. The study employed the stationarity test because of its statical properties, the panel regression test in its pooled random and fixed effects variants, followed by the co-integration test, error correction model and stacked granger causality test that analyzed causal relationship between relevant variables. The research employed secondary data which were obtained from annual report of quoted oil and gas companies to test seven hypotheses related to community development costs, human capacity development costs, employee benefit costs, and firm size. The findings reveal a significant positive relationship between community development costs and net profit margin, emphasizing the impact of strategic investments in community development on profitability. However, no significant relationship is found between community development costs and return on asset. Human capacity development costs did not exhibit a significant relationship with either net profit margin or return on asset. Notably, a negative relationship is identified between employee benefit costs and net profit margin, prompting recommendations for careful management of benefit programs. Firm size positively moderates the relationship in the net profit margin model, indicating potential advantages for larger companies, while its impact on return on asset is not statistically significant. Therefore, the study advises decision-makers to act towards optimizing resource allocation, fostering sustainable community development, and maintaining a balanced approach to employee benefits.

Keywords: Corporate Social Responsibility Accounting, Financial Performance of Oil Companies

Introduction

The term "corporate social responsibility" (CSR) describes businesses' concerns and accountability to the public, stakeholders, the employees and themselves for their social effects. It includes actions and regulations meant to have intertwined rather than separate entities; therefore, the company has certain expectations regarding appropriate business behavior and results. Hence, Drucker famously posits that: " every organization ... has only one goal, that is to be effective in its specific task, in its specific contribution, in its specific mission. But there is one other requirement: **it has to be a good citizen in the society it operates in.** It has a social responsibility... The enterprise is a part of society, and is dependent for its very existence on society. The enterprise, therefore, has a responsibility to society... The enterprise is a creation of society, and it has to be a good citizen." These statements are based on the fact that it is the society that creates enabling environment for the business enterprise to exist, operate, make profit and no business enterprise exists in a vacuum; it must exist in a society and be responsive to that society.

Therefore, the foregoing statements by Peter Drucker emphasizes the importance of businesses being good corporate citizens and contributing positively to their environment. Faced with high levels of insecurity and poverty, a backlash against globalization and distrust of big business, business leaders are under increasing pressure, and their companies to deliver wider societal value. This is especially true if they are companies with commercial relationships in a developing country, because these companies are more exposed to CSR issues. However, the problem of reconciling the company's economic orientation with its social orientation remains.

A step in this direction was taken when a comprehensive definition of CSR was proposed. According to this view, the four-part concept of CSR includes the idea that business has not only economic and legal obligations but also moral and discretionary (philanthropic) responsibilities **(Carroll 1979).** The problem here is that for CSR to be accepted as legitimate, it must fully address the obligations of businesses to society, including the most basic obligation, which is economic obligations. The confirmation of this obligation is partly achieved by proper disclosure of the social and environmental effects of an organization's operations on individuals and stakeholders directly connected to the organization, including workers, clients, suppliers, dealers, and numerous other publics or individuals impacted by the organization's operations, as well as an evaluation of the expenses associated with adhering to pertinent regulations in this field.

According to Fernando (2022), corporate social responsibility (CSR) is a business model that encourages companies to operate in ways that enhance society and the environment while still being accountable to their stakeholders and the public. Although corporate social responsibility (CSR) was widely discussed in the last forty years of the twentieth century, studies on corporate social responsibility (CSR) are relatively rare. This is to be expected in the field of CSR, that is still “emergent” **(McWilliams, Siegel and Wright, 2006).** It is only in the last decade that businesses have begun to exhibit serious evidence of CSR in their strategic management and stakeholder social reporting.

A number of studies indicate that the understanding and practice of CSR is socio-culturally framed **(Amaeshi, Adi, Ogbechie & Amao, 2006).** Despite this fact,

research on management and CSR in Africa is relatively scarce and to a large extent based on a developing-developed world paradigm (Jackson, 2004). Therefore, this study aims to advance knowledge on CSR in Africa by investigating the relationship between corporate social responsibility accounting and financial performance of oil and gas companies in Nigeria. The result of the study would also help members of the public to understand what corporate social responsibility disclosure means and the impact on financial performance on quoted oil and gas companies in Nigeria. The study would specifically be of benefit to quoted oil and gas companies, as it will sensitize the former on the basis for the implementation of social responsibilities disclosure.

The study emphasizes the fact that no modern society can run smoothly without oil and gas neither can oil and gas firms in Nigeria be profitable without its environment. Profit making is a function of so many factors, some of which are indigenous and others exogenous. Amongst the exogenous factors are operational interruption caused by the hosting community of oil and gas firms. This is due to the concern of the community over negative and potential negative effects that businesses brought to the community. The effect ranges from environmental degradation to societal conflict as a result of business activities **(Oshiole, Elamah, Amahalu, 2020).** In effort to overcome the existing conflicts between oil and gas firms and hosting environment, the idea of CSR was advocated to guarantee harmonious operation, peaceful coexistence and of course achievement of the desired goal. This is because peace is priceless while war is senseless. While that can be considered as welcome development that avenue for conflicts resolution exists, but the avenue creates more concern over the implementation and the qualification of the benefits to both the community and oil and gas firms.

Aim and Objectives of the Study

The aim of this research is to investigate the effect of corporate social responsibility accounting on the financial performance of oil and gas companies in Nigeria. This above aim will be achieved using the specific objectives as follows:

i. Investigate the relationship between Human Capacity Development Cost and Return on Asset of oil and gas companies.

ii. Investigate the relationship between Employee Benefit Cost and Net profit margin of quoted oil and gas companies.

Literature Review

Conceptual Framework

According to Gbadamosi (2016), business organizations that contribute to activities aimed at social development beyond simple profit goals to accelerate shareholder wealth maximization are increasingly motivated in business and academia. This puts pressure on businesses to become better corporate citizens. However, despite the topic's rise to prominence, there is still no consensus on what exactly constitutes corporate social responsibility. However, a common theme in the corporate social responsibility literature, highlighted by **(Peloza and Shang, 2011),** concerns how to create value for stakeholders beyond the interests of the legal owners of the company. Corporate social responsibility (CSR), also known as corporate

responsibility, corporate citizenship, responsible business, sustainable responsible business (SRB) or corporate social performance, corporate social investment is a form of integrated corporate self-regulation within an economic model. The development of the concept of CSR started from concerns related to the damage caused by businesses to the environment and society at large through their business-related activities, that is, most Business activities have specific social and environmental costs. It is fairest for companies to return a portion of their profits to help repair the damage they have caused **(Chutimant, Wanchai, & Panarat, 2017).**

Some of the key values that business organizations can add to society through corporate social responsibility include: ethical employment (i.e. unbiased employment) and work practices by improving the workplace; build local communities and communicate with affected communities about the consequences of its policies and products; investing in building social infrastructure; contribute to creating a cleaner environment, protecting and sustainably developing that environment; and contribute, through corporate governance, to overall economic development **(Chopra & Kanji, 2010). Holme and Watts (2000)** defined corporate social responsibility as the continuous commitment of businesses to behave in a way that does not harm the community and society and will contribute to economic development at the same time, improve the quality of life of the workforce and their families as well as local communities and society as a whole.

The definition of CSR used within an organization may differ from the strict definition of "stakeholder impact" used by many advocates of corporate social responsibility (CSR) and often includes philanthropic efforts and volunteerism. In the broadest sense, CSR can be defined as the collective contribution of companies to sustainable development. Defining corporate social responsibility (CSR) in more detail remains a controversial issue.

In practice, views differ depending on two factors. First, the extent to which the financial business case matters for responsible corporate behavior in determining the scope of corporate social responsibility practices, i.e. the extent to which tangible benefits to with businesses must be proven. Secondly, the extent to which government is seen to have a role in framing the agenda and how. A minimum standard for CSR might be that businesses fulfil their legal obligations or, if laws or enforcement are lacking, that they 'do no harm'. A median approach goes beyond compliance, calling for businesses to do their best, where a 'business case' can be made, to contribute positively to sustainable development by addressing their social and environmental impacts, and potentially also through social or community investments. A maximum standard point will be an active alignment of internal business goals with externally set societal goals (those that sup-port sustainable development).

The EU Green Paper on CSR defines CSR as "a concept in which companies integrate social and environmental concerns into their business operations and interactions with stakeholders on a voluntary basis.". The Economics Foundation for Quality Management defines CSR as follows: "CSR refers to a series of fundamental principles that organizations must acknowledge and reflect in their actions. It includes, among other things, respecting human rights, treating workers, customers and suppliers fairly, being good corporate citizens of the communities in which they operate and protecting the environment nature. These fundamentals are not only

considered ethically and morally desirable purposes and part of the organization's philosophy but are also necessary to ensure that the company will help the organization survive in the long run, to the extent that society benefits from the organization's activities and behavior" **(EFQM Framework for Social Responsibility, 2004).**

Bowen (1953), noted that the debate on social responsibility is the obligation of business to pursue policies necessary to make decisions or follow desirable actions in terms of society's goals and values. This idea suggests that businesses have social responsibilities that go beyond economic and legal obligations. **Carroll (1975)** defines social responsibility as the economic, legal, ethical, and discretionary expectations that society places on an organization at a given time. This implies that society has a set of basic expectations that the company must meet as a legal entity. **Luthans and Hodgets (1976)** defined CSR as a company's obligation to pursue policies, make decisions, or follow actions that are desirable in terms of society's goals and values.

Andrew (1977) describes CSR as an intelligent and objective concern to prevent the behavior of an individual or company from ultimately destructive activities, regardless of the immediate profit and that leading to a positive contribution to the betterment of humanity. **Oliver (1985)** defines social responsibility as a feeling of obligation and responsibility of individuals and organizations towards society beyond their primary functions. **Keith Davis (1960)** argued that social responsibility refers to "decisions and actions taken by companies for reasons at least partly beyond the direct economic or technical interest of the company.". Around the same time, **Eells and Walton (1961)** argued that CSR refers to "the problems that arise when business overshadows the social context and ethical principles that govern the relationship between business and society." festival". **Andrew (1995)** in his article defines social responsibility as sensitivity to the social costs of economic activities and the ability to concentrate corporate power on feasible but sometimes unattractive goals, economically more desirable than society desires. **The Economic Commission for Europe (2001)** states that social responsibility means meeting regulatory expectations but also going beyond compliance and investing more in human resources, the environment and relations with stakeholders.

Friedman (1962) was associated with The Classical Economic approach that advocated that 'there is one and only one social responsibility of business- to use its resources and engage in activities designed to increase its profit, as long as it stays within the rules of the game, which is to say, engages in open and free competition, without deception or fraud." The first approach originates in classical economic theory as expressed in the hypothesis that the firm has one and only one objective, which is to maximize profit. By extension, the objective of a corporation should be to maximize shareholder's wealth. It is asserted that in striving to attain this objective within the constraint of the existing legal and ethical framework, business Corporations are acting in the best interest of the society at large **(Baron, 2000).**

The Stakeholder Approach

The second approach known as 'the stakeholder approach' was developed in 1970s. It recognizes the significance of social objectives in relation to the maximization of profit. This approach propounded that corporate managers should make decisions which maintain an equitable balance between the claims of

shareholders, employees, customers, suppliers and the general public. The corporation therefore, represents a coalition of interest, and the proper consideration of the various interests in this coalition is the only way to ensure that the corporation will attain its long-term profit maximization objective. This 'stakeholder' approach received much publicity in Britain when it was adopted by the Opposition Labour Party in 1996. This concept merely views the business enterprise as being concerned with making profits for its shareholders, and treats the claims of other interested groups. **Baron (2000)** argued that a firm interacts with a number of constituencies including employees, suppliers, customers, the communities in which its facilities are located and the public in general. To the extent that these constituencies have an interest or stake in the relationship with the firm, they may be referred to as stakeholders. A stakeholder relationship centres on the exchange, as when an employee provides labour services to a firm in exchange for wages. Both parties presumably benefit from the continuation of such an exchange. Both parties therefore have incentives to take into account the interest of the other in the relationship.

The third view, regards profit as a means to an end and not an end in itself. It stated that organizational decisions should be concerned with the selection of socially responsible alternatives instead of seeking to maximize profit generally. The end result should be satisfactory level of profit which is compatible with attainment of a range of social goals. This view was established when the chief executive of a large corporation had the problem of reconciling the demands of the employees for more wages and improved benefit plans, customers for lower prices and greater values, shareholders for higher dividends and greater capital appreciation- all within a framework that will be constructive and acceptable to society'.

This concept acknowledges that the business enterprise has a responsibility to all stakeholders. That is those who stand to gain or lose as a result of the firm's activities. From this approach, it is evident that unless firms are able to develop clear views of society's preferences and priorities, (socially responsible alternatives) they will be unable to plan activities which will make a social impact, much less report in a meaningful way on their social performance. Therefore, without this a precise knowledge of such preferences and priorities, much of the discussion of what is socially desirable must pass for subjective judgements, or at worst pure guesswork. However, the constraint to this third view is the problem of the ever-changing nature of the ordering of social preferences. Social costs as well as social benefits are a function of social perception of what is good and bad about the business activity. As a result, the nature of corporate social responsibility is not a static concept. It involves moving targets many of which are the subjects of government action **(Baron, 2000).**

The Business Roundtable Statement Approach

The Business Roundtable was founded in 1972 to examine public issues that affect the economy and develop positions which seek to reflect sound economic and social principles" **Business Roundtable (1981)**. In 1981, one of its task forces issued a statement on Corporate Responsibility which reflects a constituency perspective and states that business is to "serve the public interest as well as private profit". The Roundtable states that "some leading managers believe that by giving enlightened consideration to balancing the legitimate claims of all its constituents, a

corporation will best serve the interest of its shareholders". The Roundtable identifies seven constituents: customers, employees, financiers, suppliers, communities, society at large and shareholders. Accordingly, responsibility to all these constituencies in total constitutes responsibility to society, making the corporation both economically and socially viable. The corporation is therefore a legal entity granted certain privileges including limited liability, indefinite life, and special tax treatment. In exchange for these privileges, the corporation has a responsibility to the society that granted it to them.

Corporate Social Responsiveness

Corporate social responsiveness shifts the focus from a philosophical perspective on social obligations to tangible social response processes **(Wartick & Cochran 1985).** Social responsiveness "refers to a firm's ability to respond to social pressures" **(Frederick 1978)** is included in **Carroll's (1979)** three-dimensional CSR model regarding responsiveness society **(Wartick and Cochran 1985)** aspects of social responsibility (economic, legal, ethical and discretionary) and social such as environment, discrimination and product safety. **Wartick and Cochran (1985)** advocate the application of social response to meet short- and medium-term business goals, while also setting achievable goals that managers can use to focus on implementation and development of policies. Social response is an action-oriented complement to CSR and a fundamental approach to developing a business response to social issues, where CSR is a macro view of the relationship between business and society, while social responsiveness emphasizes the actual response of business to social concerns. In the medium and short term. Corporate social responsiveness focuses on ostensibly reactive institutional processes, doing less than necessary; on the defensive, do as little as possible; be accommodating, do whatever is necessary; and proactive, doing more than necessary **(Wartick and Cochran 1985).** Social responsiveness is followed by social issues management to identify and analyze problems and develop corporate policy responses **(Wartick and Cochran 1985).** Additional guidance on how to implement CSR in business is given by the authors that prescribe the stages or phases of CSR in formulating business strategy, from the inclusion of the business mission to the implementation of work; their reviews; monitoring, measuring and reporting; and strategic review cycles (Grayson and **Hodges 2004; Stainer 2006).**

CSR as Competitive Advantage

The link between CSR and competitive advantage of a firm has been explored by **Porter and Kramer (2006, 2011),** who suggest that companies and society can reap mutual benefits through a concept of "shared value," when companies generate competitive advantage such as enhanced reputation with communities, suppliers, and interest groups and creation of business opportunities through CSR activities and tackling social problems. Further, **Laszlo and Zhexembayeva (2011)** argue that companies who produce stakeholder value can generate competitive advantage through the process of "embedded sustainability" or incorporation of environmental and social values at the core of business operations. Instead of bolting CSR activities on existing business operations, **Laszlo and Zhexembayeva (2011)** suggest that companies must acknowledge the economic, social, and environmental consequences of their operations and develop strategies

that are not optional or additional to core business activities but instead a way of managing modern business. Companies can embed sustainability through innovative design of products and services, inquiry and appreciation or reflecting upon experiences, learning and spreading cooperative strategy in business, and wholeness or systems thinking. **Falkenberg and Brunsæl (2011)** believe that when organizations engage in CSR activities and produce economic advantage, this could prompt competitors to engage in similar CSR activities, thus making CSR activities no longer a competitive advantage but rather a strategic necessity.

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Gap identification

To ensure that this article is focused on current existing gap in literature, proper gap identification has been done. The existing literature has several notable gaps that has been addressed. First, the reviewed studies predominantly focus on foreign firms, neglecting the specific context and characteristics of the oil and gas companies in Nigeria. As a result, these studies which were carried out outside Nigeria may not capture the unique challenges and dynamics that impact the relationship between corporate social responsibility (CSR) and financial performance within the Nigerian oil and gas sector. Based on the foregoing, the need for the study is increasingly necessary, to evaluate the relationship between employee benefit cost and return of capital employed of oil and gas companies in Nigeria; to evaluate the relationship between employee benefit cost and net profit margin of oil and gas companies in Nigeria; to ascertain the relationship between cost of remediation activities and return of capital employed of oil and gas companies in Nigeria; to ascertain the relationship between cost of remediation activities and net profit margin of oil and gas companies in Nigeria; to determine the relationship between community development cost and return of capital employed of oil and gas

companies in Nigeria; to determine the relationship between community development cost and net profit margin of oil and gas companies in Nigeria.

METHODOLOGY

Research Design: The research design represents a blueprint for data collection **(Asika, 2010)**. The ex-post facto research design will be employed for this empirical study. This design methodology falls within the domain of survey study that covers events observed to have indeed taken place already. Ex-post facto design presents the dependent and independent variables as observations that have taken place before and their characteristics evaluated at the same time. This design is possibly recommended as the right approach for administrative science research, which does not require experimentation and manipulation of the variables under investigation.

Population of the Study: The target population for this study constitutes all quoted oil and gas companies in Nigeria. A population is made up of all conceivable elements, subjects or observations relating to a particular phenomenon of interest to the researchers **(Asika, 2010).** Subjects or elements are individual items that will make up the population. They may be observed or physically counted. Therefore, the study population is all publicly traded oil and gas companies listed on the Nigerian Stock Exchange (NGX) as at 2022. The sample therefore covered seven (7) quoted oil companies which are ARDOVA, CONOIL, ETERNA, JAPAUL, MRS, OANDO, and TOTAL (As presented in Appendix I). The study covered a period of 2012 to 2021 (10 years). The study area being the oil and gas companies is one of the largest in Africa, and several companies in this sector began to report on their economic sustainability, including their environmental impact and social responsibility.

Sampling and Sampling Technique: The method for drawing the samples from a population is known as sampling procedure, while a sample is precisely a part of the population (Asika, 2010). The purposive sampling method under the non-probability sampling will be applied. The sample therefore covered seven (7) quoted oil companies which are ARDOVA, CONOIL, ETERNA, JAPAUL, MRS, OANDO, and TOTAL (As presented in Appendix I). The study covered a period of 2012 to 2021 (10 years). The study area being the oil and gas companies is one of the largest in Africa, and several companies in this sector began to report on their economic sustainability, including their environmental impact and social responsibility.

Using the purposive sampling method, the quoted oil and gas firms that will be selected under this method are those that have fulfilled the cumulative pre-tax profits from continuing operations of at least three years. This was in accordance with the listing requirement of Nigerian Exchange Group. Thus, applying this condition a total of 56 firms are determined as the sample size, hence the use of Taro Yamane formula was not necessary.

Model Specification

The model specification for this research will be formulated in accordance with the multiple and partial regressions. The model is specified considering the variables under investigation such as corporate social responsibility accounting (CSRA), community development cost (CDC), human capacity development cost (HCDC) and employee benefits (EPB). Other variables are financial performance (FFP), net profit margin (NPM) and Return on Asset (ROA). Included in the model specification is the moderator variable, namely, firm size (FMS). The model for this study will be specified in the following order:

Functional form

FFP= f(CDC, HDC, EPB) - 1

Combining equations 1

Mathematical form

$FFP= \lambda_0+ \lambda_1CDC + \lambda_2HDC + \lambda_3EPB$ - 2

From equation 4

Econometric form

$Y = a + bx_1 + bx_2 + bx_3 + U_1$

$FFP = \lambda_0+ \lambda_1CDC + \lambda_2HDC + \lambda_3EPB + \ldots + \lambda_{I,t}$ - 3

Econometric model for moderator regression

$NPM = \beta_0 + \beta_1CSRA + \beta_2FMS+ \beta_3CSRA*FMS + \ldots + U_{i,t}$ - 4

$ROA = \beta0 + \beta1CSRA + \beta2FMS+ \beta3CSRA*FMS + \ldots + Ui,t$ - 4

From equations 3 and 4, it is expected a priori that the coefficients λ_1, λ_2,λ_3,β_1, β_2, $\beta_3> 0$.

Where

CSRA = corporate social responsibility accounting

FFP = financial performance

NPM = Net Profit Margin

ROA = Return on Asset

CDC = community development costs

HDC = human capacity development costs

EPB = Employee benefit

λ_0, β_0 = regression constant

λ_1,λ_2,λ_3,β_1, β_2, β_3 = Regression coefficient

$U_{i,t}$ = Stochastic error term

FMS = Firm size

^ = Statistical estimator

Method of Data Analysis

Three major types of data analyses techniques will be used for this study, they include descriptive data analysis, inferential data analysis and causality test.

Descriptive Data Analysis

This required a univariate analysis that will be used to interpret the relevant variables of study using mean, skewness and kurtosis.

Inferential Data Analysis

The inferential test covered hypotheses testing and causality test at $\alpha= 0.05$ (5%) alpha level of significance. The linear regression is applied to test the individual hypotheses, while the multiple regressions will be used to test the composite or overall hypotheses in line with the model. Partial regression will be applied to test the moderation influence of firm size on the independent and dependent variables under investigation. The inferential analysis is divided into bivariate and multivariate. In addition, the Granger causality test will be carried out to determine the cause-and-effect relationship between the variables under investigation.

Research Questions

i What is the relationship between Human Capacity Development Cost Affect Return on Asset of oil and gas companies?

ii. How does Employee Benefit Cost affect Net profit margin of quoted oil and gas companies in Nigeria?

Research Hypotheses
The following null hypotheses were formulated for the study:

HO_1. Human Capacity Development Cost does not have significant relationship with Return on Asset of oil and gas companies.
HO 2: Employee Benefit Cost does not have significant relationship with Net profit margin of oil and gas companies.

Table 4: Unit Root Test at First Difference (1) Output of Return on asset (ROA). Community development cost (CDC). Human capacity development cost (HDC). Employee benefit cost (EPB) and Firm size (FSZ) in sample manufacturing institution over the period of 2012 to 2022.

Variables	ADF-Fisher Chi-square Stat	Prob	ADF-Choi Z-	Prob	Note	Discovery Decision
ROAit	100.616 Stationary at 1st Diff	0.0000	-5.89593	0.0000	1(1)	No Unit root
CDCit	119.800 Stationary at 1st Diff	0.0000	-5.55788	0.0000	1(1)	No Unit root
HDCit	128.809 Stationary at 1st Diff	0.0000	-5.45630	0.0000	1(1)	No Unit root
EPBi	125.459 Stationary at 1st Diff	0.0000	-5.15147	0.0000	1(1)	No Unit root
FSZit	119.157 Stationary at 1st Diff	0.0000	-4.64148	0.0000	1(1)	No Unit root

In respect of the oil and gas firms, table 4. above shows the employed panel variable at first difference. It can be seen that all probability levels are seen to be

lower than the 19%,59% and 10% significance level. This shows an absence of unit root and presence of stationarity tendencies amongst employed variable. It can be inferred from this that employed variables probability distribution does not change overtime when shifted. This gives room for variables with predictive tendencies and gives rise to further tests like the co-integration test which would be carried out after determining the type of model to utilize (where pooled, random or fixed).

Panel Regressions (Manufacturing Sector)

The multiple regression was carried out using the Ordinary Least Square regression tool, as it is the best unbiased linear regression estimator, it was carried out in the normal form and the natural form.

Pooled Effects regression

To evaluate for joint influence of employed variables on the criterion, the table above which represents the pooled effect shows that;

Table 4. Pooled Effects Regression Output for model 1- Oil and gas firms.

Dependent Variable: ROA
Method: Panel Least Squares
Date: 12/27/23 Time: 01:34
Sample:2012 2022
Periods included: 11
Cross-sections included: 25
Total panel (balanced) observations: 175

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	55869158	1.86E+08	0.300263	0.7643
CDC	4.061772	7.730832	0.525399	0.6000
HDC	39.20332	19.12010	2.050372	0.0419
EPB	-4.253781	24.19974	-0.175778	0.8607
FSZ	36.82117	38.35864	0.959919	0.3385

R-squared	0.048802	Mean dependent var	2.69E+08
Adjusted R-squared	0.026421	S.D. dependent var	2.02E+09
S.E. of regression	2.00E+09	Akaike info criterion	45.69584
Sum squared resid	6.78E+20	Schwarz criterion	45.78626
Log likelihood	-3993.386	Hannan-Quinn criter.	45.73252
F-statistic	2.180489	Durbin-Watson stat	0.447595
Prob(F-statistic)	0.073230		

On pooled effect, only employee benefit cost showed findings against aprori based on is negative coefficient of-4253781. While structural capital is the only significant corporate social responsibility accounting expenditure which is seen to stimulate return on asset of oil and gas firms in Nigeria (ROA). The model is seen to be generally dysfunctional as the R-squared is very low. The f-statistics is insignificant based on its probability level of 0.073230 which is greater than the 0.05 significance level. As the Durbin Watson shows presence of positive serial correlation.

Fixed Effect Regression

To deal with the issues of heterogeneity bias, the fixed effect is carried out as follows:

Fixed Effects Regression Output for model 1 -Oil and gas firms.

Dependent Variable: ROA
Method: Panel Least Squares
Date: 12/27/23 Time: 01:35
Sample: 2012 2022
Periods included: 11
Cross-sections included: 25
Total panel(balanced)observations: 175

Variable	Coefficient	Std.Error	t-Statistic	Prob.
C	1.34E+08	2.11E+08	0.635111	0.5264
CDC	4.940455	9.064880	0.545011	0.5866
MHDC	13.24811	24.67086	0.536994	0.5921
EPB	-0.303940	36.40032	-0.008350	0.9933
FSZ	33.27819	46.89992	0.709558	0.4791

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.716722	Mean dependent var	2.69E+08
Adjusted R-squared	0.504860	S.D. dependent var	2.02E+09
S.E. of regression	1.69E+09	Akaike info criterion	45.48107
Sum squared resid	4.16E+20	Schwarz criterion	46.00552
Log likelihood	-3950.593	Hannan-Quinn criter.	45.69380
F-statistic	3.725333	Durbin-Watson stat	1.780229
Prob(F-statistic)	0.000000		

Like the poled model, the fixed effect also shows that the employe benefit cost expenditure also contravenes the apriori expectation. Although no intellectual expenditure pattern was seen to be statistically significant in influencing return on asset. Overall, this model appears richer than the pooled effect model. As predictor variables jointly account for up to 71.67% of variation in manufacturing sector profit (ROA) followed by the signifying f statistics which is lower than the 5% significant level. The Durbin Watson is substantially very low and within the positive autocorrelation realm. We further proceed to the Random effect to check for the common mean value of employed variables and their influence on the criterion variable.

Random Effects Model

Table 4.16 Random Effects Regression Output for model 1- Oil and gas firms.

Dependent Variable: ROA
Method: Panel EGLS (Cross-section random effects)
Date: 12/27/23 Time: 01:35
Sample:2012 2022
Periods included: 11
Cross-sections included: 25
Total panel (balanced)observations: 175
Swamy and Arora estimator of component variances

Variable	Coefficient	Std.Error	t-Statistic	Prob.
C	93649718	3.01E+08	0.310651	0.7564
CDC	5.324902	7.850182	0.678316	0.4985
MHDC 24.26468	21.38935	1.134428	0.2582	
EPB	-3.313670	29.75058	-0.111382	0.9114
FSZ	37.91697	39.86708	0.951085	0.3429

Effects Specification			
S.D.	Rho		
Cross-section random		1.19E+09	0.3307
Idiosyncratic random		1.69E+09	0.4693

Weighted Statistics			
R-squared	0.017950	Mean dependent var	1.27E+08
Adjusted R-squared	-0.005157	S.D. dependent var	1.67E+09
S.E. of regression	1.67E+09	Sum squared resid	4.76E+20
F-statistic	0.776811	Durbin-Watson stat	0.608678
Prob(F-statistic)	0.541690		

Unweighted Statistics			
R-squared	0.045039	Mean dependent var	2.69E+08
Sum squared resid	6.81E+20	Durbin-Watson stat	0.425335

The random effect similarly shows poor viability of its model and all variables showed no significant influence on return on asset of oil and gas firms (ROA). The idiosyncratic random Rho shows 0.4693 which is relatively low and as such shows a disconnect between employed variables and also their inherent residuals. And it is discovered that no variable in this model shows significant influence in profit stimulation of selected oil and gas firms.

Diagnostic test

The need therefore arises to determine which of the model is most efficient i.e. whether the pooled, random or fixed effect.

Likelihood Ratio Test

To compare the pooled regression model with the fixed effects model. The null hypothesis favors the pooled model i.e. Unobserved sectional differences are not significant.

Table 4.17 Likelihood ratio test output

Redundant Fixed Effects Tests
Equation: Untitled
Test cross-section fixed effects

Effects Test	Statistic	d.f.	Prob.
Cross-section F	3.837241	(24,146)	0.0000
Cross-section Chi-square	85.585152	24	0.0000

Cross-section fixed effects test equation:
Dependent Variable: ROA
Method: Panel Least Squares
Date: 12/27/23 Time: 01:35
Sample:2012 2022
Periods included: 11
Cross-sections included: 25
Total panel (balanced)observations: 175

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	55869158	1.86E+08	0.300263	0.7643
CDC	4.061772	7.730832	0.525399	0.6000
MHDC	39.20332	19.12010	2.050372	0.0419
EPB	-4.253781	24.19974	-0.175778	0.8607
FSZ	36.82117	38.35864	0.959919	0.3385

R-squared	0.048802	Mean dependent var	2.69E+08
Adjusted R-squared	0.026421	S.D. dependent var	2.02E+09
S.E. of regression	2.00E+09	Akaike info criterion	45.69584
Sum squared resid	6.78E+20	Schwarz criterion	45.78626
Log likelihood	-3993.386	Hannan-Quinn criter.	45.73252
F-statistic	2.180489	Durbin-Watson stat	0.447595
Prob(F-statistic)	0.073230		

The above likelihood ratio test which shows the predominance between the poled and fixed effect is seen to show a cross-section F-statistics of 3.837241 at a probability level of 0.000 which is seen to be below the 0.05 significance level. This leads to the rejection of the null hypothesis (the null hypothesis supports the poled model). The alternate hypothesis which is accepted favors the fixed effect. The study

therefore upholds the fixed effect over the poled effect. We therefore proceed to evaluate the better model between the fixed and random model.

Hausman Specification Test

To compare the random effect model with the fixed test model. The null hypothesis favours the random effects model i.e. Z: are uncorrelated with the explanatory variables (Its null hypothesis is that the random effects model is appropriate while the alternative hypothesis is the fixed effects model is appropriate).

Summary of Findings

I. No significant relationship was found between Human Capacity Development Cost and either Net Profit Margin or Return on Asset.
II. There is a significant negative relationship between Employee Benefit Cost and Net Profit Margin.
III. No significant relationship was found between Employee Benefit Cost and Return on Asset.

This study assesses how different aspects of corporate social responsibility accounting affect business performance as measured by return on assets and net profit margin between 2012 and 2022. The stationarity test, the panel regression test in its pooled, random, and fixed effects variations, the co-integration test, the error correction model, and the stacked Granger causality model were all used in the study. It was found that:

The lack of a significant relationship with both Net Profit Margin and Return on Asset indicates that expenditures on human capacity development may not have a direct influence on the financial performance metrics considered in this study. The negative relationship between Employee Benefit Cost and Net Profit Margin suggests that, within the context of quoted oil and gas companies in Nigeria. Higher employee benefit costs may be associated with lower net profit margins. This underscores the need for careful management of employee benefit programs to maintain profitability. The lack of a significant relationship with Return on Asset indicates that employee benefit costs may not be a major factor affecting overall asset performance. The positive relationship between Firm Size and Net Profit Margin indicates that larger firms tend to have higher net profit margins. This could be due to economies of Scale, increased market power, or operational efficiencies associated with size. The lack of a significant relationship between Firm Size and Return on Aset suggests that while firm size impacts net profit margin, it may not be a decisive factor in overall asset performance. The findings emphasize the multifaceted nature of factors influencing financial performance in the oil and gas industry in Nigeria. Decision-makers should consider the nuanced relationships between cost elements, firm characteristics, and financial metrics.

Conclusion

The lack of a significant relationship with both Net Profit Margin and Return on Asset indicates that expenditures on human capacity development may not have a direct influence on the financial performance metrics considered in this study. The negative relationship between Employee Benefit Cost and Net Profit Margin suggests

that, within the context of quoted oil and gas companies in Nigeria. Higher employee benefit costs may be associated with lower net profit margins. This underscores the need for careful management of employee benefit programs to maintain profitability. The lack of a significant relationship with Return on Asset indicates that employee benefit costs may not be a major factor affecting overall asset performance. The positive relationship between Firm Size and Net Profit Margin indicates that larger firms tend to have higher net profit margins. This could be due to economies of Scale, increased market power, or operational efficiencies associated with size. The lack of a significant relationship between Firm Size and Return on Aset suggests that while firm size impacts net profit margin, it may not be a decisive factor in overall asset performance. The findings emphasize the multifaceted nature of factors influencing financial performance in the oil and gas industry in Nigeria. Decision-makers should consider the nuanced relationships between cost elements, firm characteristics, and financial metrics.

I. As there is no significant relationship with either Net Profit Margin or Return on Asset for Human Capacity Development Costs, companies should assess the effectiveness of current human capital investments. While continuing to invest in employee development is crucial for organizational growth, a thorough evaluation of the specific programs and their impact on financial metrics is warranted.

II. In light of the negative relationship between Employee Benefit Cots and Net Proft Margin. companies should conduct a detailed analysis of their employee benefit programs. There is a need to strike a balance between providing competitive benefits to attract and retain talent while ensuring that such costs do not unduly impact overall profitability. Regular reviews and adjustments to benefit structures may be necessary to align with financial objectives.

III. The positive relationship between Firm Size and Net Profit Margin suggests that larger oil and gas companies tend to enjoy higher profitability. While acknowledging the advantages of economies of scale, companies should explore ways to maintain or enhance operational deficiencies as they grow. It is also recommended that firms leverage their size advantage for strategic positioning in the market.

IV. Companies should adopt a mixed and context-specific approach to decision-making. recognizing the varied impacts of different cost factors on distinct financial performance indicators. Continuous monitoring and adaptation of corporate strategies are crucial to align with industry dynamics and changing market conditions.

V. The government should provide incentives to encourage oil and gas companies to engage in more corporate social responsibility activities. The incentives can include increasing the tax amounts deductible from the corporate social responsibility expenditures of the companies. Further, incentives can also include organizing awards for the best performing companies which can serve to improve the reputational values of such companies.

VI. The society - including local communities and charitable organizations among other who benefit directly for the corporate social responsibility largesse of these companies can find ways to communicate their appreciation for such act to the companies. This will serve to encourage such companies to do better in the future, especially on human capacity Development Cost and either Net Profit Margin or Return on Asset.

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