Relevance of Sustainability Accounting on Financial Performance of Selected Oil and Gas Firms in Nigeria: A Study of Shell Petroleum Development Company

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Abstract: This research work focuses on the relevance of sustainability accounting on financial performance of selected oil and gas firms in Nigeria: a study of Shell Petroleum Development Company. The objective of this study is to carefully analyze the relevance of sustainability reporting on the financial performance of selected oil and gas firms in Nigeria. Specifically, this study intends to: ascertain the relationship between sustainability accounting and financial performance of selected oil and gas firms in Nigeria in respect to their Return on Assets (ROA), Return on Equity (ROE) and Return on Investment (ROI). This study covers a period of nineteen years and employed a time series data spanning years 2000-2019. The methodology adopted in this work is the Ordinary Least Square (OLS) method of regression analysis and quasi-experimental research design. Secondary data garnered from Journal publications, test books and annual financial reports various years of the selected oil companies constitutes the sources of the data used in the analysis of this study. This study among others recommends the need for Companies operating in Nigeria, oil and gas companies inclusive to adopt sustainability reporting initiatives as this enables them to identify, apportion and appraise ecological and social cost affecting their various businesses and also enable managers to acquire strategies and techniques which are needed in the management of corporate organization's ecological, social and economic performance.

INTRODUCTION

Sustainability accounting is an emerging issue in accounting profession that aims at assessing and enhancing corporate performance with regards to sustainability. It widens the scope of traditional reporting which emphasizes financial profitability and considers the contributions of a corporate organization towards

environmental and social sustainability thereby giving more attention to other stakeholders other than shareholders. The traditional goal of a business focuses on economic performance. However, with the current global trend of social sustainability, corporate organizations are beginning to pay more commitment to environmental and social obligations.

Lending credence to the above assertion, the Association of Chartered Certified Accountants (ACCA)[1] opined that "sustainability reporting can be defined as a framework for measuring and reporting corporate performance against economic, social and environmental performance. Triple bottom line is a catch phrase that is increasingly being used as a heuristic to help conceptualize sustainability as well as provide a framework for reporting against sustainability and environmental values and the three lines represent society, economy and the environments". Simply put, sustainability reporting as a concept provides a framework through which the overall performance of a corporate entity is measured in relation to its economic, social and environmental performance. It is an umbrella term which captures social, environmental and economic value of an investment[2]. The most frequently seen factors used in performance measurement are: economic, environmental and social[3]. In the literature, there is no real consensus as to the exact dimensions used for the performance measures;some other dimensions used are community improvement, environment, entrepreneurship and education and stakeholder engagement, organizational integrity and stakeholder activism[4]. In all instances, performance is being measured based on the impact of companies on society as a whole, both now and into the future.

Kwagufan[5] while buttressing the dangers associated with irresponsible behavior of corporate organizations opined that, if business as a whole operates in a manner which causes damage to the society and thereby causes a break down in the social harmony necessary to provide a stable context for operation, then such business activities are neither economically nor socially sustainable. In the longer term if business activities cause a level of damage of the ecosphere such that it cannot sustain human life on the scale we currently enjoy, then it is clearly neither socially nor economically sustainable as there can be no economic activities-let alone economic growth-without human life to sustain it. Thus, corporate organizations should get more committed in the pursuance of the good of the society as these are essential in attaining her goal of profitability and long term existence.

The concept of sustainability reporting as proposed by Elkington[6], cited in Lassala *et al.*[7] places emphasis on three key aspects, these aspects according to Elkington should be put into consideration by corporate organization when embarking on their various business activities. These key indicators are people (social), profits (economic) and planet (environmental) which must be present in the business management. The above proposition suggest that, a good business activity is one which understand the relationship between the people, corporate profitability and the environment as these three key aspect are essential in ensuring the safety of the people from hazards caused by the unsustainable use of the environment cum the long term existence of corporate organizations. This also suggests that corporate profitability should not be prioritized over the well-being of the people and the environment, thus while aiming for profit, it should be done in a manner that will not endanger the people and the environment.

Several studies have shown that the concept of sustainability reporting is continuously gaining attention world over. The reason for this awakening may be attributed to the environmental and social issues which have continued to ravage the world. These issues have led to an increased demand on businesses to contribute meaningfully to the growth of the society.

Statement of the problem: Preserving the environment of man has become a primary concern of the government all over the world. The rationale for this collective responsibility is not unconnected to the environmental issues which has and is still threatening the habitation of man on planet earth. The untamed effect of global warming, loss of biodiversity, loss of ocean body, land infertility among others has continued to raise concern for the wellbeing of humanity. These environmental issues which impinge the well-being of man in some cases, are products of the activities of man. This is due to the fact that various corporate organization are involved in various degrees of drilling, manufacturing and extraction which in most cases accounts for the various forms of environmental degradation. The basic problem of this study is to determine the relevance of sustainability accounting and to find out if sustainability accounting can be linked with oil and gas companies as well as their corporate profitability. The problem of sustainability accounting does not lie with the amount of recognition given to the concept, rather it lies with its applicability in the attainment of people and environmental good[8] .Given the importance of sustainability reporting to stakeholders/ investors and its effect on the corporate profitability of oil and gas companies in particular, establishing these relationships is quite pertinent as it will enable oil companies and other corporate organizations to know that, businesses exist to meet the people's needs and they will in turn enjoy the resulting rewards of profit; business

organizations should also know that business can only thrive in a sustainable environment, thus, awakening the sense of social responsibility in them.

Hence, the basic problem of this study is to determine if sustainability accounting is relevant in the as certainment of the financial performance of selected oil and gas firms in Nigeria. The study particularly intends to: Examine the relationship between sustainability Accounting and Return on Assets (ROA) of selected firms in oil and gas industry in Nigeria, Establish the relationship between sustainability Accounting and Return on Equity (ROE) of selected firms in oil and gas firms in Nigeria assess the relationship between sustainability Accounting and Return on Investment (ROI) of selected firms in oil and gas industry in Nigeria. It is against this backdrop that the researcher is poised to empirically analyze this study.

Objective of the study: The main objective of this study is to analyze the relationship between sustainability accounting and the Financial Performance of Selected oil and gas firms in Nigeria. Specifically, the study seeks to; Establish the relationship between sustainability Accounting and Return on Equity (ROE) of selected firms in the oil and gas industry in Nigeria. Ascertain the relationship between sustainability Accounting and Return on Investments (ROI) of selected firms in the oil and gas industry in Nigeria. Access the relationship between sustainability Accounting and Return on Assets (ROA) of selected firms in the oil and gas industry in Nigeria.

Statement of hypothesis: In view of the research objectives, the following research hypotheses have been formulated in their Null form:

- H_1: there is no significant relationship between sustainability Accounting and Return on Equity (ROE) of selected firms in the oil and gas industry in Nigeria
- H_2: There is no significant relationship between sustainability Accounting and Return on Investments (ROI) of selected firms in the oil and gas industry in Nigeria
- H_3: There is no significant relationship between sustainability Accounting and Return on Assets (ROA) of selected firms in the oil and gas industry in Nigeria

Significance of the study: The knowledge that will be provided by this study will contribute significantly to theoretical justification and provide improved body of literature on the concept of sustainability reporting. This study will be of immerse benefit to the society, government and regulatory authorities, non-governmental organizations, oil companies and other corporate organizations as well as researchers and research bodies.

Scope of the study: This study investigates empirically the relevance of sustainability accounting on the financial performance of selected oil and gas firms in Nigeria: A Study of Shell Petroleum Development Company. This study covers a period of nineteen years spanning years 2000-2019. For the purpose of this study, Shell Petroleum Development Company was considered as one of the major players in the oil and gas industry during the period under study because they controlled a greater proportion of the market in terms of size, branch networks and oil wells.

Review of related literatures

Conceptual framework

Definition of sustainability accounting: Sustainability accounting entails a way of calculating the economic, ecological and social service effects of a corporation, against the conventional practice of gauging just the financial bottom line. Before the alignment of the concept of sustainability reporting by Elkington, scholars of environmental study were occupied with discuss on the measures of and for, sustainability and over the past 30 years, most academic studies tailored towards sustainability have witnessed a dramatic increase. A careful study and a close look at the concept of sustainability, one is likely to accept the explanation on the concept of triple bottom provided by Andrew and Karl[9] who opined that the concept of triple bottom line “captures the essence of sustainability by measuring the impact of an organization’s activities on the world, including both its profitability and shareholder values and its social; human and environmental capital”.

The concept of sustainability accounting, enables firms to have an insight to their overall performance, this implies that firms that abide to the principles of sustainability accounting are better equipped with information on the economic value they generate. Sustainability reporting also makes it possible for firms to integrate both the social and ecological values of their businesses into their reports and these may be increased or decreased into the evaluation of their day to day activities. This phenomenon is followed by the belief that notwithstanding the commitment of firms towards value creation which is better in theory than practice as the reality still remains that these firms get engaged in practices that precursor the destruction of certain values[8].

Literatures on sustainability accounting, has further proved that their exist a positive significant relationship between financial and ecological out-performance, this is more visible in sectors which have high-impact on the society such sectors as forest products, petroleum, chemicals and electric utilities[10].

The activities of the oil and gas industry make them a target of sustainability reporting enthusiasts. From the point of view of history, environmental liabilities, chemical emissions and spills, waste control and management and other obligations which demands acquiescence by the virtue of this obligation, the management of the oil and gas industry are constantly under an increasing demand to be socially, economic and ecological accountable to the various stakeholders. The regulations on tailpipe release and gasoline standards, evidently have contributed to the upsurge on environmental expenditure in a manner that cannot be compared with in other sectors. The united Nation resolution on climate change cum the Kyoto protocol of 1997 aimed at decreasing greenhouse gas release, these efforts have led to little or no impact as they have been relegated to the background[11].

Concept of sustainable development: As part of the strategies for curbing the effect of the unsustainable use of the environment by the oil and gas companies in Nigeria, much emphasizes has been laid on the need for corporate organization to imbibe responsible corporate behaviour which has the propensity to engender the sustainable use of the environment as well as the resources inherent in it.

Arriving at a singular universal definition of the term sustainability has been a tedious one as evidence from research as debunked the existence of such definition in current literatures on sustainability, thus, giving raise to the abundant of definitions on what the concept of sustainability entails. Notably, one of the activities which has greatly, liberated scholars from the island of confusion as regards to the right way to present the term, is the definition provided by the United Nations in the Brundtland Commission. These saw the term sustainability been ascribed such meaning as "development that meets the present needs without compromising the ability of future generations to meet their needs". This implies that for any development to be termed sustainable such development should as a matter of fact, embody the attributes which enables the current needs to be met while making adequate provision for future needs of generations to come to be met as well.

Bartlett[12] defined it as "development that does not compromise the ability of future generations to meet their needs". Sustainable development is perceived as that kind of development tailored towards the effective and efficient management, controlling and usage of limited and unlimited resources for the sole purpose of ensuring the survival of man on earth while making provision for both present and future generation.

In addition, sustainable development can be described as "a new way of life and approach to social and economic activities for all societies, rich and poor which is compatible with the preservation of the Environment". Sustainable development as a planned and well-articulated concept, gained it prowess from a series of Conferences and Summits which had in attendance influential and prominent people with a common goal of seeking ways on handling the "burning issues" of the 21st century: poverty, increasing inequality, environmental and human health degradation.

According to Kozłowski, "Sustainable development is such course of economic development which does not significantly and irreversibly violate man's living environment, reconciling the laws of nature and the laws of economy". Corporate sustainable behavior in this context, entails the awareness of corporate organizations on their been part of a complex whole (society) and as such their day to day activities should be carried out in a manner that engender social, economic and environmental development. Imbibing sustainable behavior by corporate organization has become, so, vital in the attainment of corporate profitability. This is because the nexus between corporate sustainable behavior and financial performance is patterned in a manner that the former sets the bedrock for the attainment of the later. An example is the fact that businesses need a stable environment to thrive; this implies that business growth is practically impossible in the presence of environmental crises.

Attaining sustainability does not end with policy formulation; it extends to its implementation cum continuity. This is so because virtually all businesses claim to aim for sustainable development in her policy statement due to pressure mounted on them to give more to the society, however, the issue lies with implementation. In a lighter term, any organization that is sustainable oriented does not simply make the statement, such organizations; embark on practices which engender the attainment of her mission to be sustainable. Such organizations also map out and adopt strategies that will enable her to continue in that line of action. Maintaining sustainability in an organization demands a collective effort of all the members of the organization.

Theoretical framework

Stakeholder theory: The stakeholder theory is a theory of organizational management and corporate ethics that

addresses morals and values in managing an organization. It is a theory of organizational management and business ethics that accounts for multiple constituencies impacted by business entities like employees, suppliers, local communities, creditors and others. Stakeholder theory was first described by Dr. F Friedman a Professor at the University of Virginia in his landmark book, "Strategic Management: A Stakeholder Approach." It suggests that shareholders are merely one of many stakeholders in a company. In his approach he explained that the stakeholder ecosystem involves anyone invested and involved in or affected by the company such as the employees, environmentalists, neighbours, manufacturers, vendors, government agencies and more. Freeman's theory suggests that a company's real success lies in satisfying all its stakeholders and not just those who are direct owners or investors of the company.

Empirical review: In this section of research work, the researcher reviewed some empirical studies which is related to the present study. In line with the observation made by Hubbard[8], though many frameworks have been established for triple bottom line reporting, only few among these developed frameworks have received broad traction. Thus, the following empirical studies were reviewed.

Kwaghfan[5] conducted a study on the "Impact of Sustainability Reporting on Corporate Performance of Selected Quoted Companies in Nigeria, the researcher was buoyed to embark on the research so as ascertain the level of impact of sustainability reporting on return on equity of companies listed on the Nigeria Stock Exchange; to evaluate the level of influence of sustainability reporting on return on assets of companies listed on the Nigerian Stock Exchange and to determine to the level of impact of sustainability reporting on earnings per share of companies listed on the Nigerian Stock Exchange, these among others made the objective of the research. The researcher adopted the use of ex-post facto as the design of the study. The population of the research comprised of 64 sampled companies picked out from 76 non-financial companies quoted on the Nigerian Stock Exchange for the purpose of data collection, the researcher obtained its data from secondary sources. While the research hypothesis tested using the student t-test statistic. Based on the result from the data analyzed, the researcher found out among others that the effect of sustainability reporting on financial performance of companies investigated was positive. Based on the findings the researcher therefore recommended among others that firm should incorporate triple bottom line accounting in their reporting system.

Nnamani *et al*.[13] carried out a study on the "Effect of sustainability accounting and reporting on financial Performance of firms in Nigeria brewery Sector". The objective of the study was to ascertain the effect of social responsibility cost on the profitability of selected firms in the Nigeria brewery sector and to determine the type of relationship that exists between employee's benefit cost and the firm's financial performance. For the purpose of data collection, the researchers sourced data for the study from the financial statements of three sampled firms. The data collected was thus, analyzed using ordinary linear regression. Based on the results obtained from data analysis, the researchers found out among others that sustainability reporting has positive and significant effect on financial performance of firms studied. It is against this background that the researchers recommended among others that firms in Nigeria should invest reasonable amount of their earnings on sustainability activities while specific accounting templates be articulated by professional accounting regulating bodies to guide firms' reportage on sustainability activities. The Financial Reporting Council of Nigeria (FRC) and others alike should make sustainability reporting compulsory while adequate sanctions are spelt out and enforced on defaulting organizations to serve as a deterrent.

Burhan and Rahmanti[14] carried out a research on ascertaining the relationship between Sustainability Reporting and company performance. Using a sample of thirty-two companies listed on the Indonesian stock exchange during the period 2006-2009, the study uses linear regression model as well as multiple regression and the researcher's shows that sustainability reports does have an association with company performance, however, partially as only social performance disclosure influences the company performance.

Summary of reviewed literature: Sustainability accounting is one of the concepts used to explain the communication of an organization's information reporting on its social, economic and environmental performance. Due to the three dimensions of triple bottom line accounting, they are similar with the concept sustainability reporting which deals with profits, people and planet also called the social bottom line, the environmental bottom line and the economic bottom line. Financial performance as it is used in this thesis is a concept which is tied to performance measurement in organizations. Performance measurement systems are considered as information systems that are indispensable in evaluating company performance.

Sustainability accounting as it is discoursed in this thesis provides a framework which creates value for stakeholders and thereby translates to satisfying the

interest of diverse group of stakeholders. This research is therefore, anchored on stakeholder's theory. Stakeholder's theory basically lays the emphasis that managers should manage a firm for the profitability of all stakeholders. This is in accordance with legitimacy theory which emphasizes that companies should continually seek to ensure that they carry out their activities within the bounds, norms and opportunities of their societies and therefore, a company should preserve its survival and continuity by willingly disclosing detailed statistics to stakeholders, so as to demonstrate it as a good citizen.

MATERIALS AND METHODS

Research design: This study adopts quasi- experimental research design. This research design is useful considering the fact that the researcher intends to analyze a time series data spanningfrom years 2000-2019. Ordinary Least Square (OLS) method of regression analysis and other test designs such as the Co- integration test, Error Correction Modeling, Augmented Dickey Fuller test etc, was used to analyze the empirical data. The OLS design, however, relates to the setting up of a particular type of an experiment or other factor being studied. In quasi-experimental design, the researcher is interested in determining what caused certain outcomes but unfortunately he has absolutely no control over the causes. The key difference is this empirical approach is the lack of random assignment. Another unique element often involved in this experimentation method is the use of time series analysis. This method is therefore deemed appropriate for the conduct of this study as it will reveal the relationship between of triple bottom line accounting and the corporate profitability of selected oil companies in Nigeria.

Sources of data: The data sources were entirely from secondary sources which were extracted from journal publications, Annual financial reports of the selected oil and companies in Nigeria and Text books. The data set for this study constitutes the annual time series data spanning from 2000-2019. The data sources was mainly from a seven 19 years financial summary of Shell development company Limited.

Population of the study: The study is time series in nature and it will comprise data from the financial performance of ten oil companies in Nigeria. The population of this study therefore, constitutes all the oil companies quoted in the Nigerian stock exchange.

Sample size of the study: The sample size of the study was designed in such a way that the financial performance of the oil and gas industry under review will be taken into consideration. The sample size of this study comprised all indicators of sustainability accounting and the financial performance of shell development company The sample period spans from years 2000-2019, this is because this study is time series in nature.

Determination of the research variable: The research variables employed in this study were structured into dependent and independent variable for the purpose of the analysis.

Dependent variable: In this study, the Net Profit (NP) of Shell Development Company represents the dependent variable which is also the financial performance. The dependent variable will be used to regress against the independent variables.

Independent variable: The independent variable represents the financial performance ratios of Shell Development Company and which will be proxied as Return on Assets (ROA), Return on Equity (ROE) and Return on Investment (ROI) and which represents the factors arising from the financial performance of the oil company under study.

Model specification: Sustainability accounting and the financial performance of selected firms in the oil and gas industry in Nigeria can be accomplished using a regression analysis which can be explicitly or implicitly stated based on a theoretical framework of endogenous models[15]. Thus the level of financial performance of oil and gas companies in Nigeria is assumed to be influenced by several variables of 'Y' which represents the financial performance as the dependent variables and which will be proxied as the Net Profit (NP) of the selected oil companies in Nigeria. 'X' on the other hand represents the independent variables and some factors arising from the financial performance of the ten selected oil companies and which will be proxied as Return on Assets (ROA), Return on Equity (ROE) and Return on Investment (ROI):

$$Y = f(x) \tag{1}$$

Where:

Y = The dependent variable (financial performance) and which was proxied as net profit of the selected oil and company

X = The independent variables and which were proxied as the factors arising from the financial performance of selected oil and Gas Company (ROA, ROE and ROI)

More specifically (Eq. 1) could be written in a non stochastic form as follows:

$$NP = f\left(ROA, ROEY \text{ and } ROI\right) \quad (2)$$

Where:
NP = The Net Profit
ROA = The Return on Assets
ROE = The Return on Equity
ROI = The Return on Investment

Therefore, we can re-write (Eq. 2) in its stochastic explicit form based on the functional relation as follows All variables are as previously defined:

$$NP = q_0+q_1 ROA+q_2ROE+q_3ROI+U_t \quad (3)$$

Where:
q_0 = The regression constants
q_1, q_2 and q_3 = The parameter coefficients and
U_t = The stochastic error term

Transforming (Eq. 3) into a natural logarithm, we can obtain:

$$InNP = q_0+q_1 InROA+q_2ROE+q_3ROI+U_t \quad (4)$$

Thus, the transformed log linear (Eq. 4) will be estimated using the Ordinary Least Square (OLS) method of regression analysis. The use of log linear method improves the validity of the estimates. This method also reduces, if not completely removes the hetrosdaciticy errors which may result from unsealed magnitude on both sides of the equation.

RESULTS AND DISCUSSION

Data presentation, analysis and interpretation: The result of the co-integration test was reported, followed by the result of error correction modeling. The analysis is based on standard econometric techniques to verify the characteristics of each of the variables in the model and their long run relationships:

- Cointegration Result
- Date: 6/06/19 Time: 23:46
- Sample (adjusted): 2000-2019
- Included observations: 14 after adjustments
- Trend assumption: Linear deterministic trend
- Series: NP, ROA, ROE, ROI
- Lags interval (in first differences): 1 to 1

Error Correction Model (ECM): It has been pointed out earlier that the Error Correction Mechanism (ECM) is meant to tie the short-run dynamics of the co-integrating equations to their long-run static dispositions in order to maintain equilibrium. In order to capture the short run fluctuation, the Error Correction Method (ECM) was employed and the result is presented below.

From Table, 1 ECM (-1) was consistent by a assuming negative values. It suggests that if in the short run variables deviate from equilibrium, they tend to re-adjust themselves back to equilibrium in the long run. The speed of this adjustment is as 53% per annum, this shows that ROA had a coefficient of 0.432102; this shows that when returns on investment increase by I unit, the NP will increase by 0.432102 units. Returns on equity also had a statistically significant positive coefficient of 1.266759 which shows that a unit increase in ROA result to an increase in NP by 1.266759 units and finally, Returns on Investment (ROI) has a positive and statistically insignificant coefficient of 389.3445; it shows that when ROI is increased by 1 unit, NP increases by 389.3445 units. It can be deduced that in the long run, if Interest rate should increase by a percent; it will cause NP to decrease by approximately 389.3445 units.

R^2 = 0.95 this gives a good fit of the regression line, it shows that 95% of the changes in dependent variables are caused by changes in the independent variables and the remaining 5% are as a result of variables not included in the model but captured by the contemporaneous error (μ).

Test of hypothesis
Hypothesis 1

- H_0: there is no significant relationship between sustainability accounting and Return on Assets (ROA) of selected firms in the oil and gas industry in Nigeria
- H_A: there is a significant relationship between sustainability accounting and Return on Assets (ROA) of selected firms in the oil and gas industry in Nigeria

In testing the null hypothesis the study employed the t-statistics of Return on Assets from the ECM result. Table 3 shows that the t-statistics had a p = 0.0160 which was <0.05 level of significance. Thus, the null hypothesis is rejected as such the alternate hypothesis is accepted that there is a significant relationship between sustainability accounting and Return on Assets (ROA) of selected firms in the oil and gas industry in Nigeria.

Hypothesis 2:

- H_0: there is no significant relationship between sustainability accounting and Return on Equity (ROE) of selected firms in the oil and gas industry in Nigeria

Table 1: Unrestricted co integration rank test (Trace)

Hypothesized No. of CE(s)	Eigen values	Trace statistic	Critical value 0.05
None*	0.962674	262.2570	125.6154
At most 1*	0.846101	150.4627	95.75366
At most 2*	0.636165	86.83304	69.81889
At most 3*	0.577741	52.45719	47.85613
At most 4	0.372057	23.14451	29.79707
At most 5	0.193734	7.324107	15.49471
At most 6	7.31E-05	0.002484	3.841466
None*	0.962674	111.7943	46.23142
At most 1*	0.846101	63.62963	40.07757
At most 2*	0.636165	34.37586	33.87687
At most 3*	0.577741	29.31268	27.58434
At most 4	0.372057	15.82040	21.13162
At most 5	0.193734	7.321623	14.26460
At most 6	7.31E-05	0.002484	3.841466
**MacKinnon-Haug-Michelis (1999) p-valuess			
p-values	ROA	ROE	ROI
0.000326	0.004751	0.005702	-0.000306
-3.03E-05	-0.000924	-0.006074	7.33E-05
-0.000915	-0.007513	-0.045965	0.000116
1.15E-05	-0.004391	-0.066735	8.52E-05
0.000221	-0.004341	-0.007253	-0.000189
-0.000389	0.004718	0.028799	0.000281
-0.000162	-0.018220	-0.004979	-0.000122
Unrestricted Adjustment Coefficients (alpha):			
D(NP)	707.6700	339.6722	304.0527
D(ROA)	3358.646	-860.2518	1180.684
D(ROE)	2.517902	5.378582	-1.068038
D(ROI)	207.7779	186.9736	-181.7345
1 Cointegrating Equation(s):	Log likelihood	-1228.218	
NP	ROA	ROE	ROI
1.000000	14.58792	17.50944	-0.938845
	(2.44733)	(9.90167)	(0.04700)
Adjustment coefficients (standard error in parentheses)			
D(NP)	0.230472		
	(0.04872)		
D(ROA)	1.093837		
	(0.14014)		
D(ROE)	0.000820		
	(0.00094)		
D(ROI)	0.067669		
	(0.02288)		
2 Cointegrating Equation(s):	Log likelihood	-1196.404	
NP	ROA	ROE	
1.000000	0.418655	1076.600	
	(0.86185)	(127.863)	
0.000000	-0.093056	-76.70770	
	(0.05890)	(8.73793)	
Adjustment coefficients (standard error in parentheses)			
D(NP)	0.220189	3.048342	
	(0.04360)	(0.64513)	
D(ROA)	1.119880	16.75146	
	(0.12900)	(1.90892)	
D(ROE)	0.000657	0.006994	
	(0.00088)	(0.01300)	
D(ROI)	0.062008	0.814428	
	(0.01946)	(0.28789)	
3 Cointegrating Equation(s):	Log likelihood	-1179.216	
NP	ROA	ROE	
1.000000	0.728057	402.9303	
	(0.33582)	(47.5736)	
0.000000	-0.116738	-25.14538	
	(0.01944)	(2.75334)	
0.000000	0.002060	-4.484316	
	(0.00361)	(0.51157)	
Adjustment coefficients (standard error in parentheses)			
D(NP)	-0.057945	0.763964	-12.00336
	(0.11523)	(1.06006)	(5.54090)

Table 1: Continue

Hypothesized No. of CE(s)	Eigen values	Trace statistic	Critical value 0.05
D(ROA)	0.039843	7.880866	-29.89269
	(0.30690)	(2.82331)	(14.7573)
D(ROE)	0.001634	0.015018	0.030783
	(0.00260)	(0.02393)	(0.12509)
D(ROI)	0.228251	2.179817	8.402639
	(0.04574)	(0.42080)	(2.19949)
4 Cointegrating Equation(s):	Log likelihood	-1164.559	
NP	ROA	ROE	ROI
1.000000	0.000000	0.000000	0.000000
0.000000	1.000000	0.000000	0.000000
0.000000	0.000000	1.000000	0.000000
0.000000	0.000000	0.000000	1.000000
Adjustment coefficients (standard error in parentheses)			
D(NP)	-0.059641	1.412619	-2.144979
	(0.11161)	(1.14387)	(9.35773)
D(ROA)	0.032507	10.68575	12.73644
	(0.28070)	(2.87697)	(23.5357)
D(ROE)	0.001696	-0.008786	-0.331004
	(0.00238)	(0.02438)	(0.19945)
D(ROI)	0.229095	1.857066	3.497412
	(0.04346)	(0.44541)	(3.64374)
5 Cointegrating Equation(s):	Log likelihood	-1156.649	
NP	GPM	OM	ROA
1.000000	0.000000	0.000000	0.000000
0.000000	1.000000	0.000000	0.000000
0.000000	0.000000	1.000000	0.000000
0.000000	0.000000	0.000000	1.000000
0.000000	0.000000	0.000000	0.000000
Adjustment coefficients (standard error in parentheses)			
D(NP)	0.002974	0.182028	-4.200838
	(0.09955)	(1.08531)	(8.17096)
D(ROA)	0.103944	9.281788	10.39094
	(0.28056)	(3.05885)	(23.0291)
D(ROE)	0.001117	0.002594	-0.311991
	(0.00238)	(0.02598)	(0.19560)
D(ROI)	0.234972	1.741565	3.304451
	(0.04425)	(0.48245)	(3.63218)
6 Cointegrating Equation(s):	Log likelihood	-1152.988	
NP	ROA	ROE	ROI
1.000000	0.000000	0.000000	0.000000
0.000000	0.000000	0.000000	0.000000
0.000000	0.000000	0.000000	0.000000
0.000000	1.000000	0.000000	0.000000
0.000000	0.000000	1.000000	0.000000
0.000000	0.000000	0.000000	1.000000
Adjustment coefficients (standard error in parentheses)			
D(NP)	-4.290945	-0.223126	17.49939
	(8.66261)	(0.04834)	(5.67552)
D(ROA)	10.53858	-1.066665	-27.74929
	(24.4151)	(0.13624)	(15.9962)
D(ROE)	-0.215768	0.001395	-0.009153
	(0.19911)	(0.00111)	(0.13045)
D(ROI)	1.782132	-0.084576	-2.686845
	(3.74012)	(0.02087)	(2.45043)

- H_A: there is a significant relationship between sustainability accounting and Return on Equity (ROE) of selected firms in the oil and gas industry in Nigeria

To test the null hypothesis stated above, the result from the ECM test was employed. Table 4 shows that the t-statistics of Return on Equity had a p = 0.0029 which was <0.05 level of significance. Thus, the null hypothesis is rejected; as such the alternate hypothesis is accepted that there is a significant relationship between sustainability accounting and Return on Equity (ROE) of selected firms in the oil and gas industry in Nigeria.

Hypothesis 3:

- H_0: there is no significant relationship between sustainability accounting and Return on Investment (ROI) of selected firms in the oil and gas industry in Nigeria

Table 2: VECM

Variables	Coefficient	SE	t-statistic	Prob.
C	7446.579	3545.338	2.100386	0.0738
ROA	0.432102	0.158300	2.729639	0.0160
ROE	1.266759	0.475621	2.663379	0.0029
ROI	389.3445	198,7032	1.959428	0.8736
ECM(-1)	-0.532745	0.175321	-3.038683	0.0052
R^2	0.950013	Mean dependent var	26827.41	
Adjusted R^2	0.900027	SD dependent var	10830.09	
SE of regression	3424.314	Akaike info criterion	19.41972	
Sum squared resid	82081487	Schwarz criterion	19.79734	
Log likelihood	-137.6479	Hannan-Quinn criter.	19.41569	
F-statistic	19.00538	Durbin-Watson stat	1.441550	
Prob. (F-statistic)	0.000471			

Researcher`s compilation from E-view (Version 9.0)

- H_A: there is a significant relationship between sustainability accounting and Return on Investment (ROI) of selected firms in the oil and gas industry in Nigeria

To test the null hypothesis stated above, the result from the ECM test was employed. Table 4 shows that the t-statistics of Return on Investment had a p = 0.8736 which was >0.05 level of significance. Thus, the null hypothesis is accepted; and the study concludes that there is no significant relationship between sustainability accounting and Return on Investment (ROI) of selected firms in the oil and gas industry in Nigeria (Table 2).

Discussion of findings: The study investigated the relevance of sustainability accounting on the financial performance of selected firms in the oil and gas industry in Nigeria using Shell Petroleum Development Company as a case study for the period between years 2000 - 2019. Various techniques of econometric analysis such as the unit root test for stationarity of the series, the co-integration test for long run relationship within the series, the Vector Error Correction Model, the Serial correlation test for autocorrelation and the heteroskedasticity. In the course of the study, the objectives were to examine the relationship between sustainability Accounting and Return on Assets (ROA) of selected firms in oil and gas industry in Nigeria, establish the relationship between sustainability Accounting and Return on Equity (ROE) of selected firms in oil and gas industry in Nigeria assess the relationship between sustainability Accounting and Return on Investment (ROI) of selected firms in oil and gas industry in Nigeria.

In more specific terms, based on the results obtained from data analysis, the findings of the study can be summarized thus. The existence of a significant relationship between Return on Assets (ROA) financial performance of selected firms in the oil and gas industry in Nigeria.

The existence of a significant relationship between Return on Equity (ROE) and financial performance of selected firms in the oil and gas industry in Nigeria. The non-existence of a significant relationship between Return on Investment (ROI) and financial performance of selected firms in the oil and gas industry in Nigeria.

CONCLUSION

It can be observed from this study that sustainability accounting as a concept lays emphasizes on the need for businesses to adopt sustainable use of her business environment and also to embark on practices which enables her to meet the various interest of the stakeholders as a survival strategy. The study while employing various techniques of econometric analysis discovered the existence of a long-run relationship sustainability accounting and financial performance proxied by Net Profit. This invariably means that, when companies are socially, environmentally and economically responsible to their host community or business environment, they stand the chance of enjoying an increase in profit. This may be largely to so many reasons, ranging from the increased acceptance they will receive from the people to the creation of a stable, peaceful and chaos free business atmosphere which remains a critical factor towards corporate survival and successful business operations. Also, incorporating sustainability accounting techniques enables firms to cut down cost of operation as the firm spends less money on the settlement of fines and compensation as a result of her irresponsible behavior.

RECOMMENDATIONS

Companies operating in Nigeria, oil and gas companies inclusive should adopt sustainability reporting initiatives as this enables them to identify, apportion and appraise ecological and social cost affecting their various businesses and also, enable managers to acquire strategies and techniques which are needed in the management of corporate organization's ecological, social and economic performance.

From the perspective of the issue of lack of uniformity of reports and difficulties encountered when trying to measure the three dimensions of sustainability

accounting, especially, the ecological bottom. The study recommends the adoption of unified reporting standards and guidelines. This is also due to the fact that sustainability accounting on a global scale is rapidly evolving; this has led to the emergence of various standards and frameworks. Thus, further pointing to the need to harmonize sustainability accounting standards and guidelines. This uniformity is perceived to engender uniformity in reporting and comparison.

From a regulatory perspective, evidence from research has showed the unavailability of a legislative obligation for companies to compile and publish sustainability reports. Hence, the study recommends that in Nigeria, such as the legislative arm of government and the Corporate Affairs Commission, to look into the activities of firms operating in Nigeria as it relates to triple bottom line reporting and come up with a form of regulation or requirement which will encourage firms especially oil companies in Nigeria to integrate the culture of triple bottom line reporting into her corporate culture. Also, there is a need for the Financial Reporting Council of Nigerian to formulate a grass root triple bottom line reporting guidelines or adopt and modify other standards for use in the country for the moment.

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