

## Evaluation of Human Resources Development Cost and Operational Performance of The Nigerian Oil and Gas Sector

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### ABSTRACT

This study investigates into human resource development cost and operating performance of the oil and gas sector in Nigeria. A sample of five oil and gas firms listed in Nigeria Stock Exchange from 2006 to 2015 was selected out of 8 largely because of completeness of data. These companies comprise of Texaco, Mobil, AGIP, Chevron and Total. The study makes use of secondary data obtained from annual report and accounts of the sampled oil and gas firms. However, panel data and regression analysis were used to ascertain the nature and magnitude of association between the dependent variable total debt to total asset (TD/TA) and the independent variables - capital expenses, revenue expenses and total expenses. Hence, the major findings arising from this study suggest that operating performances proxied by total debt to total asset of the sampled oil and gas firms are influenced negatively by capital expenses. It is concluded that the volume of investments on human resources usually made by corporate entities and the impact of such investments on the productivity level justify their treatment and recognition as assets rather than expenses. Finally the study recommends that the oil and gas sector should comply with relevant policy guiding human resource development in Nigeria. They should also maximize their revenue expenditure in order to boost their operational performances.

**Keywords:** TDTA, Revenue, Capital, Policy, Performance, Regression.

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### INTRODUCTION

[1] stated that human resources are the greatest assets at the disposal of organizations. According to [1] human resource refers to a key determinant of corporate value creation and a platform for competitive advantage which many firms enjoy.

The current trends in accounting profession is adopting knowledge economy as a better option to the production economy. However, one of the major challenges of this stand is how the profession can appreciate the place of intangible assets of corporations as depicted by the intellectual assets. According to [2], accounting profession has hitherto conservatively recognized only tangible assets (non-current assets) in the valuation of firms which remains the considerable difference between firms book value and market value.

[3] and [4] and [5] attributed the obvious disparity between firm's book value and market value occasioned by non-recognition of intangible assets in the traditional accounting concept to human resource.

*According to [2], human resources not capital constitute the ultimate basis for the wealth of nations whereas capital and natural resources are factors of production; human beings are the*

*active agents who accumulate capital, exploit natural resources, build social, economic and political organizations and carry forward national development. Expatiating on the importance of human resources, [2] holds that a country which is unable to develop skills and knowledge of its people and to utilize them effectively in the national economy will be unable to develop anything else.*

It then follows that, no country can make any meaningful economic progress without developing the knowledge, skills and competencies of its citizens to manage available resources.

Hence, [3] argued that a nation must devote a high proportion of its resources to developing its human resources in terms of number, quality and mix for the optimum overall economic and social development, so as to survive the prevailing economic hardship.

### STATEMENT OF THE PROBLEM

There is a digression/shift in the measurement of economic value using the production of material or physical goods as against the present scenario of creating human resource. [3] after identifying oil and gas industries, telecom industry and pharmaceutical industry as knowledge intensive and technologically driven firms pointed out that inspite of their huge investment in knowledge development that is human capital (intangible) assets the firms are still valued using the traditional firms' valuation methods which do not recognize the intangibles as integral components of assets

In a study done by,[2] human capital and firms' performance in the Indian pharmaceutical industry, the on result shows that human capital has a prominent influence on profitability and productivity. Furthermore, [4] and [5] argue that the impact of Intellectual Capital especially human capital can be substantial in certain service and manufacturing sectors like financial institutions, hotels, information and technology industry, education, pharmaceuticals, chemical and petrochemical.

The studies, though have affirmed and reaffirmed the ability of Human Capital to have positively influenced performance of firms, some empirical results still negate the assertion or could not establish any statistical relationship between human resource development cost and firm's performance. It then becomes obvious that the task of establishing the relationship between Human resource development cost and firms' operational performance has remained inconclusive and unresolved. Hence, this study is embarked upon so as to fill the gap, contribute to existing knowledge as well as improve on the existing performances of the oil and gas sector in Nigeria.

### OBJECTIVES OF THE STUDY

The main objective of this study is to evaluate human resources development cost and operational performance of the Nigerian oil and gas sector, while the specific objectives include:

1. To determine the effect of capital expenses on total debt to total asset of the oil and gas firms in Nigeria.

2. To ascertain the effect of revenue expenses on total debt to total asset of the oil and gas firms in Nigeria.
3. To establish the relationship between total expenses and total debt to total asset of the oil and gas firms in Nigeria.

### **RESEARCH QUESTIONS**

1. What is the effect of capital expenses on total debt to total asset of the oil and gas firms in Nigeria?
2. What is the effect of revenue expenses on total debt to total asset of the oil and gas firms in Nigeria?
3. What is the relationship between total expenses and total debt to total asset of the oil and gas firms in Nigeria?

### **RESEARCH HYPOTHESES**

The following hypotheses are formulated for the study:

1.  $H_0$ : Capital expenses has not significantly and positively influenced total debt to total asset of the oil and gas firms in Nigeria
2.  $H_0$ : Revenue expenses has not significantly and positively influenced total debt to total asset of the oil and gas firms in Nigeria
3.  $H_0$ : There is no significant and positive relationship between total expenses and total debt to total asset of the oil and gas firms in Nigeria

### **CAPITAL EXPENSES**

[4], views capital expenses as an amount spent to acquire or improve a long-term asset such as equipment or buildings. Usually the cost is recorded in an account classified as Property, Plant and Equipment. The cost (except for the cost of land) will then be charged to depreciation expense over the useful life of the asset.

It can also be viewed as capital expenditure, or CapEx, which are funds used by a company to acquire or upgrade physical assets such as property, industrial buildings or equipment. It is often used to undertake new projects or investments by the firm. Money spent on capital improvements, being those that change the nature of property, extend its useful life, or otherwise improve it beyond the natural improvement to be expected with routine repairs and maintenance. This is an important concept because capital expenditures must be added to the basis and depreciated slowly over time, while noncapital expenditures for repairs may be deducted entirely in the current year on one's taxes.

[5], explain that capital expenses are payments made in cash or cash equivalents over a period of more than one year. Capital expenditures are used to acquire assets or improve the useful life of existing assets. An example of a capital expenses is the funding to construct a factory. In accounting, capital expenditures must be capitalized; that is, the expenditure is recognized on a Statement of financial position gradually over the course of an asset's useful life. Capital

expenses are recorded as liabilities on a Statement of financial position. They are also called capital outlays.

Capital expenditures generally takes two forms: maintenance expenditures, whereby the company purchases assets that extend the useful life of existing assets, and expansion expenditures, whereby the company purchases new assets in an effort to grow the business. It is important to understand that money spent to repair or conduct ongoing, normal upkeep on assets is not considered as capital expenses and should be expensed on the income statement when it is incurred.

#### **REVENUE EXPENSES**

[5], explains that a revenue expenses is an amount that is expensed immediately—thereby being matched with revenues of the current accounting period. Routine repairs are revenue expenditures because they are charged directly to an account such as Repairs and Maintenance Expense.

A revenue expenses can also be seen as cost that is charged to expense as soon as the cost is incurred. By doing so, a business is using the matching principle to link the expense incurred to revenues generated in the same accounting period. Hence, revenue expenditure is an amount that is expensed immediately - thereby being matched with revenues of the current accounting period. Routine repairs are revenue expenditures because they are charged directly to an account such as Repairs and Maintenance Expense.

#### **TOTAL EXPENSES AND TOTAL DEBT**

[4], opines that the structure of Nigerian public expenditure can broadly be categorized into capital and recurrent expenditure. The recurrent expenditure are government expenses on administration such as wages, salaries, interest on loans, maintenance etc., whereas expenses on capital projects like roads, airports, education, telecommunication, power generation etc., are referred to as capital expenditure. Therefore, the total government expenditure will be an addition of Nigeria's government recurrent and capital expenditure.

On the other hand, total debt is a financial ratio that measures the extent of a company's or consumer's leverage. The debt ratio is defined as the ratio of total - long-term and short-term - debt to total assets, expressed as a decimal or percentage. It can be interpreted as the proportion of a company's assets that are financed by debt.

#### **HUMAN CAPITAL DEVELOPMENT**

The role of human capital development cannot be overemphasized. The development of human capital has been recognized by development economists to be an important prerequisite and an invaluable asset for a country's socio-economic development. This can only be achieved through increases in knowledge, skills and capabilities acquired through education and training by all. According to [5], human capital refers to the process of acquiring and increasing the number of persons who have the skills, education and experience that are

crucial for the economic growth and political development of a country. On his part [2] made it clear that the essence of human resources development is to ensure that the workforce is continuously adapted for, and upgraded to meet, the new challenge of its total environment. This is because the economy is a dynamic entity, which is constantly changing in response to various stimuli such as introduction and discoveries of new products or techniques of production. For timely adaptation, people already on the job require retraining, reorientation or adaption to meet the new challenges.

From the point of view of [6], human resources has been described as the knowledge, skills, attitudes, physical and managerial effort required to manipulate capital, technology, land and material to produce goods and services for human consumption. Consequently, [3] identified capacity to develop talent, capacity to deploy talent, and capacity to draw talent from elsewhere as key capacities to human capital management. In a collaborative view, for [6], human capital is the most important element of success in modern business today. So developing human capital requires creating and cultivating environment in which human beings can rapidly learn and apply new ideas, competencies, skills, behaviours and attitudes. From the foregoing discussions, one can decide that human capital represents the stock of competencies, knowledge, habits, social and personality attributes, which include creativity, cognitive abilities, embodied in the ability to perform labour so as to produce economic value.

#### **OPERATIONAL PERFORMANCE AND PROFITABILITY**

[4] opines that human capital has a direct impact on the intellectual capital assets that will yield higher financial results per employed. The development of human capitals is positively influenced by the educational level of employees and their overall satisfaction. Therefore, development of human capital has a direct impact on ROI (Return on Investment) of firms. That relate to training, education and other professional initiatives in order to increase the level of knowledge, skills, abilities, values and social assets of an employees' satisfaction and performance and eventually on a firm performance.

[7], stated that human capital is an important input for organizations especially for employees. Continuous improvement is mainly on knowledge, skills and abilities. The primary goal of all business ventures is profitability. Without profitability the firm will not survive in the long run. It is very important to measure current and past profitability in order to project future profitability.

Profitability is measured with income and expenses, income is money generated from the activities of the firm, using accrual method of accounting. Accrual method reports income when product is produced and reports expenses, when inputs are used up. Profitability ratio is applied to measure firm's performance. Some of these profitability ratios include return on assets (ROA) returns on investment (ROI), return on capital (ROC) earnings before tax (EBT) earnings before interest after tax (EBIT).

## EMPIRICAL REVIEW

### EFFECT OF EMPLOYEES SKILL ON PERFORMANCE

[8], in his study on intellectual capital and firm performance in Jordan using balance score card method, the study discovered a significant positive relationship between intangible asset, intellectual capital and financial performance, firm's customers, business process and growth and learning. The study therefore recommends that payment of enough attention to internal capabilities and resources is a gateway towards developing financial performance of firms.

[9], carried out a study on the Impact of Human Capital Development and Economic Empowerment on the Socio-Economic Development of Akwa-Ibom State, Nigeria. With the use of descriptive approach to data collection for the period 1999-2012, the study revealed that the government being the foremost driver of the economy has made a positive impact on the training and retraining of workers in the public sector. The study also revealed that apart from training, the government also embarked on elaborate empowerment programme which has helped so many to become self-employed as well as employers of labour. The study recommends among others that government should embark on extensive training of domestic engineers in the areas of oil and gas and should encourage individuals and the private sector to increase investment in human capital and economic empowerment in the state.

### EFFECT OF PROFESSIONAL EXPERIENCES ON PERFORMANCE

Mohammed, [7], investigated factors instrumental to the success of software industries of 3 nations (India, Ireland and Israel). With the use of field survey of 83 software companies in West Africa and least partial squares analysis the results show a significant relationship between the elements of intellectual capital and competitive capacity of businesses and between competitive ability and performance of the company.

[10], examined the association among organizational organic structure and intellectual capital improvement. He found that the organic structure and intellectual capital have a strong association.

### EFFECT OF STAFF MOTIVATION ON PERFORMANCE

[11], carried out a study on the effect of human resource practices on firm growth, with the aim of assessing the extent, if any, to which specific human resource practices may contribute to firm growth. The study surveyed human resource managers and recorded their perception about the links between human resource practices and sales growth. Results provided overall support for all human resource practices except of job security. It was found that selecting, training, and rewarding employees as well as giving them the power to decide for the benefit of their firm, contribute significantly to firm growth.

### EFFECT OF STAFF COMMITMENT AND RELATIONSHIP ON PERFORMANCE

[3], examined labour market flexibility in over 200 manufacturing UK firms and found that job security is negatively correlated with corporate performance. In contrast, results showed that

'high commitment' organizations are positively correlated with good corporate performance. [12], used psychological constraint and social cognition theories to explore the role of full-time employees' perceived job security in explaining their reactions to the use of temporary workers by using a sample of 149 full-time employees who worked with temporaries. Results demonstrated that employees' perceived job security negatively related to their perceptions that temporaries pose a threat to their jobs. On the one hand, for those with high job security, there was a positive relationship between benefit perceptions and performance. On the other hand, for those with low job security, there was a negative relationship between threat perceptions and performance.

[13], assessed the relationship between job insecurity, job satisfaction and effective organizational commitment of maintenance of workers in a parastatal in Gauteng. The result of their Study revealed small but significant relationships between job insecurity and extrinsic job satisfaction and job insecurity and effective organizational commitment. Job satisfaction was also found to mediate the insecurity and effective organizational commitment.

However, today's business environments are far from providing job security to their employees. For example, in an analysis of involuntary job loss in France between 1982 and 2002, [14], found evidence that technological changes contribute to keeping the employees for shorter periods of time, thus increasing job insecurity.

When companies do provide job security, then empirical evidence suggests that it has a positive effect on firm performance. Following [5], [9] found that among others, job security impacts operational performance indirectly through organizational commitment. [8], studied the US banking sector and found some support for a positive relationship between employment security and firm performance. In their study of 101 foreign firms operating in Russia, [15], found evidence that human resource practices indirectly improve organizational performance. The results showed that despite the fact that there was a direct and positive relationship between job security and performance for non-managers, the job security was the most important predictor of human resource outcomes for non-managerial employees. Results also suggested a direct positive relationship between managerial promotions based on merit and firm performance.

### RESEARCH DESIGN

The study adopted *ex post factor* research design using annual reports of five out of the eight oil and gas firms listed in the Nigerian Stock Exchange as at 2015.

Ordinary Least Squares (OLS) regression techniques was applied in the data analysis. The signs of the coefficients were relied upon in describing the direction and strength of linear relationship variables while the t-statistics and p-value were relied upon in determining the magnitude of the effect between the variables, x and y in the collection of our data series.

The variables of measurements were capital expenses, revenue expenses and total expenses of the sampled oil and gas firms (x) and the corresponding total debts to total assets (y).

$$Y' = a + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 \dots\dots\dots (1)$$

Where Y = the dependent variable

$\beta$  = The Coefficient

X = independent variables

e = error term

This can explicitly be represented as thus:

$$TD/TA = a + \beta_1 CE + \beta_2 RE + \beta_3 TE \dots\dots\dots (2)$$

Where:

TD/TA = Total Deposit to Total Asset;

CE = Current Expenses;

RE = Revenue Expenses, and

TE = Total Expenses

**TEST OF HYPOTHESES ONE**

**RESTATEMENT OF THE HYPOTHESIS IN NULL AND ALTERNATE FORMS**

**Ho<sub>1</sub>:** Capital expenses has not significantly and positively influenced total debt to total asset of the oil and gas firms in Nigeria

**Ha<sub>1</sub>:** Capital expenses has significantly and positively influenced total debt to total asset of the oil and gas firms in Nigeria

**DECISION RULE**

Accept H<sub>01</sub> if the t-statistics for Ho<sub>1</sub> < 2 and the significance of the t-statistics is not significant at 5%, otherwise reject H<sub>01</sub> and accept Ha<sub>1</sub>.

**RESULT OF THE REGRESSION OF HYPOTHESIS ONE**

Dependent Variable: TD/TA  
 Method: Panel Least Squares  
 Date: 07/20/16 Time: 14:16  
 Sample: 2006 2015  
 Periods included: 10  
 Cross-sections included: 5  
 Total panel (balanced) observations: 50

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CE	-0.291568	0.803541	-0.362854	0.0015
C	5.111102	6.195071	0.825027	0.4961
R-squared	0.971765	Mean dependent var	3.758050	
Adjusted R-squared	0.960352	S.D. dependent var	8.340310	

S.E. of regression	9.894265	Akaike info criterion	7.728640
Sum squared resid	195.7930	Schwarz criterion	7.421788
Log likelihood	-13.45728	Hannan-Quinn criter.	7.055275
F-statistic	0.131663	Durbin-Watson stat	2.215952
Prob(F-statistic)	0.751473		

Source: Authors' Eviews Output.

The regression result indicates that the operating performances of the sampled oil and gas firms are influenced negatively by capital expenses. The adjusted R<sup>2</sup> reveals that only about 96% of the variations in TD/TA could be explained by the capital expenses while 4% could be explained by other factors.

### TEST OF HYPOTHESIS TWO

#### RESTATEMENT OF THE HYPOTHESIS IN NULL AND ALTERNATE FORMS:

**H<sub>01</sub>:** Revenue expenses has not significantly and positively influenced total debt to total asset of the oil and gas firms in Nigeria

**H<sub>a1</sub>:** Revenue expenses has significantly and positively influenced total debt to total asset of the oil and gas firms in Nigeria

#### RESULT OF THE REGRESSION OF HYPOTHESIS TWO

Dependent Variable: TD/TA  
 Method: Least Squares  
 Date: 07/10/16 Time: 11:04  
 Sample: 2006 2015  
 Periods Included: 10  
 Cross-sections included: 5  
 Total panel (balanced) observations: 50

Variable	Coefficient	Std. Error	t-Statistic	Prob.
RE	0.357009	0.033084	10.79102	0.0000
C	0.261037	0.044789	5.828198	0.0011
R-squared	0.977953	Mean dependent var		0.200740
Adjusted R-squared	0.926929	S.D. dependent var		0.187892
S.E. of regression	0.034169	Akaike info criterion		-3.625819
Sum squared resid	0.007005	Schwarz criterion		-3.504785
Log likelihood	22.12910	Hannan-Quinn criter.		-3.758593
F-statistic	88.71406	Durbin-Watson stat		1.541750
Prob(F-statistic)	0.000023			

Source: Author's Eviews Output.

The regression result indicates that the operating performances of the sampled oil and gas firms are influenced positively by revenue expenses. The adjusted R<sup>2</sup> reveals that only about 92% of the variations in TD/TA could be explained by the revenue expenses while 8% could be explained by other factors.

**TEST OF HYPOTHESIS THREE**

**RESTATEMENT OF THE HYPOTHESIS IN NULL AND ALTERNATE FORMS:**

**H<sub>0</sub><sub>1</sub>:** There is no significant and positive relationship between total expenses and total debt to total asset of the oil and gas firms in Nigeria

**H<sub>a</sub><sub>1</sub>:** There is significant and positive relationship between total expenses and total debt to total asset of the oil and gas firms in Nigeria

**Result of the Regression of Hypothesis three**

Dependent Variable: TD/TA  
 Method: Panel Least Squares  
 Date: 07/21/16 Time: 05:06  
 Sample: 2006 2015  
 Periods included: 10  
 Cross-sections included: 5  
 Total panel (balanced) observations: 50

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3.412961	0.479281	7.121003	0.0000
TD	10.748999	2.384418	4.508017	0.0055
R-squared	0.659532	Mean dependent var		2.526409
Adjusted R-squared	0.582508	S.D. dependent var		0.751779
S.E. of regression	0.706229	Akaike info criterion		2.228753
Sum squared resid	9.975178	Schwarz criterion		2.327938
Log likelihood	-22.51628	Hannan-Quinn criter.		2.252118
F-statistic	3.796258	Durbin-Watson stat		1.063640
Prob(F-statistic)	0.065538			

Source: *Authors Eviews Output.*

The regression result indicates that the operating performances of the sampled oil and gas firms are influenced positively by total expenses. The adjusted R<sup>2</sup> reveals that only about 58% of the variations in TD/TA could be explained by the total expenses while 42% could be explained by other factors.

### SUMMARY OF FINDINGS

Findings arising from this research are summarized as follows:

1. That the operating performances of the sampled oil and gas firms are influenced negatively by capital expenses. The adjusted  $R^2$  reveals that only about 96% of the variations in TD/TA could be explained by the capital expenses while 4% could be explained by other factors.
2. That the operating performances of the sampled oil and gas firms are influenced positively by revenue expenses. The adjusted  $R^2$  reveals that only about 92% of the variations in TD/TA could be explained by the revenue expenses while 8% could be explained by other factors.
3. That the operating performances of the sampled oil and gas firms are influenced positively by total expenses. The adjusted  $R^2$  reveals that only about 58% of the variations in TD/TA could be explained by the total expenses while 42% could be explained by other factors.

### CONCLUSION

The study aims at evaluating the human resources development cost and the operating performance of firms in the Nigerian oil and gas firms. The evidences of applying the concept of Human Resource Development in the financial reports of corporate entities show clearly that the concept can be applied. Although certain issues still need to be addressed relative to the nature, peculiarities, valuation, and reporting of human resources, the existing procedure of valuation can produce a fair estimate of their value.

Furthermore, the volume of investments on human resources usually made by corporate entities and the impact of such investments on the productivity level of the humans justify their treatment and recognition as assets rather than expenses. Additionally, the arguments against the concept of Human Resources Development cost and its application are issues that can be solved significantly. The advantages and other benefits accruing to the application of Human Resource Development, however, outweigh the demerits. When human resources are quantified and reported as assets in the statement of financial position of corporate entities, the multiple users of the reports will be awarded with more qualitative and quantitative information, which will boost their decision making abilities.

### RECOMMENDATIONS

Based on the findings from the study, the following recommendations are imperative:

1. The oil and gas firms in Nigerian should maximize their revenue expenditure in order to boost their operational performances.
2. Oil and gas firms in Nigeria should facilitate their operational performance by critically reviewing the total expenses so as to meet up with long term debt and become solvent.
3. The oil and gas sector should ensure that they comply to relevant and required policy guiding human resource development in Nigeria

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