

## **Effect of Human Capital Resource on Financial Performance of Listed Oil and Gas Firms in Nigeria**

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### **Abstract**

*Despite the huge amount of funds invested on human capital, the traditional accounting practice failed to report these costs appropriately in the statement of the financial position of the organization as in the case of other physical assets. The study is an assessment of the effect of training and development cost on financial performance of listed oil and gas firms in Nigeria. The expo-facto research design was adopted with reliance on secondary data from annual report of listed firms. The purposive sampling technique was employed in selecting the 12 firms out of 14 oil and gas firms in Nigeria for 2011-2021 financial year. To carry out this objective three method of panel regression estimation was used which is fixed effect by Hausman test which was analyzed using E-views 10. The finding show that training and development cost has positive significant effect on return of asset. The study concludes that training and development cost has a significant positive effect on financial performance and does substantially reduce the inefficiencies in productivity of listed oil and gas companies in Nigeria. The study recommends that Individuals, partnership business, shareholders and government who employ the services of human resources in Nigeria should ensure that the human capital groups have the right competence and experience and that can be brought to bear positively on the organization.*

**Keywords:** Training and Development Cost, Return on Asset, Investor, Oil and Gas Firms, Financial Performance

### **INTRODUCTION**

One of the key contributory factors to a firm performance is the human resources of that firm. Human resources play a significant role of coordinating all firms' activities, towards the achievement of the corporate goals and objectives. With machines, materials and money little or nothing could be achieved without human contributions (Olaniyan & Lucas, 2008). This confirms the extent of importance of human resources in organisations. The importance of human resources to the success of firms is also confirmed by Akintoye and Adidu (2008), when they stated that human resource is a key factor in the determination of measurable growth of any nation. Oke (2010), highlighting the importance of human asset, he stated that successful and effective organizations understood that their success is directly related to the quality of their human capital. However, the quality of human capital or human asset that Oke(2010), referred to depends on the knowledge or the intellectual capability that the employees or managers of firms

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or organizations possessed. Thus, there is an indication that the importance of human intellectual capability is indispensable in the assessment of firm performance.

Considering the valuable role of human resource within an organisation, it is important that human resource cost in terms of hiring, training and development are properly recorded and recognized in the statement of financial position like other intangible assets that are usually disclosed in the statement of financial position of organisations. The essence of human asset or human resource accounting is to establish a generally acceptable model of valuation for human asset and ensuring that the value of human asset that drives the organisation for desired performance is adequately represented and disclosed in organization's financial statement as intangible asset. According to Chaturvedi (2013), the development of human resource accounting originated from the growing needs of the importance of human assets in the management of organisation. It functions as a department that monitors the people that are involved in the organisational resources, as well as monitoring the development, progress in assets and revenues of the company.

The importance of human resource cannot be over emphasized. Human resource is one of the intellectual assets of an organization (Oyewo, 2013). Human resource constitutes a valuable resource to every organisation. It is as important as the machines, materials and money without whom other resources cannot be blended and coordinated for the purpose of achieving profitability (Abubakar, 2011). Enofe, Mgbame, Sunday and Ovie (2013) noted that the success of any organization depends on the ability of the human resources to effectively and efficiently optimize other resources such as land, equipment and money hence human resources are the greatest assets at the disposal of businesses. Human resource at macro level indicates the sum of all components such as skills, creative abilities, innovative thinking, intuition, imagination, knowledge and experience possessed by all the people. An organization with abundant physical resources may sometimes fail miserably unless it has the right people to manage its affairs. Thus, the importance of human resource cannot be ignored. Therefore, it becomes important to pay due attention on proper development of such an important resource of an organization. Considering the valuable role of human resource within an organisation, it is important that human resource cost in terms of hiring, training and development are properly recorded and recognized in the balance sheet like other intangible assets that are usually disclosed in the balance sheet or statement of financial position of organisations. Oke (2010), highlighting the importance of human asset, stated that successful and effective organizations understood that their success is directly related to the quality of their human capital. However, the quality of human capital or human asset that Oke (2010) referred to depends on the knowledge or the intellectual capability that the employees or managers of firms or organizations possessed. Thus, there is an indication that the importance of human intellectual capability is indispensable in the assessment of corporate performance.

Human resources development is receiving broader consideration with the emergent of current globalization and unstable job market due to the present economic recession in Nigeria. Developed and developing countries in the world have placed emphases on human resources development as instrument geared towards improving employees' performance by devoting necessary organisation resources towards manpower training and knowledge transfer" (Obi-Anike, Ofobruku & Okafor, 2017). Thus, the pivotal role of human resources in an organisation informed the importance that its development cannot be optional but something that must be done irrespective of the personnel previous training or experience. Human resources development is an indispensable component of strategic human resource management as well as a means of reducing inefficiency among organisational key asset, its human resources, and it is vital for workers' productivity and organisational performance (Wabara, Chijindu & Emerole, 2017). Despite the huge amount of funds invested on human capital, the traditional accounting practice failed to report these costs appropriately in the statement of the financial position of the organization as in the case of other physical assets. The study therefore seek to examine effect of training and development cost on financial performance of listed oil and gas firm in Nigeria.

## **LITERATURE REVIEW**

### **Conceptual Framework**

#### **Training and Development Cost**

Training is one of the main function that directly contribute to the development of employees. Study suggests that the organizations investing considerably in training justify their investment by the contribution training makes to improve individual and firm performance (McElroy, 2001; Khan, 2010; Batool & Batool, 2012). Training and development cost being employed by organizations helps them to enhance employee skills and firm performance (Solkhe and Chaudhary, 2011; Delaney and Huselid 1996;) . Rajashekharaiyah (2014) assert that training and development is also attracting, developing, and retaining a diverse workforce that helps in providing the different skills required maintaining and improving the firm performance. The components of training and development activities includes; formal training, developing employee skills and imparting knowledge beyond the current position of the job training, induction training program for new comers and training programs for present employees.

Expenditure on staff training is another dimension of staff costs incurred by entities. Trainings usually involve costs payable by entities. Staff training costs are seen as expenditures incurred on staff or employees for capacity building in order to maximize performance (that is profit). Capacity building entails investment in human capital, institutions and practices necessary to enhance human skills, overhaul institutions and improves procedures and systems. According to Abiodun (1999), training is a systematic development of the knowledge, skills and attitudes required by employees to perform adequately on a given task. Employee's training and development is seen as the most important formation of any competent management.

The historical cost of human resources is the sacrifice made in getting personnel. It seeks to recognize the actual cost incurred in recruiting selecting, hiring, training and development of employee, which are capitalized and amortized over the expected useful life of the human resource. The replacement cost of human resource is the amount that would be incurred if the present employees are to be replaced. It estimates the current market value, as human resource is valued on the assumption that a new similar organization will be created from the scratch. By this, cost to the firm is calculated if the existing human resources are to be replaced with other persons of equivalent talents, skill and experience. The costs incurred by an organization in replacing terminated employees, for instance, relate to advertisement, reemployments administrative function, interviews, and traveling cost, amongst others. However, this approach is weak due to the inability of firms to replace knowledge, competency, and loyalty of human resource precisely.

#### **Financial Performance**

A firm's financial performance is of importance to investors, stakeholders and the economy at large. Investors are interested in the returns for their investment. A business that is performing well can bring better reward to their investors. Financial performance of a firm can increase the income of its staff, rendering quality product or services to its customers and creating more goodwill in the environment it operates. A company that has good performance can generate more returns which can lead to future opportunities that can in turn create employment and increase the wealth of people. Firm's performance is the ability of a firm to achieve its objectives resources. According to Rahul (1997) a company's performance is its ability to achieve its target objectives from its available resources. Suleiman (2013) viewed a firm's performance as the result of a company's assessment or strategy on how well a company accomplished its goals and objectives.

Financial performance provides a deductive measure of how well a company can use assets from business operations to generate revenue. Van Horn (2005) defined financial performance as a subjective measure of how well a firm can use assets from its primary mode of business and generate revenues. This term according to Pandey (2001) is used as a general measure of the overall financial health of a business.

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Research on the firm's financial performance emanates from organizations theory and strategic management. The notion of financial performance is used to describe performance of an entity with the legal status of a company. The concept of financial performance is a controversial issue in finance due to its multidimensional meaning. In analyzing a firm's financial performance, emphasis should be made in formulating an adequate description of the concept of a financial performance.

### **Return on Asset**

Return on asset measure the effectiveness of the economic unity in using its assets to generate profit especially manufacturing, the higher this ratio, the better the economic unity of them as it indicates the management efficiency in using its assets to generate profit and also it represents the ratio of how much a company has earned on its assets base, and the return on assets (ROA) can be obtained by dividing net profit with total assets. Micah, Ofurum and Ihendinihu (2012) noted that return on Asset (ROA) is measured as Profit before Tax/Average Total Assets. ROA is a measure of profitability that takes into consideration the assets necessary to produce income. Return on Assets expresses the net income earned by a company as a percentage of the total assets available for use by that company. ROA suggests that companies with higher amounts of assets should be able to earn higher levels of income. ROA measures management's ability to earn a return on the firm's resources (assets). The income amount used in this computation is income before the deduction of interest expense, since interest is the return to creditors for the resources that they provide to the firm. The resulting adjusted income amount is thereby the income before any distribution to those who provided funds to the company. ROA is computed by dividing net income plus interest expense by the company's average investment in asset during the year.

### **Empirical Review**

Manukaji, Osisoma and Okoye (2019), examined the effect of human resources development on the performance of quoted companies in Nigeria. The study is anchored on resources based view theory by Barney (1991). The study adopted ex post facto research design. A total of five companies quoted on the Nigerian Stock Exchange were examined using their 2014 to 2018 annual reports and accounts. Data were sourced on employee remuneration, training and development cost, size of the employee, and return on assets a proxy for performance. The data generated were analyzed using descriptive statistics, correlation test and ordinary least square estimation technique. The study found that employee remuneration and training and development cost have significant effect on performance of quoted companies in Nigeria. Size of employees was found to have insignificant effect on performance of quoted companies in Nigeria. The study concludes that human resources development has significant effect on performance of quoted companies in Nigeria. The study recommends systemic and continuous evaluation of the human resources to determine those that needs development.

Onipe (2019) examined effect of intellectual capital management and financial competitiveness of listed oil and gas firms in Nigeria. In Nigeria, most of the interests of scholars and policy makers are on the competitiveness of the economy. Very little is said about firm-level competitiveness. In view of this, this study interrogates the influence of intellectual capital management on firm financial competitiveness. Financial competitiveness is measured using financial performance proxies (return on assets, return on equity and asset turnover). Intellectual capital management is measured by value added intellectual coefficient score, human capital efficiency, structural capital efficiency and capital employed efficiency. The analysis is based on oil and gas firms listed on the Nigerian Stock Exchange and covers the period 2006 to 2018. Results indicate that capital employed and human capital has significant positive effects on return on assets. However, structural capital shows significant negative effect on return on assets. The study, therefore, recommends that management of oil and gas firms should increase their investment in capital employed and human capital while reducing investment in structural capital.

Oyedokun and Saidu (2018) examined the impact of intellectual capital on financial performance of listed Nigerian oil marketing companies over 10 years (2007-2016). Intellectual capital was measured by market

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to book value ratio (MB), Value Added intellectual coefficient (VAIC), and monetary model of Tobin's Q (MMQR) while financial performance was measured by return on asset (ROA). Ex-post facto research design was adopted while data was extracted from the firms' financial statements. Results showed that market to book value has a negative significant impact on return on asset. Monetary model of Tobin's Q has insignificant impact on return on asset while Value added intellectual coefficient also has insignificant impact on return on asset. The study recommends that oil and gas companies in Nigeria should not put more resources in intellectual capital.

Ugwuanyi and Onyekwelu (2018) assessed the effect of intellectual capital on revenue and market values of 3 listed information and communication technology firms in Nigeria over 10-year period (2004-2013). Human capital, structural capital and capital employed were used as proxies for intellectual capital while gross revenue and market price per share were used for measuring financial performance. The study adopted ex-post facto research design and data were sourced from annual reports and accounts and analyzed using Ordinary Linear Regression. Results showed that intellectual capital has positive and insignificant influence on revenue. Also, result showed that human capital efficiency has positive and insignificant influence on share price. The study recommend that human capital efficiency should be increased so that share price of oil and gas companies can be maintained in Nigeria. Sani and Usman (2018) , examine the impact of financial performance on human capital efficiency of quoted oil and gas companies in Nigeria. The secondary sources of data were employed while the panel data collected were analysed using multiple regression model. The findings revealed that the level of human capital efficiency in the Nigerian oil and gas companies could be influenced by market price per share and book value per share. The study recommends that oil and gas companies in Nigeria should increase their human capital investment to boost their book value per share through continuous training and retraining of human asset, among others.

Omole, Yusuf and Adeyemo (2017), examined the effect of human capital accounting on shareholders' value in oil and gas companies in Nigeria. This is with a view to providing information on how costs incurred on personnel could be identified, measured and disclosed on the statement of financial position of companies as an asset which is the key factor to the successful operation in oil and gas industry. The study made use of secondary data collected for the period 2004 – 2016. The entire oil and gas companies listed on the Nigerian Stock Exchange (NSE) were selected for the study based on availability of human capital accounting information in their Annual Reports. Data on variables such as human capital disclosure, dividend per share and earnings after tax were collected from the Annual Reports of the companies. Data collected were analyzed using correlation and regression analysis using the E-view statistical package. Findings revealed that that the nature and characteristics of investments on the human resource require them to be capitalized rather than expensed. The study established that there is positive significant relationship between human capital costs and the shareholders' value in oil and gas companies in Nigeria. The study recommended that that standard should be created for human resource disclosure and measurement in order to enhance valuation of human capital, ensure uniformity in disclosure and more reliable interpretation and comparison of financial statements.

Cordelia, Ogechi and John (2016), examined the effect of human resource costs on the financial performance of firms in Nigerian. The specific objective is to determine the extent to which investments in human resources influence profit after tax and turnover of firms in Nigeria. Secondary data on relevant financial variables were extracted from published financial statements of ten selected listed firms in Nigeria. The OLS technique was employed in analyzing the data and the results indicate that personnel benefit costs have positive and significant effect on Profitability, explaining about 73.9% of the variations in Profit After Tax of firms in Nigeria. The results however reveal no significant effect of Personnel Benefit Costs on firm turnover. The paper therefore concludes that investments in human resources have positive trade-off effects on profitability and growth of firms. The study recommends that greater commitment to manpower development and training, while providing proper infrastructures and conducive working environment to enhance the capacity of employees to drive positive improvements in corporate financial performance.



Okpako, Atube and Olufawoye (2014), examine the relationship between human resource accounting and firm performance. This paper conducted a survey on seven (7) companies quoted on the Nigeria Stock Exchange. The study used primary data and secondary data. 260 questionnaires were distributed and 246 questionnaires were retrieved on the companies targeted at the staffs of human resource, accounting, and audit/internal control departments which were considered to be the relevant departments for this study. Following the collection of completed questionnaires, the study adopted the principle component analysis to quantify the responses obtained so as to obtain a series which captured the composite value of the human resource accounting variable. It also adopted firm performance indicator (ROE) over the period 2006-2010. The study reveals that human resource accounting variables impacted positively to the level of firm performance. The study recommends that oil and gas companies should increase the welfare of their employee so as to put in their best.

## **Theoretical Discussion**

### **Opened System Theory**

Opened system theory was initially developed by Ludwig von Bertalanffy (1956), a biologist, but it was immediately applicable across all disciplines. Traditional theorists regarded organizations as closed systems that are autonomous and isolated from the outside world. In the 1960s, however, more holistic and humanistic ideologies emerged, recognizing that traditional theory had failed to take into account many environmental influences that impacted on the organizational efficiency and effectiveness. In modern time, the opened system theory is embraced by theorists and researchers because of how external environment influence the performance an entity. The term opened system reflected the recent belief that all organizations are unique in part because of the unique environment in which they operate and that they should be structured to accommodate unique problems and opportunities. From the economic perspective, opened system theory considers the variables that can affect the financial performance of oil and gas companies in Nigeria, which are inflation, economic growth, unemployment and among others. In the present study, the external variables examined are inflation and economic growth. High inflation is detrimental to the financial performance of companies for the fact that it lowers the profitability of companies because of the high cost of raw materials acquired from the external environment (Muraina, 2018 ; Cekrzy, 2015). Also, growing economies affect the performance of entities positively because in that period, other economic indicators are maintained at minimum level. Economic growth implies that macroeconomic problems are reduced to their barest by the government in an economy. This is how related the theory is to the study. Thus, the theory is adopted by the researcher in the present study.

### **Expectancy theory**

This theory was propounded by Victor Vroom (1964). The theory focuses on the relationship between rewards and behavior. It posits that behaviour (job performance) can be described as a function of ability and motivation while motivation is a function of expectancy, instrumentality, and valence perceptions. Although this theory implies that linking an increasing amount of rewards to performance will increase motivation and performance, some authors have argued against this assumption, emphasizing that monetary rewards may increase intrinsic motivation. Extrinsic motivation depends on rewards – such as pay and benefits – which are controlled by some external variables whereas intrinsic motivation depends on rewards that flow naturally from work itself. Therefore, while it is important to keep in mind that money is not the only effective way to motivate behaviour, and that money rewards will not always be the answer to motivation problems, it does not appear that monetary rewards run much risk of compromising intrinsic motivation in most work settings. The relevance of the theory to this study is that it is believed a well paid staff will be motivated to work better, which will further translate to improved profitability of the entity.

### **Human Capital Theory**

This study is built on the Human Capital theory proposed by Schultz (1961) and extensively developed by Becker (1964) as cited in (Seth, 2009). The theory has its root from labour economics which is a branch

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of economics that focuses on general work force in quantitative term. According to the theory, Human capital theory contends that education or training raises the productivity of workers by imparting useful knowledge and skills, thus raising workers' future income through increase in their lifetime earnings. The theory postulates that expenditure on education or training and development is costly, and should be considered as investment since it is undertaken with a view to increasing personal incomes. Human capital approach is used to explain or support occupational wage differential. However, the position of this study is that education or training and development will not only increase employee personal income, it will also serve as a means of achieving corporate competitive advantage which reflects ultimately in organisational performance.

According to Flamholtz and Lacey (1981), as in Baney and Wright (1997), human capital theory distinguished between general skills and firms' specific skills of human resources. General skills are skills possessed by individuals which provide value to a firm and are transferable across a variety of firms. For instance, all competitor firms have the potential to accrue equal value by acquiring employees with knowledge of general management, the ability to apply financial ratios, or general cognitive ability. On the other hand, specific skills provide value only to a particular firm, and such skills are of no value to competing firms. An instance of this is the knowledge of how to use a particular technology used only by one firm, or knowledge of a firm's policies and procedures provided to that firm, but usually would not be valuable to other firms. Thus, human capital is a means of production into which additional investment yields additional output. Human capital is substitutable, but not transferable like land, labour or fixed capital. The human capital theory underpin this seminar because considered the cost of education, training, development and even workers' medical treatment as investments towards improved productivity (efficiency) of individual workers and also creates a sort of competitive advantage which ultimately could result in improved firm performance.

### **METHODOLOGY**

This study adopted the ex post facto research design since the study is a secondary data research. The population of the study consists of fourteen (14) listed oil and gas firms operating on the Nigerian Stock Exchange (NSE) as at 31st December 2020. The sample size is 12 decided upon using the purposive sampling techniques and data required for this study were obtained from audited financial statements and annual reports of the listed oil and gas firms in Nigeria 10 years under consideration and from the Nigerian Stock Exchange fact book. The inferential analyses also involved the application of the appropriate statistical technique of Panel Regression Analysis; this is due to the nature of the data (Okpako, Atube & Olufawoye; 2014).

#### **Panel regression model**

The model for the study is expressed as;

$$ROA = \beta_0 + \beta_1 ER + \beta_2 TDC + \beta_3 MHE + \epsilon_{it} \dots \dots \dots (1)$$

Where:

$\beta_0$  = The autonomous parameter estimate (Intercept or constant term )

$\beta_1 - \beta_3$  = Parameter coefficient of Human Capital Efficiency

ROA = Return on Asset

EM = Employee Remuneration

TDC = Training and Development Cost

MHE = Medical and Health Expenses  $\epsilon_{it}$  =

Stochastic Error term

#### **Descriptive Statistics**

Descriptive statistics gives a presentation of the mean, maximum and minimum values of variables applied together with their standard deviations obtainable. The table below shows the descriptive statistics for the variables applied

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in the study. An analysis of all variables was obtained using the E-view 10 software for the period under review.

**Table 1: Descriptive Statistics Result**

	ROA	ROE	ER	TDC	MHE
Mean	36.23217	15.64275	6.486667	1.134500	1.133392
Median	36.98000	14.88000	5.870000	1.000000	0.985000
Maximum	46.98000	27.54000	23.54000	1.990000	3.000000
Minimum	23.50000	10.10000	1.050000	0.090000	0.090000
Std. Dev.	4.483476	3.746562	3.636525	0.469353	0.605262
Skewness	-1.202471	0.923900	1.252783	0.226369	0.401063
Kurtosis	4.572787	3.414853	5.914419	2.019029	2.575886
Jarque-Bera	41.28702	17.93234	73.85851	5.836380	4.116402
Probability	0.000000	0.000128	0.000000	0.054031	0.127683
Sum	4347.860	1877.130	778.4000	136.1400	136.0070
Sum Sq. Dev.	2392.085	1670.371	1573.694	26.21477	43.59471
Observations	120	120	120	120	120

**Source: E-View 10 Output (2021)**

Table 1 presents the descriptive statistics of the effect of human capital efficiency on financial performance of listed oil and gas firms in Nigeria during the period of 2011 to 2020. The table shows that return on asset (ROA) and return on equity ROE as a measure of financial performance has a mean of 36.23217 and 15.64275 respectively, with a standard deviation of 4.483476 and 3.746562, with a minimum value of 23.50000 and 10.10000 and maximum values of 46.98000 and 27.54000 respectively. Although the range between the minimum and maximum is wide, it implies a stable performance as the standard deviation indicated that there is no wide dispersion of the data from the mean value.

For the other measure of human capital efficiency, employee remuneration (ER) from the table shows a mean of value of 6.486667 with standard deviation of 3.636525 and the minimum and maximum values of 0.090000 and 1.990000 respectively. This implies that the human capital efficiency in terms of employee remuneration witnessed a substantial increase during the study period, as the standard deviation is so large compared to the mean, together with the huge range between the minimum and maximum values. Similarly, the table shows that the training and development cost (TDC) during the period has an average value of 1.134500 with standard deviation of 0.469353 and the minimum and maximum values of 0.090000 and 1.990000 respectively. This implies a tremendous increase in the training and development of employees during the study period. Also the mean value for medical and health expenses (MHE) is 1.133392, while the standard deviation also indicates 0.605262. The minimum and maximum value for medical and health expenses is 0.090000 and 3.000000 respectively.

**Table 2: Hausman Test**

Correlated Random Effects - Hausman Test

Equation: Untitled

Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	10.110830	3	0.0176

**Source: E-View 10 Output (2021)**

The Result of Hausman test shows that chi-square statistics value is 10.110830 while the probability value is 0.0176. This implies that there is enough evidence to reject the null hypothesis which states that random effect is most appropriate for the Panel Regression analysis. It thus stands that error component model



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(random effect) estimator is not the most appropriate because the random effects are not well correlated with the regressors. Thus, the most consistent and efficient estimation for the study is the fixed effect cross-sectional model. Consequently, the result suggests that the fixed effect regression model is most appropriate for the sampled data because the Hausman test statistics as represented by corresponding probability value is less than 5%.

**Decision Rule:** The decision rule for accepting or rejecting the null hypothesis for any of these tests will be based on the Probability Value (PV) and the Probability (F-statistic). If the PV is less than 5% or 0.05 (that is, if  $PV < 0.05$ ), it implies that the regressor in question is statistically significant at 5% level; and if the PV is more than 5% or 0.05 (that is, if  $PV > 0.05$ ), it is categorized as not significant at that level.

**Table 3: Panel Regression Result (Fixed Effect)**

Dependent Variable: ROA

Method: Panel Least Squares

Date: 07/02/21 Time: 08:08

Sample: 2011 2020

Periods included: 10

Cross-sections included: 12

Total panel (balanced) observations: 120

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	30.27548	1.003951	30.15634	0.0000
ER	0.319618	0.163647	1.953097	0.0535
TDC	2.397575	0.828598	2.893532	0.0046
MHE	1.026460	0.672020	1.527424	0.1297

### Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.512840	Mean dependent var	36.23217
Adjusted R-squared	0.447885	S.D. dependent var	4.483476
S.E. of regression	3.331421	Akaike info criterion	5.361143
Sum squared resid	1165.328	Schwarz criterion	5.709580
Log likelihood	-306.6686	Hannan-Quinn criter.	5.502645
F-statistic	7.895351	Durbin-Watson stat	1.213683
Prob(F-statistic)	0.000000		

**Source: E-View 10 Output (2021)**

From table 3 above, the coefficient of multiple determinations ( $R^2$ ) is 0.512840. This indicates that about 51 % of the total variations in return on asset is explained by the variations in the independent variables (ER, TDC and MHE), while the remaining 49% of the variation in the model is captured by the error term. This indicates that the line of best fit is highly fitted. The standard error test is applied in order to measure the size of the error and determine the degree of confidence in the validity of the estimates. Usually if the standard error is smaller than half of the numerical value of the parameter estimate, it can be concluded that the estimate is statistically significant. Having carried out a standard error test on the parameters estimated and as also indicated by their respective probability values, the parameter estimate for ER is slightly not statistically significant, given that the individual probability is 0.0535 which is just a little bit greater than 5%, while that of TDC is statistically significant, given that the individual probability is

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0.0046 which is less than 5%. In addition to the estimates for ER and TDC, the parameter estimate for MHE is not statistically significant, given that the individual probability is 0.1297 which is also greater than 5%. However, when taken collectively, the regressors (ER, TDC and MHE) against the regressed (ROA), the value of F-statistic is 7.895351 and the value of the probability of F-statistic is 0.000000. This result implies that the overall regression is both positive and statistically significant at 5%.

The coefficient of employee remuneration (ER) is 0.319618, while that of training and development cost (TDC) and medical and health expenses (MHE) is 2.397575 and 1.026460. This shows that all the explanatory variables ER, TDC and MHE are all positively related to ROA, such that a unit increase in ER, TDC and MHE will increase ROA by 0.32, 2.40 and 1.03 respectively. This result is consistent with 'a priori' expectation which hypothesizes that increase in ER, TDC and MHE will lead to a significant increase in ROA and the empirical evidence suggests that the relationship between ER, TDC and MHE and ROA is in fact statistically significant. Consequently, when taken collectively and based on the probability (F-Statistics) value of 0.000000, which is less than 0.05, the null hypothesis of the study is hereby rejected **Discussion of Findings**

This study aptly examined the effect of training and development cost on financial performance of listed oil and gas firms in Nigeria, using panel series data and regression analysis approach. The human capital efficiency proxied by training and development cost (TDC) for twelve (12) listed oil and gas firms in Nigeria for 10 years ranging from 2011 to 2020 were the independent variables while the return on asset (used to financial performance) was the dependent variable for the study. The effect of the independent variable on dependent variable was analyzed in terms of strength and significant and the panel regression analysis was used to compare the relationship among the variables.

The result for the model of the study showed that when taken individually and collectively, training and development cost (TDC) has a positive and significant effect on return on asset and return on equity taken as a measure of financial performance. This implies that training and development cost is a significant and relevant predictor of financial performance in listed oil and gas firms in Nigeria. That is to say there are empirical evidences to suggest that the attributes exhibited by the human capital group of oil and gas companies, which naturally should promote efficiency and productivity in oil and gas firms financial dealings in Nigeria, is already having the desired effect. As such, the human capital elements of the listed oil and gas firms have been able to exert the needed level of influence that is required to improve the tendencies of improved financial performance framework of the oil and gas sector in Nigeria. The findings of the study is also in agreement with the position of Manukaji, Osisioma and Okoye (2019), who examined the effect of human resources development on the performance of quoted companies in Nigeria. The study specifically found out that employee remuneration and training and development cost have positive and significant effect on performance of quoted companies in Nigeria.

### **Conclusion and Recommendations**

In the Accounting and financial literature several studies have investigated the link between training and development cost and financial performance of listed oil and gas firms in Nigeria. The conclusion of the study therefore is that training and development cost has a significantly positive effect on financial performance and does substantially reduces the inefficiencies in productivity of listed oil and gas companies in Nigeria. The result and the findings of the study present implication for regulators such as Security and Exchange Commission (SEC), financial regulating council and professional bodies within the oil and gas sector of Nigeria. The study recommends that Individuals, partnership business, shareholders and government who employ the services of human resources in Nigeria should ensure that the human capital group have the right competence and experience and that can be brought to bear positively on the organization.

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