



## Human capital accounting and the financial performance of oil and gas companies in Nigeria: is there really a nexus?

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### Abstract

In this study, we examined whether human capital accounting does matter in influencing the corporate financial performance of oil and gas firms in the Nigeria economy. In order to achieve the purpose of the study secondary data were obtained from 2013-2024. Measures of human capital accounting deployed in this study includes human capital, allowances and training costs while dimensions for corporate financial performance used in this study was return on equity obtained and calculated from the audited accounts published in oil and gas firms on the floor of the Nigerian Exchange Group. Data analytical tools deployed includes descriptive, regression diagnostics and inferential statistical techniques. Findings showed that human capital accounting measures (human capital, allowances, and training costs) significantly positively influence financial performance measured by return on equity of the publicly listed oil and gas firms in Nigeria. On the basis of the findings, the study recommends the need to increase the level of human capital accounting costs, particularly allowances and training in order to further contribute to increased performance of the oil and gas operating entities in Nigeria. This study contributes to the accounting literature by establishing that companies that invest significantly in human capital are expected to perform better than those that do not.

**Keywords:** Human capital costs, Training costs, Employee allowances, Return on equity, Oil companies

JEL Classification: M49; E24

### Introduction

For the benefit of employees and other stakeholders connected to companies, management should effectively manage their human resources, and disclose evidence of their significant contributions to human capital resources since they are one of its most valuable assets. Gara, et al (2025) opined that reliable and credible accounting for this crucial component will enhance its performance, especially in the oil and gas concerns; this is due to the fact that corporate performance is a

function of its organizational resources, particularly its human resources, which include the caliber, abilities, efficiency, creativity, and skills of its labour. Thus, in order to enable informed decision-making and responsible problem-solving, human asset accounting (HAA) encompasses the method used in accounting for all acquisition cost associated with human capital expenses in an organization and ensuring that all such cost recorded properly by management for the overall benefit of users of the accounting information.

The traditional accounting system, which writes off all expenditures relating to human asset in the year the cost arises, has not suitably and correctly addressed the human asset cost incurred, which are companies' most valuable assets (Luh, 2025). Nsentip, et al (2024) claimed that because of this treatment, there is now a research gap between management and stockholders and other users of accounting information who require this corporate information for performance analysis and informed managerial decision-making purposes. Acuña-Opazo and Contreras Gonzalez (2021) noted that companies' performance is correlated with how well it achieves its objectives. Hence, every shareholder in the company is focused on performance, which can be either financial or non-financial. Like any other company, oil and gas companies are a socio-technical setup made up of both human and non-human resources (money, materials, and equipment) that are combined to accomplish a shared objective, the main one being profit maximisation.

Anser, et al (2024) believed that companies' most valuable asset, its human resources, must be invested in and managed with utmost importance in order to accomplish this goal of profit maximization or increased performance. Consequently, the effectiveness of human resources accounting when used properly, can have a favourable effect on corporations' financial outlook and are seen as the lifeblood of firm (Dancaková & Glova, 2024). This identified gap in this study is hinged on the fact that while there are numerous studies on human resource accounting, there are limited empirical studies to the researcher's knowledge that had used human capital, allowances and training costs as measures of human capital accounting in examining how they influence financial performance of oil and gas companies in Nigeria. To fill this gap in the accountancy literature, this study empirically scrutinizes the nexus amongst human resource accounting (human capital, allowances and training costs) and oil and gas companies' financial performance (return on equity) in Nigeria. The

remaining part of this paper is sectioned as follows: Review of related literature, methodology, results, conclusion and recommendations.

### **Hypotheses of the Study**

In line with the broad objective of this study, the following hypotheses were formulated:

**H<sub>01</sub>:** There is no significant effect of human capital on financial performance (return on equity) among oil and gas companies in Nigeria

**H<sub>02</sub>:** There is no significant effect of allowances on financial performance (return on equity) among oil and gas companies in Nigeria

**H<sub>03</sub>:** There is no significant effect of training costs on financial performance (return on equity) among oil and gas companies in Nigeria

### **Review Of Related Literature**

#### **Human Capital Accounting**

Every expense pertaining to human resources is seen as a cost in traditional accounting ideas, which lowers profit. Dumay, Guthrie and Rooney (2020) asserted, however, that accounting for expenses associated with human resources as assets is a component of labour accounting. Human resource accounting, according to Elenwo and Tolofari (2024), is the method of recognising, gathering, disseminating data about human capital asset in an organization. In order to help operating managers make better decisions than they otherwise could have, he went on to explain that human capital asset accounting is the methodical collection of data regarding changes in investments made in human capital asset and reporting that data back to them (Sylvanus, et al, 2024).

Human resource accounting is the accounting of people as original resources, as observed by Hermawan, et al (2021). It is the measurement of cost and value of people for a company. Human resource accounting is also a way of thinking about how people run informal companies. Githaiga (2023) affirmed that employee expertise is a valuable resource for a firm and that, as firms become more complicated, the necessity for qualified

personnel keeps expanding, despite financial reporting's disregard for such resources, hence encouraging the need to invest in human resource of companies.

According to Eyitayo, Adeoye and Oluwole (2022), human asset accounting is the process of gauging human asset data and informing users of accounting information of the results. According to the many definitions given, human asset accounting is simply the worth of people in an organisation to improve information for users of financial information to make decisions and improve performance (both financial and non-financial). Essien, Ofonime and Eteyen (2024) further classified and categorised the goals of human resource accounting into three categories: internal, internal and external, and external, which seeks to meet the needs of users of financial information. In this study, the dimensions for measurement of human capital Accounting includes the following proxies such as human capital costs, training, and allowances.

### Financial Performance

Financial and non-financial performances are the two (2) basic categories into which performance may generally be separated. However, this study was cantered on one measure of performance – financial performance (accounting ratio). As noted by Adegbayibi (2021), financial accounting ratios, which represent the relationships between variables displayed in financial accounts, can be used to determine financial performance. Enekwe, Udeh and Okwo (2022) claimed that financial ratios are useful indicators for evaluating financial performance in relation to other performance metrics.

From an accounting standpoint, financial performance can be evaluated at the business level via accounting-based metrics and at industry level via market-based metrics (Cahyaningrum & Atahau, 2020; Ahmed, Ningi & Dalhat, 2018). In this study, we examined financial performance at the business level via return on equity (Roe). According to Ajiboye, Bosun-Fakunle and Emuze (2025), financial

performance ratios are useful indicators of companies' overall expansion, effectiveness, and sustainability.

Furthermore, whereas proxies for firm financial performance recent studies have been return on asset, return on equity and return on capital employed etc in accounting literature, earnings per share seems to have received more attention when it comes to human resource accounting. In actuality, shareholders want a better return on equity than debt. Thus, when appraising an organization's success over time, stockholders look to its return on equity (Al-Omouh, 2022). Aluwong (2022) held that corporations' financial performance is gauged by its return on equity because it clearly showcases the profit generated with funds committed by way of investment expenditures by the owners of the companies. Return on equity is considered as the value of net income returned as a proportion of shareholders' equity. Consequently, the percentage of profit after taxes to equity is used to calculate return on equity.

### Theoretical Underpinning

Stakeholder and human capital theories serve as the foundation for this investigation. First, human capital theory is predicated on the idea that businesses would make their decisions about how much money to spend on human capital on the expected future returns and/or benefits of those investments. In this sense, training and development expenses are included in investments in human capital. According to Anik, Chariri and Isgiyarta (2021), investment in human capital encompass all expenses associated with encouraging, supervising, and retraining workers in order to elicit productive behaviours from them.

Consequently, companies allocate their resources to the specialised skill development of their workforce whereas simultaneously weighing the possible future returns and benefits of their investments in the firm's human capital (Asare et al, 2021). It is anticipated that efforts will be taken to guarantee that any training-related capabilities are kept inside the

investing company and not transferred to other businesses. Since the theory touches on human resource accounting, it is pertinent to this investigation.

Second, according to stakeholder theory, even if they decide not to use it, all stakeholders have a right to know how organisational actions affect them (Ashraf et al, 2023). The annual report is a useful tool for effectively communicating with the different interest groups who are thought to have a stake in controlling particular areas of organisations (Barrena-Martínez, et al, 2020)). In order to satisfy the needs of stakeholders who have the authority to govern the resources needed by the organisation, businesses will also freely provide information like human capital.

Stakeholders should be viewed as having genuine effects on the companies, not merely as existing. It is important to view the relationship as reciprocal. Stakeholders may have different expectations of the company (Hariyono& Tjahjadi, 2021). While some may be concerned with minimising the effect of the organization's operations on themselves, others may actively try to influence what the organisation does (Hossain et al, 2020). Relationships with stakeholders can also differ; they may involve disagreements, assistance, consistent communication, and cooperative efforts.

## Methodology

This study deployed the ex-post facto research design and the justification for its adoption is that such secondary data already exist and the researcher has no way of manipulating the variables or events. Twelve (12)oil and gas companies that were selected based on availability of data among firms listed on the Nigerian Exchange Group a sat 31<sup>st</sup>December 2024. Oil and gas corporations are the subject

of the study because they are a production-oriented industry that uses a lot of human resources and is open to disclosing information on their use.

The study used twelve (12) oil and gas firms as its sample and secondary data were obtained from 2014–2024. The published audited financial statements of companies under scrutiny served as the secondary data. Variables of human capital accounting (human capital, allowances and training costs), and firm financial performance measures like return on equity were obtained and computed from the audited accounts statements of the oil and gas corporations publicly listed on the floor of the Nigerian Exchange Group.

The dependent variable is financial performance (return on equity) while the independent variable is human capital accounting (human capital, allowances and training costs). On the basis of the above, the following empirical models were estimated to guide the investigation:

$$Roet = f(Hca, All, Traco)$$

$$Roet_{it} = \beta_0 + \beta_1 Hca_{it} + \beta_2 All_{it} + \beta_3 Traco_{it} + e_{it}$$

Where:Roet is return on equity; Hca is human capital costs; All is allowances while Traco is training costs; e is error term; i is the oil and gas companies tis time (2014-2024);  $\beta_0$ is intercept;  $\beta_1$ - $\beta_3$  are coefficient of the independent variables. The study employed regression diagnostic statistics (variance inflation factor, and Huasman specification tests), inferential statistics (fixed and random effects panel regression), and descriptive statistics (mean, standard deviation, minimum value, maximum value, skewness, kurtosis, and Karl Pearson correlation). STATA 13.0 was used to perform the statistical analysis.

## Results

**Table 1: Summary Statistics**

| Variables | Mean   | Std. Dev | Min Val. | Max. Val. | Skewnes s | Kurtosi s |
|-----------|--------|----------|----------|-----------|-----------|-----------|
| Roet      | 2.0361 | 2.1943   | -1.3303  | 8.0961    | 1.3097    | 3.8607    |
| Hca       | 5.9575 | 0.5085   | 4.6961   | 7.1065    | -0.4672   | 3.1882    |

|       |        |        |        |        |         |        |
|-------|--------|--------|--------|--------|---------|--------|
| All   | 7.7695 | 0.3193 | 7.1647 | 8.4285 | -0.0386 | 2.1292 |
| Traco | 2.9094 | 0.3452 | 2.4940 | 4.0393 | -2.3568 | 6.3842 |

Source: Computed by the Researcher (2025)

The summary statistics (Table 1) revealed that the mean financial performance (Roet) of the listed oil and gas firms is 2.0361. The mean values for human resource accounting variables such as Hca, All and Traco were 4.9757, 7.7695, and 2.9094 respectively; this result implies that the variables were not far from each other. Hence, it is most probable that the listed oil and gas firms exhibit on the average, similar disposition to human resource accounting. On the other hand, the minimum and maximum

values for the human capital accounting variables indicate that substantial variation.

Remarkably, the human capital accounting variables skewed towards one direction (negatively skewed); indicating that the human capital accounting variables moved in same direction while return on equity moved in the opposite direction. In addition, all the variables have normal distribution as shown by kurtosis values, which were not far from three (3)

**Table 2: Pearson Correlation**

| Parameters | Roet   | Hca    | All    | Traco  |
|------------|--------|--------|--------|--------|
| Roet       | 1.0000 |        |        |        |
| Hca        | 0.2050 | 1.0000 |        |        |
| All        | 0.4025 | 0.4041 | 1.0000 |        |
| Traco      | 0.0370 | 0.2431 | 0.0239 | 1.0000 |

Source: Computed by the Researcher (2025)

Table 2 is the Pearson correlation for measures of human resource accounting (Hca, All and Traco) and financial performance (Roet). The results revealed that the correlation between the human capital accounting and financial

performance variables were positive; this implies that there is a positive nexus between human capital accounting and financial performance as indicated by the Pearson r values.

**Table 3: Variance Inflation Factor**

| Parameters | VIF  | 1/VIF  |
|------------|------|--------|
| Hca        | 1.26 | 0.7917 |
| Traco      | 1.24 | 0.8056 |
| All        | 1.02 | 0.9794 |
| Mean VIF   | 1.18 |        |

Source: Computed by the Researcher (2025)

Table 3 is the VIF result for multicollinearity; the mean VIF is 1.18, which is less than the accepted mean VIF of 10; this implies an

absence of multicollinearity in the empirical models of human resource accounting and financial performance.

**Table 4: Fixed and Random Effect Panel Regression**

| Dependent Variable: Return on Equity (Roet) |                  |       |                  |       |
|---------------------------------------------|------------------|-------|------------------|-------|
| Parameters                                  | Coef.            | Prob. | Coef.            | Prob. |
| Hca                                         | 0.4268<br>(4.09) | 0.000 | 0.4384<br>(5.13) | 0.000 |
| All                                         | 0.4478<br>(9.86) | 0.000 | 0.5660<br>(10.7) | 0.000 |

|                     |                  |       |                   |       |
|---------------------|------------------|-------|-------------------|-------|
| Traco               | 0.1203<br>(6.21) | 0.000 | 0.0378<br>(7.07)  | 0.000 |
| F-Value             | 29.44            |       |                   |       |
| Prob. F.            | 0.000            |       |                   |       |
| R-Squared (overall) | 0.6624           |       | 0.7630            |       |
| Wald Ch2            |                  |       | 94.40             |       |
| Prob. Ch2           |                  |       | 0.000             |       |
| Hausman Test        | Chi2(3) = 5.31   |       | Prob>Chi2= 0.1507 |       |

Source: Computed by the Researcher (2025)

Table 4 Discloses the empirical results derived from our analysis using fixed effect(FE) and random effect(RE) for variables of human resource accounting variables (Hca, All, and Traco) and financial performance (Roet) of the entire panel data. The results revealed that human resource accounting variables were highly significant at 5% level in explaining Roet. Using RE, coefficients of Hca, All and Traco were 0.4268, 0.4478, and 0.1203 respectively, an indication that when the listed oil and gas companies in Nigeria engage in human resource accounting, it would lead to approximately 43%, 459% and 12% changes in their level of financial performance (Roet).

Furthermore, the t-test results indicate that all the human capital accounting variables were statistically significant in explaining Roet. The F-statistics is 94.40 with a probability value of 0.000 is highly significant. This provides support for the proposition that there is a positive relationship between the variables of human resource accounting (Hca, All, and Traco) and financial performance (Roet) among the selected oil and gas companies in Nigeria.

The analytical results obtained using Hausman specification test was:  $\text{Chi2}(3) = 5.31$  and  $p\text{-value} = 0.1507$ ; this suggests that RE is more efficient than FE. Given that the Wald Ch2-statistics is 94.40 with a probability value of 0.000, it is highly significant, hence human resource accounting together have significant effect on financial performance. Hence, all the null hypotheses were rejected while the alternative hypotheses were accepted that human capital, allowances and training costs significantly affect financial performance (return on equity) of oil and gas companies in

Nigeria. Few things are known about how human resource accounting affects the financial performance of oil and gas companies in Nigeria, but it would be interesting to look at how human resource accounting (Hca, All, and Traco) affects financial performance metrics like return on equity (Roet).

The question in the accounting literature is actually whether certain aspects of human resource accounting would have a major effect on improved financial performance; the results are not entirely consistent. The contradictory findings can be related to methodological flaws in earlier research. In light of the aforementioned, this study examined how human resource accounting affects financial performance of Nigerian listed oil and gas companies. The results showed that all the human capital accounting variables of the study had a substantial consequence on the financial performance of listed oil and gas corporations in Nigeria. Our study's results support those of Adegbayibi (2021) and Gara, et al (2025) who found significant influence of human capital accounting on financial performance of companies

### Conclusion and Recommendations

In this study, we investigated whether accounting for human capital has an effect on the financial performance of Nigerian oil and gas companies. Secondary data was gathered between 2013 and 2024 using an ex post facto design. The audited financial accounts of the oil and gas businesses publicly listed on the Nigerian Exchange Group floor were used to calculate financial performance metrics (return on equity) and human capital accounting metrics (human capital, allowances, and

training costs). Descriptive, regression diagnostic and inferential statistical methods were used as analysis tool of data collected.

The empirical results showed that training expenses, allowances, and human capital accounting measures have a major positive effect on the financial performance (return on equity) of Nigeria's publicly listed oil and gas companies. Based on the results, the study suggests, among other things that in order to further improve the performance of Nigeria's oil and gas companies, amount incurred on human capital accounting expenditures, especially allowances and training, should be raised. This study advances knowledge in the accounting literature by demonstrating that companies that make large investments in human capital are anticipated to outperform those that do not.

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