

Human Resource Accounting and Financial Performance: Evidence from Listed Petroleum Marketing Companies in Nigeria

INUWA, Mohammed Bala

Department of Accounting and Finance

Faculty of Management and Social Sciences

Baze University, Abuja

mohammed.inuwa@bazeuniversity.edu.ng

+2347068187904

P-ISSN: 2315-9391 AJAF September
2025, 9(2) 89-102

Corresponding Author:

INUWA, Mohammed Bala

Department of Accounting and Finance

Faculty of Management and Social Sciences

Baze University, Abuja

mohammed.inuwa@bazeuniversity.edu.ng

+2347068187904

Abstract

This study assess the nexus between human resource accounting and financial performance of listed petroleum marketing companies in Nigeria over the period 2014 – 2023. The human resource accounting proxy by staff remuneration and staff training cost and financial performance which is proxy by return on asset. Firm size was used as a control variable. The sample of the study covers six (6) companies in the downstream oil and gas sector. The research adopts an ex facto research design and secondary data were collected from the company's annual reports. Descriptive statistics, correlation, and regression analyses were carried out with the aid of E-views. The result reveals that staff remuneration and staff training cost have a significant and insignificant relationship with financial performance of listed petroleum marketing companies in Nigeria respectively. The study concludes that staff remuneration has a positive relationship with financial performance while staff training cost have a negative relationship with financial performance of listed petroleum marketing companies in Nigeria. The study recommends that staff remuneration should be maintained or increased so that staff can continue putting in their best in their job to achieve high performance and cost of staff training should be improved so that staff can acquire the necessary and appropriate skills and the knowledge to carry out their work thereby increasing performance to higher heights.

Keywords: Human Resource Accounting, Staff Remuneration, Staff Training, Return on Asset, Human Capital Theory

1.0 Introduction

Over the past few decades, increasing attention has been devoted to Human Resource Accounting (HRA) as organizations and researchers recognize the critical role that human capital plays in achieving sustainable business success. Human resources refer to the collective skills, knowledge, abilities, and other attributes possessed by individuals within an organization that contribute to its productive capacity. This growing interest is largely attributed to the recognition of employees as major stakeholders and key assets in socially and environmentally responsible corporate behavior (Enofe et al., 2023).

It is widely acknowledged in the literature that the quality, competence, and commitment of an organization's workforce significantly determine its success or failure. In other words, even a firm endowed with vast physical and technological resources may still experience financial distress if it lacks competent human resources to manage and direct its operations effectively (Bukh, 2024). Consequently, despite rapid technological advancements and automation, human resources remain the most valuable and indispensable assets of any enterprise.

Although the concept of Human Resource Accounting emerged in the 1980s, it began to gain substantial recognition after its adoption and promotion in India by the Neyveli Lignite Corporation (NLC). HRA, also referred to as Human Asset Accounting, represents an information system designed to identify, measure, record, and communicate the value of human resources within an organization. It involves assigning a monetary value to employees based on their expected future benefits to the organization, thereby recognizing them as assets rather than mere expenses. Through this approach, HRA provides a framework for quantifying the economic value of human resources and reflecting it in financial statements (Mustafizur et al., 2023).

Traditional accounting systems have been criticized by behavioral scientists for failing to account for the value of human resources in financial reporting. In response, accounting scholars have called for the inclusion of human resource valuation to improve the relevance and

completeness of financial statements. The global expansion of the International Financial Reporting Standards (IFRS) further supports the movement toward alternative measurement and disclosure practices that enhance transparency and comparability in financial reporting (Ezejiofor et al., 2023).

Globally, the application of HRA varies across organizations and jurisdictions. For instance, Swedish companies report certain intangibles such as human resources and intellectual capital based on domestic valuation models, while large Finnish corporations disclose staff training and development expenditures in their annual reports. In the United Kingdom, the Managing and Reporting Intangible Assets (MARIA) initiative encourages the identification, valuation, and reporting of intangible assets. Similarly, India remains a leading example in the practice of HRA, with several entities in both public and private sectors actively engaging in the monetary valuation of their human resources (Pandey, 2014; Orjha, 2023).

In Nigeria, however, the practice of Human Resource Accounting remains at a developmental stage. A few organizations particularly in the banking, manufacturing and oil and gas sectors have begun to recognize the value of investing in human capital. Yet, such investments are generally treated as expenses in the profit and loss accounts rather than being capitalized as assets in the balance sheet (Orjha, 2023). The key challenge lies in determining the appropriate valuation methods and cost models that accurately capture the worth of human resources.

Establishing a sound system of Human Resource Accounting could provide significant benefits to both internal and external stakeholders. Internally, it would support managerial decision-making, workforce planning, and performance evaluation. Externally, it would enhance investors' confidence by providing a more realistic assessment of an organization's intangible assets. Despite its theoretical importance and growing academic discourse, the practical implementation of HRA in Nigeria remains limited. Hence, the need arises to investigate the extent, challenges, and implications

of Human Resource Accounting practices among Nigerian firms.

The financial performance of a company serves as a critical indicator of its operational efficiency and overall effectiveness. It reflects how well an organization utilizes its resources to generate profit and sustain growth. Analysts and stakeholders often rely on historical financial data to assess performance trends and make informed investment decisions. The reporting of profit is therefore fundamental, not only as a measure of business success but also as a vital source of information for decision-making. Profit reporting plays multiple roles it provides a basis for tax assessment, serves as a benchmark for evaluating managerial effectiveness, determines the extent of distributable profits, guides profit allocation, and facilitates the overall management of an economic entity (Kordestani & Hedayati, 2011).

Despite its importance, the concept of performance remains somewhat ambiguous in organizational research. Roger and Wright (1998) observe that while performance is among the most widely used dependent variables in management and human resource studies, it is still one of the least precisely defined constructs. They argue that the quest to establish a universally accepted definition of performance has been ongoing for decades, extending beyond the boundaries of Strategic Human Resource Management (SHRM). In a more practical sense, Okpako et al. (2014) define firm performance using financial indicators such as turnover growth, return on assets (ROA), return on equity (ROE), and earnings per share (EPS).

This study is inspired by the need to examine how staff remuneration and employee training costs influence the financial performance of listed petroleum marketing companies in Nigeria. According to Omodero and Ihendinihu (2023), adequate and satisfactory staff remuneration enhances employee motivation, which in turn drives organizational productivity and goal attainment. Similarly, Edom (2019) found that employee training and development significantly improve organizational performance by equipping staff with the technical skills necessary to achieve corporate objectives efficiently. These findings highlight the crucial role of human resource

investments particularly compensation and training in enhancing firm performance.

However, existing literature on human resource accounting has predominantly focused on sectors such as banking, small and medium enterprises (SMEs), manufacturing, and service industries (Abraham et al., 2022; Khan, 2020; Diana et al., 2021). Limited attention has been given to the oil and gas sector, despite its significance as one of Nigeria's leading revenue-generating industries and major employers of labor. This gap underscores the relevance of investigating how human resource accounting practices particularly employee remuneration and training expenditures affect the financial performance of petroleum marketing companies in Nigeria. This study seeks to close the knowledge gap. Hence, this study is to assess the nexus between human resource accounting and financial performance of listed petroleum marketing companies in Nigeria.

2.0 Literature Review

2.1 Concept of Human Resource Accounting

The concept of Human Resource Accounting (HRA) has evolved over time through various scholarly and professional definitions. The Human Resources Accounting Committee of the American Accounting Association (AAA) (1973) defines HRA as "the process of identifying and measuring data related to human resources and communicating that information to the relevant authorities." Bullen and Egler (2010) further describe HRA as the accounting process that treats expenditures related to human resources as assets rather than immediate expenses. Similarly, Prabhu et al. (2019) define HRA as a specialized branch of accounting that quantifies the costs of investing in human capital and measures them financially for comparison with the economic value contributed by the workforce to the organization. Ezejiofor et al. (2023) also view HRA as the systematic process of identifying, recording, and reporting investments made in human resources that are often excluded from traditional accounting systems. Essentially, HRA extends the traditional expense recognition or matching principles by emphasizing the alignment of human capital expenditures with the revenue they help generate, thereby improving

the quality and relevance of accounting information.

From these definitions, it can be inferred that Human Resource Accounting involves the systematic assessment and documentation of the costs and value associated with personnel within an organization. It encompasses the measurement and reporting of employees' performance, productivity, and economic contribution as a means of evaluating the effectiveness of this vital asset the human element of enterprise success. HRA functions as an integrated accounting system that provides information relevant to investments in human capital, covering activities such as recruitment, selection, placement, orientation, training, development, and replacement. The information generated through this system supports managerial decision making, enhances performance evaluation, and assists external stakeholders in assessing a company's value and investment potential. In this study, staff remuneration and staff training costs are adopted as key indicators of Human Resource Accounting to evaluate their effect on the financial performance of organizations.

2.1.1 Staff Remuneration

Remuneration refers to the total compensation or financial reward provided to employees in exchange for the services they render to an organization (Kanzunnudin, 2007). It encompasses various elements such as basic salary, wages, health and pension benefits, transportation and overtime allowances, and responsibility incentives. In this study, remuneration is adopted as a key metric for assessing employee compensation, incorporating both wages and salaries. Abraham et al. (2022) describe a basic salary as a fixed, periodic payment made primarily to non-manual employees, typically expressed on an annual basis and paid monthly without additional incentives for productivity. In contrast, wages are payments made to manual workers, calculated on hourly or piece rates. Similarly, Surbhi (2024) differentiates salary as a fixed payment made regularly to employees for their performance and productivity, while wages represent hourly-based payments made to laborers for daily work completed. He further notes that salaried employees are generally engaged in

“white-collar” professional roles that require education and specialized skills, whereas waged employees typically perform “blue-collar” labor tasks involving unskilled or semi-skilled work.

The primary motivation of an employee is to earn income in the form of wages or compensation for services rendered. Therefore, organizations must ensure that remuneration levels are fair, equitable, and sufficient to meet employee's basic needs. According to Kanzunnudin (2007), the minimum wage paid by employers should be adequate to sustain employees' livelihoods. Moreover, fairness and equity in compensation are crucial, particularly in developing economies such as Nigeria, where disparities in pay can lead to employee dissatisfaction, reduced productivity, and industrial unrest. Salaries and wages are commonly measured based on annual payments or total earnings. Yinka (2023) found a strong and positive relationship between remuneration and employee performance, suggesting that well-compensated employees are more motivated, committed, and productive in achieving organizational goals.

2.1.2 Staff Education and Training

Education and training are fundamental human resource practices aimed at equipping employees with the necessary skills, knowledge, and competencies to handle complex and evolving job responsibilities. Globally, organizations increasingly depend on the enhanced capabilities of a skilled workforce to gain and sustain a competitive advantage (Shu-Rung & Chun-Chieh, 2023). To develop these desirable attributes, human resource manager's design and implement structured training programs that align with organizational objectives (Lakra, 2016). Such programs not only familiarize employees with their roles but also foster greater commitment, motivation, and job satisfaction. Huang and Jao (2016) emphasize that training initiatives are designed to prepare employees to perform their duties accurately and in accordance with established standards, thereby improving efficiency and productivity. In addition, Khan and Baloch (2023) note that forward-looking organizations invest in long-term training and skill development programs to enable their workforce to adapt to current and future uncertainties, thus

enhancing employee performance through higher levels of commitment and innovation.

Regardless of an organization's size or industry, its employees remain the most critical determinants of its success or failure. Ensuring that positions are filled with educated and well-trained personnel is vital for operational effectiveness and sustainable performance. Jaoude (2024) found that organizations that provide high-quality training programs achieve up to three times higher profits than their competitors, highlighting the strategic importance of continuous employee development. Similarly, Ali and Nada (2018) revealed a significant positive relationship between education, training, and organizational performance, underscoring the value of investing in human capital. In the context of human resource accounting, education and training expenditures can be quantified as the financial investments made toward staff development, reflecting the organization's commitment to enhancing the capabilities of its workforce and improving overall performance outcomes.

2.2 Financial Performance

This study focuses on testing the firm financial performance by using the famous and common proxy of performance accounting based measurement that is ROA as some of the previous studies have used this proxy of performance (Adewuyi & Olowookere, 2023).

2.2.1 Return on Asset (ROA)

It represents the ratio of a company's earnings before interest and tax (EBIT) to its total assets (Baulkaran, 2014). It measures how efficiently a firm utilizes its assets to generate profit within a given period. ROA is often preferred by analysts because it is considered neutral to tax, depreciation, and financing structure. According to Liu et al. (2024), ROA reflects the proportion of operating income excluding extraordinary items to total assets. However, some scholars argue that including extraordinary income may distort comparability as such income does not arise from regular business operations and may make cross-firm comparisons less meaningful.

2.2.2 Firm Size

Firm size is one of the most influential characteristics in organizational studies (Pandey, et

al. 2000). Large firms are different from smaller firms, in that larger firms are likely to have more layers of management, a greater number of departments increase specialization of skill, and greater bureaucracy than smaller firms (Yegon, 2024). Firm size matters for some reasons. Larger firms are associated with lower fixed costs per unit, cheaper access to outside financing, diversification of their financing sources, and less likelihood to fail or liquidate (Goddard Tavapoli & Wilson 2005). Large firms are likely to be more diversified and less prone to bankruptcy (Rajan & Zingales 1995). (Pandy et al. 2000) were of the opinion that as firm size increases, fixed costs become relatively less important. Larger firms are associated with better diversification capabilities, and the ability to exploit economies of scale and scope. Bigger firms are likely to be more profitable as more profit opportunities abound with bigger capital resources than a smaller-sized firm with smaller capital resources does. On the other hand, larger firms are also associated with rigidity and unnecessary bureaucracy that can block profitable opportunities that may require urgent attention. (Goddard, Tavapoli & Wilson, 2005). For the purpose of the study, firm size is defined as the total assets owned by the firm measured as a log of total assets.

2.3 Theoretical Framework

2.3.1 Human Capital Theory

The human capital theory on its part assumes that organizations would make decisions regarding the amount of investments that would be made in human capital based on the anticipated future benefits and or returns from such investment. Investments in human capital in this regard include training and development costs. Flamholtz and Lacey, 1981 in Bassey and Tapang (2012) opine that investments in human capital include all costs related to eliciting productive behaviors from employees, including those related to motivating, monitoring, and retraining them. Organizations, therefore, commit their resources to train employees' specialized skills while at the same time; they make a comparison between their investments in the firm's human capital and the potential future returns and benefits accruing from such investments. Efforts are expected to be made to ensure that any of such acquired skills from

training are retained in the investing company and not transferred to other companies. The theory is relevant to this study because it borders on human resource accounting.

2.3.2 Resource Based Theory

The resource-based theory was developed by Baney (1991) the theory posits that individual employee performance affects firms' level of outcomes. This means that the contributions of an individual employee at various levels of the organization result in a corporate goal. For these reasons, employees' intellectual competence, employee's skill, and corporate human resource function must be properly developed if corporate goals must be achieved. The resource-based theory indicates that human resource provides a source of a sustained competitive advantage which consists of three basic requirements of value, imitation, and specialization that must be always present within the specialized human resource as discussed below:

Value: Firms create value through either decreasing product or service costs or through product or service differentiation in a way that allows the firm to charge a premium price. Thus, the goal of any human resource (HR) executive is to create value through the human resource function. Therefore, the first question to be addressed by (HR) executives is how the (HR) functions can aid in either decreasing costs or increasing revenues.

Imitation: This explains that the value and the rare characteristics of a firm's human resources can provide above-normal profits for the firm in the short term. However, if other firms can imitate the characteristics over time, such characteristics will provide no more than competitive parity. According to Bassey and Tapang (2012), human resources are not subjected to the same degree of imitation as equipment or facilities, investments in firm-specific human capital can further decrease the probability of such imitation by qualitatively differentiating a firm's employees from those of its competitors.

Specialization: For any characteristics of a firm's human resources to provide a source of sustained competitive advantage, the firm must be organized to exploit the resource. Organization requires putting in place the systems and practices that allow

human resource characteristics to bear the fruit of their potential advantages. For instance, allowing employees to participate in the decision-making process could be one of the ways to achieve this, and allowing them to display their intellectual capabilities in the decision-making process. Firm human resources must not be subjected to replacement by a substitute if they are to provide a source of sustainable competitive advantage.

This theory connects to the study as it explains the strength of human resources to the overall success or failure (performance) of firms.

2.4 Empirical Literature

Several studies have been carried out on the impact of human resource accounting on the financial performance of firms, which results in mixed findings. Some of these studies are reviewed as follows:

Abraham et al. (2022) study the effect of human resource accounting on the performance of Deposit Money Banks listed on the Nigerian Stock Exchange. Specifically, the study examined the effect of staff remuneration, staff training, and cost of health care on the safety of staff in the performance of Deposit Money banks in Nigeria. The study adopted the ex-post facto research design. Data were sourced from annual published accounts of Deposit Money Banks listed on the Nigerian Stock Exchange for the period 2015-2019. Descriptive statistics and correlation were used in the analysis of data. Multiple regression analysis was further used to test the hypotheses at a 5% level of significance. Findings from the investigation revealed that; staff remuneration with the cost of health care and safety have no significant effects on market value using TQ while the cost of staff training has a significant effect on the market value of a listed deposit money bank using TQ. The study, therefore, recommended the need for staff remuneration to be improved so that bank staff can put in their best in order to achieve better performance.

Stanley et al. (2022) examined the effect of Human resource accounting (HRA) on the financial performance (return on assets-ROA) of selected quoted Nigerian food and beverages firms. Four of these firms were sampled from 2012-2021. The research analyzed the data generated using the

panel regression analysis through the instrumentality of Econometric Views. The study evidenced that, staff training and development costs (STC) and welfare costs (EWC) improved firm performance significantly, but staff safety costs did not. However, hiring costs has a negative significant effect on the ROA of the targeted firms in Nigeria during the study periods. Hence, the paper concluded that human resource accounting is instrumental to higher firm performance. As such, the study recommends that management of selected firms should not see their staff training as a one-off thing instead they should conduct both off and on-the-job training on a regular basis. Lastly, the management of the targeted firms must ensure that their welfare package includes both monetary and non-monetary compensation.

Ndum and Oranefo (2021) examined the effect of human resource costs on the financial performance of quoted brewery firms in Nigeria. The study adopted an Ex-Post Facto research design. The population of the study is made up of 5 breweries companies quoted on the floor of the Nigerian Stock Exchange (NSE) as at 2019 and have consistently submitted their annual reports to the NSE from 2010 to 2019. The regression analysis revealed that staff cost has a positive and significant effect on the net profit margin of quoted brewery firms in Nigeria, while staff cost has a positive and insignificant effect on the return on assets of quoted brewery firms in Nigeria. The study thereby recommended that Nigerian breweries should imbibe the culture of capitalizing and reporting investment on human resources that can improve quality and productivity. This will impact positively on their financial performance and consequently on the share price value.

Khan, (2020) investigated the impact of human resource accounting (HRA) on the overall performance of the organization. By presenting the details of HRA the study identifies various dimensions of an organization's financial aspects viz., human capital efficiency, organization profitability, return on asset, and return on equity from 2019 to 2018. To understand the impact of various measurements, the study collected required data from 268 responses from human resource and finance departments of SME firms and analyzed

the data using linear regression, the result of ANOVA and coefficient values illustrated there is a positive significant effect of HRA on human capital efficiency, organization profitability and return on equity. This is evident that the SME firms in Saudi Arabia are aware of the benefits of HRA for the organization and the only concern is it needs rapid implementation initiatives from the management which is possible with wide awareness across the nation. However, there is no significant effect of HRA on return on assets. This study contributes to the SME firms, human resource departments, and managerial decision-makers to understand the HRA concept and its usefulness to make a positive difference in their financial statements.

Olayinka and Adegbe (2020) investigated the effect of human resource accounting on the quality of financial reporting (using earnings quality, accounting conservatism, earnings smoothness, and persistence as proxies) of quoted oil and gas companies in Nigeria. The study adopted an ex-post facto research design. The population of the study was 12 oil and gas companies in Nigeria. A purposive sampling technique was used and considered 12 oil and gas firms that had secondary data information that covered a period of 10 years from 2009 -2018. The empirical findings of financial reporting quality revealed that the human asset provided the basis for this improvement in oil and gas companies. The study concluded that human resource accounting has a significant effect on the financial reporting quality of quoted oil and gas companies in Nigeria. The study recommended that the regulatory bodies should find ways of rewarding companies that comply with the regulatory guiding standards and comply with information disclosure for earnings quality assessment and sanction erring companies that conceal relevant and purposeful information from the stakeholders.

Nwauzor and Tamunoemi (2020) examined human capital accounting and firms' performance in the oil and gas sector of Nigeria, human capital as a foundation for corporate profitability. The study adopted an expo factor research design, and the population of the study is the nine (9) downstream oil and gas firms in Nigeria as listed on the Nigeria Stock Exchange (NSE) as from 2009 to 2018. The

result showed that compensation cost and market share are positive and statistically significant. Findings also showed that the moderator variable firm size does not moderate the relationship between human capital accounting and financial performance. Therefore, they recommended the 3 Rs for the human resources of oil and gas companies in Nigeria.

The study of Vaddadi et al. (2018) aims at ascertaining the relationship between human resource accounting and the performance of firm from 2009 to 2018. The study was carried out in ten branches of the Indian Nationalized Bank located in Andhra Pradesh, India. A quantitative method was used to examine the present study. Researchers identified three independent factors under Human Resource Accounting (HRA) and one dependent factor as the performance of a firm. The findings revealed a positive association between shelter costs and the firm's performance, a positive association between health and safety costs and the firm's performance, and a positive association between training and development costs and the firm's performance. According to the findings of the current study, shelter cost, and training & development cost were strongly correlated with the firm's performance, but health and safety cost was moderately correlated with the firm's performance. The research helps the banks to identify the importance of investment in human capital.

Ruparelia and Njuguna (2020) studied the relationship between board remuneration and financial performance of Kenya's financial service industry. Secondary data were obtained from audited financial statements of the service industry of firms listed on Nairobi securities exchange for eleven years for the period between 2009 and 2018. Board remuneration was measured by director annual fees while financial performance was measured by return on assets (ROA), return on equity (ROE), dividend yield (DY), and EPS. Linear regression was used on pooled cross-sectional time series data. The result of the study revealed that there was a significant relationship between board remuneration and ROA while there is no significant EPS.

3.0 Methodology

This study employed an ex post facto research design where information on human resource accounting variables and financial performance variables of listed petroleum marketing companies on the Nigeria Exchange Group were extracted from the audited annual reports of the companies from 2014-2023. The population of this study consists of 10 petroleum marketing companies and 6 purposive samples of the listed companies were used based on consistent data availability during the study period. The collected data was sorted, edited, and verified for accuracy while preparing it for analysis. E-views were used in analyzing the data. Descriptive statistics were used to show the measure of tendencies that include mean table, standard deviations, and percentages. Correlation and regression analyses were also used to find out the relationship between human resource accounting and financial performance.

3.1 Measurement of the Variables

3.1.1 Dependent variable

The dependent variable for this study is financial performance. Return on asset (ROA) is used to measure financial performance. ROA is the Net profit as the ratio of the total assets.

3.1.2 Independent variables

The independent variable of this study is human resource accounting. This is represented with proxies as staff remuneration, and staff training costs. This study measures staff remuneration as the total salary paid to staff. The staff training cost is measured as the total cost involved in the training of staff.

3.1.3 Control Variables

This study identified firm size as the control variable because of the difference in the size of the sampled firm, which is measured as a natural log of total assets.

3.2 Model Specification

The empirical model is stated as follows.

$$ROA_{it} = \beta_0 + \beta_1 SR_{it} + \beta_2 STC_{it} + \beta_3 FS_{it} + \varepsilon_{it} \dots \dots \dots (1)$$

Where:

ROA= Return on Asset

SR= Staff Remuneration

STC= Staff Training Cost

FS= Firm Size

B0= Constant

i= Number of firms

t= Time period

ε_{it} = error terms

Decision Criteria

The null hypothesis (H_0) will not be rejected if the computed value falls within the critical positive value of the distribution table for whichever degree of freedom will be computed with a 5% (0.05) level of significance. Otherwise, reject the null hypothesis.

4.0 Results and Discussion

The main objective of this study is to assess the nexus between human resource accounting and financial performance of listed petroleum marketing companies in Nigeria. To enhance the validity of the results and the presentation and understanding of the panel multiple regression results, the result of the descriptive and diagnostic tests is included in the result and analysis presented here.

4.1 Descriptive Statistics

The mean, maximum, and lowest values of the applicable variables are shown together with the corresponding standard deviations. The descriptive statistics for the variables used in the study are displayed in Table 1. Using E views, which analysis of variables for the time period under consideration was obtained.

Table 1: Descriptive Statistics Results

	ROA	SR	STC	FS
Mean	0.03328	1597451.00	59415.77	16.52239
Median	0.02948	512771.00	34179.50	17.62518
Maximum	0.11166	7549416.00	239187.00	19.15655
Minimum	0.06176	4168.00	1065.00	13.22756
Std. Dev.	0.03976	2288416.00	65084.89	2.11009
Skewness	0.22294	1.51984	1.12027	-0.60608
Kurtosis	2.96592	3.82731	3.29565	1.63593
Jarque-Bera	0.24997	12.40516	6.38430	4.16250
Probabilit				
y	0.88251	0.00202	0.04108	0.12477
Sum	0.99848	47923522	1782473	495.6716
Sum sq.				
Dev.	0.04583	1.5223140	1.2375311	129.12190
Count	30	30	30	30

Source: author computation (2025)

The descriptive statistics of the dependent and the independent variables are shown in Table 1 above.

The table displays the mean, minimum, maximum, and standard deviation for return on asset (ROA) which are 0.03328, -0.06176, 0.11166, and 0.03976 respectively. This value shows that there is a small dispersion of the standard deviation from the mean value. The table also displays the mean, minimum, maximum, and standard deviation values for staff remuneration (SR) as 1597451.00, 4168.00, 7549416.00, and 2288416.00 respectively. Comparing the range between the maximum and minimum values reveals there is a marginal increase in staff remuneration in the study period. The results further show that staff training cost (STC) during the period has mean, minimum, maximum, and standard deviation values of 59415.77, 1065.00, 239187.00, and 65084.89 respectively. This shows an increase in staff training costs in the study period. The firm size (FS) has a mean value of 16.52239, a standard deviation of 2.11009, and minimum and maximum values of 13.22756 and 19.15655 respectively. The standard deviation values represent the degree of dispersion in the data series. The more the dispersion of the standard deviation, the more the series deviates from the mean and vice versa.

From the table above, ROA has a negative skewed distribution while all the independent variables display a positively skewed distribution with FS having a value below zero and SR and STC having a value greater than zero, which predicts that the distribution will have more values above the sample average in the distribution. Skewness reflects the degree of asymmetry of the series. Kurtosis was employed to test the peakness of the series distribution which indicates that the value is leptokurtic if it exceeds 3 and platykurtic if it is below 3. The results show that ROA, SR, STC, and FS have a value of 2.96592, 3.70938, 3.29565, and 1.43050 respectively. Jarque-Bera statistics which analyses whether the sample data exhibit the skewness and kurtosis of normal distribution indicate that SR and STC has the greatest value of 11.29529, and 6.38430, while FS and ROA have lower values of 3.30212 and 0.24997 respectively.

4.2 Correlation Analysis

Table 2 presents the correlation matrix showing the Pearson correlation coefficient between the

dependent and independent variables as well as among the studies of the independent variables.

Table 2

Correlation Matrix

	ROA	SR	STC	FS
ROA	1			
SR	0.147012	1		
STC	-0.270658	0.657251	1	
FS	-0.393055	0.649118	0.702725	1

Source: author computation (2025)

The table above shows that there is no relationship among the explanatory variables that is larger than 0.7 which can pose the problem of serial correlations among the data because the rule states that a correlation coefficient between two independent variables of 0.8 is excessive showing a sign of multicollinearity. The results show that SR and ROA have a positive correlation coefficient of 0.147012 while STC and FS have a negative relation with ROA. Furthermore, SR, STC, and FS have a positive relation of 0.657251, 0.649118, and 0.702725.

4.3 Multicollinearity Test

The multicollinearity test was carried out in order to assess the robustness of the estimate, utilizing the Variance Inflation Factor (VIF). Multicollinearity is a breach of the assumptions for linear regression modeling and occurs when one or more independent variables have a strong influence on the others than they do on each other. This can affect the validity of the findings from any research.

Table 3

Multicollinearity Test (VIF)

Variable	Coefficient Variance	Uncentered VIF	Centered VIF	Interpretation
C	0.003733	121.0816	NA	
SR (Staff Remuneration)	1.22E-17	3.015716	2.0050	Low multicollinearity – acceptable.
STC (Staff Training Cost)	1.73E-14	4.268090	2.2921	Low multicollinearity – acceptable.

Variable	Coefficient Variance	Uncentered VIF	Centered VIF	Interpretation
FS (Firm Size)	1.61E-05	144.9568	2.2499	Low multicollinearity – acceptable.

Source: author computation (2025)

Decision rule: Table 3 presented the results of the multicollinearity test conducted which revealed that from the distribution of the values in the table, the correlation coefficient of the independent variables is indeed in line with the variance inflation factors (VIF). The VIF ranges from 2.005010 to 2.292063, which is below a threshold of 10 and shows that the study variables are not multicollinear.

4.4 Fixed Effect Likelihood Ratio Test

In order to distinguish between the fixed effects regression model and the pooled effect regression model, the fixed likelihood ratio test is carried out. Due to the panel format of the data set, pooled and fixed-effect regressions were conducted.

H_0 : Pooled effect is the most appropriate for the panel regression analysis.

H_1 : Fixed effect is the most appropriate for the panel regression analysis.

The result of the fixed effect likelihood ratio is shown in Table 4 below:

Table 4: Fixed Effect Likelihood Ratio (Test between Pooled and Fixed)

Test	Statistic	d.f	Prob
F-Statistics	1.427618	(4.22)	0.2580
Chi-square	6.923036	4	0.1400

Source: author's computation (2025)

According to the decision rule that led to the test, it reveals a chi-square statistics value of 6.923036 with a probability value of 0.1400, from the result above it implies that we have no reason to reject the null hypothesis, which indicates that fixed effect is the most suited for the panel regression analysis.

4.4.1 Langrange Multiplier Test

The Breusch-Pagan Langrange Multiplier test is employed to choose between the pooled effects model and the random effects model. The pooled effect and random effect regression was run due to

the panel nature of the data. The decision rule for this LM test is at 5% significance level.

H₀: Pooled effect is the most appropriate for the panel regression analysis.

H₁: Random effect is the most appropriate for the panel regression analysis.

Table 5: Breusch-Pagan Lanrange Multiplier

Test	Statistic	d.f	Prob
Breusch-Pagan LM	5.920358	4	0.0359

Source: author's computation (2025)

The Breusch-Pagan LM test shows a probability value of 0.0359 which means the null hypothesis should be rejected which states that the Pooled effect is the most appropriate for the panel regression analysis. Therefore, the random effect model is picked as the most appropriate.

4.4.2 Hausman Test

This test is carried out to choose between the fixed effect model and random effect model, in order to interpret the objective of the study and the research hypotheses. The decision rule of Hausman test is at 5% level of significance.

H₀: Random effect is the most appropriate for the panel regression analysis.

H₁: Fixed effect is the most appropriate for the panel regression analysis.

The result of the Hausman test is shown in Table 6 below:

Table 6: Hausman test

Test summary	Chi-Square	df	Prob.
Random	5.0001807	3	0.1717

Source: author's computation (2025)

The table above shows that the test is statistically insignificant at 0.1717 as the probability statistics lie above 5% level of significance. Therefore, this study has no reason to reject the null hypothesis that the random effect is the appropriate model. The regression results of the random effect model are presented in Table 7 below.

Table 7: Regression Analysis

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C (Constant)	0.2393	0.0592	4.0430	0.0004
SR	1.39E-08	3.39E-09	4.1154	0.0003
STC	-1.88E-07	1.27E-07	-1.4766	0.1518
FS	-0.0131	0.0039	-3.3787	0.0023

Effects Specification

Effect Component	S.D.	Rho
Cross-section random	0.0000	0.0000
Idiosyncratic random	0.0295	1.0000

Weighted Statistics

Statistic	Value		
R-squared	0.4753	Mean Dependent var	0.033283
Adjusted R-squared	0.4147	S.D Dependent var	0.039755
S.E. of regression	0.0304	Sum Squared Resid	0.024050
F-statistic	7.8497	Durbin-Watson Stat	2.312933
Prob(F-statistic)	0.0007		

Source: author's computation 2025.

The table above display and analyze the effect of regression result of the explained variables proxied by ROA as well as the explanatory variables SR and STC. It shows R² of 0.475267 which means that about 47.52% of the total variation in return on assets of petroleum marketing companies in Nigeria is accounted for by staff welfare with other factors not included in the model. Furthermore, the regression of the result as presented above shows an intercept of 0.239289.

The result reveals that staff remuneration (SR) has a positive relationship with return on assets (ROA) of the selected listed petroleum marketing companies in Nigeria. SR has a beta coefficient of 1.39 and a P-value of 0.0004, which is significant at the 5% level. This implies that if staff

remuneration increase by 1% the return on asset of petroleum marketing companies in Nigeria will increase by the value of the coefficient which is positive. The result reveals that staff training cost (STC) has a negative relationship with ROA and also is insignificant at a p-value of 0.1518 which is above the 5% value of significance.

4.5 Discussion of finding

This study seeks to investigate the effect of human resource accounting on the financial performance of listed petroleum marketing companies in Nigeria. Human resource accounting was measured with staff remuneration and staff training cost while return on asset was used as a proxy of financial performance.

Evidence from the study shows a significant effect of staff remuneration (SR) on the return on assets (ROA) of listed petroleum marketing companies in Nigeria. As shown in Table 6 above SR has a positive beta coefficient and positive P-value which implies that it is a significant predictor of the ROA of listed petroleum marketing companies in Nigeria, with a positive relationship. This suggests that once staff welfare is given much attention it will enable staff to work hard and give much attention to their work with less distraction thereby leading to an increase in return on assets. This finding agrees with the finding of Ruparelia and Njuguna (2020) who studied the relationship between board remuneration and financial performance of Kenya's financial service industry, and it revealed that board remuneration has a positive and significant effect on ROA. The finding however is inconsistent with the findings of (Abraham et al. 2022) who studied the effect of human resource accounting on the performance of Deposit Money Banks listed on the Nigerian Stock Exchange and the study revealed that staff remuneration has an insignificant effect on ROA.

The study shows that staff training cost (STC) has an insignificant effect on the return on assets (ROA) of listed petroleum marketing companies in Nigeria. The result shows from the table above that STC has a negative beta coefficient with a positive P-value which is above 0.05 significant value. This

is inconsistent with the finding of Abraham et al. (2022) which shows that staff training cost has a significant effect on ROA of listed companies in Nigeria.

5.0 Conclusion and Recommendation

This paper examines the effect of human resource accounting on financial performance using 9 listed petroleum marketing companies in Nigeria as a sample between 2023 and 2021. The study regression shows that there is a significant relation between staff remuneration and financial performance and an insignificant relationship between staff training cost with financial performance of the sampled companies. The findings revealed that staff remuneration and staff training costs have a positive and negative impact on the financial reporting quality of listed petroleum marketing companies in Nigeria respectively. Given the foregoing, the study recommends the following:

- i. It has been recommended that staff remuneration should be maintained or increased so that staff can continue putting in their best in other to achieve high performance and increase the financial performance of their employer.
- ii. The cost of staff training should be improved so that staff can acquire the necessary and appropriate skills and knowledge to carry out their work thereby increasing performance to higher heights.

Suggestion for Further Studies

Human resource accounting serves as an important instrument for enhancing financial performance. Future studies could explore additional dimensions of human resource accounting, such as staff safety, pension schemes, and retirement benefit plans. Likewise, subsequent research may benefit from employing a larger sample size to improve generalizability. While this study used Return on Assets (ROA) as the indicator of financial performance, future researchers may consider alternative measures such as Return on Equity (ROE) or Return on Investment (ROI).

References

- Abraham, E. O, Odobi, O. David & Enwuchola, R. O (2022). Effect of Human Resources Accounting on Performance of Listed Deposit Money Bank in Nigeria. *Journal of Accounting and Financial Management* E-ISSN 2504-8856 P-ISSN 2695-2211 Vol 8. No. 4 2022
- Adewuyi, A. O., & Olowookere, A. E. (2023). New corporate code and immediate performance change of the Nigerian firms. *Corporate Governance*, 13(2), 169– 183.
- Bassey, E. B. & Tapang, A. T. (2012). The impact of human resource accounting on the profitability of a firm, *European Journal of Accounting, Auditing and Finance Research*, 2(5): 13-17.
- Bullen, M. L. & Eyler, K. (2010). Human resource accounting and international development: Implication for measurement of human capital. *Journal of internal business and cultural studies*, 1-16.
- Bukh, P.N. (2024). The relevance of intellectual capital disclosure: A paradox, *Accounting, Auditing and Accountability Journal*, 16(1), pp. 49-56.
- Enofe, A. O., Mgbame, C. Sunday O. S., & Ovie, O. (2023). Human resources accounting disclosures in Nigeria quoted firms. *Research Journal of Finance and Accounting*, 4(13), 7-12.
- Ezejiofor, R. A, Chitom, J. R. & Chelichi, I. F. (2023). Appraisal of Human Resource Accounting on Profitability of Corporate Organizational. *Economics* 6(1): 1-10.
- Goddard, J., Tavapoli, M., & Wilson, (2005). Determinants of profitability in European manufacturing and services industry: Evidence from dynamic panel data. *Applied financial management*. 15 (18) 1261-1282.
- Huang, W. & Jao, Y. (2016). Comparison of the influences of structured on-the-job training and classroom training approaches on trainees' motivation to learn. *Human Resource Development International*, 19(2): 116-134.
- Jaoude, H. (2024). Labor market and employment policy in Lebanon. *Journal of Human Resources in Hospitality and Tourism*, 3(2): 125-135.
- Kanzunnudin, M. (2007), Effect of wages and supervision of employee productivity. *Journal of Management Research*, 15(4): 59-75.
- Khan, K. & Baloch, N. (2023). Impact of training on employee development and other behavioral outcomes: a case of public accountant trainees in Khyber Pakhtunkhwa. *Journal of Managerial Sciences*, 11(1): 93-107.
- Khan, S. (2020). Impact of human resource accounting on organizations' financial performance in the context of SMEs. *Accounting* 7 (2021): 621–628.
- Kordestani, G.R. & Hedayati, M. (2011). Accounting benefit; Economic benefit. *Certified Public Accountant No.* 12(3),118-125
- Lakra, N. (2016). *Assessment of employee training: the case of steel industry in India*. IUP
- Mustafizur, R., Amzad, H. & Tabassum, A., (2023). Problem with Human Resource Accounting and A Possible Solution. *Research Journal of Finance and Accounting* www.iiste.org ISSN 2222-1697 (Paper) ISSN 2222-2847 (Online) Vol.4, No.18, 2023.
- Ndum, N. B. & Oranefo, P. (2021). Human resource cost and financial performance: a study of quoted brewery firms in Nigeria. *International Journal of Innovative Finance and Economics Research* 9(2): 73-84.
- Nwauzor, C.O. & Tamunoemi, B. L. (2020). Human capital accounting and firm performance: a study of oil and gas firms in Nigeria. *Journal of Economics, Management & Social Science* 6(2).
- Okpako, P.O., Atube, F.N. & Olufawoye, O.H. (2014). Human resource accounting and firm performance. *Global Journal of Commerce & Management Perspective*, 3(4),232-237
- Okpala, P. O & Chidi O. C (2010). Human Capital Accounting and its Relevance to Stock Investment Decisions in Nigeria. *European Journal of Economics, Finance and Administrative Sciences* (21).
- Olayinka, A. O. & Adegbe, F. F. (2020). Human resource accounting and quality of financial reporting of quoted oil and gas companies in Nigeria. *International Journal of Accounting, Finance and Risk Management* 5(4): 195-206.
- Pandey, I.M., Chotigeat, T., & Ranjit, M.K. (2000). Capital structure choices in emerging capital

- market: Case of Thailand, Management and Change, *Journal of Management* 4, (1) 1-14.
- Pandey, N. (2014). Human resource accounting: The concept and its practice in India. *Journal of Management and Technology*, 10(1), 29 -38.
- Prabhu, M. Nabaz Nawzad Abdullah, and Madan Mohan G. (2019), An Empirical Study on the Satisfaction Level of National and International Tourists towards Natural Attractions in Kurdistan, *African Journal of Hospitality, Tourism, and Leisure*, Volume 8 (2), 1-8.
- Rajan, R.G., & Zingales, L. (1995). What Do We Know about Capital Structure Some Evidence from International Data? *Journal of Finance*, 50, (5), 1421-1460.
- Ruparelia R, Njuguna A (2020). Relationship between board remuneration and financial performance in the Kenya financial service industry. *International Journal of Financial Research* 7(2):247-255.
- Shu-Rung, L. & Chun-Chieh, H. (2023). A study of the impact of - job training on job performance of employees in the catering industry. *International Journal of Organizational Innovation*, 9(3): 125-138.
- Surbhi, S. (2024). Differences between Salaries and Wages. Retrieved on 24th January 2020.
- Vaddadi, K.M., Surarchith, N.K. & Subhashin, D. (2018). The effect on human resource accounting (HRA) on performance of a firm. *International Journal of Pure and Applied Mathematics* 118(20): 4833-4841.
- Yegon, C.K., (2024). Effect of enterprise risk management determinants on financial performance of listed firms in Kenya, thesis submitted in partial fulfillment for the degree of Doctor of Philosophy in Business Administration, Jomo Kenyatta University of Agriculture and Technology.
- Yinka, C.O (2024) The Impact of Remuneration on Employees' Performance: A Study of Abdul Gusau Polytechnic, Talata-Mafara, and State College of Education Maru, Zamfara State. *Arabic Journal of Business and Management Review* 4(2), 34-42.