

Chapter 1

Human Capital Investment and Financial Performance of Listed Deposit Money Banks in Nigeria

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Abstract

The study investigated the effect of human capital investment on the financial performance of listed deposit money banks in Nigeria. The specific objectives were to ascertain the effect of educational cost on return on assets, investigate the effect of staff remuneration cost on return on assets. The study collected secondary data from the annual reports of fifteen banks listed on the Nigeria Stock Exchange from 2015 to 2024. Eight of the banks were used as sample of this study using purposive sampling techniques. The method of data analysis was descriptive statistic, unit root test, diagnostics test and panel least square (PLS) with the help of E-view v10. Findings revealed that there is a positive and insignificant effect of educational cost on return on assets of listed deposit money banks in Nigeria, and there is positive and significant effect of staff remuneration cost on return on assets of listed deposit money banks in Nigeria. The study generally concluded that the effect of human capital investment on financial performance of listed deposit money banks in Nigeria is statistically significant for the period spanning from 2015 - 2025. The study recommended, among others, that; capitalizing human assets such as educational costs would positively impact on performance of banks. Therefore, its disclosure is recommended as intangible asset in the statement of financial position.

Keyword: *Human capital investment educational cost and staff remuneration cost*

Introduction

Notably, businesses face serious challenges emanating from poor administration, poor human capital investment, poor quality delivery and low productivity which retards its stability and development. The Nigerian banking sector is not left out, they face increased pressure and challenges on development of the human capital. This is blamed on its management insensitivity to relevance of human capital development for its financial performance. Ebe et al (2024) stated that various elements serve as constraints to the application of human capital investment of firms in Nigeria and globally. Abolo (2022) confirmed that a number of factors that discourage the evolution in the area and the application of the idea are at v cry indigent level of awareness and recognition of human capital investment. Again, lack of industry standard, depth of the research involved, vitality of some industries like the information technology are very energetic due to recurrent discoveries and technological development. The problems of human capital investment can as well rest on the reporting companies themselves who often do not give accurate information regarding the inputs and output of her workers and workforce (Akinsola, 2018). Okanyere and Ijeoma (2019) opined that listed firms do not attach

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primary precedence to the measurement of human assets, rather they face more urgent issues like human resource prerequisite and allocation. Such harms are made up of; failure of human resource managers to give sufficient import to the concept of HRA, the senior management will equally give it even less importance and resources, leaving no time for measurement, lack of common method to its reporting thus defining the principles that would tolerate for valuable and significant comparisons.

A number of empirical studies have consequently looked into the effect or relationship between human capital investment and financial performance. Some empirical studies argued that there is a negative and insignificant relationship between human investment and financial performance. Some empirical studies argued that there is a positive and significant relationship between human investment and financial performance. For instance, Newstyle (2025) result revealed that there is a significant effect of capital development on education and real gross domestic product in Nigeria in the long run, there is a significant effect of capital development on health and real gross domestic product in Nigeria for both short run and long run. The study concluded that there is a significant effect human capital development on economic performance in Nigeria for long run planning but is not significant for short run prediction base on the ARDL model analysis. Beida (2024) result of the study revealed that training and development costs had a positive and significant effect on the Return on investment of listed assurance companies in Nigeria. At the same time, personnel costs also had a positive and significant effect on the Return on investment of listed assurance companies in Nigeria. Adesanmi et al. (2024) result showed that employee remuneration cost to revenue has a negative and significant effect on returns on capital employed of DMBs in Nigeria. Also, employee and safety cost has a positive and significant effect on returns on capital employed (ROCE) of listed deposit money banks in Nigeria. Eke et al. (2024) study revealed that a significant relationship exists between human capital development and the financial performance of DMBs in Nigeria. Others includes; Kusuma (2024), Odewusi and Olalere (2024), Okafor et al. (2023), Ofurum et al. (2023), Adamu et al. (2023), Abolo (2022) have disclosed significant effect of human capital cost, accounting, development and investment on financial performance measures.

However, some empirical studies argued that there is a negative and insignificant relationship between human investment and financial performance. For instance, Obi and Okoro (2024) investigated on human capital accounting for sustainable performance of the financial sector businesses in Nigeria for the period 2008 -2021. . Results showed that staff and development cost of banks has insignificant effect on their return on assets and return on equity. Kankpang et al. (2024) examined effect of human resource cost (HRC) on profitability of quoted oil and gas firms in Nigeria. It was also found that staff size has negative effect on PAT of oil and gas companies while staff training and development cost have significant effect on PAT. Others includes; Major and Dumle (2023), Newstyle and Major (2022a), Mukolo et al. (2022), Lin et al (2022), Godwin and Udeh (2021) have disclosed insignificant effect of human capital cost, accounting, development and investment on financial performance measures. From the above studies, none of the prior studies have employed staff remuneration cost in carried the effect of human capital investment on financial performance of listed deposit money banks in Nigeria.

Conceptual Framework

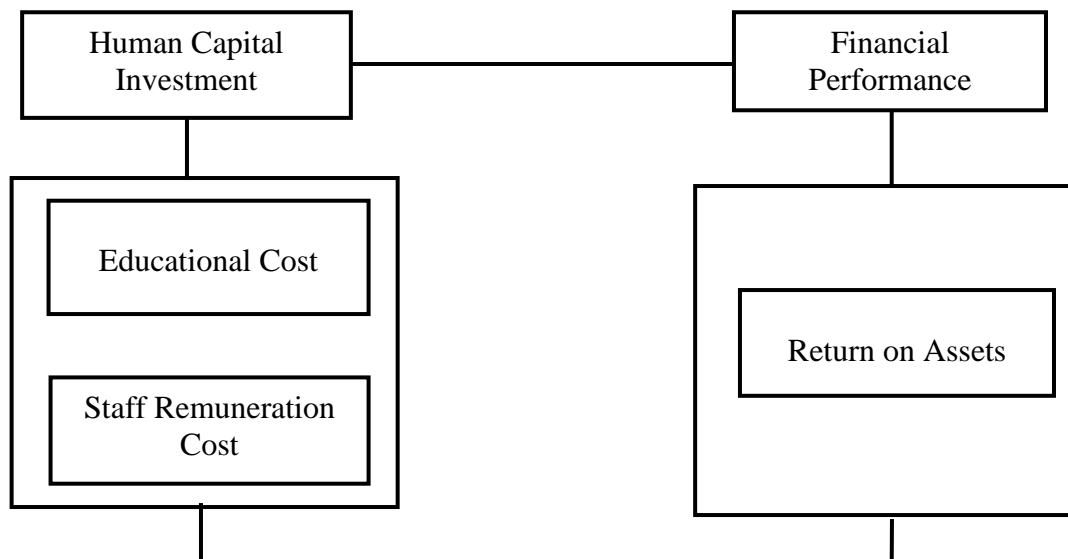


Figure 1: Conceptual framework on the effect of human capital investment and financial performance.

Sources: Kankpang et al (2024), Aaron and Jonah (2024), Eke et al (2024), Adesanmi et al (2024), Newstyle and Major (2022), Onyinyechi and Ihendinihu (2017).

Aim and Objectives of the study

The aim of this research was to empirically investigate the effect of human capital investment and financial performance of listed deposit money banks in Nigeria. The specific objectives are to: -

- i. evaluate the effect of educational cost on return on assets of listed deposit money banks in Nigeria.
- ii. determine the effect of staff remuneration cost on return on assets of listed deposit money banks in Nigeria.

Research Questions

The following research questions were raised to guide the specific objectives of the study. They include to:

- i. What is the effect of educational cost on return on assets of listed deposit money banks in Nigeria?
- ii. What is the effect of staff remuneration cost on return on assets of listed deposit money banks in Nigeria?

Research Hypotheses

The following hypotheses were raised in a null form to address the research questions.

H₀₁: There is no significant effect of educational cost on return on assets of listed deposit money banks in Nigeria

H₀₂: There is no significant effect of staff remuneration cost on return on assets of listed deposit money banks in Nigeria.

REVIEW OF RELATED LITERATURE

Conceptual Review

1. Human capital Investment

According to Newstyle (2025), human capital investment is the financial or monetary worth of employees' expertise and skills. It comprises education, aptitude, cognition, health and other important factors that make workers rate high in the work place. Human capital is responsible for the economic development of countries. The concept of human capital is not restricted by age or social strata. In the views of Abolo, (2022), human capital investment is the process of identifying and reporting the investments made in human capital of an organization that are presently not accounted for in the conventional accounting practices. It involves measuring the costs incurred by the business firm and other organizations to recruit, select, hire, train and develop human capital. Human capital investment can be described as the process of identifying, measuring and communicating information about human resources in order to facilitate effective management within an organization. Human capital is a term used to describe the capacity of individuals who constitutes the workforce of an organization. Egbunike and Okoro (2018) viewed Human capital investment as a management tool that seeks to measure, analyze, and report on the human capital of an organization. It involves assigning a financial value to the knowledge, skills, and experience of employees, as well as other intangible assets such as intellectual property and brand reputation. Human resources accounting is a technique used to measure the value of an organization's human resources, including the knowledge, skills, and abilities of its employees. Abdulateef, et al. (2018) opined that human investment is an approach that seeks to measure and assign a monetary value to the human resources of an organization, including its employees, management, and intellectual capital. Accordingly, it is an approach that recognizes that people are a critical asset to an organization, and that their skills, knowledge, and experience contribute to the value and success of the organization.

2. Educational Cost

Human capital investments on education are expenses that are used as investments in construction programs that use a lot of capital techniques (Newstyle, 2025). Education is the formal, systematic alteration of behaviour through learning that results from development, instruction, education, and planning experience (Beida, 2024). He states that the goal of training is to support the company in fulfilling its mission by enhancing the value of its most valuable asset its workforce. Formal training is the expense associated with orienting a person to the work and providing him with the necessary skills. Two elements of human resource investment are the salaries of trainers and the fixed costs of training facilities. The training of an employee is one of the main factors that directly contribute to the development of an employee to function efficiently leading to increased corporate performance. The study suggests that any corporation that invests considerably in the training of its staff will justify its investment in the form of contribution from the employee which will improve the organisational performance (Aaron & Jonah, 2024).

3. Staff Remuneration Cost

Staff remuneration otherwise known as staff salaries and wages, commission and other fringe benefits accrued to a worker. Employee remuneration cost refers to the total expenditure that a company incurs in compensating its employees for the work they

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perform. This includes salaries, wages, bonuses, benefits, and any other forms of compensation that are paid to employees in exchange for their services. Ojeleye (2017) posited that remuneration is a monetary or financial benefit in the form of salaries, wages, bonuses, incentives, allowances and benefit that ensue to an employee or group of an employee by the corporation as a benefit for services rendered by the employees, commitment to the organization or reward for employment. In a study conducted by Ojeleye (2017) discovered that remuneration of the employees had a strong positive relation on performance in an organization. It was also recommended that employers of labour must take the remuneration of their employees seriously because failure to do so will result in low productivity. It was also stated that employee should also be allowed to participate in the determination of their pay. Akintoye (2018) describes it as costs associated with providing and maintaining employee benefits such as health insurance, retirement plans, and other perks. It is the total cost of all compensation, both direct and indirect, provided to employees. This includes wages, salaries, bonuses, commissions, benefits, and any other forms of compensation paid by the employer. Salary is a fixed sum of money paid to an employee at regular intervals as an outcome of services rendered to an organisation, while wages are payments on an hourly basis to an individual based on the quantity of work done day-to-day. Wages or salaries are of great prominence to the employee because if they are not sufficient life becomes indeterminate for the employee and the direct family members. Wages and salary are highlighted by an employee because they occupy a central phase in the scheme of things as regards compensation for work (Abraham et al, 2022).

4. Financial Performance

Makanaga (2015) posts that financial performance is an indicator of the firm's general financial condition in a given period of time and can equally be employed to contrast related companies in the same business. Newstyle (2022) defined financial performance as a subjective measure of how well a firm can use assets from its primary mode of business and generate revenues. Financial performance implies the level in which the financial goals of a firm are being or have been attained. It is a method of ascertaining impacts of companies policies and the operations in a monetary language (Ebe et al., 2024). This shows the situation of an organization on at moment in time as presented in the statement of financial statement of companies or it may show a series of actions over a stipulated period of time as it is revealed by the statement of comprehensive income. This term according is used as a general measure of the overall financial health of a business. 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.

5. Return on assets (ROA)

Return on Assets (ROA) is an indicator of how well a company utilizes its assets, by determining how profitable a company is relative to its total assets, ROA is best used when comparing similar companies or comparing a company to its previous performance. ROA gives a manager, investor, or analyst an idea as to how efficient a company's management is at using its assets to generate earnings. Return on assets is displayed as a percentage (Bashari & Mohammed, 2019). Return on assets (ROA), in basic terms, explains what earnings were generated from invested capital (assets). ROA for public companies can be different from one company to another dependent on the industry. This

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is why when using ROA as a comparative measure, it is best to compare it against a company's previous ROA numbers or against a similar company's ROA. The ROA figure gives investors an idea of how effective the company is in converting the money it invests into net income. The higher the ROA number, the better, because the company is earning more money on less investment. ROA is most useful for comparing companies in the same industry, as different industries use assets differently (Bashari & Mohammed, 2019).

Theoretical Review

Human capital theory

This study based on the Human Capital theory propounded by Schultz (1961) and extensively developed by Becker (2014). The theory has its root from labour economics which is a branch 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 discrepancy. This theory shows how education results raise in productivity and competence of workers by increasing the-level of their cognitive skills. Theodore, Schultz, Gory Bucker and Jacob-Mincer introduced the concept that people invest-in education so-as to enlarge their reserve of human capabilities which-can be formed by bringing together inborn abilities with investment in human beings. (Babalola, 2000), examples of such investments include; on the job training; money spent on education and nutrition. This theory assumes that human-capital act as a resource, usually comes with experience are translated into knowledge and skills which further improves the chances of survival.

Empirical Review

Newstyle (2025) studied the effect of human capital development on economic performance in Nigeria. The research design adopted for the study was ex post facto research design. The population of the study was conducted on Federal Republic of Nigeria under the National Bureau of Statistics, Federal Inland Revenue Services, Central Bank of Nigeria (CBN) and Federal Ministry of Finance. The study period covered was forty-three (43) years spanning from 1981 to 2023. This study utilized Descriptive statistic, Unit Root Test, diagnostic tests such as Breusch-Godfrey serial correlation LM test, Breusch-Pagan Heteroskedasticity test was adopted. And ARDL Regression analysis with the aid of E-View 10 was also employed for testing for hypotheses. The findings from the study revealed that there is no significant effect of capital development on education and real gross domestic product in Nigeria in the short run but there is a significant effect of capital development on education and real gross domestic product in Nigeria in the long run, there is a significant effect of capital development on health and real gross domestic product in Nigeria for both short run and long run, there is no significant effect of capital development on education and misery index in Nigeria for both short run and long run, there is no significant effect of capital development on health and misery index in Nigeria for both short run and long run. The study concluded that there is a significant effect human capital development on economic performance in Nigeria for long run planning but is not significant for short run prediction base on the ARDL model analysis. Therefore, the study recommended that government should invest more in capital

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expenditure on education to ensure enhancement in human capital development through raise in budget allotment to these sectors for long term planning.

Beida (2024) examined the effect of human resources accounting cost information on investment decisions of listed assurance companies in Nigeria. The specific objectives of the study was to examined the effect of human resources accounting cost information proxied by training and development cost and personnel cost together with firm size (introduced as a control variable) on investment decision proxies using ROI of listed assurance companies in Nigeria. The ex-post facto research design was adopted with a population of 23 companies, of which 15 were sampled using purposive sampling techniques. Secondary data sources from annual reports of listed assurance companies in Nigeria ranging from 2013 to 2022 financial years were used. Panel regression analysis was used to analyse the result using E-views 10. The result of the study revealed that training and development costs had a positive and significant effect on the Return on investment of listed assurance companies in Nigeria. At the same time, personnel costs also had a positive and significant effect on the Return on investment of listed assurance companies in Nigeria. Based on this finding, it is recommended that assurance companies invest more in their employees' training and development and increase their staff welfare to enhance human capital efficiency.

Obi and Okoro (2024) investigated on human capital accounting for sustainable performance of the financial sector businesses in Nigeria for the period 2008 -2021. Human Capital Accounting was proxied by staff development cost and training while sustainable financial performance was proxied by return on assets and return on equity. The financial sector used were four banks whose financial statements were accessible online for the period of investigation. Secondary data was used and accessed from online publication of the four sampled banks. Model relation between staff and development cost, return on equity and return on asset was developed with the objective to determine the effect of staff and development cost on banks return on asset and return on equity. Data collected were analyzed with Ordinary Least Square regression model with analytical tool of Eview 10. Results showed that staff and development cost of banks has insignificant effect on their return on assets and return on equity. The research recommends that for banks to successfully address the challenges of sustainable performance, there must be a paradigm shift to improvement in human capital accounting for sustainable performance of the banking sector.

Adesanmi et al. (2024) examined the effect of human resource accounting on financial performance of listed deposit money banks in Nigeria. The study used 13 listed deposit money banks as sample size. Data were collected from secondary source using annual reports of the selected firms from Fact-books published by the Nigerian Exchange Group from 2013 to 2022. Data collected include; employee remuneration cost, employee health and safety cost, employee retirement benefits and return on capital employed. The data were analysed using descriptive statistics and ordinary least square regression analysis. The result showed that employee remuneration cost to revenue has a negative and significant effect on returns on capital employed of DMBs in Nigeria. Also, employee and safety cost has a positive and significant effect on returns on capital employed (ROCE) of listed deposit money banks in Nigeria. Employee retirement benefit has a negative and significant effect on returns on capital employed (ROCE) of deposit money banks in

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Nigeria. The study concluded that human resources have negative and significance effect on the financial performance of listed deposit money banks in Nigeria.

Aaron and Jonah (2024) determined the relationship between human capital accounting and financial performance of listed pharmaceutical companies in Nigeria for the period of 2013 to 2022. The proxies of human capital accounting used are staff remuneration cost, staff training and development cost and employee retirement cost while financial performance was proxy with net profit after tax. The study adopted the use of ex-post facto research design and resource-based theory was used to anchored the study. The collected data from six pharmaceutical companies were analysed using descriptive statistic, correlation and regression analysis. The result showed that staff remuneration cost and staff training and development cost had a positive significant relationship on net profit after tax. Likewise, employee retirement cost had a negative and insignificant association on net profit after tax. The study therefore concluded that human capital accounting effect financial performance of listed pharmaceutical companies in Nigeria. The study recommended among others that staff remuneration should be increase in order to motivate staff to put in more effort towards organizational performance.

Methodology

The study adopted ex-post facto research design. The ex-post-facto research design was found suitable for the purpose of this study as we cannot alter any existing data on the variables or control any of the independent and dependent variables but they were observed simultaneously. The population of the study is finite and consists of all deposit money banks listed in the Nigeria Stock Exchange between January 2015 and as at December, 2024. Table 1 shows the names of the deposit money banks listed on the Nigeria Stock Exchange as at 31st December, 2024. Table 3 shows that there were fifteen (15) listed deposit money banks between 1stJanuary 2015 and 31stDecember 2024.

Table 1 List of Listed Deposit Money Banks in Nigeriaas at 31st December, 2023

S/NO	COMPANIES	DATE LISTED	DATE OF INCORPORATION
1	Access Bank Plc.	November 18th 1998	February 8, 1989
2	Diamond Bank Plc	May 2005	December 20, 1990
3	Ecobank Transnational Incorporated	September 11, 2006	October 3, 1985
4	FBN Holdings Plc	November 26, 2012	August 13, 2012
5	FCMB Group Plc.	June 21, 2013	November 20, 2012
6	Fidelity Bank Plc	May 17, 2005	November 19, 1987
7	Guaranty Trust Holding Company Plc	June 24, 2021	July 24, 2020
8	Skye Bank Plc	24th November, 2005	December 8, 1989
9	Stanbic IBTC Holdings Plc	November 23, 2012	March 14, 2012
10	Sterling Bank Plc.	August 17, 1993	November 25, 1960
11	Union Bank Nig.Plc.		May 30, 1969
12	United Bank For Africa Plc	March 31, 1970	February 23, 1961
13	Unity Bank Plc	December 22nd 2005	April 27, 1987
14	Wema Bank Plc.	February 13th 1991	May 2, 1945
15	Zenith Bank Plc	October 21, 2004	May 30, 1990

Source: Nigeria Exchange Group FactBook 2015-2024

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The sample size of this study consisted of eight (8) listed deposit money banks in Nigeria as from 1st January, 2015 -to- 31st December, 2024. This study utilized purposive (Judgmental) sampling technique. The reason for chosen the purposive sampling technique was due to availability of the panel data chosen for the time frame for the sample deposit money banks.

Method of Data Analyses

This study employed descriptive statistics; unit root tests, Hausman Test and Panel Least Squares. The E-views version 10 was used for the descriptive statistics; unit root tests on the other hand were performed to ascertain the stationarity state of the dataset as well as the regression technique of Panel Least Squares (PLS).

Model Specification

The model's specifications were made in a way that it answered the study's specific goals. Because of its straightforward computational process and the estimates, it produces, which have the best properties, including linearity, unbiasedness, minivariance, and mean square error estimation, panel least square (PLS) was chosen for this research project (Koutsoyianis, 2003). In carrying out this research work on the effect of human capital investment on the financial performance, we developed a compact form of our as follows:

Model I: Return on Assets (ROA) Model

$$ROA = f (EUDC, SRC) \dots\dots\dots i$$

This can be written in Panel Least Square (PLS) form as:

$$ROA_{it} = a_0 + a_1EDUC_{it} + a_2SRC_{it} + U_{it} \dots\dots\dots ii$$

$a_1 > 0; a_2 > 0;$

ANALYSIS OF RESULTS AND DISCUSSION OF FINDINGS

Descriptive Analysis

Table 2 Descriptive analysis

	ROA	EDUC	SRC
Mean	1.453895	3.742817	5.385405
Median	0.016733	3.691223	4.811398
Maximum	27.02298	6.677043	7.761653
Minimum	0.001495	0.778151	2.727541
Std. Dev.	5.567325	1.680212	1.494313
Skewness	3.753205	-0.021564	0.019080
Kurtosis	1.444253	1.900635	1.770744
Jarque-Bera	4.032183	4.034878	5.041753
Probability	0.203403	0.132996	0.080389
Sum	116.3116	299.4253	430.8324
Sum Sq. Dev.	2448.614	223.0258	176.4047
Observations	80	80	80

Source: Author Computation, (2025) using E-Views 10

From the results in table 2 the study observed that the financial year in which the financial information has been extracted from eight (8) listed deposit money banks in Nigeria

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spanning for the period between 2015 - to - 2024. The study disclosed an observation period 80 implying (10 x 8) years. The return on assets (ROA) reveals a mean, median, standard deviation value as 1.453895; 0.016733; and 5.567325 respectively highlighted the minimum and maximum return on assets (ROA) ranges from 0.001495 to 27.02298 assets for the time period observed among the sampled listed deposit money banks in Nigeria. The educational cost (EDUC) shown a mean, median, standard deviation value as 3.742817; 3.691223; and 0.680212 respectively that highlighted the minimum and maximum educational cost (EDUC) ranges from 0.778151 to 6.677043 members for the time period observed among the sampled listed deposit money banks in Nigeria. The Staff Remuneration Cost (SRC) disclosed a mean, median, standard deviation value as 5.385405; 4.811398 and 1.494313 respectively that highlighted the minimum and maximum compensation cost ranges from 2.727541 to 7.761653 for the time period observed among the sampled listed deposit money banks in Nigeria. Finally, the Jarque-Bera test statistics disclosed that probability values (0.203403 and 0.132996) of the variables (ROA and EDUC) are greater than the 5% critical level implying that the panel data set is normally distributed.

Unit Root Test

Stationarity implies that the mean, variance and covariance are constant across different periods. Existence of unit roots can lead to serious issues such as; spurious regressions and errant behaviour variables due to econometric assumptions for analysis not being valid. This study tested for the stationarity of all variables used by applying two different panel unit root test namely; the Im, fPesaran & Shin Test and Levin, fLin & ChufTest. According to table 4 below, all variables were stationary at levels; thereby indicating that all variables were integrated of order zero, i.e. $I(0)$.

Table 3: Unit Root Test Results

Variable	ADF FISHER					Remark
	ADF - Fisher Chi-square Statistics	ADF - Fisher Chi-square Prob	ADF - Choi Z-stat Statistics	ADF - Choi Z-stat Pro	Order of integration	
EDUC	27.3952	0.0068	-2.13844	0.0162	I(0)	Stationary
COMC	37.0558	0.0021	-1.84115	0.0328	I(0)	Stationary
ROA	41.3362	0.0000	-3.89416	0.0000	I(0)	Stationary

Source: Author Computation, (2025) using E-Views 10

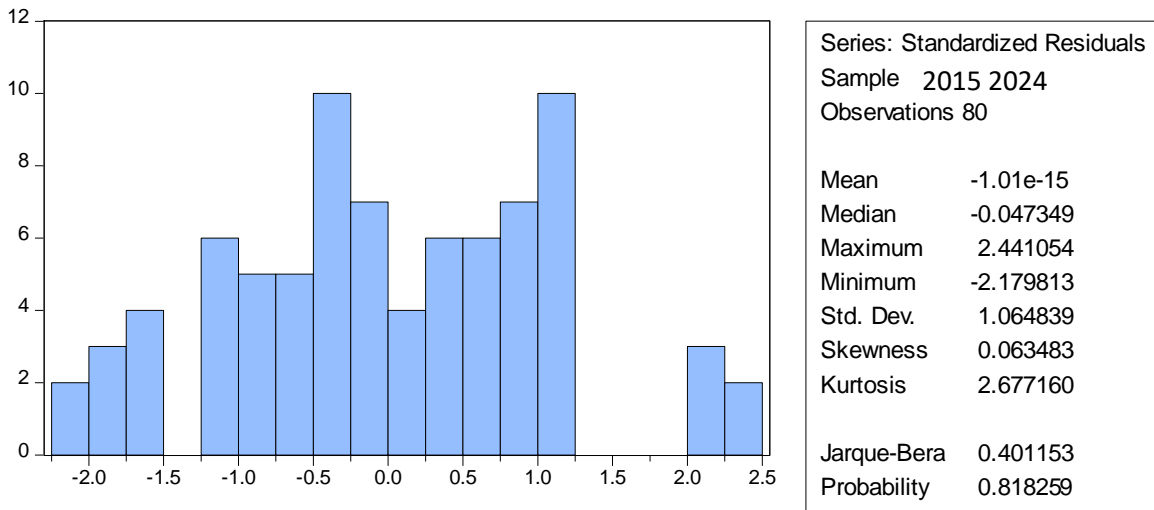
The empirical results of the ADF - Fisher unit root test at 5 percent critical levels in table 3 above shows that all the variables of interest are $I(0)$, that is, stationary at levels. Their p-values are less than 5% with respect to ADF - Fisher Chi-square Prob and ADF - Choi Z-stat Pro.

Diagnostic Test Results

The following sections discuss the results of the diagnostic tests that were conducted to ensure whether the data fits the basic assumptions of the classical linear regression model. The implication of the test, limits therein, test results and their discussion are also presented.

Figure 2: Residual Normality Tests for model I (ROA)

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Source: Author Computation, (2025) using E-Views 10

The Jarque-Bera is a statistical process used to determine if a sample or any group of data fits a standard normal distribution. The result of the Jarque-Bera normality test (0.401) with a probability value of 0.818 indicates that the model residuals are normally distributed.

Multivariate Data Analysis

The panel data collected from the eight deposit money banks and for ten years lead to a total sample size of 80 company-years. Random effects and fixed effect regression model has been developed to verify the cause and-effect relationship between the dependent and independent variables. Table 4 disclose Hausman Test for the choice of Random effects and fixed effect regression.

Table 4 Hausman Test for Model I (ROA)

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	2.941860	4	0.5676

Cross-section random effects test comparisons:

Variable	Fixed	Random	Var(Diff.)	Prob.
EDUC	0.005615	0.007130	0.000029	0.7786
SRC	0.484083	0.500078	0.021907	0.9139
SAG	-0.000209	-0.000211	0.000000	0.8889

Source: Author Computation, (2024) using E-Views 10

Hausman test is a test the consistency of an estimator, in so doing, evaluating the fitness of the statistical model to the data gathered. With this test, the study identified if the Random-effect or Fixed-effect model should be adopted for further analysis. From table 4, the Hausman test shows that individual effects is independent of the explanatory variable

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given that the probability value of 0.5676 is above the 5% significant level, thereby accepting the null hypothesis. Accordingly, the study adopts the Random-effect multiple regression for model 1 estimation.

Table 5 Regression Analysis of Model I (ROA)

Dependent Variable: ROA

Method: Panel EGLS (Cross-section random effects)

Date: 09/09/25 Time: 11:39

Sample: 2015 2024

Periods included: 10

Cross-sections included: 8

Total panel (balanced) observations: 80

Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
EDUC	0.102564	0.078172	1.312039	0.1935
SRC	0.492390	0.123840	3.976032	0.0002
SAG	-0.000226	0.000124	-1.818972	0.0729
C	-1.336412	0.546531	-2.445264	0.0168

Effects Specification		S.D.	Rho
Cross-section random		0.286627	0.3132
Idiosyncratic random		0.424471	0.6868

Weighted Statistics			
R-squared	0.746830	Mean dependent var	1.587346
Adjusted R-squared	0.733328	S.D. dependent var	0.813879
S.E. of regression	0.420290	Sum squared resid	13.24827
F-statistic	55.31097	Durbin-Watson stat	1.149406
Prob(F-statistic)	0.000000		

Unweighted Statistics			
R-squared	0.923123	Mean dependent var	3.742817
Sum squared resid	17.14557	Durbin-Watson stat	0.888138

Source: Author Computation, (2025) using E-Views 10

The results in table 5 disclosed the regression coefficients ($R^2 = 0.746$, Adjusted $R^2 = 0.733$, F-statistic = 55.310, DW = 1.149). The results of the regression model disclosed the effect of the independent variables educational cost (EDUC) and staff remuneration cost (SRC) as well as sale growth (SAG) on the dependent variable return on assets (ROA). The coefficient of determination R^2 represented the proportion of variance of return on assets (ROA) that has been explained by educational cost (EDUC), and staff remuneration cost (SRC) as well as sale growth (SAG) in the regression model. The Adjusted R^2 provides an insight of goodness of fit of the model. This implied that 73.3% changes in return on assets (ROA) contributed to changes in educational cost (EDUC) and staff remuneration cost (SRC) as well as sale growth (SAG) among the listed deposit money banks in Nigeria

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while 26.7% was explained by unknown variables that were not included in the regression model. The Durbin-Watson statistic test discovered that there is a positive evidence of autocorrelation in the time series data set. The F-statistic and its corresponding probability value disclosed that the regression model satisfies the overall goodness-of-fit statistical test.

Statement of Hypotheses

H₀₁: There is no significant effect of educational cost on return on assets of listed deposit money banks in Nigeria.

H₀₂: There is no significant effect of compensation cost on return on assets of listed deposit money banks in Nigeria.

Decision 1: The results in table 5 reported the effect of educational cost (EDUC) on return on assets. The educational cost (EDUC) coefficient (0.102564) and T-statistics (1.312039) disclosed a positive effect. The Prob. ** value 0.1935 > 5% chosen significant level. Given the above result, the study rejected the null hypothesis one and accepted the alternative hypothesis one. Hence, the study concluded that there is a positive and insignificant effect of educational cost on return on assets of listed deposit money banks in Nigeria.

Decision 2: The results in table 5 reported the effect of staff remuneration cost (SRC) on return on assets. The staff remuneration cost (SRC) coefficient (0.492390) and T-statistics (3.976032) disclosed a positive effect. The Prob. ** value 0.0002 < 5% chosen significant level. Given the above result, the study rejected the null hypothesis two and accepted the alternative hypothesis two. Hence, the study concluded that there is positive and significant effect of compensation cost on return on assets of listed deposit money banks in Nigeria.

Conclusions

Every organization needs human capital be it medium or small. This is because the success of any organization depends on the ability of human capital to effectively and efficiently optimize other resources such as money, materials, machines, time, and information. The significance of the human capital theory therefore is that it regards people as assets and stresses that investment by organization in people will generate worthwhile returns. Without human capital, other resources cannot be operationally effective. Human capital gives rise to human capital assets whose value is significant to the organizations. Human capital asset (HCA) brings out the investment in human capital. The identification and recognition of human value in organizational productivity is what human capital investment all entails. Based on the data obtained from the annual financial reports of the listed deposit money banks from Nigeria exchange group; the data were presented and analyzed, findings were discussed in chapter four and summary of findings are presented above. Therefore, the study concluded that;

1. The study concluded that there is a positive and insignificant effect of educational cost on return on assets of listed deposit money banks in Nigeria.
2. The study concluded that there is positive and significant effect of staff remuneration cost on return on assets of listed deposit money banks in Nigeria.

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Note: The study generally concluded that the effect of human capital investment on financial performance of listed deposit money banks in Nigeria is statistically significant for the period spanning from 2014 - 2023.

Recommendations

Based on the findings of this study and the conclusion drawn thereof, the following recommendations are made

1. Capitalizing human assets such as educational costs would positively impact on performance of banks. Therefore, its disclosure is recommended as intangible asset in the statement of financial position.
2. Recruitment, hiring and training of competent personnel are very essential in facilitating not only the level of productivity but also the development of personnel in any organization. The bank therefore, should take staff training seriously.

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