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- **CONTAGION BETWEEN LONG-TERM MARKET FINANCING AND INDUSTRIAL OUTPUT**
- **CAPITAL FORMATION IN NIGERIA: DEMAND-SIDE LED AND SUPPLY-SIDE DRIVEN**
- **STAFF COMPETENCY AND THE PERFORMANCE OF COMMERCIAL BANKS IN NIGERIA**
- **DETERMINANTS OF FINANCIAL SECTOR DEVELOPMENT- EVIDENCE FROM BANKING FINANCIAL INSTITUTIONS**
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- **UNDERSTAND YOUR CUSTOMER (UYC) AND IMPERATIVES FOR GEN Z AND GEN ALPHA AS MAJOR FINANCIAL SERVICE CUSTOMERS**

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EDITORIAL

Dear Esteemed Readers,

We are pleased to present Volume 13, No. 1, 2025, of the Institute's Journal of Banking, featuring six scholarly papers that provide critical insights into Nigeria's financial system, sector performance, and the evolving dynamics of customer behaviors. This edition brings together evidence-based research and sector-focused discussions that illustrate the ongoing impact of financing, regulation, industry trends, and human capital development on national economic growth. Collectively, the articles in this volume explore themes ranging from market financing, industrial productivity, and capital formation to financial sector development, employee competency, and the strategic contribution of commercial banks to SME advancement. This edition also examines the shifting expectations of younger digital-native customer segments, particularly Generation Z and Generation Alpha, who are redefining the future of financial services. The research findings presented here are of significant value to policymakers, financial institutions, academics, and practitioners seeking to strengthen decision-making and enhance performance within Nigeria's financial ecosystem.

The opening paper, "**Contagion Between Long-Term Market Financing and Industrial Output**," evaluates whether capital market activities and industrial output in Nigeria exhibit a contagion effect. Drawing on data from 1981–2024, the authors apply descriptive and econometric methodologies across the crude petroleum, solid minerals, and manufacturing sectors. The findings reveal that capital market financing has not significantly influenced industrial output, challenging

the widely held supply-leading hypothesis. Recommendations include allowing market forces to determine lending rates, stabilizing the exchange rate, deepening capital market structures, and supporting industrial-friendly policies to boost production.

The second paper, “**Capital Formation in Nigeria: Demand-Side Led and Supply-Side Driven**,” analyses whether long-term capital formation is driven more by demand or supply forces. Using econometric techniques over the period 1981–2021, the study concludes that capital formation in Nigeria is predominantly demand-led in the long run and partly supply-driven in the short term. The authors recommend a combination of expansionary fiscal measures and relaxed monetary policy in the short term, while advocating a flexible fiscal environment in the long term to stimulate aggregate demand.

In the third article, “**Staff Competency and the Performance of Commercial Banks in Nigeria**,” the authors examine the relationship between staff capability and banking sector performance using 270 observations from 1981–2023. The study recommends sustained investment in technical and behavioural training, particularly in credit risk assessment, fraud prevention, customer relationship management, cybersecurity, artificial intelligence, and fintech operations. The paper also advocates stronger partnerships with academic and professional institutions to develop Nigeria-specific certification pathways, as well as regulatory enforcement of competency standards to enhance sector resilience.

The fourth paper, “**Determinants of Financial Sector Development: Evidence from Banking Financial Institutions**,” investigates the extent to which banking-sector indicators have influenced financial

sector development between 1981 and 2024. Through rigorous analytical techniques—including unit root, co-integration, correlation, and Granger causality tests—the authors find that banking institutions have not significantly driven sector development, attributed largely to structural weakness within the broader financial system. The paper calls for stronger regulatory oversight, enhanced monitoring frameworks, and targeted measures to deepen financial sector maturity.

The fifth article, “**Commercial Banks’ Lending to SMEs and Economic Growth Nexus in Nigeria,**” explores the impact of bank lending on economic growth from 1992 to 2023. Using multiple statistical and econometric techniques, the study shows that both bank lending to small-scale enterprises and total private-sector credit positively influence GDP, with private-sector credit exhibiting a stronger effect. The authors recommend that commercial banks adopt more favourable lending conditions and interest structures to support SME development and long-term economic expansion.

The sixth article, “**Understand Your Customer (UYC) and Imperatives for Gen Z and Gen Alpha as Major Financial Service Customers,**” focuses on the emerging expectations of younger digitally native generations who will shape the future of the financial services market. Unlike traditional Know Your Customer (KYC) approaches, the proposed UYC model emphasizes personalised digital engagement, ethical interaction, and the development of products that align with the values, behaviours, and technological fluency of these cohorts. The paper asserts that financial institutions must accelerate investment in digital infrastructure, improve customer-centric solutions, and innovate product design to remain competitive in the evolving landscape.

Together, the contributions in this edition provide valuable analyses of Nigeria's evolving financial and economic environment. They offer relevant guidance for policymakers, industry leaders, researchers, and practitioners committed to improving institutional performance and navigating emerging opportunities and challenges. We trust that this volume will stimulate further inquiry and support evidence-based actions across the financial services sector.

I hope you find this edition insightful, engaging, and enriching.

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(Editor-In-Chief)

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CONTAGION BETWEEN LONG-TERM MARKET FINANCING AND INDUSTRIAL OUTPUT

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ABSTRACT

Industrialization as a catalyst for growth depends on huge capital outlay financed through long-term borrowing. Long-term markets (capital markets) are long-term markets designed for such purpose. Therefore, the paper investigates the contagion nexus between the capital market and industrial output in Nigeria within the period spanning from 1981 to 2024. The major objective of the study is to answer the question- is the capital market performance and the industrial output relationship in Nigeria contagious? Secondary data sources were gotten from the Statistical Bulletin of the Central Bank of Nigeria of various issues. Descriptive (median, mean, mode, standard deviation among others) and inferential (unit root test, correlation test, autoregressive distributed lag and stability tests were adopted for analysis. Results indicate the existence of a long run relationship between the dependent and independent variables; there is a negative insignificant effect of long-term financing on the crude and petroleum industrial sector output; lending rate has a weak positive insignificant effect on driving long-term financing to the industrial output; capital market financing has a weak negative insignificant effect on solid mineral sector output; exchange rate denotes a weak positive insignificant effect on industrial output; capital market financing has a

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negative insignificance effect on the manufacturing sector output. Taking together, long-term market financing depicts has both positive and negative insignificant effect on industrial output. This implies that long-term financing has insignificantly impacted industrial output hence the supply-leading hypothesis is inapplicable to Nigeria. Recommendations include that the lending rate should be left to be determined by market forces rather being fixed by the monetary authorities; exchange rate should be monitored to ensure predictability and forestall incessant fluctuations as has been hitherto the case; the activities and performance of the capital market should be boosted by removing economic vagaries that impede its performance; government should implement industrial- friendly policies to engender industrialization and industrial output.

Keywords: Contagion, long term market, industrial output, industrialization.

JEL Classification: G23, L90, L80, L7

1. INTRODUCTION

In Great Britain, between 1760 and 1840, as recorded in history, was the maiden age of industrialization. This marked the first era of sustained economic growth in global history, while industrialization began in the United States of America in the early 19th century. Blinder (2021) asserts that this phenomenon spread to most countries in Western Europe before the century ended. The International Monetary Fund IMF (2023) asserted that world economy growth will come from developing countries as there is still the need for such economies to industrialize and have the capacity to do so. It further confirmed that as at 2023, the world largest growth statistics emanated from developing countries. From the foregoing, industrialization leads to growth and development. Industrialization has to do with the transformation of the economy from agriculture-based to manufacture-oriented economy. It

is a shift and departure from consumption to productive, manufacturing, production methods, technology, social structures, innovational and technical methods.

However, such industrial projections demand huge capital investment which the short term lending and credit cannot finance. This brings to bear the need for longer –term financing. The major financial institution vested with this role is the long-term price market or the capital market.

Long –term market is an aspect of the financial system that deals on trading of long term securities such as stocks (equity), long-term debt (bonds), where investors, companies, industries, government and its agencies raise funds for financing, funding and supporting investments, projects, savings and capital accumulation for growth. The Nigeria Bureau of Statistics (NBS) (2020) opines that it provides platform for channeling longer-term funds from the surplus economic units to the deficit economic units. It triggers growth by providing businesses with accessibility to capital, facilitating investments and job creation. It offers individuals with avenues for savings and wealth management.

Long term market or stock market as an aspect of the financial intermediaries is engaged in the function of channeling savings from the surplus economic units to the deficit economic users for investment and consumption purposes. As such savings quantum become higher, simultaneously the capital flow through the stock market increases, hence savings and investment become cardinal in determining development of a typical long term market.

Despite capital market funding to industries, the country is adjudged by the Global industrial index as not industrialized. This calls for further investigation. This is more worrisome as moribund industries, unemployment, poverty, income inequality and other economic woes are prevalent in the country over the years. Such woes could have been

curbed if the industrial output has been in triggered via adequate financing from the appropriate channels.

The major concern of the paper is to determine whether the stock market financing has impacted industrial output in Nigeria within the reviewed period.

The relevance of the paper stems on industrialization and long-term market policies initiation and implementation. The outcome of the study will inform policy decision, initiation, and implementation, on such critical national topics of capital market and industrial output.

The paper is structured as follows; following the introduction in section 1 is Literature review in section 2. While section 3 delves into the methodology, section 4 is the result and discussion of results; and is concluded in section 5 with the summary, conclusion and recommendation.

2. LITERATURE REVIEW

Conceptual Review

Long –term market performance

The long- term market is the collection of financial institutions set up for the granting of medium and long-term loans. It is a market for longer term financial instruments including, market for government securities, market for corporate bonds, market for corporate shares (stocks), and market for corporate loans it is market for the mobilization and utilization of long –term fuds for development. Anyanwu (1993) describes it as the long term end of the financial system.

It is comprised of inner capital market (market for new securities) and outer capital market made up of markets not directly concerned with issue of new securities but are engaged in the business of long term lending and borrowing. It embraces primary (market for new securities) and secondary (market for existing shares) markets.

Capital markets promotes rapid capital formation, provide sufficient liquidity for investors, create a built-in operational and allocation efficiency within the financial system to ensure optimal utilization of funds with relatively little cost, mobilize savings from surplus economic units to the deficit economic units for growth and development, provide alternative sources of revenue distinct from taxation for the government, provides necessary liquidity mechanism for investors through a formal market for debt and equity securities. By performing these functions, the market triggers industrial output financing and growth.

Industrial Output

Industrial output is the product of industrialization. Industrialization marks a period of transformation from agro-based economy to urbanized, mass-producing, technology-based, scientific- cutting edge economy. The period of moving from agrarian to industrial society is rough especially as it requires huge capital and investment outlay. Industrial output increases the economic and living standards of the people. It impacts positively on education, life-span, individual, per capita income, and overall quality of life. On the other hand, it can negatively affect economic growth through environmental degradation, social inequality, cultural disruption, income inequality, and pollution.

Relationship between Long –term market performance Industrial Output

Olarinre, et al (2023) examined the effect of capital market on industrialization and industrial output in Nigeria for the period spanning from 1986 to 2021 employing the autoregressive distributed lag and co-integration. Results depict that market capitalization, industrial loan, total value of market, has both short and long run has positive effect on the industrial growth.

Yakubu (2023) studied the nexus between capital market and industrial growth from 1990 to 2021. The study employed the Augmented Dickey

Fuller ADF , Ordinary least square OLS and causality tests. Results indicate that the Market capitalization and industrial growth are positively and significantly correlated.

Liu (2015) examines if there is relationship between time series variation in stock market liquidity and investor's investment sentiment. Employing two survey –based investment sentiment indices, the study found that market is more liquid when the rise in the investment sentiment increases that is when the investors are bullish.

Kamasa, et al (2023) studied the effect of financial sector reforms on growth of the stock exchange for Ghana. The study got data from 1999 to 2019 and employed the FMOLS and the error correction method. Results indicated that the reforms of the financial sector have positively affected stock market in Ghana within the period reviewed in the study. Umar (2022) analyzed the impact of capital market on the performance of the industrial sector performance. It concludes that industrial expansion were influenced by the performance of the industrial sector. Algaeed (2021) examined the effect of the capital market on GDP per capita in Saudi Arabia from 1985 to 2018. The study employed the Johansen co-integration, FMOLS, and the ADRL for analysis. Results indicate that market capitalization and liquidity depicted negative trends.

Kaka et al (2021) studied the effect of market capitalization on industrial growth for Nigeria for the period ranging from 1985 to 2017 using the Augmented Dickey –Fuller (ADF), Vector error correction method, and VAR the results indicate the existence of a direct relationship between gross fixed capital formation and industrial growth; also a positive relationship was depicted between market capitalization and industrial growth.

Anderu (2020) studied the between the capital market and economic growth and expansion for a period of 1980 to 2018 using Nigeria data.

Employing the Bound co-integration testing and the ARDL model for data analysis. Results indicated that existence of a long run association between the growth of the economy and industrial growth.

Theoretical Review

The finance-growth theory

The finance-growth theory asserts that it is an indisputable fact that the financial sector plays a crucial role for economic growth of any economy. However, it is arguable that the growth of the economy is also crucial for the financial sector of the economy to grow. This debate was resolved by Patrick (1966) by identifying the direction of causality between the two. These causal directions were identified as supply-leading and demand-following. Supply-leading hypothesis posits and asserts that causality is from financial development to economic growth, while the demand-following hypothesis opined that the causality is from economic growth to financial development. That is to say the supply-leading postulates that development in the financial institutions and markets leads to economic growth; the demand - following hypothesis suggests that as the economy grows, it will result to increased demand for financial services and therefore drive financial sector growth.

This theory is pertinent to the study as it enables supports the a priori expectation of the study that capital market financing will boost industrial output.

3. METHODOLOGY

Research design

Data for Nigeria for the period of 1981 to 2024 was used to ascertain the contagion between long term market and industrial output. The data sources are secondary collected from Statistical Bulletin of the Central Bank of Nigeria (CBN) of various issues. The Bank is an authorized and statutory institution responsible for reliable and authoritative economic and trade data in the country.

The dependent variable is the industrial output depicted by the total contribution of the industrial sector to the Gross Domestic Product (GDP). It denoted as INDGDP. The dependent variables are the capital market financing to the industrial sector; including financing to crude petroleum and natural gas (CapCPN), solid minerals (CapSM), manufacturing (CapMan), lending rate (LR), and exchange rate (EXR). For the econometric statistic and analysis, the following augmented model is estimated:

$$\begin{aligned}
 & \text{INDGDP}_t = C_0 + \sum_{j=0}^p \beta_j \text{LCapCPN}_{t-k} + \sum_{j=0}^l \alpha_j \text{LCapSM}_{t-j} + \sum_{j=0}^l \alpha_j \text{LCapMan}_{t-j} + \sum_{j=0}^l \alpha_j \text{LLR}_{t-j} + \sum_{j=0}^k \alpha_j \text{LEXR}_{t-j} + \mu_t \quad \dots (1)
 \end{aligned}$$

where,

L INDGDP is the dependent variable – industrial contribution to GDP; L= log, C₀ is the constant, LCapCPN is the capital market financing to crude and natural gas; LCapSM is the capital market financing to the solid minerals sector; LR is lending rate; LEXR is the exchange rate, depicting the control variable. β, α are the coefficients, μ_t is the residual term.

First descriptive statistic was adopted. This include mean, median, mode, skew, standard deviation, kurtosis, among others.

Next we performed econometrical statistic. The Augmented Dickey Fuller (ADF) unit root test (URT) is adopted to ascertain if the variables have unit root. This is to avoid the simultaneity bias sometimes associated with the time series data. When the variables survive this test by rejecting the null hypothesis of unit root, we go further to perform the Autoregressive Distributed Lag ARDL test. This is to enable find the long run relationship among variables. However this is applied where variables are mixed such as some are stationery at level and some are stationery at first difference.

The ADF test is based on the following equation

$$\Delta X_t = \alpha_0 + \alpha_1 t + \beta X_{t-1} + \sum_{j=1}^m \gamma_j \Delta X_{t-j} + \mu_t \quad \dots (2)$$

where

X_t is integrating series (independent variable), β is coefficient, γ_j is integrating series (dependent variable), Δ is the first difference operator; t is the time trend; α_0 is a drift; α_1 represents the linear time trend; m is the lag length; μ_t is a white noise process.

If some of the variables have different integrating order we now test for co integration (for long run relationship) using the auto regressive distributed lag.

Correlation test

The study employed the correlation analysis to enable establish if there is relationship existing between the explanatory and dependent variables. Such relation can be strong weak, positive or negative.

Autoregressive Distributed Lag (ARDL) is the next to perform.

In the time series domain, ARDL co integration bounds can be used to find the long run relationship among variables which are mixed such as some are stationery at level and some are stationery at first difference. Pesaran & Shin (1990) and Pesaran et al (2001) opines that “the ARDL co-integration technique is used in determining the long run relationship between series with different order of integration”.

The ARDL is a model for time series data in which a regression equation is used to predict current values of a dependent variable based on both the current values of an explanatory variable and the lagged (past periods) values of the explanatory variable. Cromwell et al (1994) opine that “in statistics and econometrics, a distributed lag model is a model for time series data in which the regression equation is used to predict the current values of the dependent variables”.

The starting point of for a distributive lag model is an assumed structure of the form

$$Y_t = \alpha + Q_0 \chi_t + Q_1 \chi_{t-1} + Q_2 \chi_{t-2} + \dots + Q_n \chi_{t-n} + \epsilon \quad \dots (2)$$

Alternatively, the distributive lag model is

$$Y_t = \alpha + Q_0 \chi_t + Q_1 \chi_{t-1} + Q_2 \chi_{t-2} + \dots + \epsilon \quad \dots (3)$$

where, Y_t is the value at the time period t of the dependent variable y , α = the intercept term to be estimated, Q_0 is the explanatory powers of the variables, χ_t = explanatory variable, Q_1, Q_2 are the lag weight, ϵ = the error term

In the first equation, the dependent variable is affected by values of the independent variables arbitrarily in the past, so the number of lag model weights is infinite and therefore the model is called the infinite distribution model. Conversely in the second and alternative equation there are only a finite number of lag weights, indicating an assumption that there is a maximum lag beyond which values of the independent variables do not affect the dependent variable. A model based on this assumption is called finite distribution lag model.

Decision rule is that if the computed F-statistic is greater than or above the upper band critical value, the null hypothesis (there is no co-integration among the variables) is rejected, (the variables are co-integrated). Conversely if the computed F-statistic is lesser than or below the lower band critical value, the null hypothesis cannot be rejected, (the variables are not co integrated). Also if the computed F-statistic falls within or between the upper band and lower bound critical value the result of the inference is inconclusive and depends on whether the underlying variables are of $I(0)$ or $I(1)$.

Also, the stability tests were performed to establish the veracity of the variables' reliability.

4. RESULTS AND DISCUSSION

Results

Table 1 Descriptive Test result

	INDGDP	CapCPN	LR	CapSM	EXR	CapMan
Mean	1355.886	368143.0	119.5714	92339.87	81120.05	222534.9
Median	648.8000	133389.3	118.5669	8390.800	66554.00	52254.50
Maximum	3657.000	1432141.	467.0000	654733.0	511100.7	765438.0
Minimum	153.6000	-32049.40	0.610000	-11859.60	-143189.5	-166221.5
Std. Dev.	1212.319	438826.8	122.4834	158028.0	96969.80	296618.7
Skewness	0.522722	0.958044	1.091331	2.058828	1.873000	0.692241
Kurtosis	1.596164	2.540811	3.647215	6.633644	10.48186	1.742441
Jarque-Bera	5.489148	6.955697	9.286032	54.03392	125.4360	6.267687
Probability	0.064276	0.030874	0.009629	0.000000	0.000000	0.043550
Sum	58303.10	15830147	5141.569	3970614.	3488162.	9568999.
Sum Sq. Dev.	61728103	8.09E+12	630091.8	1.05E+12	3.95E+11	3.70E+12
Observations	43	43	43	43	43	43

Source: Researcher's Computation (2025)

The mean estimated value is used to estimate the dispersal pattern. The figures are 1355 for the dependent variable INDGDP while the explanatory variables depicted such values as 368143, 119, 92339, 81120 and 222534 for CapCPN, LR, CapSM, EXR CapMan respectively. The standard deviation depicts the variability from the mean or average value. In the Table 1 above the INDGDP value is 212 while for CapCPN, LR, CapSM, EXR CapMan , it is 438826, 122, 158028, 96969, and 296618 respectively. It depicts that only one variable has low variability and that is exchange rate, while the others have high variability. In summary, all values are widely dispersed around the mean. This indicates that they are grossly affected by the extreme mean.

The values are also positively skewed with such values as 0.52 for the dependent variable; 0.95, 1.09, 2.15, 2.05, 1.87 and. 0.69 respectively for the independent variables.

For kurtosis, the shape can be flat or peak in terms of the normal curve. As it is well known, kurtosis measures the “tailed -bias” of the probability distribution of a real valued random variable. The variables exhibit leptokurtic distribution Also the variables depict reasonable level of association with probability significant at 0.05 level of significance.

Jarque-Bera is used to measure the normality of the series, that is to say whether the series are normally distributed or not. Decision rule is that at 5% level of insignificance, the residuals are normally distributed. Although the variables exhibit reasonable sign of association in the descriptive analysis, we also subject these claims to more econometric test to confirm these claims.

Econometric Results

Table 2 Unit Root Test result

Variable	Intercept Only	Decision	Trend and Intersect	Decision
<i>LINDGDP</i>	-2.5437 (6.6559)*	I(0)	-3.5063 (-6.9864*	I(0)
<i>LCapCPN</i>	-2.9331 (-0.2443)	I(1)	-3.5311 (-1.7435)*	I(1)
<i>LLR</i>	-2.9351 (1.92207)	I(1)	-3.5322 (-0.3655)*	I(1)
<i>LCapSM</i>	-2.9887 (-1.5639)	I(1)	-3.5236 (-2.1543)	I(1)
<i>LEXR</i>	-2.9323 (7.3532)	I(1)	-3.5063 (2.0521)*	I(1)
<i>LCapMan</i>	-2.9265 (-5.8433)	I(0)	-3.5224 (-6.1647)*	I(0)

* (**) *** Significant at 1% (5%) 10% level of significance

Source: Researcher’s Computation (2025)

The results of the Augmented Dickey Fuller unit root test strongly revealed that the variables are mixed in the integrated of order 1, and order), that is, I(1) and I(0) at 1%, 5% and 10% level of significance respectively as the case may be. For both intercept and trends and intercepts, the calculated t-test is greater than critical (t-tabulated) t-values, in some and lesser in some hence the null hypothesis of no unit root cannot be accepted. The individual series are non- stationary in some and thus quite suitable for the purpose intended.

Table 3 Correlation test result

	INDGDP	CapCPN	Lr	CapSM	EXR	CapMan
INDGDP	1.0000					
CapCPN	0.8955	1.0000				
LR	0.8618	0.9330	1.0000			
CapSM	0.7970	0.9128	0.9098	1.0000		
EXR	0.3872	0.4831	0.4897	0.3614	1.0000	
CapMan	0.8709	0.9241	0.8254	0.7802	0.2046	1.0000

Source: Researcher's Computation (2025)

All the explanatory variables depict value greater than 0.70 showing a strong positive relationship with the dependent variable. However this with the exception of the value of EXR of 0.32 implying a weak relationship.

Table 4 ARDL Test result

Dependent Variable: INDGDP				
Method: ARDL				
Fixed regressors: C				
Number of models evaluated: 12500				
Selected Model: ARDL(4, 3, 4, 1, 4, 1)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.*
INDGDP(-1)	1.075432	0.130182	8.261012	0.0000
CAPCPN	-0.000963	0.000757	-1.271903	0.2216
CAPCPN(-1)	-0.003558	0.000715	-4.979422	0.0001

LR	-0.245410	1.260058	-0.194761	0.8480
LR(-1)	1.314330	1.397268	0.940643	0.3609
CAPSM	0.000744	0.001107	0.671551	0.5114
CAPSM(-1)	0.003101	0.001122	2.762986	0.0139
EXR	-0.000511	0.000895	-0.570630	0.5762
EXR(-1)	0.004142	0.000850	4.874579	0.0002
CAPMAN	0.000190	0.000752	0.253035	0.8035
CAPMAN(-1)	0.004044	0.000724	5.588570	0.0000
C	3.925391	34.70000	0.113124	0.9113
<hr/>				
R-squared	0.997555	Mean dependent var	1436.790	
Adjusted R-squared	0.994192	S.D. dependent var	1244.506	
S.E. of regression	94.84255	Akaike info criterion	12.23083	
Sum squared resid	143921.8	Schwarz criterion	13.21190	
Log likelihood	-215.5011	Hannan-Quinn criter.	12.58283	
F-statistic	296.6778	Durbin-Watson stat	2.217968	
Prob(F-statistic)	0.000000			
<hr/>				
*Note: p-values and any subsequent tests do not account for model selection.				
<hr/>				

Source: Researcher's Computation (2025)

The R-squared which depicts a value of 0.997 means that only 0.003 of variations in industrial output was unable to be explained by stock market financing. This confirms a high significance of the explanatory variable to drive the dependent variable. Also, the adjusted R squared of 0.099 shows that the explanatory variables have positive explanation on the dependent variable. The Durbin-Watson values of 2.21 shows that the data was free from auto –correlation. The F-statistic probability of 0.00 being lesser than 0.05 shows that there is an existence of a long run relationship between the long-term market financing and industrial output.

With regards to capital market financing to the crude ad natural gas industrial sector representing CapCPN which has a coefficient value of -0.0009 is insignificant having a probability of 0.22 which is not lesser than 5% level of significance. This depicts a negative insignificant

effect of long -term capital in financing the crude and natural gas industrial sector output. For the lending rate with coefficient of 0.0007 and a probability of 0.84 imply that it has a weak positive insignificant effect on industrial output.

The capital market financing to the solid minerals output with a coefficient of -0.0005 with probability of 0.57 depicts a weak negative insignificant effect on industrial output.

The EXR with the value of 0.0001 and probability of 0.83 denotes a weak positive insignificant effect on industrial output.

For capital market finance to the manufacturing sector output having negative value of -0.24 is insignificant having a probability of 0.84. This implies that the capital market financing to manufacturing sector has a negative insignificance effect on industrial output.

For the short run, for there to be a long run relationship among the variables, the coefficients of the variables must be negative and also be significant at 5% level of significance with one-lag period. Using the one –lag period, the results depicts that CapCPN is negatively significant in the short run; the lending rate is positively significant; the CapSM is negatively insignificant and the EXR is weakly although positively significant. The CapMan is positively insignificant to income redistribution.

Table 5. Residual Analysis

Test	p=values
Heteroscedasticity	0.432
Serial Correlation LM Test	0.354
Normality Test	0.721

Source: Researchers’ Computation

The above table depicts the residual test results. The test is run to test for the adequacy of the model. The result indicate that the residual of

the model has no serial correlation, they are homoscedastic and are normally distributed. This is because all the p-values are greater than 0.05

Findings

There is the existence of a long run relationship between the dependent and independent variables. This finding corroborates with the findings of Anderu (2020) study for Nigeria

In the long run, there is a negative insignificant effect of long-term financing on the crude and petroleum industrial sector output. The lending rate has a weak positive insignificant effect on driving long-term financing to the industrial output; capital market financing has a weak negative insignificant effect on solid mineral sector output; Exchange rate denotes a weak positive insignificant effect on industrial output. Capital market financing has a negative insignificant effect on the manufacturing sector output. Taking together, long-term market financing depicts both positive and negative insignificant effect on industrial output within the reviewed period. The findings corroborate with Algaed (2021) for Saudi Arabia; while the findings negate the findings of Olarinre, et al (2023) and Yakubu (2023).

5. CONCLUSION AND RECOMMENDATION

Conclusion

The study investigated the effect of long-term financing on industrial output in Nigeria within the period spanning from 1981 to 2024. Industrial output involves huge capital outlay to be financed by longer-term markets. This study is premised since moribund industries, unemployment, low income, poverty, hunger, high cost of living among others remain prevalent despite robust capital market over the years. The Nigerian data for the period of 1981 and 2024 is covered in the study. The study is aimed to find if long –term financing has boosted industrial output. in Nigeria within the reviewed period. Both descriptive and inferential statistics were adopted for analysis. Findings

depict that long –term financing has both positive and negative insignificant effect on industrial output.

Implication of Findings

Long-term financing has insignificantly impacted industrial output. This justifies the persistence of hunger, poverty, income inequality and other moribund industries in the country over the years. That means that capital market financing has not been channeled appropriately to drive industrial output. The rate of exchange being the medium of translating such funds in terms of the domestic currency has not even helped the situation as its fluctuation and unpredictability has heightened and worsens the scenario. Equally, the lending rate which depicts insignificant effect since the rate has been high over the years. Had the long –term funds been efficiently and effectively managed, industrial output could have been triggered. The financing of the industrial sector has been from other sources distinct from the capital market.

The findings imply that the supply-leading hypothesis is inapplicable to Nigeria.

Recommendations

Based on the findings the following recommendations are proffered:

1. The lending rate should be left to be determined by market forces rather being fixed by the monetary authorities.
2. The exchange rate should be monitored to ensure predictability and forestall incessant fluctuations as has been hitherto the case.
3. The activities and performance of the capital market should be boosted by removing economic vagaries that impede its performance.
4. The government should implement industrial- friendly policies to engender industrialization and industrial output.

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CAPITAL FORMATION IN NIGERIA: DEMAND-SIDE LED AND SUPPLY-SIDE DRIVEN

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ABSTRACT

This study investigated the determining driver of capital formation in Nigeria for the period spanning from 1981 to 2021. The objective of the paper is to answer the question- is capital formation in Nigeria driven by supply –side economics or the demand – side economics This study adopted secondary data sourced from various issues of the Central Bank of Nigeria Statistical Bulletin. Both descriptive and econometric tools were employed for analysis. The descriptive tool include the mean, median, standard deviation etc. The econometric tool used include (the unit root test(URT), the auto regressive distributive lag (ARDL) co integration test and the Granger causality test) tools for analysis. Results indicate that- there is a unidirectional

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causality between capital formation and government expenditure running from capital formation to government expenditure; also a unidirectional causality between taxation and capital formation running from taxation to capital formation; no causality between the money supply and capital formation, and interest rate and capital formation; In the long the proxies of demand side economics significantly and positively affect capital formation while the supply-side economics negatively and insignificantly affects the dependent variable. There exists a long run relationship among the variables. This implies that In the long run capital formation is demand- side led, and not supply- side driven while in the short run capital formation is partly supply side driven. This paper recommends that economic policy makers should blend an expansionary fiscal policy with a relaxed monetary policy in the short run. In the long run more relaxed fiscal policy should be implemented while the present monetary policy should be sustained but with more aggressive initiative to produce greater number of public goods and services so as to trigger general demand.

Keywords: Capital formation, supply-side economics, demand- led,
JEL classification- O16, R42, R53

1. INTRODUCTION

Capital formation is the net capital accumulation for a time period in a country usually a year (Van Oordt, 2017). It entails the additions to capital goods. Increment in capital formation stimulates economic growth and development in a country. Savings and investment trigger capital formation and depends on government policy. World Bank (2019) asserts that capital formation is the outlay or addition to fixed assets, plus net charges in inventories. Capital formation is used to

replace replete or old assets hence employed in producing more goods and services. Capital formation leads to more money swirling in the economy. It is a key measure of the economic health of a country. Increased production and investment trigger population betterment and more money at their disposal which drives economic growth. From the foregoing, investigating the driving factors determining capital formation becomes necessary in view of its role in driving the economy. Two factors drive capital formation- supply-side economics and the demand side economics.

Goodwin et al (2015) posit that supply – side economics is an aspect of macroeconomic theory that asserts that growth in the economy and capital accumulation is attained by way of decreasing taxes, decreasing government regulations, and allowing trade openness. It postulates that consumers will benefit when goods and services are distributed at lower prices, and increased employment, hence output and employment are stimulated (Wanniski 1978). It originated from the Classical and neo-classical economic Thought.

Demand side economics is similar to the Keynesian School of Thought. It is anchored on the premise that demand creates its own supply. By implication, policy that will increase the purchasing power of both low and middle-income people will trigger greater demand for goods and services. Therefore policies that create more job opportunities and projects with low rate of cost of capital will leave more investible funds in the hands of both individuals and government to engage in more investment and hence trigger capital formation.

Unraveling the factors that either positively (significantly) or negatively (insignificantly) drive capital formation (supply-side driven

and or demand –side led) will propel economic policy decision – makers to initiate or review and implement policies that will stimulate capital formation and thereby stimulate economic growth in not only Nigeria but other developing economies.

The relevance of this study to literature is that it underscores the factors determining capital formation in view of the role it plays in developmental stride of economies. Again existing studies have not been in-depth in investigating the drivers of Nigeria capital formation. The need for this study becomes more important with regards to concerns in research and policy implementation and review. The results, findings and suggestions from this study will stimulate further research for potential and foremost researchers; and present suggestions for policy initiative and implementation by the economic managers. Since few studies, if any, have been carried out in the topic with reference to Nigeria, forms the basis of the research interest. It brings to bare the importance and need to carry out this research. The policy concern is derived from anticipation that the findings of this research will undoubtedly furnish the monetary managers in this country and beyond to inculcate policy tool for the purpose of enhancing economic policies that will stimulate capital formation.

The structure of the paper is thus. After the introduction in section 1 is section 2 that deals on literature review. In section 3, the method and methodology is dealt on. The result and analysis is dealt on in section 4. The conclusion is in section 5 with the summary, conclusion and recommendation.

2. LITERATURE REVIEW

2.1 Conceptual Review

Supply-side economics affirms that increasing the goods and services supply translates to speedy economic growth and capital formation. It therefore suggests fiscal policy should incorporate tax cuts, lower interest rate and deregulation. Supply side fiscal policy came into being in the 1970,s as an alternative to Keynesian , demand side policy. Supply side economics strives to bolster the economy by stimulating policies that lead to increased supply of goods and services and consequently capital formation.

Conversely, demand -side economics asserts that the primary factor that triggers capital formation and growth is the goods and services demand in the economy. The major feature of the demand side economics is the aggregate demand. John Maynard Keynes developed the theory during the Great Depression of the 1930s. Four integral elements make up the aggregate demand; - goods and services consumed, industrial investment in capital goods, government expenditure made by government on public goods, and net exports, and finally net exports. Demand side economics opines that government should intervene to tackle low aggregate demand in the short run which may reduce unemployment. Types of demand side economics include increased money supply, increased government expenditure.

Capital formation is calculated as gross fixed capital formation plus inventory investment. It can be viewed to be the gross business fixed investment plus gross residents' contribution investment plus gross profit investment plus inventory investment. It can be driven by government policies including the monetary policy, price policy, exchange rate policy and fiscal policy. These policies may be

conservative of expansionary. These policies may restrict or trigger more money in the hands of the individuals for consumption, savings or investment purposes. The dependent variable is the capital formation. The supply- driven variables are taxation and interest rate, while the demand led variables are money supply and government expenditure. These are the explanatory variables.

The study's a priori expectation is that capital formation in Nigeria will be driven by both supply-side and demand –side driven.

2.2 Theoretical Review

The Accelerator theory of investment opines that as the demand for goods and services or income rises in the economy, it triggers positive impact as it stimulates investment. With regards to the variables adopted in this study, the supply side economics involves income increment and this is depicted by taxation and interest rate. Also the increase in demand and supply of goods and services depict the government spending and money supply.

2.3 Relationship between Capital formation, Demand-side Economics and Supply-side Economics

Meyer & Sanusi (2019) studied the causality relationship existing between capital investment, growth in income and employment in South Africa. Adopting the error correction models as econometric tool, results depict that domestic capital formation and employment and income growth in that country have a long run relationship.

Ajose & Oyedokun (2018) in the study of the impact of capital accumulation on Nigeria economic growth used trend analysis for the period spanning from 1980 to 2016. Results depict that the existence of

a long run association between the dependent and independent variables and also a causality subsisting between capital production and economic growth in the country.

Mwesigwa (2018) conducted a study on foreign direct investment and trade openness on capital formation in Uganda for a period between 1984 and 2016 using the ARDL bound test. Results depict that foreign direct investment and trade openness are the major factors determining capital formation in the long run but are insignificant drivers of the capital formation in the short run.

Reddy (2019) in a study in Fiji ascertained the trend and factor determinants of capital investment from 1974 to 1998 using the multiple regression analysis. Results depict that savings foreign direct investment, income, low interest rate and political stability are the key determining factors underscoring capital formation.

Lucky & Uzah (2016) testing the Jhingan's capital formation propositions in the Nigeria scenario investigated the elements influencing capital formation. The study employed the co-integration test, Augmented Dicker-Fuller unit root test, Granger causality test and the vector error correction model. It found that capital formation is negatively and insignificantly affected by money supply, gross national savings, exchange rate, external debt, and terms of trade; on the other hand capital formation is positively affected by credit to the private sector, lending rate, inflation, public expenditure, government revenue and operating surplus.

Okafor (2015) investigated "the relationship between private capital formation and savings in Nigeria". Using ordinary least square method,

co-integration and error correction mechanism, found that capital expenditure and inflation negatively affected gross fixed capital formation; while savings had negative impact; lending rate exhibited a positive effect on gross fixed private capital.

Gaps in Literature

Available literature on the determinants of capital formation bothers on cross-country analysis. Based on our knowledge, there exists no in-depth prior study on country-specific level especially for Nigeria more so on concerns about supply-side and demand-side economics. Notably, time series analysis for Nigeria will undoubtedly provide a better framework in understanding the peculiar factors driving capital formation in the country. Usually it is noted that studies on panel data mostly showcase an aggregate purview on driving factors, they are incapable to offer policy implications specifics geared towards each country particularly. Furthermore, cross section studies are intertwined with many other shortcomings pertaining to omitting bias in variable, also bias of selection of sample, inconsistency allocation of weights of countries and unobserved country-specific effects.

Therefore, this study bridges this literature gap in an effort to investigate the factors that drive capital formation in Nigeria.

3. METHODOLOGY

3.1 Research Design

Employing data for Nigeria data spanning from 1981 to 2021, the study situated the supply-side and demand-side factors driving capital formation in Nigeria. The data sources are secondary gotten from Statistical Bulletin of the Central Bank of Nigeria (CBN) of various issues. The Bank is an authenticated and statutory institution

responsible for reliable and authoritative economic and trade data in the country. First descriptive statistic was adopted. This include mean, median, mode, skewness, standard deviation, kurtosis, among others.

Next we performed econometrical statistic. The Augmented Dickey Fuller ADF unit root test URT to ascertain if the variables have unit root. This is to avoid the simultaneity bias associated with the time series data. When the variables survive this test by rejecting the null hypothesis of unit root, we go further to perform the Autoregressive Distributed Lag ARDL test. This is to enable find the long run relationship among variables. However this is applied where variables are mixed such as some are stationery at level and some are stationery at first difference.

The following basic Autoregressive distributed lag model with an exogenous variable is

formulated as:

$$Y = C_o + \sum_{k=1} \beta Y_{t-k} + \sum_{j=0} \alpha_{j+X} X_{t-j} + \mu_t \quad \dots \quad (1)$$

where,

Y is the dependent variable, p is the autoregressive order of the ARDL where it is directly associated to Y, X is an exogenous explanatory variable which has l lags (equally a contemporaneous X value may be included), μ_t is the residual term.

As applicable to the study Equation 1 is formulated thus-

$$\begin{aligned}
 LCapF = C_0 + \sum_{k=1}^p \beta LGExp_{t-k} + \sum_{j=0}^l \alpha_j LIntR_{1t-j} + \sum_{j=0}^l \alpha_j LTAX + \sum_{j=0}^l \alpha_j LMS \\
 + \mu_t \dots (2)
 \end{aligned}$$

where,

L*CapF* is the dependent variable - log of capital formation, *C*₀ is the constant, *LGExp* is log of government expenditure, *LIntR* is log of interest rate, *LMS* is the log money supply β, α are the coefficients, μ_t is the residual term.

where,

L*CapF* is the dependent variable - log of capital formation, *C*₀ is the constant, *LGExp* is log of government expenditure, *LIntR* is log of interest rate, *LMS* is the log money supply, μ_t is the residual term.

It is noted that the Equation (2) is not actually a long run rather a short run model. In order to get the actual impact of the independent variable through α is to be done in view of the size and orders associated with dependent variable through β . This therefore leads to the case where we weigh the aggregated impact of α , and this done by way of long run multiplier. Blackburne and Frank (2007) assert that to approximate this long run multiplier would entail a non linear transformation so as to get long run co efficient. This is given as

1

$$\Theta = \frac{\sum_{i=1}^p \alpha_j}{1 - \sum_{k=1}^p \alpha_j \beta_k} \quad \dots (3)$$

Equation 3 is the long run multiplier of explanatory variable. The formula works by way of using the coefficients α associated to the independent variable including its lags. Then this divided by 1 minus the sums of the autoregressive β coefficients. The numerator of the equation is the long run propensity of the explanatory variable towards the dependent variable. Its interpretation is that a permanent change of one unit in explanatory variables, implies that the sums would be the long run propensity as impact on the dependent variable. The denominator or the down part of the equation is the weight associated to the response of the autoregressive structure. It shows the model of the number of lags of Y and the corresponding number of lags associated to the independent variables. Its interpreted as – if X (explanatory variables) in levels change by a unit, the average and or expected change in the dependent variable would be as the long run coefficient

Methods

The descriptive statistic and the econometric statistic are employed. They include unit root test (URT), Auto regressive distributed lag and the Granger causality tests are adopted.

The unit root test (URT)

It is observed that the ordinary least squares (OLS) statistic is employed for time series tests. Be it as it may, the OLS at times is not devoid of some influences such as simultaneity bias and spurious influences. This problem may be avoided. This is done by ascertaining the time series properties of the data set employed in estimation of the equations. In order to test the stationarity of the variables we perform the Augmented Dickey Fuller (ADF) unit root test. The Unit Root Test is a series statistics. Dickey and Fuller (1979) opines that “a series, say, X_t is said to be integrated of order k , that is, $X_t \sim I(k)$, if it is stationary after differencing it k times”. If calculated t-ratio is less than the critical value (table value), the null hypothesis of unit root (non-stationary) is rejected in which case the level of time series X_t is characterized as integrated of order zero i.e. $I(0)$. However, if the individual time series in the equation are integrated of order one $I(1)$, then the series is said to be non-stationary.

Auto regressive distributed lag ARDL

For the unit root tests results - if the Augmented Dickey Fuller unit root test depicts that the variables are integrated of order $I(0)$ and order $I(1)$, at 1%, 5% and 10% level of significance respectively as the case may be. Since variables are mixed where some are stationary at level and some are stationary at first difference, we adopt the Auto regressive Distributed Lag co integration approach (ARDL). In the time series domain, ARDL co integration bounds can be used to find the long run relationship among variables which are mixed such as some are stationary at level and some are stationary at first difference. Therefore we go a step further to employ the co integration test procedures to test the co-integration among the variables using ARDL.

Granger causality tests

If it is found that series are co integrated, the standard Granger causality test is employed. Therefore test for Granger causality is constructed by estimating equations in the form:

$$\Delta LCapF_t = \sum_{i=1}^{m-1} \beta_i \Delta LCapF_{t-i} + \sum_{j=1}^{m-1} \delta_j \Delta LDSE_{t-j} + \varepsilon_t \quad \dots(4)$$

$$\Delta LDSE_t = \sum_{i=1}^{m-1} \beta_i \Delta LCapF_{t-i} + \sum_{j=1}^{m-1} \lambda_j \Delta LDSE_{t-j} + \mu_t \quad \dots(5)$$

where,

$LCapF_t$ is the log of capital formation (dependent variable), $LDSE_t$ is the log of factors driving capital formation (demand and supply side economics) (explanatory variable), $L\mu_t$ is the white noise disturbance term; ε is also the white noise disturbance term.

The decision rule is thus- if the probability value (the probability) is equal to, or greater than 0.05, we accept the null hypothesis that there is no causality (or that one variable does not Granger cause the other) between the variables, hence we reject the alternative hypothesis.

However, if the p-value (the probability) is lesser than 0.05, we reject the null hypothesis that there is no causality (or that one variable does not Granger cause the other) between the variables hence we accept the alternative hypothesis that one variable Granger cause the other. Thus if probability = or > 0.05, accept (do not reject) the null hypothesis, if probability < 0.05, reject (do not accept) the null hypothesis.

The following rejection and acceptance rule is applicable- if the probability value equals or higher than 0.05, the null hypothesis is accepted implying that no causal relationship exists between the variables. It is interpreted that one variable does not Granger cause the other.

On the other hand, (the probability) is lesser than 0.05, we will not accept the null hypothesis that there is no causality (or that one variable does not Granger cause the other) between the variables hence we accept the alternative hypothesis that one variable Granger cause the other.

Variable Description

The relation between the tax reduction and capital formation is that reduced tax imply making more income available for the investors for investment and reinvestment purposes. Decreasing capital borrowing rate (interest rate will provides incentives that will enable investors to invest in capital projects. Increased money supply will no doubt increase the investible funds available to investors for investing in capital projects while lowering such will reduce the investible funds of the capital projects. Increased government spending will induce the investor ability to increase capital projects while decreased government spending will have a converse effect.

4. RESULTS AND DISCUSSION

4.1 Results

Table 4.1 Descriptive test results

	CAPF	GEXP	INTR	MS	TAX
Mean	2241588.	1716739.	22.38317	7666175.	977569.3
Median	268894.5	579301.0	22.42000	1175984.	135441.0
Maximum	10571740	7654322.	36.09000	40318299	5002345.
Minimum	5417.000	4754.000	10.00000	16161.70	500.9910
Std. Dev.	3691726.	2211467.	6.062142	11468602	1543060.
Skewness	1.473231	1.287471	-0.210996	1.505181	1.530499
Kurtosis	3.349021	3.617215	2.731519	4.098293	3.965907
Jarque-Bera	15.03923	11.97761	0.427357	17.11421	17.60043
Probability	0.000542	0.002507	0.807608	0.000192	0.000151
Sum	91905105	70386305	917.7100	3.07E+08	40080340
Sum Sq. Dev.	5.45E+14	1.96E+14	1469.983	5.13E+15	9.52E+13
Observations	41	41	41	40	41

Source- Researcher's Computation

The descriptive results enables comparisons to be made between the statistical means and standard deviations of the variables. This will facilitate in explaining theoretically the relationship between the variables. Table 1 shows the mean values, standard deviation etc. of the parameters. The average (mean) is 2241588 for the dependent variable- (capital formation) 1716739, 22.38, and 7666175, and 977569 for the explanatory variables. The standard deviation is between 36911726 for the dependent variable, - (capital formation), 2211467, 6.0621, 11468602, 11468602 and 1543060 also for the explanatory variables. respectively. The variables also exhibit an asymmetrical distribution with long tail to the right depicting high positive skew as above zero

having values of 1.1473231 for the dependent variable - (capital formation), and 1.287471, -.2109, 1.5051, 1.5309, for the explanatory variables. respectively. The probability of zero of the variables also explains relationship, the kurtosis values which quantifies whether the shape of the data of the distribution matches are 3.3490 for the dependent variable - (capital formation), and 3.6172, 2.7317, 4.0972, 3.9659 for the explanatory variables.

It is observed with interest that all the variables showed reasonable sign of relationship. Although this is the case, yet the nature of the movements may have affected the normal distribution of the variable. It becomes necessary to make theoretical case that such trends are likely to lead to causal relationship between the both explanatory variables driving capital formation in the country within the reviewed period yet the claim will be further tested econometrically for confirmation.

Table 4.2 Unit root test results

Variable	Intercept Only	Decision	Trend and Intersect	Decision
<i>LCapF</i>	2.9237 (-7.3466)*	I(0)	3.5107 (-5.8593)*	I(0)
<i>LGEXP</i>	-2.9237 (-2.4639)	I(1)	-4.1614 (-3.3580)*	I(1)
<i>LINTR</i>	-2.9266 (1.4900)	I(1)	-3.5063 (-0.6036)*	I(1)
<i>LMS</i>	-2.9314 (-1.1808)	I(1)	-3.5180 (-1.6175)	I(1)
<i>LTAX</i>	-3.1830 (-3.4061)*	I(0)	-2.9237 (-3.4743)*	I(0)

* (**) *** Significant at 1% (5%) 10% level of significance

Source- Researcher's Computation

The results of the unit root tests is depicted - The Augmented Dickey Fuller unit root test depict a strong integration of variables of order 1, that is, I(1) and order 0, that is, I(0) at 1%, 5% and 10% level of significance respectively as the case may be. For both intercept and trends and intercepts, the critical (t-tabulated) is less than t- values calculated t-test, hence the null hypothesis of no unit root cannot be accepted. The individual series are non -stationary and thus quite suitable for the purpose intended.

This is depicted in Table 4.2 above

4.3 Auto regressive distributed lag long run result

	Coefficients	Standard Error	t-statistic
Prob.			
Long Run Results			
LCapF(-1)	1.1395	0.0710	16.0495
0.0000			
Trend	98985	29294	3.3089
0.028			
LGEXP	1.4809	0.7475	1.9810
0.0587			
LGEXP(-1)	-89413	1.2323	-7.2552
0.0000			
LGEXP(-2)	5.9724	1.2634	4.7272
0.0001			
LINTR	-5.1719	2899	-1.7836
0.0866			
LMS	0.6631	0.0740	8.9526
0.0000			

<i>LMS(-1)</i>	-0.2316	0.06212	-3.7289
0.0010			
<i>LTAX</i>	-0.4252	0.2884	-1.4741
0.1529			
<i>LTAX(-1)</i>	0.6790	0.2841	2.3898
0.0247			
<i>LTAX(-2)</i>	-2.8297	0.4423	-6.3966
0.0000			
C	306950.2	625476.6	0.4907
0.6279			
R ²	0.9704		
Adjusted R ²	0.9574		
F-Statistic	74.5601		
Akaike I. C.I	30.2530		
Schwarz Criterion	30.7754		

Source- Researcher's Computation

Stability diagnostic Test

This test is used to provide evidence for the stability of long run relationships among the variables. It enables us to perform a separate test for the long run relationships stability; and also the speed of adjustment towards equilibrium stability.

From the above table it was found that the critical value of the t-statistics is 3.308 and a probability of 0028 which is less at 5 percent level of significance. Also for the F-statistic, the critical value is 74.56 which is higher than the table value. Therefore this depicts that there exists a long run relationship among the variables.

Significance Test

The coefficient of government expenditure is 1.4809 and money supply is 0.6631 depicting a significant effect it has on the dependent variable. However, the coefficients of interest rate and taxation which is -5.1719 and -0.4252 respectively depict negative effect on capital formation. This implies that in the long the proxies of demand side economics significantly and positively affect capital formation while the supply-side economics negatively and insignificantly affects the dependent variable.

Table 4.4. Pairwise Granger Causality Result

Null Hypothesis	F- statistic	Probability	Decision	Type of causality
$LGE_{Exp} \nrightarrow LCapF$	1.2030	0.3127	Not Rejected	No Causality
$LCapF \nrightarrow LGE_{Exp}$	4.8871	0.0136	Rejected	Causality
$LIntR \nrightarrow LCapF$	0.0.1783	0.8374	Not Rejected	Not Causality
$LCapF \nrightarrow LIntR$	1.1379	0.3326	Not Rejected	Not Causality
$LMS \nrightarrow LCapF$	0.2099	0.8118	Not Rejected	Not Causality
$LCapF \nrightarrow LMS$	2.7417	0.0801	Not Rejected	Not Causality
$LTAX \nrightarrow LCapF$	4.5228	0.0181	Rejected	Causality
$LCapF \nrightarrow LTAX$	1.0967	0.3455	Not Rejected	No Causality

Source Researcher's Computation

The next to be performed is the Pairwise Granger Causality test. It is a group and descriptive statistics. This is depicted in Table 4.4

The probability of the causality from government expenditure to capital formation is 0.3127. This is greater than 0.05 and depicts no causality. However, the probability from capital formation to government expenditure is 0.0136 is less than 0.05 and depicting causality.

The probability of the causality from interest rate to capital formation is depicted as 0.8374. This is greater than 0.05 and depicts no causality and likewise the probability from capital formation to exports is 0.3326 is greater than 0.05 and depicting no causality.

Interesting to note also is the probability of the causality from money supply to capital formation is depicted as 0.8118. This is greater than 0.05 and depicts no causality and likewise the probability from capital formation to money supply is 0.0801 is greater than 0.05 and depicting no causality.

Going further, the probability of the causality from taxation to capital formation is depicted as 0.0181. This is lesser than 0.05 and depicts causality while the probability from capital formation to taxation is 0.3455 is greater than 0.05 and depicting no causality.

Research Findings

From the foregoing the following findings are discernable:

There is a unidirectional causality between capital formation and government expenditure running from capital formation to government expenditure.

There is also a unidirectional causal relation between taxation and capital formation running from taxation to capital formation

There is no causal relation between the money supply and capital formation, and interest rate and capital formation.

In the long run, the proxies of demand side economics significantly and positively affect capital formation while the supply-side economics negatively and insignificantly.

affects the dependent variable. There exists a long run relationship among the variables.

These findings have far reaching implication. In the short run supply side economics partly drives capital formation and the capital formation partly drives demand side economics.

There exists long run relationship between the supply side economic and capital formation. There is also a long run relationship between demand side economics and capital formation In the long run capital formation is demand side driven, and not supply side led while in the short run capital formation is partly supply side led.

5. CONCLUSION, SUMMARY AND RECOMMENDATION

5.1 Conclusion

The study situates and investigated the drivers of capital formation trends in Nigeria from 1981 to 2021. The enormous role of capital formation in economic growth and development is trite in literature. However the factors that stimulate it is scarce especially whether it is supply-side driven or demand-side led. Data was gotten from the Central Bank of Nigeria bulletin of various issues. The descriptive statistic as well as the unit root test, the ARDL, and the Granger causality tests were adopted for statistical and econometric analysis.

5.2 Summary

The novel findings of this study are as follows-

There is a unidirectional causality between capital formation and government expenditure running from capital formation to government expenditure.

There is also a unidirectional causality between taxation and capital formation running from taxation to capital formation.

There is no causality between - money supply and capital formation; interest rate and capital formation.

There exists a long run relationship among the variables.

In the long the proxies of demand side economics significantly and positively affect capital formation while the supply-side economics negatively and insignificantly affects the dependent variable.

Implications of the findings

These findings have far reaching implication. In the short run supply-side economics partly drives capital formation and the capital formation partly drives demand- side economics.

There exists long run relationship between the supply side economics and capital formation. There is also a long run relationship between demand side economics and capital formation

In the long- run capital formation is demand- side led, and not supply-side driven while in the short run capital formation is partly supply side driven.

5.3 Recommendation

Based on the findings, the following recommendations are proffered. Economic policy makers should blend an expansionary fiscal policy

with a relaxed monetary policy in the short run. Lesser tax infliction, less regulation, lower interest rate and improved supply-side economics are recommended. In the long run more relaxed fiscal policy should be implemented while the present monetary policy should be sustained but with more aggressive initiative to produce greater number of public goods and services so as to trigger general demand. Government should engender increased monetary power of low and middle income individuals.

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STAFF COMPETENCY AND THE PERFORMANCE OF COMMERCIAL BANKS IN NIGERIA

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ABSTRACT

This study examines staff competency and the performance of commercial banks in Nigeria from 1981 to 2023. Eight variables (Capital Adequacy, Deposit Growth Rate, General level of Education, Financial Education, Number of Training Programmes per year, Volume of Bank Fraud, Revenue Turnover, and Non-Performing Loans) were used in the analysis. An unbalanced panel dataset comprising 270 observations was used to analyze data from financial reports and internal records of seven selected commercial banks. Findings revealed that financial education of bank staff, the number of training programs, and revenue turnover significantly and positively influenced capital adequacy, while non-performing loans had a significant and negative

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relationship with capital adequacy. Financial education of bank staff, bank fraud volume, and revenue turnover significantly and positively influenced the deposit growth rate. The study recommends that commercial banks should invest in financial education and training programs focused on credit risk assessment, fraud prevention, customer relationship management, and fintech adoption, and given the increasing reliance on digital platforms, training should cover cybersecurity measures, artificial intelligence applications, and mobile banking operations to cultivate a competent workforce capable of adapting to industry dynamics. Collaborations with financial institutions, universities, and international training bodies can help design certification courses and workshops that address Nigeria-specific challenges. Regulatory authorities are urged to enforce competency standards and support continuous professional development to foster a resilient and competitive banking system.

Keywords: Staff competency, Commercial banks, Human resources management, Organizational performance, Nigeria

JEL Classification: G21, M12, O15, O55

1.0 INTRODUCTION

The management of financial resources has been a challenge to mankind, as any error in assessing situations or miscalculations arising from poor knowledge or judgment can lead to losses or economic disadvantages (Sukenti, 2023). Businesses fail when the people to whom duties are assigned lack the skills, knowledge and competencies to carry out such duties (Sitinjak, Johanna, Avinash & Bevoor, 2023). The management of personal, corporate or organisational finances requires a good level of education, training, skills/competencies and

expertise. Organisational successes are therefore, a function of the competency level of the staff. According to Wijayanti and Sari, (2023), the global environment has become highly competitive, requiring organizations to engage employees with new sets of knowledge, skills, and behavior that can drive the market and lead the organization to sustainability. The level of bank failures, over the years, has remained a major challenge to many economies in the world. Nigeria presents a particularly disturbing scenario with the sequence of bank failures since the 1930s. From the early days of banking in Nigeria till date, the nation has recorded many bank failures. Between 1930 and 1960, 17 banks failed or were liquidated in Nigeria while additional 36 banks suffered the same fate between 1994 and 2003 (Ogubunka, 2003).

Moreover, Nigeria recorded a sharp reduction in the number of commercial banks when the number dropped from 89 to 24, following the Banking Consolidation process of 2005 (Ugwunta, Ani & Ugwuanyi, 2012). The details of the failed banks categorised into five (5) phases is indicated in Table 1.

Table 1: Details of Failed Banks in Nigeria (1930- 2024)

S/No.	Phases	Periods	Commercial	Merchant
1	1 st	1930 to 1968	20	----
2	2 nd	1969 to 2000	16	15
3	3 rd	2001 to 2009	13	----
4	4 th	2010-2011	6	----
5	5 th	2012-2024	1	----

Source: Ogubunka (2003), and Iwedi (2017)

The Central Bank of Nigeria (CBN) and the Nigerian Deposit Insurance Corporation (NDIC) as Supervisors and Regulators has faced great tasks in managing information and apprehensions of the Nigerian Banking Sector. Many of the infractions in terms of funds management, credit administration, customer care, frauds, basic banking operations etc. relate to ignorance and non-observation of basic rules, laws, procedures and standard techniques in their operations. In some cases, the affected banks lost money through fraud, credit defaults, fines, penalties as well as legal fees (CIBN 2016). The major reason for bank failures is lack of financial literacy by those who handle basic managerial and clerical functions and operations (CIBN 2013, Iwedi, 2017 and Lusardi, 2019).

Notwithstanding the number of studies on the performance of commercial banks by scholars, there is still limited literature linking the performance of commercial banks to capital adequacy, the growth rate of deposits on one hand, and the general level of education, financial education, volume of bank frauds, revenue turnover and non-performing credits of commercial banks on the other hand, in Nigeria (Oyetoyan, Ajiboye, & Popoola, 2021, Tamunosiki-Amadi & Simeon, 2024, Adefe, Watson & Liddle, 2019). Also, most of the studies carried out on financial literacy and staff competency mostly gathered data from the year 1990, neglecting data recorded before year 1990. This study fills this gap as data collected on the variables spanning from 1981 to 2023 thereby establishes the basis to understanding of some aspects of staff competency and the performance of commercial banks in Nigeria.

2.0 Literature Review

2.1 Conceptual Framework

Competency relates to the knowledge, skills, abilities, and behaviors that contribute to individual's satisfactory or efficient performance in an organization to achieve optimum results (Škrinjarić, 2022). It is how individuals are able to understand and respect organisational ethics which are considered necessary to enable them respond on how to plan, implement and evaluate their functions (Wijayanti & Sari, 2023). The Competency Framework released by the Central Bank of Nigeria (CBN), in 2012, revealed that the 2009 global financial crisis exposed the inadequacy of skills and dearth of executive capacity in the banking industry (CBN, 2012). This development necessitated the need for continuous training and development of bank staff in order to enhance their skill and performances. The Chartered Institute of Bankers of Nigeria (CIBN) was appointed the sole accreditation agency in line with Act No. 5 of 2007. The Institute was empowered to determine the knowledge and skill levels which banking practitioners should attain and to ensure ethical standards and professionalism among the practitioners. In the banking industry, the regulatory authorities use common rating system called CAMELS to measure the performance of a bank for soundness or otherwise.

The categorisation is done using scores ranging from one (1) to five (5), one (1) is the best indicating strong performance, while five (5) is the poorest rating, indicating a weak bank. A higher rating is an indication that the ability of the bank to expand will be impeded. There are three (3) components in the competency framework. These are:

Credentials, Skills and Behaviours. These components are strictly interrelated and cannot be separated. They are described in Figures 1, 2, and 3.

Figure 1 relates to the basic components of competency, otherwise referred to as competency Framework (Adefe, Watson & Liddle 2019). This constructs identifies the three elements that portray what competency is and how they revolve around each other. Financial literacy improves the capacity (competency) of the staff of banks, thereby improving their performance and the growth of the banks.

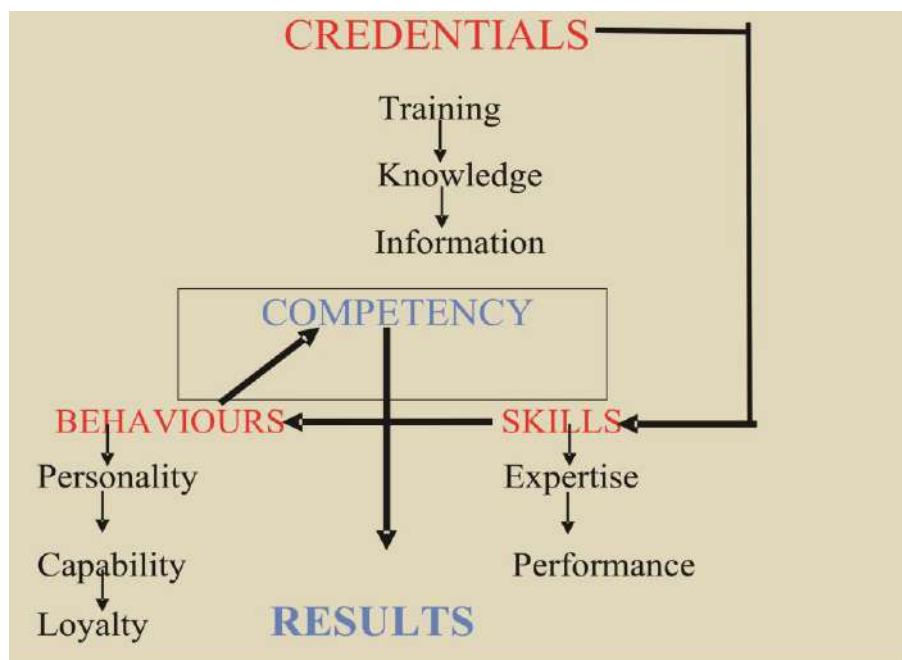


Figure 1. Concept of Bank Staff Competency
 Source: Designed by the researcher (2024)

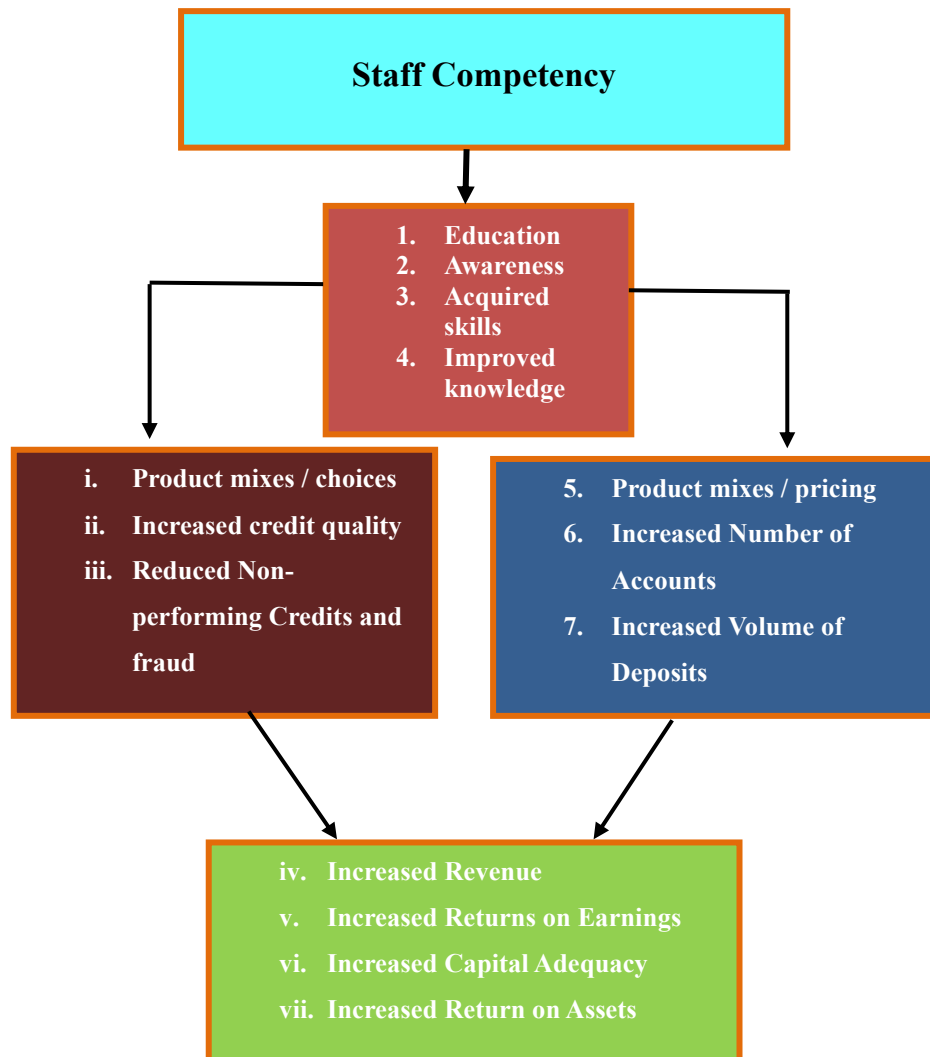


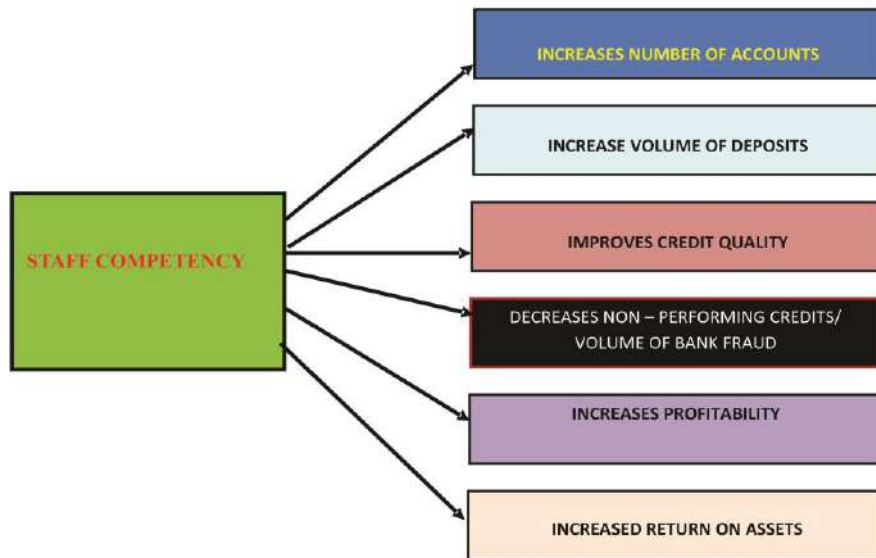
Figure 2: Bank Staff Competency and Performance
Source: Researchers, 2025

Figure 2 indicates that education creates awareness, improves knowledge and skills, leading to ability to design and price products and services. With improved knowledge and skills, staff can undertake credit appraisal professionally, thereby reducing the volume of non-performing credits and fraud. This subsequently leads to increased volume of deposits, revenue, and returns on earnings as well as improved capital adequacy and return on assets.

Figure 3: Staff Competency and Bank Performance

Source: Authors, 2025

Figure 3 shows that a competent workforce will design attractive banking products and services which will lead to higher patronage as well as increase in the volume of deposits. A competent workforce will also bring about an improved credits quality thereby reducing the incidences of non-performing credits and fraud, and subsequently increasing the bank's profitability.



2.2 THEORETICAL CONSTRUCT

This study is anchored on three theories: Contemporary banking theory, Human capital theory and Performance theory.

2.2.1 Contemporary Banking Theory

Bhattacharya and Thakor (1993) advanced the Contemporary Banking Theory and it is an extension of financial intermediation theory. It states that commercial banks are an important entity in process allocation of capital resources. The financial intermediaries play important roles through reduction of the transaction costs for the services. The main area of focus in this theory relates to the understanding of the existence

of the financial intermediaries. The contemporary banking theory is relevant to this study in relations to bank branch spread variable. Commercial banks can operate in a single branch, but due to competition and to be financially included, they operate a network of branches. The operation of a network of branches is a major role of the contemporary banks that seek to narrow the distance between the customer and the services rendered.

2.2.2 Human Capital Theory

This theory relates to the skills, knowledge and capabilities which employees acquire that prepare them for successful performance in the workplace, in the present and the future. It is relatively new in financial studies. It states that companies have an incentive to seek productive human capital and to add to the human capital of their existing employees at all times (Breton, 2014). There are three key elements in the theory, namely that: i. Countries without much human capital cannot manage physical capital effectively, ii. Economic growth can only proceed if physical capital and human capital rise together, and iii. Human capital is the factor most likely to limit growth. The notes that employees rise through a hierarchy based on promotion until they reach a level where their best performances cannot be obtained, and this leads to poor productivity. The promotion system is such that people keep moving based on certain thresholds or point of entry or other criteria. The fact is that some staff may be very good at the lower level of operations, but lack basic managerial skills and competencies to perform at the top. Assigning crucial responsibilities to people on the basis of point of entry or other conditions may result to great dangers to the bank.

2.2.3 Theory of Performance

The Theory of performance management is an important part of organisational behaviour and human resource management as they help businesses to manage and motivate staff (Marshall, Aguinis & Beltran, 2022). The theory posits that there are six components on the levels of performance. These components relate to knowledge, skills, identity, context, personal factors and fixed factors. Also called the goal-setting theory of motivation, the theory of performance relates to setting goals that are clear, specific, and challenging, are more motivating than vague goals or easy goals.

2.3 Review of Empirical Literature

Literature exists on the issue of staff competency and the performance of commercial banks with conflicting results. Ibe and Obialor (2022) assessed the effects of automated teller machines (ATMs), point-of-sale (POS) systems, web-based internet transfers, and mobile payment solutions on bank performance, measured by the value of commercial bank deposits in Nigeria using secondary data sourced from the Central Bank of Nigeria's Statistical Bulletin for the period 2009–2020. The study found that POS systems, mobile payments, ATMs, and web-based transfers positively influenced the performance of commercial banks in Nigeria during the study period. The study recommended that the government implement appropriate monetary and fiscal policies to promote financial innovation, thereby enhancing the performance of commercial banks in Nigeria. Similarly, Odili, Edim and Ugwu (2022) examined the performance indicators of the major components of the financial sector and how they influenced household welfare in Nigeria

from 1986 to 2020 using annual time series data. The study revealed that the transmission channels through broad money supply-GDP, market capitalization-GDP, and total insurance premium income-GDP were the conduits through which households benefit from financial sector development. Total pension fund assets-GDP ratio had negative effect on household welfare, while the ratio of domestic credit to the private sector-GDP did not influence household welfare in Nigeria. The study recommended that Central Bank of Nigeria should strengthen its policy on credit extension to the private sector by making it mandatory for commercial banks. Commercial banks should be monitored to ensure compliance. Regular payment of pension to retirees is imperative in improving standard of living and household welfare in Nigeria.

Oyetoyan, Ajiboye, and Popoola (2021) investigated the impact of financial literacy programs, the use of agents and representatives, the expansion of ATMs, and mobile banking services on the financial performance of listed banks in Nigeria. A census study was conducted using primary data collected through questionnaires. Data analysis was performed using SPSS (version 23), and regression analysis results were presented in tables. The findings revealed that financial inclusion elements have a strong positive impact on banks' financial performance, particularly in terms of return on equity. Financial literacy programs had a positive but weak impact on performance, while the use of agents and representatives demonstrated a strong positive effect. The proliferation of ATMs and mobile banking services had a positive yet weak effect on financial performance, and bank branch expansion similarly showed a positive but weak impact. The study recommended that policymakers in the financial sector should

leverage on financial inclusion strategies to enhance the financial performance of Nigerian banks. Odili, Nwaocha, Ezeudu and Eluwa (2021) analyzed the effect of financial inclusion on poverty alleviation in Nigeria using time series data from 1992 to 2018. The ARDL bounds test revealed that financial inclusion and poverty alleviation co-integrated. Deposits of customers in the banking sector and microfinance bank branches were the most significant financial inclusion measures. The coefficients showed that electronic money operations, commercial banks credit to rural populace, microfinance banks credits and microfinance banks deposit had positive effect on per capita income, while commercial banks branches, deposits of customers in the banking sector, and micro finance bank branches had negative effect on per capita income. The study recommended policies aimed at driving financial inclusion and poverty alleviation via commercial and microfinance banks. Odili (2021) examined financial system deepening and the performance of the Nigerian economy using time series data from 1981 to 2019.

Data was analyzed using OLS multiple regression technique. The results revealed that private sector to gross domestic product ratio and market capitalization to gross domestic product ratio were positive, while broad money supply to gross domestic product ratio was negative. Market capitalization to gross domestic product ratio and money supply to gross domestic product ratio were significant in influencing the economy of Nigeria. The causality tests showed that there exist, unidirectional relationship between the Nigerian economy and market capitalization as a percentage of gross domestic products which lends support to the demand-following hypothesis. The study recommended that, the government should make and implement

policies that will stimulate financial engineering and innovation, and they should ensure that microfinance banks and commercial banks establish their branches in the rural areas to enhance financial inclusion and efficient mobilization of funds in Nigeria.

Folajimi and Dare (2020) assessed the impact of credit risk on the financial performance of Nigerian DMBs using data from 13 out of 19 listed banks on the Nigerian Stock Exchange, covering the period from 2006 to 2018. The study employed a linear regression model, with Return on Capital Employed (ROCE) as the dependent variable and credit risk variables including NPLs, LLP, loan-to-deposit ratio, and capital adequacy ratio as independent variables, with bank size as a control. The results showed a positive and significant effect of credit risk on financial performance. The study recommended implementing stringent credit policies and maintaining a robust credit management framework to reduce non-performing loans and improve bank performance. Nwosu, Okedigba, and Anih (2020), investigated the impact of non-performing loans on the profitability of commercial banks in Nigeria, using data from 18 banks between the first quarter of 2014 and the fourth quarter of 2018. Panel fixed effects and autoregressive distributed lag models revealed a significant negative relationship between NPLs and bank profitability. The study found that higher NPL levels, increased liquidity ratios, and inflation negatively affected profitability, while larger bank size and higher capital adequacy ratios had positive effects. It recommended that banks strengthen credit risk management and provide financial advisory services to loan customers to ensure efficient investment of borrowed funds.

Oduro, Asiedu, and Gadzo (2019), investigated the relationship between bank credit risk and corporate financial performance using financial data from banks listed on the Ghana Stock Exchange over 15 years. Using the 2 Stage Least Square (2SLS) regression method, the study found that credit risk was negatively related to operating efficiency, net interest margin, and capital adequacy, while bank size and the financing gap were positively associated with credit risk. The study emphasized the importance of managing credit risk to enhance financial performance. Similarly, Kajola, Babatunji, Olabisi and Babatolu (2019), studied credit management of 10 deposit money banks in Nigeria between 2005 and 2016. They used capital adequacy ratio, non-performing loan to total deposit ratio (NPLDR) and non-performing loan to total loan ratio (NPLLR) as proxy for credit management while return on equity (ROE) and return on asset (ROA) were used as proxy for financial performance. Panel data modeling approach was employed in data estimation. It was found that all the three credit risk parameters have a significant relationship with ROA and ROE. The study recommended that management of banks should develop robust credit policies in order to effectively assess their customers' credit worthiness.

3.0 METHODOLOGY

3.1 Data

The study relied on unbalanced panel data derived from secondary sources obtained from the annual financial statements and statistical reports of Central Bank of Nigeria (CBN), Nigerian Deposit Insurance Corporation (NDIC), National Bureau of Statistics (NBS), and

Financial Reports and Archival Records/ Information collected from seven commercial banks in Nigeria on the variables from 1981 to 2023.

3.2 Model Specification

In this study, the model of Oyetoyan, Ajiboye, and Popoola (2021) was adopted, with some modifications. The study determined the effect of financial literacy programs, usage of agents and representatives, increased proliferation of ATMs and mobile banking services on the financial performance of listed banks in Nigeria. The analysis was based on the multiple regression equation presented in equation 3.1 and 3.2.

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon \text{ -----} 3.1$$

$$Y = f(\text{GLE, FED, NTP, VBF, RTO, NPL}) \text{-----} 3.2$$

Y = Financial Performance of Listed Banks; X₁ = Financial literacy programs; X₂ = Use of agents and representatives; X₃ = Increased proliferation of ATMs and Mobile Services; β₀ = Constant and; ε = is the error term; β₁- β₃ = Coefficients of variables in the regression model For this study, the variables were selected to capture adequately the training and competency needs of the banking sector. The study models are specified in equations 3.3 and 3.4.

$$\text{CAD} = \beta_0 + \beta_1 \text{GLE}_t + \beta_2 \text{FED}_t + \beta_3 \text{NTP}_t + \beta_4 \text{VBF}_t + \beta_5 \text{RTO}_t + \beta_6 \text{NPL}_t + u_t \text{-----} 3.3$$

$$\text{DGR} = \delta_0 + \delta_1 \text{GLE}_t + \delta_2 \text{FED}_t + \delta_3 \text{NTP}_t + \delta_4 \text{VBF}_t + \delta_5 \text{RTO}_t + \delta_6 \text{NPL}_t + u_t \text{-----} 3.4$$

β₀, α₀, and δ₀ = Constant; β₁- β₆, α₁- α₆, and δ₁- δ₆ = Co-efficient of independent variables; μ_t = Error term; *a priori* expectations: β₁- β₆, α₁- α₆, and δ₁- δ₆ > 0,

Table 2: Description of Research Model Variables

Variables	Measurement	Notation	Data Source
Capital Adequacy	Percentage of Tier 1 & Tier 2 capital to risk-weighted assets	CAD	Selected banks' annual financial reports
Deposit Growth Rate	Annual percentage growth in customer deposits	DGR	Selected banks' annual financial reports
General Level of Education of bank staff	Average education attainment qualification of staff (%)	GLE	Selected banks' recruitment records
Financial Education of bank staff	Average financial literacy rate of staff (%)	FED	Selected banks' appraisal records
Training Programmes organised by the bank per annum	Number of training programmes organised by the bank per year (count)	NTP	Selected banks' training record
Volume of Bank Fraud	Total fraud and forgery-related losses (Billion Naira)	VBF	NDIC annual reports; Selected banks' annual financial reports
Revenue Turnover	Annual revenue (Billion Naira)	RTO	Selected banks' annual financial reports
Non-Performing Loans	Percentage of loans classified as non-performing	NPL	Selected banks' annual financial reports

Source: Author's compilation, 2025

The general educational assessment rating of bank staff in Nigeria's commercial banks was determined based on the average scores of seven sampled banks: First Bank, Union Bank, United Bank for Africa (UBA), WEMA Bank, Access Bank Plc, Zenith Bank, and GTBank. These Banks were selected based on their respective time of entry into the Nigerian banking space and the scores were aligned with their internal guidelines used for staff recruitment and promotion.

Table 3: General education assessment rating of bank staff of the Commercial Banks in Nigeria

Level	Description	Score (%)
High School Diploma	Basic qualification for entry-level roles.	5
Undergraduate Degree (Bachelor's)	Standard qualification for operational and supervisory roles.	15
Postgraduate Degree (Master's, MBA)	Advanced knowledge for leadership and strategic roles.	20
Professional Certifications (e.g., ACIB, ACA, ACCA etc.)	Expertise for technical banking functions.	25
PhD or Doctorate	Mastery in research, policy development, or niche financial operations.	35

Source: Source: Author's compilation from assessment guidelines provided by the human resource department of the sampled banks, 2025

Workplace performance and commitment to continuous professional development also factor into the scoring, ensuring practical competence complements theoretical education.

Table 4: Financial Education assessment guidelines of the sampled Commercial Banks in Nigeria

S / N	Level	Description	Score (%)
1	Basic Financial Literacy	Fundamental understanding acquired through short courses or workshops.	10
2	Intermediate Financial Education	Proficiency in key concepts through certifications or in-house training.	20
3	Advanced Financial Education	Specialized skills acquired through professional certifications (e.g., ACIB, ACA, ACCA etc).	30
4	Comprehensive Financial Expertise	Mastery in finance through postgraduate education or leadership-level credentials.	40

Source: Author’s compilation from assessment guidelines provided by the human resource department of the sampled banks, 2025

The scores are assigned on a scale from 1 to 10, with higher scores indicating more advanced qualifications or education levels.

3.3 Methods of Data Analysis

The study employed a panel regression approach, utilizing Pooled Ordinary Least Squares (OLS), Fixed Effects (FE), and Random Effects (RE) models. To ensure the selection of the most appropriate model, two diagnostic tests were performed. The Breusch-Pagan Lagrange Multiplier (BP-LM) test was conducted to decide between the Pooled OLS and the Fixed/Random Effects models, while the Hausman test was used to determine whether the Fixed Effects or

Random Effects model was more suitable for the analysis. Descriptive statistics and a correlation matrix were presented.

4.0 RESULTS AND DISCUSSIONS

4.1 Descriptive statistics

The summary descriptive statistics shows the central tendencies, variability, and distributional characteristics of research variables.

Table 5:
Summary statistics of the macroeconomic variables used for the study obtained from Commercial Banks in Nigeria (1981 - 2023)

Statistic	CAD	DGR	GLE	FED	NT P	VBF	RTO	NPL
Mean	14.00	17.80	77.80	69.28	13.0 1	316.42	168.35	6.09
Median	12.80	15.65	80.85	71.07	12.0 0	229.68	45.90	4.40
Maximum	90.70	95.70	99.90	93.20	24.0 0	6150.00	2591.40	75.73
Minimum	0.62	2.80	50.50	40.20	3.00	3.53	0.79	0.80
Std. Dev.	7.92	11.82	14.35	14.98	5.60	455.20	319.17	7.61
Skewness	0.29	0.31	-0.37	-0.37	0.38	3.39	2.20	0.20
Kurtosis	2.22	1.98	1.90	1.95	2.01	4.15	3.57	1.56
Jarque-Bera	2.13	1.61	1.96	1.84	1.74	11.21	8.59	2.21
Probability	0.32	0.41	0.70	0.67	0.25	0.00	0.01	0.35
Sum	3,780.2 9	4,770.1 4	21,006.9 4	18,706.3 8	3,51 2	85,434.0 6	45,286.9 5	1,638 4
Obs.	270	270	270	270	270	270	270	270

Source: Source: Authors computation using E-Views 13, 2025

Table 5 shows a mean CAD of 14.00% which reflects a strong commitment to maintaining financial stability and compliance with regulatory frameworks. The mean value is significantly above both the CBN's stipulated minimum of 10% and the Basel II Accord's 8% benchmark, underscoring the sector's resilience. The standard deviation of 7.92% indicates moderate variability among the sampled banks, reflective of the heterogeneity in risk appetite, capital structures, and management strategies. The skewness of 0.29 and kurtosis of 2.22 suggest a near-normal distribution of CAD, which is confirmed by the Jarque-Bera probability of 0.32, indicating that deviations from normality are statistically insignificant. The DGR is a key measure of banking sector performance, reflecting the ability of banks to attract and retain deposits, which form the backbone of their funding base. For Nigerian banks, as shown in Table 5, the mean DGR of 17.80% indicates robust year-on-year deposit growth, suggesting increasing customer confidence, enhanced financial inclusion efforts, and steady economic activity during the study period. A standard deviation of 11.82% reveals moderate variability in deposit growth among banks, indicative of differences in deposit mobilization strategies, regional penetration, and brand loyalty. The skewness of 0.31 and kurtosis of 1.98 suggest a distribution that is approximately normal, further validated by the Jarque-Bera probability of 0.41.

4.2 Unit Root Test

Table 6 presents the results of the panel unit root test conducted using the Levin, Lin, and Chu (LLC) methodology.

Table 6 Unit Root Test (Levin, Lin and Chu)

Variables	Order of Integration				I(0)
	Model A	Model B	Model A	Model B	
LNCAD	-2.292*	-3.906**	-	-	I(0)
LNDGR	-2.274*	-4.116**	-	-	I(0)
LNGLE	-6.113**	-5.501**	-	-	I(0)
LNFEED	-5.982**	-5.552**	-	-	I(0)
LNNTP	-7.660**	-6.548**	-	-	I(0)
LNVBF	-4.089**	-4.732**	-	-	I(0)
LNRT0	2.111	-5.716**	-	-	I(0)
LNNPL	-3.989**	-4.647**	-	-	I(0)

Source: Authors computation using E-Views 13, 2025

The LLC test evaluates the null hypothesis that the panel series has a unit root (non-stationary) against the alternative hypothesis of stationarity (no unit root). Two models were used: Model A (individual effects), and Model B (individual effects with linear trends). The results indicate that all variables, including LNCAD, LNDGR, LNGLE, LNFEED, LNNTP, LNVBF, LNRT0, and LNNPL, are stationary at level, I(0) as evidenced by significant test statistics at the 1% or 5% levels. This further result indicates the existence of a long run relationship which necessitated test of their long run relationship using the pooled panel least squares estimation.

4.3 Tests for Linearity

The test for linearity of the dependent and independent variables for this study was done using Pearson product moment correlation matrix and the result presented in Table 7.

Table 7: Pearson product moment correlation matrix

Correlation	LNCAD	LNDGR	LNGLE	LNFEED	LNNTTP	LNVBFB	LNRTTO	LNNPL
LNCAD	1							
LNDGR	0.584**	1						
LNGLE	0.624*	0.765**	1					
LNFEED	0.511**	0.820**	0.071	1				
LNNTTP	0.702**	0.639*	0.090	0.072	1			
LNVBFB	-0.56**	-0.544*	-0.125*	-0.082*	0.154*	1		
LNRTTO	0.617**	0.685**	0.151*	0.129*	0.093	0.280**	1	
LNNPL	-0.700**	-0.527**	-0.009	-0.16**	0.002	-0.055	0.147*	1

Source: Authors computation using E-Views 13, 2025

Asterisk **, and * signifies 1% and 5% levels of significance.

Analyzing the relationships between variables reveals moderate to strong correlations, ranging from -0.70 to 0.82. All coefficients are statistically significant at the 1% or 5% levels, indicating meaningful associations. Table 7 indicates that CAD, and DGR of commercial banks in Nigeria are positively correlated with the GLE, FED, NTP, and RTO of commercial banks staff in Nigeria. It equally reveals a significant negative correlation between CAD and VBF, and NPL of commercial banks in Nigeria.

4.4 Tests for Normality

The Shapiro-Wilk test, histograms, and P-P (probability-probability) plots for residuals were chosen as measures of data and regression residual normality. The p-value associated with the Shapiro-Wilk test is a critical indicator of normality. The results of these normality assessments are presented in Table 8.

Table 8:
Shapiro-Wilk’s Test of normality for the non-logged and logged variables (dependent and independent) used in the study

Variables	Non-logged variables			Logged variables		
	Statistic	df	Sig.	Statistic	df	Sig.
Capital Adequacy (%)	0.800	270	0.000	0.935	270	0.435
Deposit Growth Rate (%)	0.749	270	0.000	0.984	270	0.134
General Level of Education (%)	0.937	270	0.000	0.917	270	0.363
Financial Education (%)	0.940	270	0.000	0.915	270	0.119
Number of Training Program per Year	0.946	270	0.000	0.964	270	0.632
Volume of Bank Fraud (Million Naira)	0.407	270	0.000	0.960	270	0.298
Revenue Turnover(Billion Naira)	0.519	270	0.000	0.980	270	0.067
Non-Performing Loans (%)	0.471	270	0.000	0.975	270	0.077

Source: Authors computation from SPSS 27, 2025.

Asterisk **, and * signifies 1% and 5% levels of significance.

The Shapiro-Wilk test results presented in Table 8 shows that for the non-logged variables, all p-values are below 0.05, indicating significant deviations from normality. This lack of normality is a common characteristic of financial and socio-economic data, often attributed to extreme values, skewness, or kurtosis, as indicated in studies like Hatem et al., (2022). The result of the normality tests for the observed data of CAD and DGR are normal as they do not pose any problem to the validity of the study results. Similarly, the curve cut across almost all the histogram bars in figures 4, 5, and 6 signifying that the observed data are normal after the transformation of the dataset.

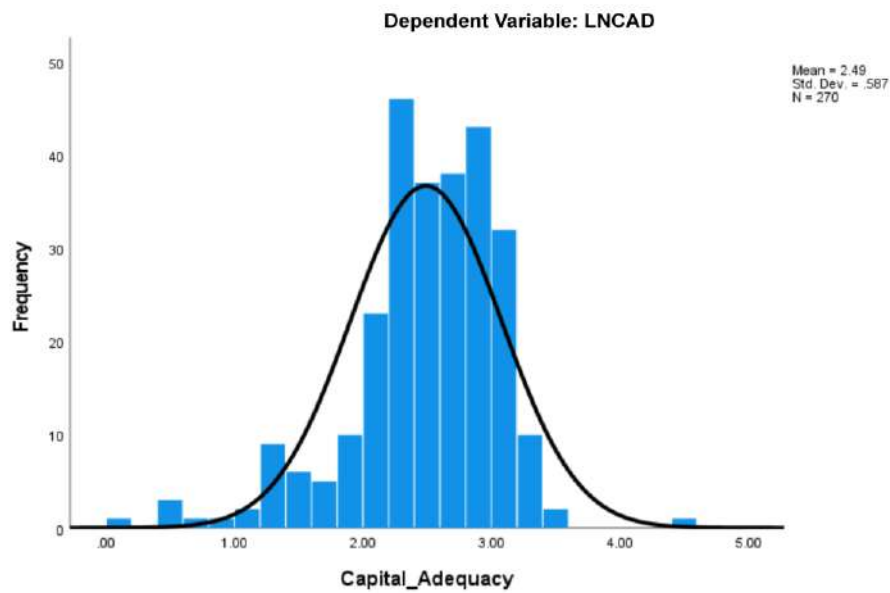


Figure 4:
Histogram of Dependent Variable CAD of Commercial Banks in Nigeria from 1981-2023

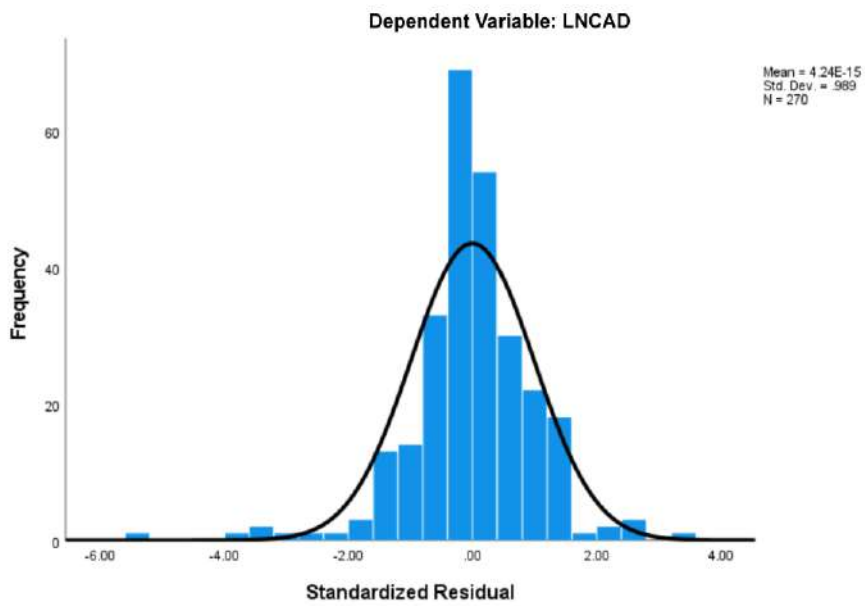


Figure 5:
Histogram of test residuals obtained from the OLS linear regression of the determinants of CAD of Commercial Banks in Nigeria from 1981-2023

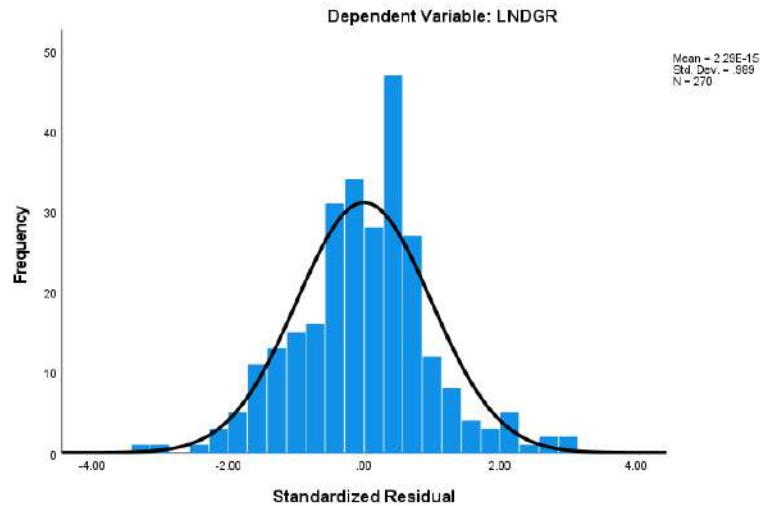


Figure 6: Histogram of test residuals obtained from the OLS linear regression of the determinants of DGR of Commercial Banks in Nigeria from 1981-2023

The plot of the standardized residuals obtained from the pooled ordinary least squares regression of the determinants of CAD and DGR are presented Figures 7 and 8.

Figure 4.7 and 4.8 show that the standardized residuals are normally distributed, as evidenced by the alignment of points along the diagonal reference line in the plot. Consequently, this reinforces the reliability of the regression model for making accurate predictions regarding LNCAD and LNDGR. The line aligns closely with the data points, indicating a strong fit. This alignment confirms that the residuals from the OLS linear regression of the determinants are not only normally

distributed but also exhibit a high degree of consistency with the assumption of normality.

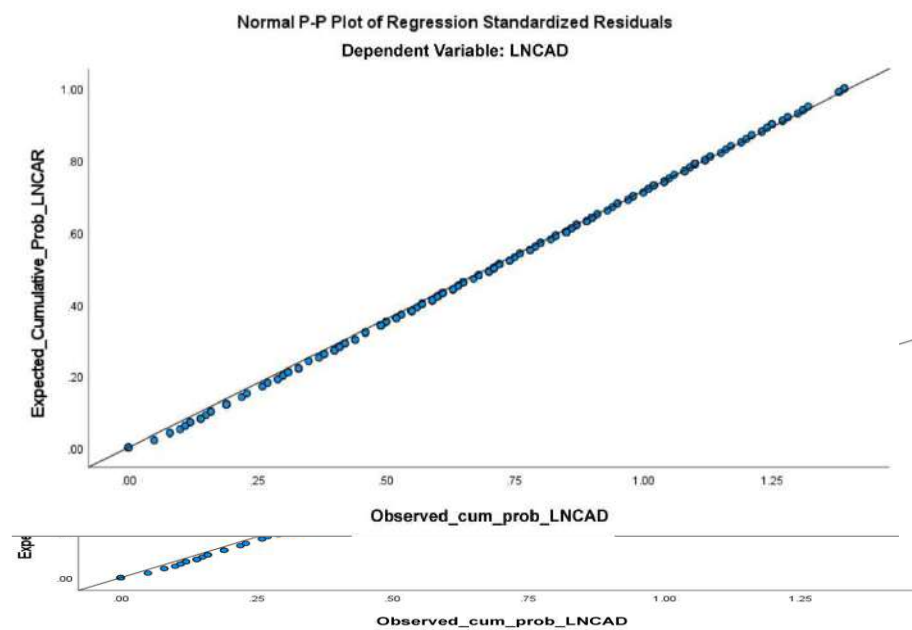


Figure 4.7: Observed and expected cumulative probabilities of the standardized regression residuals for the CAD of Commercial Banks in Nigeria from 1981-2023

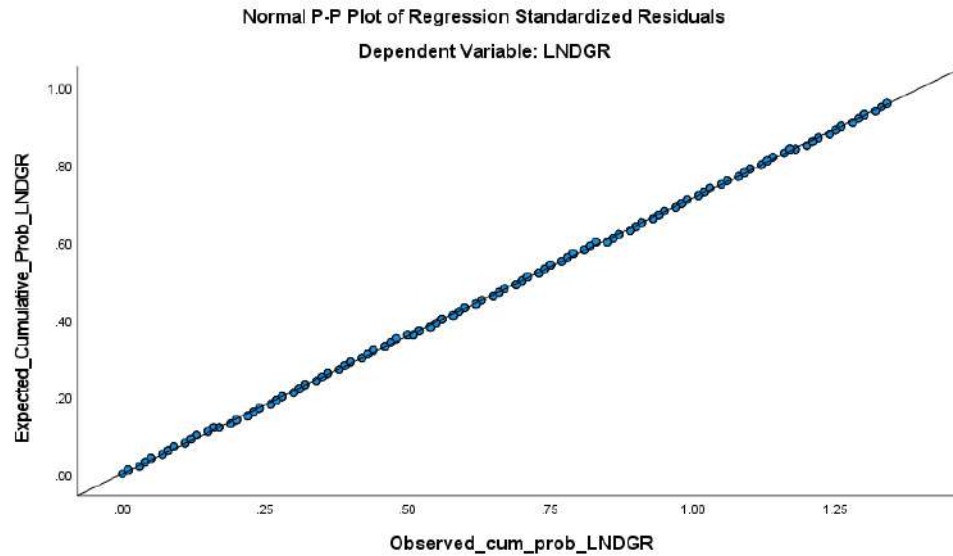


Figure 8: Observed and expected cumulative probabilities of the standardized regression residuals for DGR of Commercial Banks in Nigeria from 1981-2023

4.5 Tests for Multicollinearity

Multicollinearity among the independent variables was tested using Variance Inflation Factor (VIF). The results of the Variance Inflation Factor (VIF) analysis, centered for precision, and its inverse (also called tolerance level) are presented in Table 9. By rule of thumb, any variable whose VIF is greater than 10 is highly collinear and vice-versa (Wooldridge, 2019). Multicollinearity occurs when independent variables are highly correlated, potentially distorting coefficient estimates and undermining the reliability of regression results (Gujarati, 2009).

Table 9: Variance inflation factor result for multicollinearity diagnostic

Variable	Model 1: LNCAD		Model 2: LNDGR	
	VIF	1/VIF	VIF	1/VIF
GLE	1.0377	0.9637	1.0377	0.9637
FED	1.0587	0.9446	1.0587	0.9446
NTP	1.0346	0.9666	1.0346	0.9666
VBF	1.1235	0.8901	1.1235	0.8901
RTO	1.1564	0.8648	1.1564	0.8648
NPL	1.0673	0.9369	1.0673	0.9369

Source: Authors computation from E-Views 13, 2025

The result in Table 9 shows that all the variables have centered VIF that are less than 10 which implies they are not collinear. This result strongly suggests that multicollinearity is not a substantive concern in this study, ensuring the stability and interpretability of the regression coefficients.

4.6 Test for Autocorrelation

Durbin-Watson statistics was adopted in this study to test for the presence or otherwise of autocorrelation and is popularly denoted by d and the result is presented in Table 10.

Table 10: Durbin-Watson statistics results for autocorrelation diagnostic

S/N	Models	<i>d</i> -Statistic	<i>d</i> -Critical (d_L – d_U)	Autocorrelation Conclusion
			@5% level of sig.	
1.	LNCAD	1.873	1.716 -1.845	No autocorrelation
2.	LNDGR	1.985	1.716 -1.845	No autocorrelation

Source: Authors computation from E-Views 13, 2025, *d*-Critical was

obtained from *DW* table

With a sample size of 270 and six independent variables ($k = 6$), the critical values of *DW* at a 5% significance level are $d_L=1.716$ and $d_U=1.845$. The result in Table 10 shows that for the LNCAD model, the calculated Durbin-Watson statistic is 1.873, which exceeds the upper critical value ($d_U= 1.845$). This result indicates that there is no evidence of autocorrelation in the residuals of the model.

4.7 Test for Heteroskedasticity

To assess the presence of heteroskedasticity, this study employed the Breusch-Pagan-Godfrey test (F-statistic). Table 11 summarizes the heteroskedasticity test results for the models.

Table 11: Breusch-Pagan-Godfrey Heteroskedasticity Test

Parameters	Model 1: LNCAD	Model 2: LNDGR
F-statistic	0.7110	0.7058
Obs*R-squared	21.9475	21.9038
Scaled explained SS	0.6065	1.1388
Prob. F(6,268)	0.7454	0.7492
Prob. Chi-Square(6)	0.5234	0.5261
Prob. Chi-Square(6)	1.0000	1.0000
Heteroskedasticity	Absence of	Absence of
Conclusion	Heteroskedasticity	Heteroskedasticity

Source: Authors computation from E-Views 13, 2025

Across all models, the F-statistic and associated probability values (e.g., Prob. F(6,268)) exceed the 5% significance threshold, indicating a failure to reject the null hypothesis of constant variance. Similarly, the Prob. Chi-Square (6) values for the Obs*R-squared and Scaled Explained SS tests are consistently non-significant, further supporting the conclusion of homoscedasticity. These results confirm the absence of heteroskedasticity in the models, ensuring the reliability of the estimated coefficients and statistical inferences drawn from the regression analyses.

4.8 Model Estimation Selection

To determine the most appropriate estimation method, the Breusch-Pagan Lagrange Multiplier (BP-LM) test was employed to identify the more appropriate between pooled OLS and fixed/random effect models. The result of the BP-LM test is presented in Table 4.8 for the models used in this study.

Table 12: Breusch-Pagan Lagrange Multiplier (BP-LM) test

Test	Model 1: LNCAD		Model 2: LNDGR	
	Statistic	Prob.	Statistic	Prob.
Breusch-Pagan LM	65.972	0.0000	71.583	0.0000

Source: Authors computation from E-Views 13, 2025, P-values < 0.05

Table 12 presents the Breusch-Pagan Lagrange Multiplier (BP-LM) test results for determining the appropriateness of the Pooled OLS model versus the random effects model across the specified models. For Model 1 (LNCAD), a chi-square statistic of 65.972 with a p-value of 0.0000 is obtained, which leads to the rejection of the null hypothesis that the variance of the random effects is zero. This result indicates that the Pooled OLS model is not suitable for this model. Similarly, for Model 2 (LNDGR), the BP-LM test yields a chi-square statistic of 71.583 with a p-value of 0.0000, also rejecting the null hypothesis and confirming the inadequacy of the Pooled OLS model for this specification. Consequently, the study proceeds to conduct the Hausman test to determine the more appropriate choice between the fixed effects and random effects models.

4.9 Hausman Specification Test

To decide whether to adopt the fixed effects model (FEM) or the random effects model (REM), Hausman specification test was carried out to select the preferred model. It basically tests whether the unique errors (term error) are correlated with the regressors (Ibitomi & Micah-Elton, 2022). The results of the Hausman test for the models specified for this study is presented in Table 13.

Table 13: Results of correlated random effects-Hausman test

Test Summary	Model 1: LNCAD		Model 2: LNDGR	
	Chi-Sq. Statistic	d.f. Prob.	Chi-Sq. Statistic	d.f. Prob.
Cross-section				
random	3.445	6 0.7651	4.184	6 0.6617

Source: Authors computation from E-Views 13, 2025, P-values > 0.05

The Hausman test results across models consistently indicate that the random effects model is the most appropriate for analyzing the effects of staff competency on the performance of Commercial Banks in Nigeria. The random effects model not only accounts for inter-bank heterogeneity as random rather than fixed, but it also ensures that the estimates are efficient and reliable for policy recommendations.

4.10 Regression Analysis Results

Table 14 presents the regression results of the impact of the independent variables on the performance metrics.

Table 14:
REM result of Staff Competency influence on capital adequacy
Commercial Banks in Nigeria (1981 -2023)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Constant	1.5396	0.5819	2.6457***	0.0086
LNGLE	0.0337	0.1062	0.3178	0.7509
LN FED	0.2110	0.0898	2.3485**	0.0196
LNNTP	0.0771	0.0448	1.7197*	0.0867
LN VBF	-0.0319	0.0242	-1.3170	0.1890
LN RTO	0.2352	0.0132	17.8014***	0.0000
LNNPL	-0.2285	0.0288	-7.9406***	0.0000
R-squared	0.7808			
Adjusted R-squared	0.7690			
F-statistic	40.595			
Prob(F-statistic)	0.0000			
Durbin-Watson stat	1.8726			

Source: Authors computation from E-Views 13, 2025,
Asterisk ***, **, and * signifies 1%, 5% and 10% levels of
significance.

The estimated model for the determinants of CAD is expressed as:
 $CAD_{it} = 1.54 + 0.033GLE_{it} + 0.211FED_{it} + 0.077NTP_{it} - 0.032VBF_{it}$
 $+ 0.235RTO_{it} - 0.228NPL_{it} + \epsilon_{it}$

These findings align with theoretical expectations, where factors such
as FED, NTP, and RTO positively influence capital adequacy, NPL and
VBF exert negative effects.

Table 15: REM results of Staff Competency influence on deposit growth rate of Commercial Banks in Nigeria (1981 -2023)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Constant	0.0472	0.9118	0.0517	0.9588
LNGLE	0.0782	0.1663	0.4699	0.6388
LNFEED	0.4097	0.1407	2.9112**	0.0039
LNNTP	0.0649	0.0702	0.9236	0.3565
LNVBF	0.2529	0.0802	3.1546***	0.0000
LNRTO	0.0479	0.0207	2.3132**	0.0215
LNNPL	-0.0122	0.0451	-0.2712	0.7864
R-squared	0.6859			
Adjusted R-squared	0.6651			
F-statistic	34.208***			
Prob(F-statistic)	0.0000			
Durbin-Watson stat	1.9853			

Source: Authors computation from E-Views 13, 2025

Asterisk *** and ** signifies 1% and 5% levels of significance.

The estimated model for the determinants of DGR is expressed as:

$$DGR_{it} = 0.047 + 0.078GLE_{it} + 0.410FED_{it} + 0.065NTP_{it} + 0.253VBF_{it} + 0.048RTO_{it} - 0.012NPL_{it} + \epsilon_{it}$$

These findings align with theoretical expectations, where factors such as FED, NTP, RTO, and VBF positively influence deposit growth, while NPL negatively impact it.

4.11 Test of Hypotheses

Using the random effects regression output, two hypotheses formulated for this study were tested.

Table 16: Summary of Hypotheses Testing

S/N	Independent Variable	Expected Sign	Reported Sign	Level of Significant	Remarks
A. Test of Hypothesis One					
1.	GLE	+	+	ns	Null Hypothesis accepted
2.	FED	+	+	5%	Null Hypothesis rejected
3.	NTP	+	+	10%	Null Hypothesis rejected
4.	VBF	-	-	ns	Null Hypothesis accepted
5.	RTO	+	+	1%	Null Hypothesis rejected
6.	NPL	-	-	1%	Null Hypothesis rejected
B. Test of Hypothesis Two					
1.	GLE	+	+	ns	Null Hypothesis accepted
2.	FED	+	+	5%	Null Hypothesis rejected
3.	NTP	+	+	ns	Null Hypothesis accepted
4.	VBF	-	+	1%	Null Hypothesis rejected
5.	RTO	+	+	5%	Null Hypothesis rejected
6.	NPL	-	-	ns	Null Hypothesis accepted

Source: Authors computation from E-Views 13, 2025

Note: ns = Not significant

Therefore, we conclude that staff competency has significant effect on the capital adequacy, and deposit growth rate of commercial banks in Nigeria.

4.12 Discussion of Findings

The regression results reveal a positive and significant relationship between financial education and CAD, with a coefficient of 0.2110, a t-statistic of 2.3485, and a p-value of 0.0196. This finding implies that enhancing financial education among bank staff contributes positively to the capital adequacy of Commercial Banks in Nigeria. This aligns empirical findings of Adeyemi and Olusegun (2023), which highlight the critical role of financial literacy in enhancing banks' operational efficiency and financial stability, and it is supported by organizational learning theories. These theories suggest that continuous investment in employee training and education enhances institutional performance by fostering a culture of innovation and adaptability (Abubakar et al., 2022).

The regression results indicate a positive and significant relationship between the number of training programs (LNTP) and capital adequacy in Nigerian Commercial Banks at the 10% significance level ($\beta = 0.0771$, $p = 0.0867$). The positive relationship between training programs and capital adequacy is supported by Yusuf and Ibrahim (2021) who conducted a study on Nigerian banks and found that the frequency and quality of staff training programs significantly influenced their ability to meet Basel III capital requirements. Similarly, a study by Olanrewaju and Fashola (2020) highlighted that training programs focusing on regulatory compliance and financial innovation contributed to the financial stability of Nigerian banks,

while, a study by Kumar and Joshi (2021) on Indian banks revealed that staff training programs were a critical determinant of financial performance and capital adequacy. Similarly, the study revealed a strong positive and significant relationship, with a coefficient of 0.2352, a t-statistic of 17.8014, and a p-value of 0.0000. This finding indicates that revenue turnover significantly enhances the capital adequacy of Nigerian Commercial Banks. This relationship is consistent with Olaniyi and Ojo (2022), which suggest that efficient revenue generation enhances banks' ability to meet regulatory capital requirements and mitigate financial distress.

The study further hypothesized the absence of a relationship between non-performing loans (NPLs) and capital adequacy. However, the regression results reveal a negative and significant relationship, with a coefficient of -0.2285, a t-statistic of -7.9406, and a p-value of 0.0000. This negative impact on CAD is consistent with recent findings, such as those by Okoye and Onyekwere (2023), which highlight the detrimental effects of NPLs on financial stability. Failure to manage NPLs effectively can result in regulatory sanctions and reputational damage, further weakening the bank's financial position. Effective strategies for reducing NPLs include stringent credit appraisal processes, robust loan monitoring systems, and the use of advanced credit scoring technologies.

On the other hand, General Level of Education of Bank Staff (LNGLE) and Volume of Bank Fraud (LNVBF) had insignificant influence on the Capital Adequacy of Commercial Banks in Nigeria. The general level of education of bank staff (LNGLE) exhibits an insignificant influence on the Capital Adequacy (CAD) of Nigerian Commercial

Banks, with a coefficient of 0.0337 and a p-value of 0.7509, far above the conventional thresholds for statistical significance (5%). This result is consistent with studies like Belete (2015), which observed that general education may not strongly correlate with key financial metrics in banking. However, the findings contradict studies such as Moussa (2015) and Vodová (2013), which emphasize the significant role of a well-educated workforce in improving institutional stability and outcomes. The volume of bank fraud (LNVBF) shows an insignificant influence on CAD, with a coefficient of -0.0319 and a p-value of 0.1890. This indicates that variations in fraud levels during the study period do not significantly impact banks' ability to maintain adequate capital. This result aligns with Belete (2015) who argued that operational risks such as fraud might have a limited direct effect on capital adequacy due to mitigating factors like insurance policies, robust fraud detection systems, and regulatory oversight. On the other hand, studies such as Moussa (2015) and Faroq and Nasir (2017) argue that fraud can indirectly erode profitability and liquidity, thereby affecting CAD.

The regression results also revealed a positive and significant relationship between the financial education of bank staff and DGR, with a coefficient of 0.4097 and a probability value of 0.0039 at a 5% significance level. This implies that improvements in the financial education of bank staff are associated with an increase in deposit growth rates. Recent studies support these findings. Akintoye et al. (2021) demonstrated that financial literacy among bank employees significantly influences deposit mobilization, as well-informed staff are more likely to provide innovative financial solutions that attract deposits. Similarly, Olamide and Ajibade (2020) found a direct link

between financial education and operational efficiency in Nigerian banks, highlighting its critical role in optimizing deposit mobilization strategies. Adeyemi et al. (2023) further noted that staff education enhances their capacity to adopt technological tools, streamline banking operations, and attract deposits from tech-savvy customers in urban and rural areas. The results align with the strategic focus of Nigerian banks to remain competitive in the modern financial ecosystem.

The study hypothesized the absence of a relationship between the volume of bank fraud and deposit growth rate in Nigerian Commercial banks. Contrary to this, the regression results reveal a positive and significant relationship between volume of bank fraud and DGR, with a coefficient of 0.2529 and a probability value of 0.0000 at a 1% significance level. This finding appears counterintuitive but can be explained within the broader dynamics of banking operations in Nigeria. Empirical evidence supports these interpretations. Chukwuma and Onyeze (2021) observed that while fraud occurrences negatively affect public perception of banks, swift action in mitigating fraud strengthens depositor confidence. Similarly, Oluwagbemi and Falola (2022) emphasized the importance of advanced fraud detection technologies, noting that investments in cybersecurity and fraud prevention mechanisms lead to increased depositor trust and higher deposits. Ibe and Nwokolo (2023) added that effective fraud management systems improve operational transparency, creating a safer environment for deposit mobilization.

The relationship between revenue turnover and deposit growth rate in Nigerian Commercial Banks was positive and significant, with a coefficient of 0.0479 and a probability value of 0.0215 at a 5% significance level. This indicates that higher revenue turnover is associated with increased deposit growth rates. Adebayo et al. (2020) noted that higher revenue turnover in Nigerian banks correlates with enhanced deposit mobilization efforts, as operational success attracts higher customer confidence. Eke et al. (2021) found that revenue turnover serves as a key indicator of financial stability, influencing depositors' decisions to commit their funds. Okoroafor and Obinna (2023) emphasized that revenue growth enhances banks' capacity to innovate and expand service delivery channels, further boosting deposits.

On the other hand, the general level of education of bank staff had insignificant influence on the deposit growth rate of Nigerian Commercial Banks, as apparent in its coefficient of 0.0782 and a probability value of 0.6388. The result obtained is consistent with Adebisi and Olanrewaju (2019) and Okonkwo et al. (2021) but contrary to the findings of Abubakar et al. (2020). This insignificant relationship may suggest that while general education forms a foundational requirement, it is insufficient alone to drive deposit growth. Similarly, the number of training programs attended by staff shows an insignificant influence on deposit growth rate, with a coefficient of 0.0649 and a probability value of 0.3565. The result is consistent with the findings of Chukwu and Nwachukwu (2019) and Okechukwu and Adekunle (2020), who observed that while training programs enhance employee competencies, their immediate effect on deposit growth may be limited, depending on the relevance and application of the training

content. Lastly, non-performing loans (NPL) exhibit an insignificant relationship with deposit growth rate, as indicated by its coefficient of -0.0122 and probability value of 0.7864. This outcome aligns with studies by Omole and Adediran (2020) and contradicts findings by Adeoye et al. (2022). The weak relationship may stem from the indirect nature of NPLs in influencing depositors' behavior, as other factors such as bank stability and public perception play more direct roles.

5.0 CONCLUSION AND RECOMMENDATIONS

5.1 Conclusion

This study examined staff competency and the performance of commercial banks in Nigeria for a period of 43 years (1981-2023). Eight variables (Capital Adequacy, Deposit Growth Rate of, General level of Education, Financial Education, Number of Training Programmes per year, Volume of Bank Fraud, Revenue Turnover and Non-Performing Loans were used in the analysis). The analysis provided critical insights on the influence of staff competencies on the performance of Commercial Banks in Nigeria. The findings revealed that Staff Competency significantly affects the performance of Nigerian Commercial Banks. Specifically, GLE, FED, and NTP exhibited positive and significant relationships with the performance indicators, highlighting the pivotal role of human capital in banking operations. The analysis further revealed that while variables such as VBF and RTO showed no significant direct relationships with the dependent variables, their indirect effects through operational efficiency and customer confidence cannot be overlooked. These findings were synthesized to inform the policy implications, emphasizing the need for targeted human capital development,

enhanced credit risk management, and operational efficiency strategies to optimize bank performance across key metrics. The study concludes that staff competency is a critical determinant of bank performance. Banks with a highly educated workforce, robust financial literacy initiatives, and consistent training programs are better equipped to maintain strong capital buffers, attract deposits, and achieve higher profitability.

In terms of capital adequacy, the study concludes that banks with competent staff are more likely to meet regulatory capital requirements and sustain financial stability. The positive relationship between GLE, FED, and CAD underscores the importance of education and financial literacy in risk management and compliance with capital adequacy standards. These findings suggest that investing in staff development is essential for strengthening the resilience of the Nigerian banking system. Regarding deposit growth, the study found that staff competency positively influences the ability of banks to attract and retain deposits. Competent staff are better at building customer trust, designing innovative financial products, and implementing effective marketing strategies, all of which contribute to higher deposit mobilization. This reinforces the need for banks to prioritize workforce development as a means of enhancing customer engagement and expanding their deposit base.

5.2 Recommendations

Collaborations with financial institutions, universities, and international training bodies such as the Chartered Institute of Bankers of Nigeria (CIBN), Financial Institutions Training Centre (FITC) or the International Finance Corporation (IFC) can help design certification

courses and workshops that address Nigeria-specific challenges, such as currency instability, loan default risks, and regulatory complexities.

By ensuring staff are well-versed in managing financial instruments and understanding market trends, banks can foster long-term sustainability and profitability while meeting global banking standards. Nigerian banks should commit to organizing at least quarterly training sessions focused on critical areas such as credit risk assessment, fraud prevention, customer relationship management, and fintech adoption. Given the increasing reliance on digital platforms, training should also cover cyber-security measures, artificial intelligence applications, and mobile banking operations. This will not only enhance operational efficiency but also improve customer satisfaction and loyalty. To make training more effective, banks should adopt a blended approach combining online modules with hands-on workshops and simulation exercises that replicate real-world banking scenarios in Nigeria. Regulatory authorities should mandate and incentivize commercial banks to implement robust financial education programs tailored to improving staff proficiency, enforce stringent policies for the management of non-performing loans (NPLs) and the optimization of revenue turnover (RTO), enforce mandatory adoption of advanced fraud detection technologies, such as artificial intelligence and machine learning, coupled with rigorous staff training on fraud prevention protocols.

5.3 Contributions to Knowledge

This study provides an empirical analysis of staff competency in Nigerian commercial banks, focusing on six key indicators: General Level of Education, Financial Education, Number of Training

Programs, Volume of Bank Fraud, Revenue Turnover, and Non-Performing Loans. The comprehensive evaluation of how these competencies influence two critical measures of bank performance-Capital Adequacy (CAD), and deposit growth rate (DGR) is novel in existing body of literature on banking sector performance. The adoption of a panel regression approach, combining Pooled Ordinary Least Squares (OLS), Fixed Effects (FE), and Random Effects (RE) models, distinguishes this research from prior studies. By performing rigorous diagnostic tests to ensure the appropriateness of each model, this study sets a precedent for robust econometric analysis in banking research. The insights provide actionable pathways for improving bank performance through targeted staff competency initiatives.

The study introduces a structured scoring system for evaluating staff competency, incorporating academic qualifications, financial literacy, and professional certifications. This innovative framework bridges theoretical gaps in measuring human capital in the banking sector. The findings inform regulatory authorities and bank management about the critical areas requiring attention, such as recruitment policy, enhancing training programs, promoting financial literacy, and reducing fraud to optimize bank performance.

5.4 Limitations of the Study

The limitations of this study arose from dearth of materials on this area of research as well as the difficulty in collection of data. It was difficult to access data on General Level of Education, level of Financial Education as well as the number of times the staff of Commercial Banks in Nigeria attended Financial Trainings. Previous researches

dealt mostly on decision-making process on the management of personal finances. The available literature also concentrated on other measures on Bank Performance, rather than the level of Staff Competency towards achieving profitable performances. Additionally, the data collected/ sourced from the Central Bank of Nigeria, the Nigerian Deposit Insurance Corporation, as well as National Bureau of Statistics were inadequate. However, these limitations were overcome by obtaining records from the archives/ internal records of seven (7) Commercial Banks in Nigeria. The banks include First Bank Plc, Union Bank Plc, United Bank for Africa Plc, WEMA Bank Plc, Guaranty Trust Bank Plc, Access Bank Plc as well as Zenith International Bank Plc using their Annual Financial Statements, as well as other internal records. These records and data complemented the datasets in order to make the results of this study accurate and reliable.

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DETERMINANTS OF FINANCIAL SECTOR DEVELOPMENT- EVIDENCE FROM BANKING FINANCIAL INSTITUTIONS

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Abstract

The paper investigated the indicators of banking financial institutions that drive financial development in Nigeria from 1981 to 2024. The paper answers the question: Have the banking and financial institutions driven financial sector development within the reviewed period? Although financial development is recognized as a major driver of economic development, there have been controversies over the banking-sector indicators that drive it. This, therefore, calls for investigation. It is an ex post facto research design that uses secondary data from the Central Bank of Nigeria Statistical Bulletin across various issues. The study covers the period from 1981 to 2024. Ascertain the banking-sector factors that shape the development of

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the financial sector will improve our understanding of the startling differences in the industry's long-run growth rate. Both the descriptive (mean, median, standard deviation, etc.) and the econometric statistics (unit root test, the co-integration test, the correlation test, and the Pair-Wise Granger causality test. Findings indicate that banking and financial institutions have not driven development in the financial sector. This finding is not surprising as the financial sector in the country is to say the least remains undeveloped. The implications of findings among others is that the banking institutions contributions to be responsive to financial sector, the sector must be developed. Therefore recommendations among others are that banking stability should be encouraged via more regulations and monitoring initiatives.

Keywords: Financial sector, banking financial institutions (BFI), financial sector development

JEL Classification: O16, O 40, G 28

1 INTRODUCTION

Financial sector development is in place when as stated by World Bank (2014), financial instruments, markets and intermediaries work together to reduce the costs of information, enforcements and transactions. Basically the sector comprises of the banking and the non-banking financial institutions.

Levine (2008) identified five key functions of the financial system to include information production *ex ante* about possible investment and capital allocation; monitoring investment and the exercise of corporate

governance after the provision of financing; facilitating trade, diversification, and managing risks; mobilization and pooling of savings; and promoting the exchange of goods and services. It is argued that the financial sector is instrumental to facilitating income- growth and job creation.

The role of the financial development in economic growth and development can never be over emphasized (Sangho, et al., 2007). In the process of pooling together scattered and idle funds in the form of deposits, and extending such funds to those that need it for consumption, investment or other purposes, capital accumulation is stimulated, technology is advanced, foreign capital is attracted, allocation of capital is optimized, and growth is driven. In fact as found by Petra (2013) a meta -analysis of 67 empirical studies depicts that financial development is robustly associated with economic growth.

Furthermore financial development fundamentally involves overcoming the inherent setbacks (mainly in terms of costs), incurred in the financial system. It therefore means the reduction of information accessibility, contract enforcement, engaging in transactions and other expenses in the process of usurping financial services delivery. Financial development is a sine qua non for development as opined in literature. It is a process that depicts improvements and advancement by way of innovations in quantity, quality and efficiency in the service delivery of the financial intermediaries. Shahnoushi, et al (2018) assert that financial development leads to increase in the generation of investment, investment in social and economic structures, investments in human resources, and increase in skill and expert level of labour force. This no doubt will foster and engender trade and trade openness

Financial development is the totality of the arrays of sustainable improvements in quantity, quality and efficiency of financial intermediary services to the economy. Financial sector encompasses institutions, instruments and markets, legal and regulatory framework that facilitate transactions to be made via credit creation. Indeed development of the financial development entails reduction of costs (such as cost of acquiring information, enforcing contracts, and cost involved in transaction execution) incurred in the financial system. In the process of reduction of the aforementioned costs, there has been the emergence of financial contracts, intermediaries and markets.

These no doubt are triggered by intermediaries including both the banking financial institutions (BFIs) and non-banking financial institutions (NBFIs). The banking institutions remain the fulcrum in the financial sector development. Since development in the financial sector includes the maximum and optimum provision of banks' service delivery to as many as need it and the banks sector has dual statutory roles- credit creation and deposit mobilization, banks remain cardinal in driving development of the sector. These constituents of the financial sector or the financial intermediaries provide liquidity services, saving opportunities as well as efficient allocation of resources. Ahmed (2016) asserts that financial development facilitates the creation of wealth, trade and the formation of capital. Shahnoushi et al (2008) suggested that a well-developed financial system provides an avenue for better fund and savings transition in an organized society. It also leads to increase in generation of investments, investment in social and economic structures, investment in human resources and increase in skill and expert level of labour force.

Although financial development is recognized as major instrument that drives economic development, there have been controversies on whether it is the banking sector indicators that determine such development.

Various measures of financial development have been advocated over the years by various researchers. Beck et al (2005) suggest the two Schools of Thought- the Academic Literature view and the Financial Centre view. The Academic Literature view focuses on the relationship between financial intermediaries and economic growth. In this context, financial development is not measured by its contribution to the gross domestic product (GDP) but rather by outstanding credit to the private sector relative to GDP. This however is not a perfect measure or indicator of financial intermediation rather it is just the indicator that closely aligns to the functions of finance as established by Levin et al (2008) . These functions include - easing the exchange of goods and services; mobilizing or pooling savings from the large number of investors ; allocating society's savings to the most productive use; diversifying and reducing liquidity and inter temporal risk. Yet both the BFIs and NBFIs play such functions. The second view as held by the Financial Center looks at financial development from the perspective of the financial sector been based on a comparative advantage in the provision financial services (through skill based regulatory policies etc.). This indeed encompasses the share of the value added in a country's GDP or the share of the value of employment or wages level. Equally both intermediaries are engaged in the performance of such functions.

Despite the fact that financial development is recognized as major instrument that drives economic development yet, there have been

controversies on whether the banking financial institutions determinants and indicators drive it. This is at the stance of the indispensable role of the banks in driving the economy This therefore calls for further investigation.

The remaining parts of the paper are Sections 2 and 3 containing the Literature review and Methodology respectively, while section 4 is the results and analysis. The paper is concluded in section 5 with summary and recommendation

2. LITERATURE REVIEW

Conceptual Review

Determinants of financial sector development

There have been divergent views on the appropriate indicators of financial development. Various researchers at various time periods have advocated various indicators for measuring the financial development in various countries.

It becomes pertinent to ascertain an acceptable measurement of financial development to enhance evaluating the extent of financial development in a country and its impact on the economic development.

Some researchers suggest standard quantitative indicators for such measurement derived from recent research for long time frame for a broad range of countries include- ratio of financial institutions (assets) to GDP; ratio of liquid liabilities to GDP; ratio of deposits to GDP. While these ratios may seem relevant, yet they did not capture the broader spectrum of the financial sector including the financial institutions, markets and intermediaries.

The World Bank's Global Financial Development Database GFDD (2021) came up with a more encompassing and simpler 4× 2 framework for financial development measurement globally. It entails four sets of proxy variables that capture well defined functioning financial system. They are – financial depth, access, efficiency and stability. These components are then broken down to two components of the financial sector – financial institutions and financial markets. The Financial Development Forum Index was first published by the World Economic Forum WEF in the year 2008. There have been subsequent updates on yearly basis. The adoption of the index for financial development of 2011 was on the recognition of seven component pillars: Institutional environment (InE), Business Environment (BZE), Financial stability (FiS), Banking financial services (BFS), Non- banking Financial services (NBFS), Financial market (FMK), Financial assess (FiA).

This leads to the concern on if it is the BFIs or the NBFIs that drive development in the financial sector.

Relationship between financial development and banking financial institution

George et al (1996) distinguished between price indicators and quantity indicators of financial development suggesting that the use of measures of spread between the required rate of return on productive investment and the rate of return on intermediated savings as soon as the data is obtained from liberalized financial markets

Sectanah et al (2011) in their study “Determinants of Financial Development- the case of Mauritius” used Time Series analysis for 1970 to 2008 for Mauritius by means of the Auto Regressive distributive Lag ARDL. Results indicate that trade openness and trade liberalization are important determinants of financial development. Also investment rate , per capita, literacy rate are also deemed to be important factors in stimulating financial development, while inflation adversely influenced financial development both in the long and short run. It also found that cultural and religious factors play an insignificant role in determining financial development in Mauritius.

Natalia, *et al* (2014) in their study - “Correlation Analysis of Macroeconomic and Banking System indicators” carried out correlation analysis to identify the interrelation between dynamics of institutional environment and banking system indicators. Results depict that banking indicators mostly correlate with indicators of households’ income and spending, and trade balance. Influence of economic crises changes correlation force between macroeconomic factors and indicators of the banking system.

Ross, *et al* (2000) investigated the “Financial Intermediation and growth: Causality and causes”. It evaluates whether the exogenous components of the financial intermediary development influences economic growth or whether cross- country differences in legal and accounting system explain differences in the level of financial development. Using both traditional cross- section and instrumental variable procedures and the recent dynamic panel techniques, they found that the exogenous component of financial intermediary development is positively associated with economic growth. Also legal and accounting systems and reforms that strengthen credits rights,

contract enforcements, and accounting practices can boost financial development and accelerate economic growth

Richard, *et al* (2019) investigated “The role of the financial sector in Economic Development”. The study considered how the economy would perform without a financial sector; also the role of government in supporting an efficient financial sector. The study concludes that efficient financial market requires that infrastructure of laws, conventions, regulations, and most of all confidence so as to encourage investors to allocate their savings through financial markets and institutions.

Trence, *et al* (2015) studied the “Impact of macroeconomic variables upon the Banking system Liquidity”. Their analysis centered on a group of countries recently affected by adverse economic and financial conditions including, Greece, Portugal, Spain, Italy, Croatia, and Cyprus. They used the generalized method of movements GMM as econometric tool for a period spanning between the first quarter of 2005 to the last quarter of 2011. They found that macroeconomic variables determining liquidity level are inflation rate, public deficit, unemployment rate, gross domestic product GDP and the liquidity ratio.

Bohacchora (2007) in a study “ The impact of macroeconomic factors on risks in the banking sector- A cross country Empirical analysis” explained the links between macroeconomic conditions and individual bank’s risks. Using capital adequate ratios as a broad measure of risk sustainability, a linear mixed effects model for a large international panel of banks for the period from 2001 to 2005 is estimated. It was found that banks in non OECD countries with less deposit insurance

tend to be more risky whereas evidence of a negative relationship between the concentration of the banking sector and banks' risks testing is statistically less robust

3. METHODOLOGY

Research Design-

Using the Nigeria data spanning from 1981 to 2024, the study ascertains the effect of macroeconomic indicators on the financial development in Nigeria. Data is collected through secondary sources – statistical bulletin of the Central Bank of Nigeria (CBN) of various issues.

The dependent variable is financial development while the independent variable is the macroeconomic indicators. First we performed the Augmented Dickey Fuller ADF unit root test URT to ascertain if the variables have unit root. This is to avoid the simultaneity bias associated with the time series data. When the variables survive this test by rejecting the null hypothesis of unit root, we go further to perform the co integration test.

The following augmented model is estimated

$$L\Delta LFSD = \beta_0 + \beta_1 LBFIA + \beta_2 LBFID + \beta_3 LBFIE + \beta_4 BFIS + ut \dots\dots\dots (i)$$

where,

FSD is proxy for Financial sector development depicted as ratio of financial sector contribution to the GDP; BFIA is the banking financial institutions access proxy as the number of commercial banks branches per thousands of bankable individuals, BFID representing banking sector depth proxy as the ratio of banking institutions Private sector credit to GDP; BFIE is the banking financial institutions efficiency

depicted as profitability (return on assets, return on equity); BFIS is the banking financial institutions stability depicted as capital adequacy ratio; L is the log, β , α are the coefficients, μ_t is the residual term.

Methodology

First descriptive statistic was adopted. This include mean, median, mode, skew, standard deviation, kurtosis, among others.

Next we performed econometrical statistic. The Augmented Dickey Fuller (ADF) unit root test (URT) is adopted to ascertain if the variables have unit root. This is to avoid the simultaneity bias associated with the time series data.

The ADF test is based on the following equation

$$\Delta X_t = \alpha_0 + \alpha_1 t + \beta X_{t-1} + \sum_{j=1}^m \gamma_j \Delta X_{t-j} + \mu_t \quad \dots\dots\dots (2)$$

where

X_t is integrating series (independent variable), β is coefficient, γ_j is integrating series (dependent variable), Δ is the first difference operator; t is the time trend; α_0 is a drift; t represents the linear time trend; m is the lag length; μ_t is a white noise process.

When the variables survive this test by rejecting the null hypothesis of unit root, we go further to perform the Johansen co-integration test.

A set of variables are said to be co-integrated if a linear combination of their individual integrated series I(d) is stationary. Generally speaking,

“ two variables are said to be co integrated if they have a common stochastic trend, that is, if they move together for a long period of time. Succinctly put, a set of variables that are stationary in their first differences but not stationary in their levels are said to be co integrated if their exists a stationary linear combination between them”.

To test for co integration among the variables, we used the Johansen (1991) co integration test as in equation (ii) below;

$$X_t = \sum_{j=1}^m A_j X_{t-j} + \mu_t \quad \dots (3)$$

Where μ_t is the column vector of error term, X_t is the vector of the variable to be determined.

Adding $X_{t-1}, X_{t-2}, \dots, X_{t-m}$ and $A_1 X_{t-1}, A_2 X_{t-2}, \dots, A_m X_{t-m}$ to both sides of sides of equation (ii),

equation (i) can now be expressed in first difference form as

$$\Delta X_t = \sum_{i=1}^{m-1} \Delta X_{t-i} + \Pi X_{t-1} + \mu_t \quad \dots (4)$$

where

$\Pi = (K_{rxq} - A_1 - A_2 - \dots - A_m)$, $K = -K + A_1 A_2 + \dots + A_m$ and K is $n \times n$ square matrix. Also, the coefficient matrix Π contains the long run relationship among the variables in the vector of data.

The Johansen's cointegration proposed two test statistics through Vector Autoregressive (VAR) model that are used to identify the number of cointegrating vectors, namely the trace test statistic and the maximum eigenvalue test statistic. These test statistics can be constructed as,

$$\lambda_{trace}(r) = -T \sum_{i=r+1}^n \ln(1 - \hat{\lambda}_i) \quad \dots \quad (5)$$

$$\lambda_{max}(r, r+1) = -T \ln(1 - \hat{\lambda}_{r+1}) \quad \dots (6)$$

where

$\hat{\lambda}_i$ are the eigenvalues obtained from the estimate of the A_k matrix

T is the number of usable observations.

The λ_{trace} tests the null that there are at most r cointegrating vectors, against the alternative that the number of cointegrating vectors is greater than r

λ_{max} tests the null that the number of cointegrating vectors is r ,

against the alternative of $r + 1$.

Then the correlation test is performed. The study employed the correlation analysis to enable establish if there is relationship existing between the explanatory and dependent variables. Such relation can be strong weak, positive or negative. Then the Granger causality test is performed. The essence of the tool is that it remains a veritable tool for rejecting or accepting the Ho. For instance the essence of causality research is to econometrically ascertain the variable that drives the other variable (cause) in other to achieve a particular result (effect) hence the use of Pairwise Granger causality test.

4. RESULTS AND

Results

Table 4.1 Descriptive test results

	FSD	BFIA	BFID	BFIE	BFIS
Mean	-81.01000	27.85000	48.72000	24.36364	74.47273
Median	21.20000	26.75000	46.12000	21.85000	75.40000
Maximum	138.0000	65.20000	98.45000	64.30000	91.00000
Minimum	-4095.000	11.20000	29.10000	10.90000	42.90000
Std. Dev.	621.4984	9.498090	13.40685	12.35028	11.81997
Skewness	-6.332482	1.352061	1.338472	1.219261	-0.567007
Kurtosis	41.40715	6.694546	5.780802	4.224773	2.675658
Jarque-Bera	2998.436	38.43023	27.31463	13.65183	2.550509
Probability	0.000000	0.000000	0.000001	0.001085	0.279360
Sum	-3564.440	1225.400	2143.680	1072.000	3276.800
Sum Sq. Dev.	16609191	3879.190	7728.977	6558.762	6007.607
Observations	44	44	44	44	44

Source: Researchers' Computation 2025

In the above Table, the estimated value of the mean is adopted to estimate the pattern of dispersal. The figures are -81 for the dependent variable while the explanatory variables depicted such values as 27.8, 48.7, 24.3 and 74.47 for BFIA, BFID, BFIE and BFIS respectively. The standard deviation depicts the variability from the mean or average value. The FSD has the value is 621 while for the explanatory variables it is 9.4, 13.4, 12.35 and 11.81 respectively In summary, all values are widely dispersed around the mean. This indicates that they are grossly affected by the extreme mean.

The values are skewed with such values as -41.4 for the dependent variable; 1.3, 1.33, 1.2, 1nd -0.56 respectively for the independent variables.

For kurtosis, the shape can be flat or peak in terms of the normal curve. As it is well known, kurtosis measures the “tailedness” of the probability distribution of a real valued random variable. The variables exhibit leptokurtic distribution Also the variables depict reasonable level of association with probability significant at 0.05 level of significance.

Jarque-Bera is used to measure the normality of the series, that is to say whether the series are normally distributed or not. Decision rule is that at 5% level of insignificance, the residuals are normally distributed. These results although reasonably fabulous will be further subjected to econometric test to confirm these claims.

Table 4.2 Unit root test result

Variable	Intercept Only	Decision	Trend and Intercept	Decision
<i>LFSD</i>	-3.6268 (2.4171)*	I(1)	-4.2350 (-0.3995)*	I(1)
<i>LBFA</i>	-3.6210 (-0.8745)	I(1)	-4.2268 (-2.0020)*	I(1)
<i>LBFD</i>	-3.6268 (2.2787)	I(1)	-4.2350 (-3.8706)*	I(1)
<i>LBFE</i>	-3.5847 (-2.7726)	I(1)	-4.2436 (-3.8501)	I(1)
BFIS	-2.3458 (-1.5643)	I(1)	3.5432 (-2.9876)	I(1)

* (**) *** Significant at 1% (5%) 10% level of significance

Source: Researchers' Computation 2025

The results of the Augmented Dickey Fuller unit root test strongly revealed that the variables are mixed in the integrated of order 1, and order 0, that is, I(1) and I(0) at 1%, 5% and 10% level of significance respectively as the case may be. For both intercept and trends and intercepts, the calculated t-test is greater than critical (t-tabulated) t-values, in some and lesser in some hence the null hypothesis of no unit root cannot be accepted. The individual series are non-stationary in some and thus quite suitable for the purpose intended.

Table 4.3 Co-integration result

Sample (adjusted): 1983 2024

Included observations: 42 after adjustments

Trend assumption: Quadratic deterministic trend

Series: FSD BFIA BFID BFIE BFIS

Lags interval (in first differences): 1 to 1

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.650428	110.6233	79.34145	0.0000
At most 1 *	0.543601	66.47937	55.24578	0.0038
At most 2	0.332692	33.53505	35.01090	0.0714
At most 3	0.240165	16.54593	18.39771	0.0891
At most 4 *	0.112455	5.010447	3.841466	0.0252

Trace test indicates 2 cointegrating eqn(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

Source: Researchers' Computation 2025

Since the variables are integrated of the same order $I(1)$, we move a step further to employ the Johansen (1991) integration test procedures to test the co-integration among the variables. The Johansen methodology is the generalization of the ADF test. Two likelihood ratio tests (Trace and Maximum Eigenvalue) were used to test the hypothesis regarding the co-integrating vectors. The results suggest the existence

of an underlying long run stationary steady state relationship between the dependent and explanatory variables. The trace test indicates two co-integrating equations at 0.05% level, so the null hypothesis of no co-integration cannot be accepted, ie $r=0$ among the variables.

Table 4.4 Correlation result

	FSD	BFIA	BFID	BFIE	BFIS
FSD	1				
BFIA	0.1092	1			
BFID	-0.1706	-0.3249	1		
BFIE	-0.2270	0.2053	0.0637	1	
BFIS	-0.1067	0.2701	0.0334	0.5251	1

Source: Researchers' Computation 2025

All the explanatory variables depict negative weak values with the exception of BFIA implying negative and weak relationship between the explanatory and dependent variables..

Table 4.5 Pair Wise Granger Causality test

Pairwise Granger Causality Tests			
Date: 05/19/25 Time: 09:49			
Sample: 1981 2024			
Lags: 2			
Null Hypothesis:	Obs	F-Statistic	Prob.
BFIA does not Granger Cause FSD	42	0.28356	0.7547
FSD does not Granger Cause BFIA		1.32330	0.2786
BFID does not Granger Cause FSD	42	0.41330	0.6645

FSD does not Granger Cause BFID		1.37984	0.2643
BFIE does not Granger Cause FSD	42	0.26555	0.7682
FSD does not Granger Cause BFIE		0.51232	0.6033
BFIS does not Granger Cause FSD	42	0.30544	0.7386
FSD does not Granger Cause BFIS		2.52757	0.0936

Source: Researchers' Computation 2025

In Table 4 above, the probability of the causality from BFIA to FSD (i.e. 0.75 is greater than 0.05 depicting no causality. Also the probability of the causality from FSD to BFIA which is (0.270 is greater than 0.05 showing no causality. There is no causality between BFIA and FSD.

With probability of 0.66 and 0.26 running from BFID to FSD and FSD to BFID respectively, both of which are greater than 0.05, it implies no causality also between the variables.

The probability of the causality from BFIE to FSD (i.e. 0.76) is greater than 0.05 depicting no causality. The probability of the causality from FSD to BFIE which is (0.60) is greater 0.05 showing no causality. This implies that BFIE has not driven FSD.

The probability of the causality from FSD to BFIS (i.e. 0.09) is not less than 0.05 depicting no causality; the probability of the causality from BFIS to FSD which is (0.73) is greater 0.05 showing no causality.

4.2 Findings

No causality exists between the BFIA, BFID, BFIE and BFIS and FSD. The finding concurs with that of Sangho, et al., (2007), however the finding negate that of Laszlo (2006) for Belgium, Denmark, Iceland and Ireland, Italy, New Zealand, Spain and Sweden.

5. SUMMARY AND RECOMMENDATION

Summary

The study investigated the effect of government financing (disaggregated) of deficits on redistribution of income. Deficit financing should be a driver of income redistribution. This study is premised since poverty, hunger, high cost of living and low income remain prevalent despite huge deficit financing by the government over the years. The Nigerian data for the period of 1981 and 2023 is covered in the study. The study is aimed to find if disaggregated public deficit financing had impacted poverty and income redistribution in Nigeria within the reviewed period. Both descriptive and inferential statistics were adopted for analysis. Findings depict that there disaggregated public deficit financing has both positive and negative insignificant effect on income redistribution within the reviewed period. Exchange rate also accounts for such as it depicts a negative insignificant effect on redistribution of income.

Implication of Findings

The banking sector has not driven financial development within the reviewed period. This is not surprising as the financial sector in Nigeria

is not developed. Therefore despite the seemingly robust performances of the banking sector to economic growth, it is not significantly impacted in and undeveloped financial system. It implies that the financial system could have been more undeveloped if the banking sector has not contributed such immensely to the economy.

Recommendation

1. Bank spread should be increased by way of ensuring that more branches be established especially in the rural areas in order to capture more bankable adults and customers.
2. Banking stability should be encouraged via more regulations and monitoring initiatives.
3. Efficiency in the banking sector becomes imperative to enhance more performance and better service delivery.
4. Concerted efforts should be geared towards a developed financial sector from its present status of less development.

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COMMERCIAL BANKS' LENDING TO SMEs AND ECONOMIC GROWTH NEXUS IN NIGERIA.

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Abstract

This study explores the relationship between commercial banks' lending to small and medium-sized enterprises (SMEs) and economic growth in Nigeria from 1992 to 2023. Using an ex-post facto research design, data were sourced from the Central Bank of Nigeria and analyzed through descriptive statistics, Augmented Dickey-Fuller unit root tests, and multiple regression. The independent variables were commercial banks' loans to small-scale enterprises (CBLSSSE) and total credit to the private sector (CBTCPS), while gross domestic product (GDP) served as the dependent variable. Findings indicate that CBTCPS has a positive and significant impact on GDP, and

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CBLSSSE also contributes positively to economic growth. The model exhibited strong explanatory power with an adjusted R² of 0.99 and an F-statistic probability of 0.000000. The study concludes that bank lending to SMEs and the private sector drives economic growth and recommends favourable interest rates and lending terms to enhance SME sustainability.

Keywords: commercial banks, SME lending, economic growth, Nigeria

Introduction

The financial institutions occupy a pivotal position in fostering economic growth by providing financial support to enterprises that act as engines of development. Specifically, commercial banks fulfill a vital role in financial intermediation, which is essential for addressing the financial discrepancies between surplus and deficit economic entities. These banks aggregate deposits from individuals and organizations with excess funds and allocate them to those in need of financial resources. Okpala et al. (2018, p.2) articulated that from the collected deposits, the commercial banking sector disburses credit facilities to prospective investors, thereby promoting economic activities; consequently, the commercial banking sector functions as a significant conduit connecting savers and investors within the economic framework. Therefore, they further emphasized that the contemporary banking sector is characterized as dynamic, fiercely competitive, and a fundamental element contributing to economic development.

The scarcity of financial capital represents a prevalent obstacle in numerous developing nations, particularly as small-scale enterprises

encounter insufficient funding. The critical function of banks in mobilizing and directing financial resources to the tangible sectors of the economy cannot be overstated. A deficiency in financial capital, attributable to the erratic inflow of loanable funds to investors in need, undoubtedly threatens the economic advancement of any nation striving for rapid economic development (Dada et al., 2021, p.2). They further posited that the expansion of economic activities necessitates a seamless transfer of funds from surplus to deficit economic units and enterprises.

The provision of loans to small and medium-sized enterprises is an essential function that commercial banks fulfill in every economy. This lending function is deemed significant as the general populace or clientele utilizes it as a criterion for evaluating the stability of banks. Some individuals contend that banks that demonstrate a readiness and capacity to extend loans are perceived as more stable than those that predominantly decline loan requests from their clientele (Mamman & Hashim, 2014, p.7). The primary responsibility of banks within any economy is to accumulate savings and subsequently allocate these funds for investment purposes, thereby stimulating economic activity, which ultimately leads to economic expansion.

Olaoye et al. (2018, p.2) asserted that the contribution of small and medium-sized enterprises (SMEs) to the national economy is of paramount importance. These enterprises serve as the foundation for industrial advancement, playing a vital role in the economies of both industrialized and developing countries. It is crucial to acknowledge that commercial banks must consistently provide loanable funds to businesses in order to ensure their viability. The purpose of mobilizing

funds is to ensure that they are eventually accessible to businesses at reasonable costs. Consequently, businesses are provided with the opportunity to acquire funds from commercial banks, utilize them efficiently for sustained growth, and repay them promptly, as opposed to incurring loans at prohibitive costs that could jeopardize emerging enterprises. Hence, Muhammad and Ngele (2023, p.1), in alignment with the previous assertions, clearly indicated that in a small, open economy such as Nigeria, deposit money banks (DMBs) play an integral role in promoting growth. Dada et al. (2021, p.1) articulately asserts that the provision of commercial bank credit to diverse economic entities, commonly referred to as bank loans and advances, facilitates financial intermediation between deficit and surplus units, thereby augmenting and enhancing productivity. Furthermore, they emphasize the significance of financial access, availability, and affordability in catalyzing entrepreneurial endeavors and amplifying investment prospects among a broader demographic of the population. Such measures are anticipated to effectively mitigate unemployment and poverty levels within the economy. A robust financial intermediation framework within the banking sector is deemed an essential prerequisite for business financing and, by extension, economic growth in contemporary economies.

Olaoye et al. (2018, p.2) have highlighted the crucial contributions of small and medium enterprises (SMEs) within both developed and developing economies, as well as the governmental reforms in Nigeria that are primarily focused on wealth creation, poverty alleviation, employment generation, value reorientation, and the stimulation of genuine economic growth. Consequently, there exists a pressing necessity for the revitalization of the SME sub-sector to enable it to

fulfill its anticipated functions. Indeed, considering the demographic characteristics and entrepreneurial inclinations of the populace, SMEs represent a formidable mechanism for the transformation of the Nigerian economy.

Okpala et al. (2018, p.1) delineated economic growth as a favorable alteration in the national income or the output of goods and services produced by a nation over a specified timeframe. This phenomenon is typically quantified by evaluating the production levels within the economy. It is anticipated that the support extended by banks in the form of loans to businesses will substantially enhance their performance and, in turn, contribute to economic growth.

The banking sector appears to be inadequately facilitating the financial requirements for the advancement of small and medium scale enterprises within Nigeria. This inadequacy may be attributable to various challenges faced by banks, including insufficient capitalization, elevated lending rates, a high incidence of non-performing assets, and instances of bank failures, among others. Conversely, enterprises in Nigeria are confronted with inadequate financial support from banks, excessive borrowing costs, unreliable power supply, and a challenging economic and operational milieu, among other obstacles. Olaoye et al. (2018, p.3) suggested that numerous SMEs in the nation have persistently depended on internally generated funds, which inherently constrains their operational capacity. A significant issue encountered by SME operators in Nigeria is the government's tendency to overlook their needs when formulating policies, often prioritizing large organizations instead (Afolabi, 2013, p.2).

The inability of financial institutions, particularly money deposit banks (MDBs), to fulfill their primary role of mobilizing savings for investment has engendered disparities between the real and monetary sectors of the economy (Dada et al., 2021, p,3). Despite the Nigerian government's encouragement for banks to extend credit to both small and large private investors and enterprises to promote economic growth, the persistent challenge of high interest rates remains. The lending rates imposed by banks appear to be unfavorable, thereby compelling some small-scale enterprises and businesses to increasingly depend on savings and reinvestment of profits.

Okon et al. (2022, p.2) articulated the perspective that when interest rates fall below the rate of return on capital, entrepreneurs are inclined to secure loans at the prevailing monetary rate for the procurement of capital goods, consequently facilitating an accelerated rate of economic growth. Nonetheless, this situation constrains the expansion of enterprises that require substantial borrowing from financial institutions to enhance productivity and, in turn, elevate Nigeria's gross domestic product.

The volume of bank lending and the sectors that receive these funds are occasionally influenced by monetary authorities. A similar dynamic applies to the lending rate, which is contingent upon the monetary policy rate established by the Central Bank of Nigeria. In instances where enterprises are unable to obtain the requisite bank financing, their productive capacities are consequently constrained, thereby negatively impacting their contributions to gross domestic product, which serves as a prevalent metric for assessing economic growth.

This study filled some gaps in this area of study. The period gap was filled as this study covered up to 2023 which is the data available as obtained from the CBN statistical bulletin. The variable gap was filled as most studies use one independent variable, however, this study used two independent variables. The methodology gap was filled as this study carried out various econometric analysis on data obtained, which include descriptive statistics, coefficient of variation, ADF unit root test, multiple regression, multi-collinearity, Ramsey reset co-integration and error correction model.

The broad objective of the present study is to examine commercial banks credit to small and medium scale enterprises and Nigeria economic growth nexus for the period 1992 to 2023.

The specific research objectives were to:

1. Examine the commercial bank loans to small scale enterprises and gross domestic product nexus in Nigeria.
2. Assess the commercial bank total credit to private sector and gross domestic product nexus in Nigeria.

Research hypotheses in null form:

1. Commercial bank loans to small scale enterprises had no significant effect on gross domestic product in Nigeria.
2. Commercial bank total credit to private sector had no significant effect on gross domestic product in Nigeria.

Literature review

Conceptual Review

Commercial banks' credit represents the allocation of monetary resources from banking institutions (lenders) to their clientele (borrowers). Nwaeze et al. (2022, p.4) emphasized that bank credit is inherently linked to the banking sector, as banks function as intermediaries that receive funds in the form of deposits from surplus economic units and subsequently allocate these funds to deficit units requiring financial resources for productive endeavors. Consequently, banks assume the role of debtors to depositors of funds while simultaneously acting as creditors to borrowers of funds.

In the paradigm of financial intermediation, commercial banks are pivotal players, facilitating the flow of funds from surplus units to deficit units within the economy, thereby converting bank deposits into lending for borrowers. The lending activities conducted by commercial banks for their clientele are commonly referred to as bank loans and advances or bank credit. The Small and Medium Scale Enterprise (SME) sector has been recognized as a significant instrument utilized by developed nations to achieve socio-economic advancement. Recently, the small-scale business sector has been regarded as a foundational component of contemporary economic structures (Olaoye et al., 2018, p.2).

Odubuasi et al. (2020, p.3) articulated economic growth as an enhancement in the productive capacity of a state concerning the generation of goods and services over a designated timeframe. Furthermore, Nwaeze et al. (2022, p.2) described economic growth as a quantitative, sustained augmentation in a nation's per capita income

or output, accompanied by an expansion in its labor force, consumption, capital, and trade volume. The provision of commercial bank loans is perceived as a crucial determinant that fosters economic growth. Okon et al. (2022, p.3) succinctly posited that the accessibility and affordability of bank loans stimulate investment, which, in turn, enhances employment, income, output, and ultimately, economic growth.

Theoretical Review

Wicksell's theory of lending and economic growth: This theoretical framework was introduced by the Swedish economist Knut Wicksell in 1901, drawing significant influence from the quantity theory of money. Wicksell's theory is predicated on a comparative analysis of the marginal productivity of capital against the cost associated with borrowing funds. Wicksell (1901) contended that when the interest rate applicable to borrowed capital is lower than the natural rate of return on capital, entrepreneurs are incentivized to borrow at the prevailing money rate to acquire capital goods. This scenario would engender an augmented demand for various resources and subsequently elevate their prices. Conversely, should the interest rate on borrowed capital exceed the natural rate of return on capital, entrepreneurs would divest capital goods in favor of holding liquid assets. This would precipitate an increased demand for money, thereby intensifying the cost of borrowing. Wicksell established a connection between the interest rate and the production gap, which denotes the disparity between prospective production levels and actual output. This theory bears significant relevance to the current study as it elucidates the direct relationship between the demand for money, its associated costs, and the output within a nation.

It delineates the manner in which interest rates influence borrowing behavior, which subsequently impacts the acquisition of capital goods and alters production dynamics. Should interest rates exceed the natural rate of return, borrowing will consequently diminish, thereby impeding economic growth due to insufficient investment levels. Conversely, if the interest rate is positioned below the natural rate of return, an increase in borrowing is anticipated, which will catalyze economic growth through heightened investment (Weise, 2006 as cited in Okon et al., 2022, p.4).

Endogenous growth theory: This theory posits that economic growth is predominantly attributed to internal mechanisms rather than external stimuli. It contends that enhancements in productivity can be directly correlated with accelerated innovation and augmented investments in human capital facilitated by governmental and private sector entities. This theoretical framework asserts that economic growth is primarily driven by endogenous factors rather than exogenous influences. Internal growth determinants encompass capital investment, policy formulation, and an expanding labor force. This theory emerged as a counterargument to the neoclassical exogenous growth paradigms, which posited predictions regarding economic growth without integrating considerations of technological advancement (Ejinkonye et al., 2024, p.3).

Empirical Review

Muhammad and Ngele (2023, p.1) conducted an investigation into the effects of deposit money banks' loans to the private sector on Nigeria's economic growth spanning from 1981 to 2021. Time series data were meticulously collected and analyzed employing the ordinary least

squares methodology. The independent variables encompassed credit to the private sector, lending rates, and deposit money banks' assets, while gross domestic product served as the dependent variable. Data for the series were sourced from the World Bank Indicators 2021 and the Central Bank of Nigeria's Statistical Bulletin 2021. The results indicated that all variables were stationary at the first difference. Furthermore, it was established that the variables exhibited co-integration, although the interest rate exerted a negative influence on economic growth.

Nwaeze et al. (2022) explored the ramifications of commercial banking practices on sustainable growth within Nigeria during the timeframe of 2005 to 2017. The research employed an ex-post facto design. Time series data pertinent to the study period were procured from the Central Bank of Nigeria (CBN) Statistical Bulletin. Real Gross Domestic Product (RGDP) was identified as the dependent variable, while commercial bank deposits, commercial bank credit, and commercial bank liquid reserves were classified as independent variables; the Ordinary Least Squares (OLS) multiple regression technique was utilized for data analysis. The findings indicated that both commercial bank deposits and commercial bank liquid reserves had a positive and statistically significant impact on economic growth, whereas commercial bank credit exhibited a negative and statistically insignificant effect on economic growth during the specified period.

Okon et al. (2022) assessed the influence of commercial bank loans on economic growth in Nigeria utilizing selected variables such as real gross domestic product, credit to the private sector, interest rates, total deposits, and interest rates. Data were acquired from the Central Bank

Nigeria Statistical Bulletin and subjected to analysis using the Autoregressive Distributed Lag Model. The empirical results indicated that the interest rate exhibited a positive and statistically significant effect on Gross Domestic Product (GDP), financial deepening also demonstrated a positive and statistically significant effect on GDP, whereas total deposits and credit to the private sector manifested a positive but statistically insignificant effect on GDP within the context of Nigeria during the analyzed timeframe.

Dada et al. (2021) investigated the relationship between the flow of commercial bank credit and economic growth in Nigeria utilizing the following variables: money supply, domestic investment, inflation, and the prevailing interest rate within the economy. The study employed time series data spanning the years 1981 to 2019, which was obtained from the Central Bank of Nigeria (CBN) and the National Bureau of Statistics. The analytical methodologies implemented included unit root testing, Hansen co-integration testing, ARDL Bound testing for co-integration, Fully Modified Ordinary Least Squares (FMOLS), and the Toda-Yamamoto Granger non-causality test. The findings revealed that commercial bank credit flow, alongside other variables, exerts a positive and statistically significant influence on economic growth, as well as establishing one-directional causal evidence between credit flow and economic growth.

Okpala et al. (2018, p.1) explored the role of commercial banks in fostering economic growth within Nigeria. Secondary data covering the period from 1980 to 2016 was procured from the Central Bank of Nigeria (CBN). The analytical framework employed in this study was based on the Ordinary Least Squares (OLS) technique. The findings of

the study concluded that financial intermediation significantly contributes to economic growth in Nigeria.

Olaoye et al. (2018, p.1) investigated the ramifications of commercial bank lending to Small and Medium Scale Enterprises (SMEs) on the Nigerian economy, covering the period from 1998 to 2017. The variables under consideration included the average commercial bank lending rate, commercial bank loans, inflation rate, and gross domestic product. Secondary data was extracted from the Central Bank of Nigeria Statistical Bulletin and the National Bureau of Statistics and subsequently analyzed through descriptive analysis, correlation analysis, ordinary least squares regression analysis, and Granger causality analysis. The results indicated that commercial bank loans to SMEs (CBLSMES) exhibited a negative and statistically insignificant impact on GDP; the average commercial bank lending rate to SMEs (ACBLRSMES) also demonstrated a negative and statistically insignificant impact on GDP, while the inflation rate (IFTRATE) had an insignificant positive influence on GDP.

Methodology

The ex-post facto research design was employed in the present study. The data was obtained from the Central Bank of Nigeria's statistical bulletin, 2023 and World Development Indicators. The data underwent analysis using descriptive statistics, the Augmented Dickey-Fuller (ADF) unit root test, and multiple regression analysis, multi-collinearity, Ramsey reset co-integration and error correction model. The independent variables included commercial banks' loans to small-scale enterprises (CBLSSSE) and commercial banks' total credit to the private sector (CBTCPS), while the dependent variable was gross

domestic product (GDP). The *a-priori* expectation is that the independent variables should have positive and significant effect on the dependent variable. The decision rule is to accept the null hypothesis where the coefficient value is negative and probability value greater than 0.05 otherwise reject

This relationship is expressed thus:

$$Y_t = b_0 + b_1x_1 + b_2x_2 + b_3x_3 + \dots + b_kx_k + e_t$$

Where:

Y = dependent variable

b_0 = intercept

x_1, x_2, x_3 are the independent variables

e_t = random error term

b_0, b_1, b_2, b_3 are the parameters of the model

This study used the model:

$$GDP = f(CBLSSE, CBTCPS, INT-RATE)$$

The above is estimated as follows:

$$GDP = b_0 + b_1 CBLSSE + b_2 CBTCPS + INT-RATE + e_t$$

GDP = gross domestic product

CBLSSE = commercial banks loan to small scale enterprises

CBTCPS = commercial banks total credit to private sector

INT-RATE = Interest rate as control variable.

Presentation of findings

Table i: Descriptive statistics

Variables	Mean	Med	Max	Min	STD.	Skew	Kurt	J-Bera	Prob	Sum	Sum SqDev.	Observe
LNGDP	10.13	10.51	12.34	6.79	1.61	-0.46	2.02	2.43	0.29	324.35	81.16	32
LNCBTCPS	7.94	8.72	10.58	4.32	1.9	-0.44	1.8	2.97	0.22	254.22	111.95	32
CBLSE	53.58	40.97	465.37	10.7	80.48	4.37	22.86	628.17	0	1714.59	200808.2	32
INT_RATE	18.35	17.56	31.65	11.5	3.95	1.19	5.48	15.82	0	587.2	484.01	32

Source: Researchers computation

Table of Coefficient of Variation

Variable	lngdp	Lncbtcps	Cblsse	Int-rate
Coefficient of Variation (%)	15.97	23.92	150.29	21.54

The above table showed the descriptive statistical behavior of parameters used in this study. The coefficient of variation (cv) 15.97% is relatively low which implied that its variability is small compared to its mean and less dispersed, making predictions about lngdp relatively reliable. The CV (23.92%) of lncbtcps is moderate, showing that it has more variability relative to lngdp .This dispersion reflects some fluctuations which does not indicate extreme instability. Cblsse (150.29%) implied high variability or fluctuations and dispersion from the mean. The interest rate with 21.54 % of CV indicated a moderate variability, similar to lncbtcps, which can be predictable.

Table ii: ADF unit root test

Null hypothesis: H0: There is unit root

Variables	ADF STAT	5% critical	Inference	p-value	Decision
D(LNGDP)	-3.1824	-2.9460	1(1)	0.0311	Reject null
DCBLSSE	-1.9887	-1.9534	1(1)	0.0464	Reject null
D(LNCBTCPS)	-3.0049	-2.9678	1(1)	0.0462	Reject null
INT-RATE	-3.6753	-3.5629	1(0)	0.0394	Reject null

Source: Researchers computation

Table (ii) showed that all the variables attained stationary level at difference order one except the interest rate which was at difference order zero.

Test of Hypotheses:

Hypothesis 1: H0: CBLSSSE had no positive and significant effect on GDP in Nigeria.

Table iii: Multiple Regression Output

Variables	Coefficient	Std. error	t-statistic	p-value	P(f-stat)	R ²	DW stat
D(LNGDP)							
D(CBLSSE)	0.003128	0.000910	3.436770	0.0019			
D(LNCBTCPS)	0.799630	0.020762	38.51337	0.0000	0.0000	0.99	1.08
INT-RATE	-0.028055	0.010395	-2.698793	0.0119			

Source: Extract from the regression table (Eviews10).

The regression output (table iii) showed that coefficients of CBLSSSE and LNCBTCPS are positively signed, while the interest rate is negatively signed with all the corresponding probability values less

than 5% level of significance. The overall regression is statistically significant as indicated from the probability value of f–statistic .The R² value of 99% proved to be realistic as we used the variance inflation factor to test for the presence of multi-collinearity on the data. The outcome of Durbin Watson statistic of 1.08 is an evidence of small serial correlation.

Table iv: Consolidated Post Estimation Test and Co-integration Test Table

	Multi-collinearity	Heteros	Test	p-value	Ramsey	P-value	Bounds	Test
Variables	V I F				Reset		@ 5%	
LNGDP							F-stat	30.8745
CBSLSE	1.080178	f-stat	0.17187	0.9145	t-stat	0.3769	i(0)	2.79
LNCBTCPS	2.632558	Obs*R ²	0.57862	0.9013	f-stat	0.3769	I(1)	3.67
INT-RATE	2.609743	SSS	0.51508	0.9156	Like-ratio	0.3316		
CointEq(-1)*					CointEq(-1)*		-0.137	0.0000

Table (iv) disclosed the results of multi-collinearity, Ramsey reset, co-integration and error correction model (ECM) tests. Findings from the table showed absence of multi-collinearity, presence of homoscedasticity, absence of model mis-specification using Ramsey reset test and presence of long term relationship using bounds co-integration test, where 14% speed is expected at significant level (0.0000) to adjust for short term deviations in the long run.

Hypothesis One: The study rejected the null hypothesis and states that CBSLSE had a positive and significant effect on GDP in Nigeria.

Hypothesis Two: The study rejected the null hypothesis and states that LNCBTCPS had a positive and significant effect on GDP in Nigeria.

Discussion of findings

The observation that the Commercial Banks' Loan to Small Scale Enterprises (CBL SSE) exhibited a positive and statistically significant influence on the Gross Domestic Product (GDP) of Nigeria aligns with the pre-established theoretical expectations of this investigation. This positive and significant outcome stands in contrast to the findings articulated by Olaoye et al. (2018), who reported a negative and statistically insignificant relationship.

The observation that the Commercial Banks Total Credit to the Private Sector (CBTCPS) demonstrated a positive and statistically significant impact on Nigeria's GDP is consistent with the pre-established theoretical expectations of this investigation. Furthermore, this positive effect corroborates the conclusions drawn by Muhammad and Ngele (2023) as well as Okpala et al. (2018). Additionally, the significant impact is also supported by Muhammad and Ngele (2023). Conversely, Okon et al. (2022) identified that commercial bank loans exerted a positive yet statistically insignificant effect on GDP, while Nwaeze et al. (2022) reported that commercial bank credit had a negative and statistically insignificant effect on GDP.

Conclusion

This investigation has elucidated the relationship between the independent variables (commercial banks' loans to small scale enterprises and commercial banks' total credit to the private sector) and the dependent variable (gross domestic product) in terms of both directionality and magnitude. The independent variables have been demonstrated to possess the capacity to elucidate variations in the GDP of Nigeria, thereby contributing to economic growth. The independent

variables were ascertained to have a positive and statistically significant effect (both individually and collectively) on Nigeria's GDP.

Recommendations

- 1). Commercial banks should endeavor to enhance their lending practices directed towards small scale enterprises in Nigeria. This approach will serve to maintain their continued positive and statistically significant impact on GDP, thereby fostering economic growth.
- 2) The Central Bank of Nigeria (CBN) should through its monetary policies and circulars direct commercial banks to persist in providing financial support to the private sector. Such funding is anticipated to facilitate increased value creation by private sector enterprises, thereby augmenting Nigeria's GDP.
- 3) Commercial banks ought to take into account the lending rates applicable to productive enterprises. This consideration would promote greater borrowing for productive endeavors, thereby contributing to the enhancement of Nigeria's GDP.

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UNDERSTAND YOUR CUSTOMER (UYC) AND IMPERATIVES FOR GEN Z AND GEN ALPHA AS MAJOR FINANCIAL SERVICE CUSTOMERS

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Abstract

Gen Z and Gen Alpha are generations immersed in technology from birth and are likely to be more financially conscious than their predecessors. As early adopters of new technologies and innovative solutions, usually referred to as digital natives, they represent a critical mass of consumers of future banking services. Therefore, it is imperative for financial service providers to develop approaches to effectively serve Gen Z and Gen Alpha by shifting from the traditional Know Your Customer (KYC) model to incorporate an Understand Your Customer (UYC) approach. This transition involves embracing digital systems to provide seamless digital experiences, ethical and responsible services, and personalised financial offerings tailored to these distinct customer groups. Together, these generations present a unique challenge for financial service providers, underscoring the need for readiness to serve Gen Z and Gen Alpha and highlighting the imperative for financial institutions to adapt and innovate to meet the evolving needs of these future customers.

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Keywords: Gen Z; Gen Alpha; Banks; Financial Service Provider; Understand Your Customer (UYC); Know Your Customer KYC); Future Customers; Finance.

INTRODUCTION

The Millennials also referred to as Gen Y (born between 1981 and 1995, and currently aged between 29 and 43 years) have been a primary focus for financial service providers for years, representing the largest customer segment at present and playing a pivotal role in driving digital transformation within the financial service industry. As the 21st century continues, the financial service landscape has continued to undergo significant changes driven by technological advancements and evolving consumer behaviours. Generation Z (born between 1996 and 2010, and currently aged between 14 and 28 years) and Generation Alpha (born post-2010 with age of up to 14 years presently) are set to become a substantial part of the future global population, driving the adoption of new systems (Deloitte. (2023).

As of July 19, 2024, the global population is approximately 8,118,835,999, with Africa's population at 1,496,369,237, according to United Nations estimates. Projections suggest that Africa's population will rise to 1,710,666,359 by 2030, 2,093,408,427 by 2040, and 2,485,135,539 by 2050, when the oldest members of Generation Alpha will be around 40 years old (Worldometers, 2024). Nigeria's current population is about 229,523,873, with 67% under the age of 35. By 2050, Nigeria's population is projected to reach 377,459,883, with 71% under the age of 35. This demographic shift underscores the growing importance of digital-native generations as the primary future customers. Consequently, it is crucial for banking institutions to understand and adapt to these generations' unique characteristics

and preferences to maintain relevance and competitiveness in the evolving financial landscape.

Gen Z are true digital natives, having grown up with smartphones, social media, and instant access to information. Francis and Hoefel (2018) argued that they value authenticity, prefer genuine, transparent brands and personalized experiences. Financially conscious, they display a strong awareness of financial literacy and stability. Their comfort with digital banking, mobile applications, and cryptocurrencies makes them unique in their financial behaviours and needs. Growing up amidst unprecedented digital transformation, they have witnessed major societal shifts, including the rise of social media, significant geopolitical conflicts, and the global pandemic. This generation navigates a delicate balance between aspirational luxury and environmental activism, seeking information and experiences that are effortlessly accessible, pragmatic, and digitally engaging. Gen Alpha, even more immersed in technology from birth, would prefer engaging, interactive content and learning tools (Aljović, 2024). Likely to adopt financial habits from their older Gen Z siblings and peers, they are projected to be early adopters and quick to embrace new technologies and innovative solutions. This makes them a critical target audience for future financial service innovations.

To effectively serve Gen Z and Gen Alpha, financial service providers must transition from the traditional Know Your Customer (KYC) model to an Understand Your Customer (UYC) approach. This shift involves embracing digital systems to provide seamless digital experiences, ethical and responsible services, and personalised financial offerings tailored to these distinct customer groups. Together, these generations present a unique challenge for financial institutions, raising the critical question: Are financial

service providers truly prepared and ready to serve the Gen Z and Gen Alpha?

Banking in the Last Decades

The banking sector has undergone profound evolution over the last century, driven by advancements in technology, shifts in economic paradigms, regulatory reforms, and evolving consumer preferences. At the start of the 20th century, banking was profoundly rooted in interpersonal relationships within local communities. Banks primarily served as custodians of savings and providers of credit. Transactions occurred in person at physical branches, where clients developed personal connections with bank staff. This rapport was essential for fostering trust, which played a crucial role in ensuring financial stability and security during times of economic uncertainty. Access to banking services was limited, and financial inclusion was markedly low. (Gaviyau & Godi, 2025; Hanson et al., 2024; Agarwal, 2025)

The mid- and late-20th century was a period of significant transformation in banking, driven by the advent of electronic data processing systems. These systems fundamentally altered the operational backend of banking institutions. For instance, when I began my career in banking in late 1974, banking operations were predominantly paper-based and manual. By 1978, the United Bank for Africa (UBA) initiated a process of computerization, initially focusing solely on backend operations. Additionally, during the late 1970s, UBA introduced mobile branch banking by deploying specially configured trucks to deliver financial services to rural communities, addressing the issue of bank concentration in major Nigerian cities. This initiative was later complemented by the Nigerian government's introduction of the rural banking scheme, which required the establishment of banks in rural areas to promote savings mobilization and increase the flow of funds to the rural

sector (Okorie, 1992). These innovations significantly improved transaction processing speeds and streamlined record-keeping efficiencies. Simultaneously, banks began adopting technology on a broader scale, facilitating their expansion beyond local markets and laying the foundation for interconnected global financial networks.

Osibanjo, et al., (2014) and Nkechika (2022) emphasized that the late 20th century in Nigeria marked the beginning of an era characterized by globalization and emerging digitalization. The rise of multinational corporations and the expansion of international trade created a demand for sophisticated financial services capable of facilitating cross-border transactions and managing currency exchanges. Financial service providers in Nigeria adapted their traditional practices by establishing interconnected networks that spanned local and global financial markets and institutions. At the same time, consumer behavior began evolving to align with the realities of the new system.

The early 21st century saw a rapid growth in digital, especially online and mobile banking services, driven by consumer preferences for convenience and accessibility (Putrevu & Mertzanis, 2023). Mobile banking, in particular, became a transformative tool, allowing customers to conduct transactions, check account balances, and transfer funds using smartphones anytime and anywhere. This digital revolution fundamentally changed consumer expectations, pushing financial service providers to innovate and improve their offerings to meet increased demands for personalization, efficiency, and security (Lottu, et al., 2023).

In recent years, the financial service landscape has faced exponential disruption from fintech startups and digital-only financial service providers such as digital banks, neo-banks, leveraging newer technologies to enhance financial services, streamline processes, and eliminate geographical boundaries. The fintech revolution has democratised financial access, breaking down barriers in financial inclusion by providing equitable access to services, including peer-to-peer lending platforms, crowdfunding mechanisms, and so on. This transformation has upended traditional banking paradigms, revitalising the financial consumer ecosystem and reshaping the future of banking (Sahay et al., 2020).

Fintechs are fundamentally transforming the financial landscape, increasingly positioning themselves as formidable players in the industry. This trend is evidenced by their growing tendency to acquire traditional banks, reflecting a significant shift in how financial services are structured and delivered. With valuation often surpassing the market capitalisation of many established banking institutions, Fintechs such as Opay and Flutterwave have achieved unicorn status (valued over \$1 Billion) in remarkably short timeframes. These companies have harnessed innovative technologies to offer services that are not only efficient but also highly tailored to the specific needs of consumers of different age groups. By leveraging data analytics, machine learning, and artificial intelligence, Fintechs can quickly assess customer profiles and deliver personalised solutions, whether through peer-to-peer lending, digital wallets, or other financial products. This level of agility and responsiveness stands in stark contrast to the often cumbersome and slow-moving processes associated with traditional banks (Udo & Jacob, 2025; Sanyaolu et al., 2024).

Moreover, Fintechs are redefining consumer expectations regarding financial services. Their ability to provide seamless and user-friendly experiences, often accessible via mobile apps and short codes (USSD), has attracted a growing customer base that values speed, convenience, and personalisation, especially the Gen Z. This shift has compelled traditional banks to rethink their strategies, prompting them to innovate and adapt to retain relevance in an increasingly competitive environment. As Fintechs continue to evolve and expand, their impact on the financial ecosystem is profound. They not only challenge the dominance of traditional banks but also contribute to broader financial inclusion by providing accessible financial services to underserved populations. Fintechs are bridging the gap between those traditionally excluded from the banking system and the financial resources they require. This democratization of financial access underscores the transformative potential of Fintechs in reshaping the future of financial services.

Summarily, the rapid rise of Fintechs, marked by aggressive acquisition strategies, impressive capitalizations, and their ability to deliver customised financial solutions, signifies a pivotal moment in the evolution of finance. Their influence is reshaping the industry and setting new standards for how financial services are conceived, delivered, and consumed. Through the integration of advanced technologies in different use cases, such as AI-driven chatbots, biometric authentication systems, and blockchain-powered decentralized finance (DeFi) innovations, Fintech has continued to revolutionised the delivery of financial services, redefining customer expectations with personalised experiences and enhanced operational efficiencies. These advancements are directing the financial sector toward more secure, transparent, and consumer-centric ecosystems, underscoring the profound impact of Fintechs on the future of financial services. However, as the landscape

continues to evolve, it will be crucial to understand the needs of emerging customers to maintain sustained relevance and growth.

Know Your Customer (KYC) Vs Understand Your Customer (UYC)

The concept of "Know Your Customer" (KYC) has long been a key element of regulatory compliance and risk management in the banking industry. KYC practices aim to ensure that financial institutions thoroughly verify their clients' identities, evaluate their risk profiles, and monitor transactions to prevent financial crimes like money laundering and fraud (PricewaterhouseCoopers, 2016). This strict approach has historically been vital for maintaining trust, security, and compliance with regulatory standards in the financial sector. However, as technology advances and customer expectations shift significantly, there is an increasing need for financial service providers to adopt a more comprehensive approach: Understand Your Customer (UYC). While KYC mainly concentrates on verifying identities and assessing risks, it often misses the full scope of the customer journey and does not fully capture their changing needs, behaviors, and preferences, which are especially important for Gen Z and Gen Alpha.

In today's interconnected and digitalized world, customers demand personalized experiences and seamless interactions across multiple banking channels. UYC represents a paradigm shift towards achieving a deeper and better understanding of customers. This approach integrates sophisticated data analytics, artificial intelligence (AI), and machine learning capabilities to extract profound insights into customer behaviour, preferences, and lifecycle stages. By analysing a myriad of data sources including transactional records, social media engagements, and digital footprints, financial service providers can construct intricate customer profiles. These profiles enable financial service providers

to offer tailored product recommendations, personalised financial services, and targeted marketing strategies that resonate with individual customer preferences and aspirations.

Understand Your Customer (UYC) aims to greatly improve customer experience and increase engagement. Financial service providers can refine their offerings to better meet customer needs by exploring the motivations, preferences, and pain points of their clients. This personalized approach will not only boost overall customer satisfaction but may also build loyalty, fostering long-term relationships between providers and their customers. In today's complex banking environment, UYC helps financial service providers proactively anticipate and meet customer expectations. Using advanced technologies and detailed data insights allows providers to quickly adapt to changing preferences and market conditions. Ultimately, UYC is essential for financial service providers striving to meet regulatory standards and deliver unique, value-driven customer experiences, especially for emerging generations like Gen Z and Gen Alpha.

Nature of the Gen Z and Gen Alpha as Future Bank Customer

Understanding future customers hinges on grasping their defining characteristics and behaviours. Gen Z, already emerging as bank customers, adeptly use digital platforms for entertainment, social interaction, education, and personal growth. They are also very entrepreneurial. As Gen Z matures, Gen Alpha will enter an increasingly integrated digital environment, shaped by advancements in AI, blockchain, augmented reality, cloud computing, quantum computing, and so on. Both generations will demand seamless, intuitive, and immediate banking experiences, rejecting totally, the traditional methods reliant on physical branches and paper processes as outdated and cumbersome. Their financial expectations reflect their digital fluency and preference for

efficiency and immediacy in all aspects of their lives (Aljović, 2024).

Gen Z and Gen Alpha will actively pursue mobile-centric banking innovations facilitated through digital devices serving as their primary portals to banking services. They will expect mobile applications to surpass basic expectations by being intuitively designed, highly secure, and capable of seamlessly managing a wide range of financial activities, from routine transactions to sophisticated financial planning tools. These generations will prioritise accessibility and efficiency in their digital interactions, demanding banking experiences that are not only user-friendly but also robust and adaptable to their evolving financial needs.

These generations will anticipate financial service providers to harness the power of specialised AI to provide highly personalised financial guidance, anticipate their individual needs, and tailor product offerings accordingly. This advanced level of personalisation serves as a cornerstone for fostering enduring customer relationships and cultivating strong loyalty. Through the AI-driven insights and predictive analytics, financial service providers can not only meet but exceed the expectations of these generations, who value customized experiences that resonate with their unique financial goals and preferences.

To these generations, promptness is of utmost importance. Having grown accustomed to immediate gratification in various facets of their lives, they will insist on banking experiences that offer real-time updates, swift resolution of issues, and instant processing of transactions. For these digitally native generations, delays and inefficiencies in financial transactions are perceived as barriers to seamless, efficient banking interactions. Therefore, they expect banking services to provide instantaneous responses and actions,

reflecting their preference for streamlined, responsive experiences that align with their fast-paced lifestyles and digital expectations.

By their nature, Gen Alpha and Gen Z may place a significant emphasis on social consciousness when selecting financial institutions. They may gravitate towards financial service providers that exhibit robust corporate social responsibility initiatives, prioritise sustainability efforts, and uphold ethical business practices. These generations are proactive in supporting companies that align with their values, seeking transparency and accountability in how financial service providers engage with environmental, social, and governance (ESG) factors. Their preference for ethically responsible banking reflects a broader societal trend towards sustainability and social impact, influencing their choices and fostering long-term trust and loyalty with financial institutions.

Gen Z and Gen Alpha are acutely aware of cybersecurity risks and place a paramount importance on robust security measures and stringent privacy protections when selecting banking services. These digital-native generations demand financial service providers to invest in cutting-edge technologies to safeguard customer data against evolving threats. Ensuring trustworthiness in financial services requires the implementation of advanced encryption techniques, secure authentication processes, and proactive monitoring of potential vulnerabilities. By prioritizing cybersecurity, financial service providers not only mitigate risks but also affirm their commitment to safeguarding the confidentiality and integrity of their customers' personal and financial information. This proactive stance is vital for establishing and maintaining trust in an increasingly interconnected and data-driven banking landscape.

As innovation continues to drive change, traditional forms of cash, such as notes and coins, may become obsolete. Emerging technologies might lead to the replacement of smartphones and handheld devices with new access mechanisms, while authentication methods such as passwords and passcodes are expected to evolve towards more seamless procedures. Adapting to the evolving expectations of Gen Z and Gen Alpha is essential for financial service providers who wish to effectively meet their needs. These generations, characterized by their digital fluency and high expectations, will significantly influence the future of banking services. Additionally, preparations should be made for Gen Beta, who will begin entering the world in 2025, with the oldest members reaching 25 by 2050. Considering these forthcoming shifts, what steps should financial institutions take to address the needs of these future customers?

Conclusion

As financial service providers encounter a generational shift, it is evident that significant transformation is necessary to effectively serve Gen Z and Gen Alpha. Embracing technological progress, encouraging innovation, and staying agile are essential for addressing the needs of these digital-savvy, socially conscious, and security-focused customers. By focusing on digital innovation, customer-centricity, and sustainability, financial service providers can build meaningful connections with these generations. This strategic change not only adapts to the digital age but also creates unique opportunities to redefine banking for an inclusive, sustainable, and technologically advanced future. The ability to listen, adapt, and innovate will be crucial in meeting the expectations of a generation poised to reshape the finance and economic landscape.

Recommendation

The transition to meet these expectations will not be without challenges, and there is evidence that the digital interaction between financial service providers and their Gen Z customers is already established, yet there remains substantial room for improvement. Traditional banking services often fall short of meeting the expectations of a generation that values personalised and contextually relevant experiences. In contrast, Fintech offerings offer vibrant, engaging banking experiences. However, the effective integration of embedded functionalities across areas such as Buy Now, Pay Later (BNPL) services and youth banking, along with a strong focus on user experience (UX) and customer-centric design, is crucial. Additionally, the use of relatable language and communication strategies is pivotal for success. Without these elements, adoption rates may struggle.

Designing successful solutions hinges on prioritizing customer-centricity, especially tailored for Gen Z and Gen Alpha. This involves actively engaging them in co-creation processes to ensure banking experiences closely align with their preferences and needs. A notable trend is the integration of social media experiences into banking solutions, moving towards cohesive, user-friendly platforms that seamlessly integrate with popular social networks. Additionally, financial service providers must recognize that Gen Z and Gen Alpha are not merely customers but also the future workforce of the industry and essential partners in shaping the future of financial services.

These generations bring not only their financial requirements but also their digital proficiency, innovative insights, and expectations for personalised, technology-driven financial services. Engaging them as partners involves collaborating to develop solutions that resonate with their values, lifestyles, and aspirations. This

collaborative approach will foster trust, build loyalty, and establish deeper connections with Gen Z and Gen Alpha, ensuring mutual growth and success in the evolving financial landscape.

Financial service providers must make significant investments in upgrading their technological infrastructure, moving to agile, scalable, and secure platforms capable of supporting advanced digital services. This transformation is crucial to meet the growing demands of a digital-first economy and the expectations of the customers, particularly Gen Z and Gen Alpha, who prioritize seamless, efficient, and secure digital interactions. Upgrading ensures enhanced operational efficiency, improved service delivery, and effective cybersecurity measures, thereby future-proofing financial institutions and maintaining their competitive edge in the evolving Fintech landscape. Additionally, these investments will empower financial service providers to deploy technologies and communications strategies that resonate with the emotions and aspirations of the Gen Z and Gen Alpha customers, shaping a future-ready banking experience.

Investing in an educational system that develops the talent needed to manage the emerging financial services landscape is essential, especially as financial service providers continue to deploy and increasingly rely on technologies to enhance operational efficiency and mitigate risks in a digital-first environment. Educating, attracting, and retaining talent proficient in the use and application of emerging technologies is crucial for financial service providers aiming to innovate and remain competitive. This approach will not only streamline financial service operations but also enable financial service providers to offer innovative products and services that meet the digital expectations of customers, particularly Gen Z and Gen Alpha.

Instilling financial literacy in Gen Z and developing structures to capture Gen Alpha in advance are crucial, as they grow up in a digitally native world, often with smartphones and other mobile devices, yet lacking awareness of financial issues, including cyber risks. Early financial education is essential, and integrating adaptable modules into existing banking apps tailored for younger users is a crucial strategy. This approach fosters early financial literacy, making the learning process engaging and intuitive. Financial service providers should create interactive tools to assist Gen Alpha and Gen Beta in making informed financial decisions, complemented by educational incentives. Notably, many countries are incorporating digital financial literacy programs into elementary and secondary school curricula.

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