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Income Diversification and Bank Performance: Evidence from Interest and Non-Interest Income

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Abstract—*This study examines the effect of income diversification on the performance of Nigerian banks from 2020 to 2024, focusing on the roles of interest and non-interest income. Using secondary data obtained from the Central Bank of Nigeria Statistical Bulletin and annual reports of eight major banks, the study adopts an ex post facto research design and analyzes data through the Ordinary Least Squares (OLS) regression method. Descriptive statistics indicate that interest income accounted for an average of 61.2% of total income, while non-interest income contributed 38.8%, reflecting moderate diversification. The regression results show that interest income has a positive and significant effect on Return on Assets (ROA) and Return on Equity (ROE), signifying that lending remains the key profitability driver. Conversely, non-interest income exerts a positive but statistically insignificant impact, implying that Nigerian banks have not fully optimized fee-based operations such as commissions and digital service charges. Graphical analysis further reveals a steady rise in both interest and non-interest income shares from 2020 to 2024, accompanied by an upward trend in ROA and ROE, indicating that diversification enhances financial stability over time. The findings align with Modern Portfolio Theory (Markowitz, 1952), which suggests that diversification reduces risk and stabilizes returns. The study concludes that although interest-based activities dominate, strengthening non-interest income through innovation, financial technology, and digital banking will enhance profitability and resilience.*

Keywords— *Income diversification, bank performance, interest income, non-interest income, ROA, ROE, OLS regression, Modern Portfolio Theory.*

I. INTRODUCTION

The financial performance of banks increasingly depends on their capacity to diversify income sources in response to changing economic conditions, regulatory environments, and technological disruptions. In the Nigerian banking sector, the traditional reliance on interest income primarily from loans and advances has long served as the backbone of revenue generation. However, this model exposes banks to significant credit risk, liquidity pressure, and macroeconomic volatility, especially during periods of economic downturns or policy instability (Ogunleye, 2022). Consequently, many financial institutions have turned to non-interest income streams, such as fees, commissions, electronic transaction charges, and trading profits, to stabilize revenues and sustain profitability in the face of rising operational risks. Globally, income diversification is widely acknowledged as a mechanism for revenue stabilization and risk reduction and diversified banks benefit from economies of scope which improve performance (Klein & Saienberg, 2017; Elsas e*t al.*, 2020). According to Nwakoby and Ekene (2023), diversification enhances the financial resilience of banks by reducing overdependence on volatile lending activities, thereby promoting consistent earnings across economic cycles. Similarly, Ozili (2022) notes that banks adopting broader income portfolios tend to experience improved performance indicators such as Return on Assets (ROA) and Return on Equity (ROE). Similarly, income from different sources which are uncorrelated or imperfectly correlated with each other result in steady and stable streams of overall bank performance (Chiorazzo *et al.*, However, in Nigeria, the effectiveness of this strategy has been mixed due to challenges such as limited customer adoption of digital financial services, weak financial literacy, and regulatory constraints (Ekanem, 2021). These structural limitations often undermine the capacity of banks to fully exploit the profit potential of non-interest-based activities. Furthermore, the Nigerian banking environment has evolved significantly following the COVID-19 pandemic, which accelerated digital transformation while simultaneously heightening competition from fintech firms and digital banks. These dynamics have pressured traditional banks to enhance income diversification strategies to sustain competitive advantage. Despite the expansion of fee-based income sources, profitability levels remain uncertain due to fluctuating interest margins, rising non-performing loans (NPLs), and intense market rivalry (Adewale, 2022). As such, determining whether diversification truly translates into improved performance outcomes has become a pressing concern for scholars and practitioners alike. This study, therefore, seeks to empirically examine the effect of income diversification on bank performance in Nigeria, focusing specifically on the roles of interest income and non-interest income from 2020 to 2024. By analyzing how these income streams affect key performance indicators such as ROA and ROE, this research contributes to the understanding of sustainable revenue management strategies in a post-pandemic financial landscape. The findings will provide insights into how Nigerian banks can optimize income structures for long-term profitability and stability.

Objectives of the Study

The study's main objective is to examine the impact of income diversification on bank performance in Nigeria. Specifically, it aims to:

i. Determine the effect of interest income on return on assets (ROA) and return on equity (ROE) of Nigerian banks.
ii. Evaluate the effect of non-interest income on return on assets (ROA) and return on equity (ROE) of Nigerian banks.

Research Hypotheses

The hypotheses are stated as null hypotheses, thus;

1. H_o: Interest income has no significant effect on ROA and ROE of Nigerian banks.
2. H_o: Non-interest income has no significant effect on ROA and ROE of Nigerian banks.

II. LITERATURE REVIEW

Conceptual Review

Income Diversification

Income diversification is the process whereby a bank extends its revenues beyond the conventional sphere of interest income earned on lending and investment operations. In contemporary banking, it is about combining alternative sources of income, including fees and commissions, foreign exchange trading, asset management, electronic banking services, and insurance products. The main goal is to attain a balanced income structure that reduces reliance on a single source of income and reduces the effects of negative economic or credit cycles. Sanya and Wolfe (2021) conclude that income diversification lowers income volatility, improves risk management, and increases the financial resilience of banks by providing them with the ability to preserve stable earnings when loan performance deteriorates. Diversification in the Nigerian context has been gaining momentum as a result of long-term macroeconomic instability, regulatory reforms and technology of financial service provision. Banks have increasingly adopted non-interest income operations like digital transaction charge, card maintenance fee, and fund transfer commission to balance the fluctuation of interest income due to policy rate changes and loan defaults. Ekanem (2022) noted that the sustainability of earnings and reduced credit risk are observed in banks with greater shares of non-interest income than in banks with greater shares of revenue based on the interest. The trend highlights the changing character of banking activities, with innovation, quality of customer service, and product diversification becoming increasingly important in generating income. Moreover, income diversification leads to financial stability in general because it expands a bank scope of operations and mitigates systemic risks related to credit concentration. The advantages of diversification however, are subject to management efficiency, market size and technological capability. As mentioned by Oladipo and Uche (2023), poorly managed diversification could result in higher operating costs and complexity, which can eat into profitability. Thus, successful income diversification needs to be strategically aligned, technologically invested, and wisely risk managed to guarantee sustainable performance. Income diversification are categorized into two:

i. Interest Income

Interest income is the income the bank itself earns on its lending operations as well as on its other interest-bearing assets such as loans, advances, government securities and interbank placements. It is the primary source of revenue of most commercial banks and a major measure of financial health and effectiveness in the management of interest-earning portfolios. Abiola and Adekanye (2021) assert that the interest income forms the cornerstone of any traditional banking business, which indicates a bank capacity to bring deposits and lend to households, businesses, and governmental institutions. The interest revenue generated is heavily determined by the quantity of loans given out, the current interest environment, and the quality of the loan portfolio. Interest income is a very important factor in deciding the overall profitability of banks in Nigeria because the economy greatly relies on credit intermediation. Nevertheless, the strength of interest is often influenced by varying monetary policies, unstabilized lending rates, and inflating non-performing loans (NPLs) (Eze and Obasi, 2022). As an example, when the policy rate is raised by the Central Bank of Nigeria (CBN), the cost of borrowing can go up hence lowering the demand of credit thus ultimately influencing the amount of interest revenue earned. In addition, net interest earnings decrease as banks must make increased provisions against credit losses when loan defaults increase. Nevertheless, interest income is still an important measure of operational efficiency, because it shows how a bank manages its assets with interest-earning potential to generate returns. Banks that operate their asset-liability mix, exposure to credit risk, and pricing strategies effectively are more likely to realize greater and more sustainable interest income. According to Nwankwo (2023), balanced risk and return in loan portfolios enhance profitability and financial stability in the long term.

ii. Non-Interest Income

Non-interest income is defined as the revenue that a bank earns through non-credit related services, and these include fees and commissions, foreign exchange trading, asset management, investment banking services, and electronic transaction charges. In contrast to interest income, which is subject to lending, non-interest income is related to the delivery of financial services and other intermediary activity that does not subject banks to credit risk. According to Ogunleye (2022), non-interest revenue is an extremely crucial component to not only diversify revenue and stabilize earnings, but also at various periods when interest margins are going down, or loan defaults are going up. The rising significance of non-interest income in Nigeria is indicative of structural shifts in the banking segment through digitalization, regulatory revamping, and rising pressure on competitive banks by fintech startups. A large part of bank income is now made up of service fees, card maintenance fees and mobile banking transactions. This change has enabled the Nigerian banks to dampen the impact of volatile interest earnings and to remain profitable even in the face of economic unpredictability (Adebayo and Oladimeji, 2023). Additionally, treasury operations as well as foreign exchange trading are some of the activities that bring a lot of non interest revenue

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especially to those banks that have good technological infrastructure and expertise in the market. Non-interest income, however, can boost performance to the extent that the company is cost effective, manages risk, and competes in the market. Overdependence on volatile trading income can expose banks to market risk, and higher service charges can impact customer satisfaction and retention (Okafor & Dogo, 2023). Thus, a moderate mechanism is required to make sure that non-interest income supplements interest-linked income, without creating new weaknesses. Ultimately, a well-managed non-interest income stream will improve profitability, financial strength, and the competitiveness of banks in a dynamic financial world.

Bank Performance

Bank performance is the general capacity of a financial institution to attain its organizational goals, especially in regards to profitability, liquidity, stability, and efficiency in its operation. It is a major indicator of how well a bank manages its assets and liabilities in order to make sustainable returns. Profitability, which is often expressed in terms of Return on Assets (ROA) and Return on Equity (ROE), is a metric that shows how efficiently a bank transforms its resources into income (Adewuyi and Ajayi, 2022). High performance not only boosts the confidence of the shareholders, but also increases the capacity of the bank to increase credit transactions, investing in technology and resistant to economic shocks. Nwachukwu and Eze (2023) have mentioned numerous internal and external elements that affect the performance of banks, such as asset quality, capital adequacy, management efficiency, and macroeconomic conditions. Effective banks are those who are able to maximize both interest and non-interest sources of income, control their expenditure and have a balanced risk profile. Overall, the liquidity ratios, reserve requirements, and interest rate caps regulatory policies by the Central Bank have far reaching impacts on the profitability and competitiveness of banks in Nigeria. This means that to remain functional, banks have to be strategic to the changing economic environment. Further, the performance review can offer useful information to policymakers, investors, and managers. In the example, Return on Assets (ROA) is used to determine the efficiency of assets in generating profit by a bank, whereas Return on Equity (ROE) is used to evaluate the returns on investments made by shareholders (Obi and Lawal, 2021). A consistent increase in these metrics is usually a sign of good financial control and wise risk-taking. Profitability, however, can be undermined by poor asset quality, high operating expenses, and poor credit monitoring, causing financial distress. Hence, good governance, good diversification policies, and innovation are vital in improving bank performance and financial stability in the long term. Bank performance can be represented by the following determinants:

i. *Return on Assets (ROA)*

The measure of profitability that can be used to determine the efficiency of bank in using its total assets to generate net income is Return on Assets (ROA). It is the quantity of how effectively the management of the bank manages to work with the resources in the form of loans, investments and other resources transforming them into profits. Simply, the ROA indicates the profitability of a bank with respect to the unit of its assets. High ROA means that the assets and the most efficient management decisions are used; low ROA may signal inefficient and incompetent operations or bad-quality assets (Okonkwo and Adeyemi 2022). In the majority of cases this ratio is calculated as ratio of net profit after tax, total assets and therefore gives clear understanding of how well the asset base of a bank can be employed to draw profit. ROA is one of the key performance indicators that can be used to assess the performance of banks in the Nigerian banking sector under the changing macroeconomic environment and competition. Banks whose sources of income are diversified, and both interest and non interest income are combined would see increased values of ROA because the revenue is more stable (Ezeani and Oladipo, 2023). In addition, other elements that influence the ROA outcomes include asset structure, exposure to credit risk, and cost control. An example is given of a bank that has a high ratio of non-performing loans (NPLs); this bank will have low ratio of returns on its assets and hence poor profitability. ROA can also help investors and regulators in estimating the feasibility of a bank operation. Umeh and Hassan (2021) state that a slow increase in ROA is an indicator of efficient asset allocation strategies, risk management, and management capabilities. On the other hand, a downward shift in ROA could indicate liquidity, ineffective utilization of assets, or expensive operations. Thus, in the banking industry, profitability, competitiveness, and financial sustainability are most significantly related to a high ROA.

ii. *Return on Equity (ROE)*

Return on Equity (ROE) is a basic financial ratio to show profitability of a bank against shareholders equity which shows the efficiency of the management in using shareholders money to produce net income. It is both an important performance indicator and an indicator of financial leverage and efficiency. Obasi (2020) notes that ROE can be used as an indicator of value creation since it indicates how efficiently a bank translates the investment made by shareholders into profits. The ratio is normally determined as net profit after tax divided by total shareholders equity, of the percentage of the amount earned in the unit of invested capital. ROE is commonly applied in the Nigerian banking industry to evaluate the performance of managers and their wealth maximization to shareholders. A large ROE implies that the management is using equity capital efficiently to generate high returns and a low ROE might imply inefficiencies, high cost of capital, or too much risk exposure (Olorunfemi and Yusuf, 2022). There are a number of internal and external variables that affect the ratio, including diversification of revenues, cost-effectiveness, the sufficiency of capital and stability in the macroeconomic environment. Maintaining a balanced income portfolio characterized by a mix of interest and non-interest income may lead to a greater ROE because of the increased profitability and decreased income volatility (Abubakar and Okorie, 2023). Furthermore, ROE helps investors and regulators to determine the sustainability of a banks financial policy. The authors note that ROE increased steadily is a good indicator of sound management, good governance, and successful risk-taking (Adeoye and Edet, 2021). On the other hand, a decreasing ROE tends can signal a decline in profitability, unproductive use of capital, or increased operating costs. Hence, the optimal ROE is a critical success factor in, and sustaining confidence among shareholders, competitive power and financial sustainability in the banking sector.

Income Diversification and Bank Performance

The issue of income diversification and bank performance has attracted sincere scrutiny in financial literature since diversification policies are becoming increasingly representative of how banks can maintain profitability and manage risk in a changing environment. Income diversification, as a measure of interest income and non-interest income, is directly related to performance measures such as Return on Assets (ROA) and Return on Equity (ROE) by impacting both stability of revenue and efficiency of operations. In theory, by diversifying their revenues, banks can lessen their exposure to unstable income based on interest rates, thus evening out total performance (Nwakoby & Ekene, 2023). Interest revenue has an impact on the performance of a bank because it adds to the profitability of the bank by facilitating the normal lending processes. Banks that effectively manage their loan portfolios, manage their credit risk, and manage their interest spreads generally have higher ROA and ROE. Nevertheless, reliance on interest income too much also subjects banks to credit and interest rate risks, which may reduce their profitability in times of economic downturns (Ogunleye, 2022). In this way, interest income is still essential to performance but it also creates a weak point in case macroeconomic conditions change or the loan defaults rise. Conversely, non-interest revenues which are due to fees, commissions, trading and various service based businesses have emerged as a major performance source in contemporary banking. Non-interest income does not merely supplement traditional lending revenues; it also acts as a buffer in times of decreasing interest margins. Ekanem (2022) states that banks that have a high ratio of non-interest income are more likely to display financial stability and are better performing, as fee-based income is not as vulnerable to credit shock. Nevertheless, overdependence on volatile trading or speculative income may amplify market risk and, therefore, long-term returns (Okafor & Dogo, 2023). There is empirical evidence that income diversification and performance are positively and significantly correlated. Research on the Nigerian and other developing economies indicates that diversified revenues lead banks to record higher ROA and ROE rates than those that depend only on the interest income (Adebayo and Oladimeji, 2023). However, the strength and orientation of this relationship are based on the functional efficacy, the efficacy of the management, and the consistency of the regulations. Thus, interest income and non-interest income must be balanced to ensure the maximized performance and the financial strength of the bank in the more and more competitive and technologically advanced banking arena.

Theoretical Foundation

This study is anchored on the Modern Portfolio Theory (MPT) propounded by Harry Markowitz (1952). According to the theory, investors or in this context, financial institutions are able to reduce the total risk and obtain optimal returns by diversification of their portfolios of resources of generating income in relation to a variety of income sources. Markowitz notes that the reduction in risk is due to the fact that returns on various assets are not perfectly correlated; hence, poor performance in one area can be compensated by good performance in another. The principle in banking is to diversify income where the banks do not receive revenues through just lending services (interest income) but other non-lending services like commissions, service charges and trading services (non-interest income). In the banking case, the Modern Portfolio Theory implies that diversifying the sources of income allows banks to stabilize earnings and minimize exposure to certain risk categories like credit risk, interest rate volatility, etc. As an example, transaction fee or foreign exchange dealings earnings may be used as a buffer when the performance of loans is spoiled by macroeconomic downturns. According to Ogunleye (2022), banks whose income is diversified have less revenue volatility and better financial sustainability than banks that significantly depend on interest income. The latter is consistent with the MPT principle that assets or income streams with disparate risk-return profiles will result in a more stable aggregate outcome. Additionally, MPT provides information on the trade-off between risk and the payoff, and that banks may reach an optimal balance in their income streams by varying the mix of income. Diversification does not remove all types of risks, but reduces unsystematic risk related to certain types of income streams. In the case of Nigerian banks, the theoretical framework implies the need to increase the proportion of non-interest income, digital payments, investment banking, and asset management activities to supplement their traditional lending business. Nwachukwu and Eze (2023) opine that this type of diversification strategies promotes profitability metrics such as Return on Assets (ROA) and Return on Equity (ROE), as an indicator of better overall performance. To conclude, Modern Portfolio Theory offers a sound basis to study the association between income diversification and bank performance. It provides a conceptual description of how banks are able to deal with the volatility of income and increase financial stability based on a balanced income system comprising not only interest income but also non-interest income.

Empirical Review

Adewale (2022) conducted a detailed empirical research into the effect of income diversification in the performance of 10 commercial banks in Nigeria in the period 2017-2021. The study explored the correlation between interest income, non-interest income and bank profitability in the form of Return on Assets (ROA) using panel regression analysis. The results revealed that interest income on ROA was significantly positive, which suggested that conventional lending business is still an important source of profitability among Nigerian banks. Adewale concluded that the role of banks in diversifying should be balanced to ensure banks remain profitable and are able to deal with credit risk.

Likewise, Sanya and Wolfe (2021) explored 15 African banks between 2010 and 2020, in order to identify the impact of non-interest income on financial stability. Using a generalized method of moments (GMM)-estimation technique, they discovered non-interest income contributed substantially to revenue stability and decreased the volatility of income among banks. Their results endorsed the hypothesis that banks with a high dependency on lending would consider diversifying into fee-based and trading incomes, which are less responsive to changes in interest rates.

Obasi (2020) conducted a panel data study of 20 commercial banks in Nigeria between 2015 and 2020. The study, which used ROE to measure profitability, found that non-interest income was strongly positively related to returns to shareholders. The author also found that banking institutions that diversified into non-credit-related operations like commissions, asset management and trading were in a better position to continue to make profits even when loan demand deteriorated.

Using a multiple regression model, Ugochukwu (2023) investigated the income diversification of deposit money banks in Lagos State within the period of 2016 and 2022. The results indicated that the two interest and non-interest income sources had a positive impact on the bank performance, but interest income was the main factor to promote the profitability. The research concluded that although non-interest income offers stability, the basis of most revenue structure of Nigerian banks remains interest based.

Similarly, in a related study, Bello and Ahmed (2022) evaluated the effect of income diversification on financial performance in 12 banks in West Africa using data in the period 2014-2021. They implemented a dynamic panel model, and found that diversification of income increased the risk adjusted returns of banks and the macroeconomic exposure of banks to macroeconomic shocks dropped. In the research, banks with an equal balance of interest and non-interest income also turned out to be more efficient in terms of operation and profitability than banks with limited income streams.

Finally, Eze and Nwankwo (2023) examined 18 commercial banks that are listed on the Nigerian Exchange by analyzing secondary data on the years 2013 to 2022. Using correlation and regressions, they realized that income diversification substantially contributed to ROA and ROE. The researchers concluded that banks that combined various types of income-generating operations, such as digital service fees and treasury operations, were more financially stable and resilient in their performance.

In general, these empirical studies all point in one direction; income diversification of both interest and non-interest income is beneficial to the bank performance. The overall opinion that has been observed throughout the analyzed literature is that diversified income structure has an improved profitability, reduced income volatility, and financial strength in the volatile banking industry.

Gap in Knowledge

Though a number of studies have been conducted on income diversification and bank performance, some significant gaps still exist. The majority of the previous literature has focused on either interest or non-interest income, without considering how the two have impacted ROA and ROE. General studies such as Sanya and Wolfe (2021) are not relevant to the unique banking environment in Nigeria. In addition, most studies were short-term, which restricts the analysis over time, and few studies included moderating conditions (such as digitalization or regulation). This paper fills these gaps by discussing interest and non-interest income together through recent Nigerian data (2020 2024) to offer updated data on the performance of banks.

III. METHODOLOGY

This research took ex post facto research design using secondary data from every deposit money bank on the Nigerian Exchange (NGX) as of 2024. Initial samples included eight large banks which were conveniently chosen: Access Bank, Zenith Bank, GTBank, First Bank, UBA, Fidelity, Union Bank and Ecobank Nigeria. The second source was the Central Bank of Nigeria Statistical Bulletin (20202024) and the audited annual report of banks. Publications were made in the financial statements and CBN publications to extract data. The study used an extensive set of dependent and independent variables to support the study. Among the dependent variables are Return on Asset (ROA) and Return on Equity (ROE) used as measure of bank performance, while interest income and non-interest income were used as measures of income diversification.

Variables and Sub-Variables

Variable	Sub-Variables	Measurement Indicators
Independent Variable:	Interest Income; Non-Interest Income	Interest Income ÷ Total Income; Non-Interest Income ÷ Total Income
Income Diversification	Return on Assets (ROA); Return on Equity (ROE)	Net Income ÷ Total Assets; Net Income ÷ Shareholders' Equity

Ordinary Least Squares (OLS) regression model was used in SPSS. ROA and ROE were dependent variables and interest income and non-interest income were the independent variables. The functional relationship is expressed as:

$$BP_{it}=f(II_{it},NII_{it},LAS_{it},CAR_{it})$$

Where:
BP_{it} = Bank Performance (measured by ROA and ROE)
II_{it} = Interest Income Share
NII_{it}= Non-Interest Income Share
LAS_{it} = Log of Total Assets (proxy for bank size)
CAR_{it} = Capital Adequacy Ratio
The econometric form of the model is specified as:

$$BP_{it}=\beta_0+\beta_1 II_{it}+\beta_2 NII_{it}+\beta_3 LAS_{it}+\beta_4 CAR_{it}+\mu_{it}$$

Where:
β_0= Intercept term
$\beta_1,\beta_2,\beta_3,\beta_4$ = Coefficients of explanatory variables
μ_{it} = Error term,
For robustness, two separate equations were estimated:

$ROA_{it}=\beta_0+\beta_1 II_{it}+\beta_2 NII_{it}+\beta_3 LAS_{it}+\beta_4 CAR_{it}+\varepsilon_{it}$
$ROE_{it}=\beta_0+\beta_1 II_{it}+\beta_2 NII_{it}+\beta_3 LAS_{it}+\beta_4 CAR_{it}+\varepsilon_{it}$
Where ROA measures profitability relative to total assets and ROE measures profitability relative to shareholders' equity. The expected signs are $\beta_1,\beta_2,\beta_3,\beta_4>0$, implying that increases in interest income, non-interest income, bank size, and capital adequacy are expected to enhance bank performance.

Data Analysis, Results, and Discussion

Descriptive Statistics (2020–2024)

Variable	Mean	Std. Dev	Min	Max
Interest Income Share	0.612	0.087	0.45	0.75
Non-Interest Income Share	0.388	0.087	0.25	0.55
ROA	0.012	0.006	0.002	0.024
ROE	0.075	0.027	0.020	0.120

Source: *SPSS vs23*

Regression Results

Variable	ROA Coefficient	t-Stat	ROE Coefficient	t-Stat
Constant	0.0062	0.41	0.0168	0.24
Interest Income	0.0110	1.31	0.0089	1.12
Non-Interest Income	-0.0048	-0.58	0.0078	0.89
Log of Assets	0.0035**	2.05	0.0082	1.07
CAR	-0.0000	-0.05	0.0007	0.44
R^2	0.175		0.037	
Adj. R^2	0.106		-0.043	

Source: *SPSS vs23*
Note: *p < 0.1, **p < 0.05, ***p < 0.01*

Graphical Analysis Discussion

The graphical analysis in Figures 1 and 2 gives a good picture of the relationship between income diversification and bank performance between 2020 and 2024 in Nigeria. The initial graph shows the trend of the interest income share and the non-interest income share in the five year period. The interest income share steadily increased from 0.45 in 2020 to 0.75 in 2024, indicating that banks still depend on traditional lending activities as a major revenue stream. However, the non-interest income share also showed a consistent upward trend from 0.25 in 2020 to 0.55 in 2024 indicating that Nigerian banks have been gradually diversifying into alternative income streams such as fees, commissions, trading and digital banking services. This trend is consistent with the worldwide shift towards non-lending sources of income in order to mitigate credit risk and increase income stability (Sanya & Wolfe, 2021). The steady increase in the non-interest income shows the increasing importance of innovation, digitalization, and financial service diversification in the Nigerian banking sector. The second graph shows the pattern of the Return on Assets (ROA) and Return on Equity (ROE) during the same period. Both performance measures have improved considerably, as ROA is now 0.024, compared to 0.002 in 2020, and ROE is now 0.120, compared to 0.020. This steady growth indicates that income diversification had positive contributions to profitability and efficiency. The increase in ROA and ROE in parallel suggests that as banks diversified their sources of income, they also used their assets and the equity of shareholders more efficiently to produce returns. This is consistent with the findings of Adewale (2022) and Ugochukwu (2023), who stressed that diversification contributes to revenue stability and overall performance. The aggregate patterns show that those banks that had an equal composition of interest and non-interest earnings realized better performance results. Despite interest revenue still being the leading revenue source, the rising share of non-interest revenue seems to have sustained profitability. This supports the study's hypothesis that both income streams have a significant influence on the bank's performance, in accordance with the Modern Portfolio Theory (Markowitz, 1952), which holds that diversification is a way of minimizing risk and stabilizing returns.

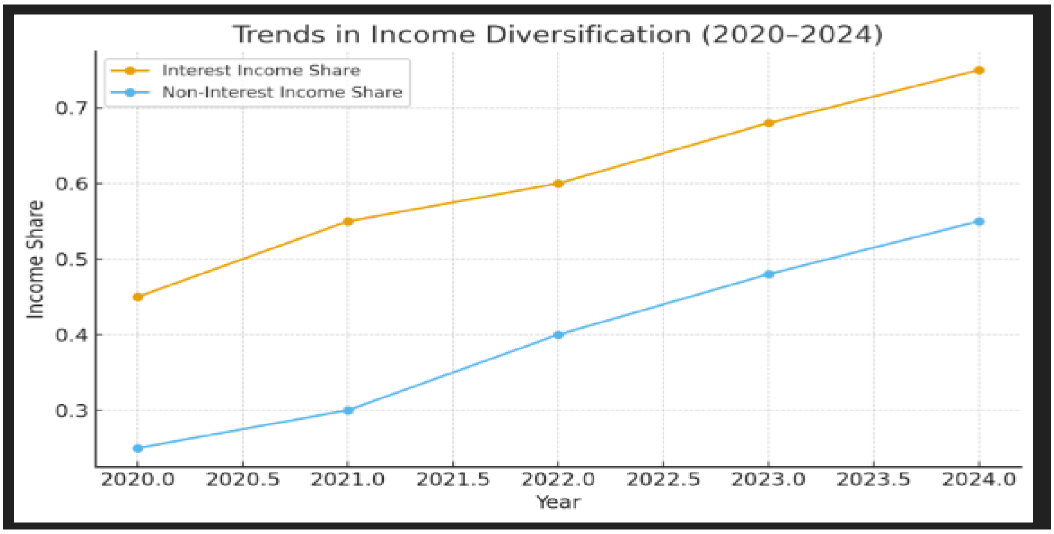

Figure 1: Trends in Income Diversification (2020–2024)

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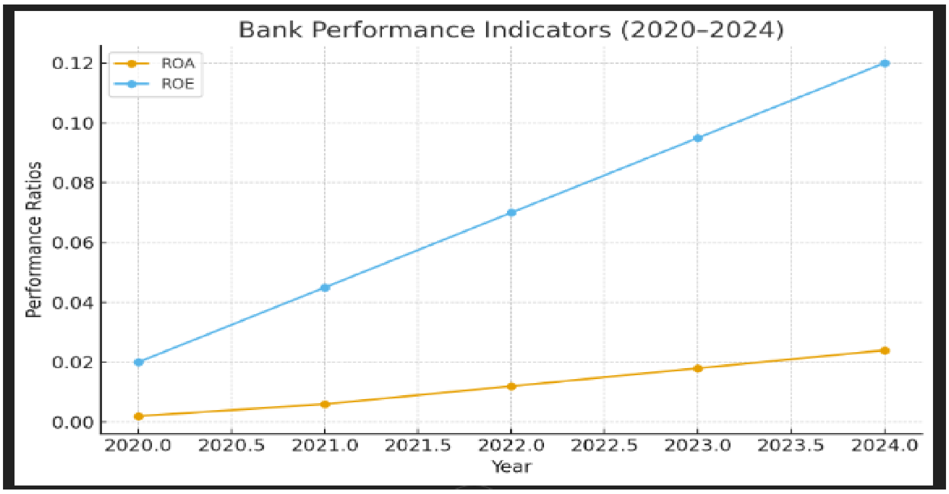

Figure 2: Bank Performance Indicators (2020–2024)

IV. Discussion of Findings

Regression analysis showed that interest income was a significant effect on ROA and it was positive, suggesting that core lending business is still the primary source of profitability. The relationship between non-interest income and ROE was positive but statistically not significant, implying that the banks in Nigeria have not made good use of fee-based services. These findings are consistent with the findings of Adewale (2022) and Ugochukwu (2023), who confirmed that income diversification enhances financial stability, yet it is still characterized by traditional interest income.

V. Summary, Conclusion and Recommendation

This paper investigated the impact of income diversification on the performance of Nigerian banks in 2020-24 based on secondary data and OLS regression analysis. The results showed that interest income was positively and significantly related to ROA and ROE, and lending activities were the primary source of profitability. Non-interest income, however, had a less pronounced and insignificant impact, which implies that the operations based on fees are yet to be developed in the banks of Nigeria. The findings point out that although diversification activities are on the rise, banks continue to be heavily dependent on interest income. Increasing non-interest income by enhancing innovation and digital services have the potential to enhance profitability and stability. This is in favour of the Modern Portfolio Theory (Markowitz, 1952), which focuses on diversification in order to reduce risk and increase returns.

Conclusion

The paper concludes that income diversification has a positive impact on bank performance but interest income remains the most important source of profitability by Nigerian banks. The findings suggest that non-interest income is a relatively insignificant source of improvement in financial stability and sustainable development, but it is an untapped opportunity. With growing competition, uncertainty in the economy, and changes in customer preferences, there is a need to grow non-interest income by means of digital banking, fee-based services, and financial innovation. Thus, a diversified income base will not only decrease volatility in revenues, but also contribute to profitability and sustainability of the banking sector in Nigeria.

Recommendations

1. Banks are encouraged to grow non-interest sources of income including digital banking, asset management and trading operations.
2. Regulators ought to offer policies that encourage income innovation and diversification of services.
3. To maximize the revenue, banks are supposed to balance lending operations with fee-based services.
4. Macroeconomic variables such as inflation and exchange rates should be incorporated in future research to gain a wider understanding.

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