# MANAGERIAL EFFICIENCY AND PROFITABILITY OF DEPOSIT MONEY BANKS IN NIGERIA

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## ABSTRACT

*This article investigated the relationship between managerial efficiency and profitability in Deposit Money Banks in Nigeria, focusing on the period from 2014 to 2023. Employing an ex-post facto design, the research analyzed historical data from the audited financial statements of a purposively selected sample of 10 listed banks. This methodology allows for an objective examination of how managerial efficiency impacts profitability metrics such as return on investment (ROI) and return on assets (ROA). The analysis incorporated descriptive statistics, correlation analysis, panel regression, and ANOVA to assess the efficiency-profitability dynamics within the sector. The findings revealed a significant positive relationship between the loan-to-deposit ratio (LDR) and the financial performance of Deposit Money Banks, with a coefficient of 0.6877 ($p=0.000<0.05$). Additionally, the findings indicated notable variation in both the managerial efficiency and return on investment across the sampled banks. These results underscore the importance of effective managerial practices in enhancing profitability within the Nigerian banking sector. Ultimately, the research concludes that a higher LDR positively influences the financial performance of Deposit Money Banks in Nigeria, suggesting that optimizing the allocation of deposits toward loans is a viable strategy for improving overall profitability.*

**Keywords:** *Managerial Efficiency, Profitability, Return on Investment, Loan to Deposit Ratio*

## 1.1. Introduction

The relationship between managerial efficiency and profitability in deposit money banks has garnered substantial interest from both scholars and practitioners, particularly in emerging economies like Nigeria. These banks play a vital role in fostering economic development by mobilizing savings, facilitating capital accumulation, and serving as intermediaries in financial transactions. Achieving profitability, which is essential for their sustainability and economic contributions, largely depends on how efficiently they are managed.

Managerial efficiency refers to the optimal utilization of human and financial resources by bank executives to achieve organizational goals. This includes making informed decisions on credit management, risk assessment, resource allocation, and the smooth running of daily

operations. A high degree of management efficiency helps banks stay competitive, control risks effectively, and improve key financial performance indicators such as returns on equity and assets (Oladejo & Yinus, 2020).

Profitability in the banking sector is often measured through indicators like net interest margin, return on assets, and return on equity, which reflect a bank's ability to generate surplus revenue after accounting for its operational costs (Igbinedion & Olaniyan, 2022).

Nigeria's banking sector has undergone significant reforms over the years, especially following the global financial crisis of 2008, aimed at enhancing efficiency and strengthening the financial system.

These reforms introduced stricter regulations and improved corporate governance standards. Despite this progress, several inefficiencies persist within bank management, continuing to hinder profitability (Adeoye & Ademola, 2021). Scholars have attributed these inefficiencies to factors such as inadequate risk control mechanisms, poor employee training, and slow adoption of innovative technologies. These issues lead to higher operational costs and a growing volume of non-performing loans, which in turn reduce profitability (Ologunde & Adekanbi, 2021).

The Central Bank of Nigeria (CBN) plays a pivotal supervisory role over deposit money banks, aiming to promote both operational efficiency and financial performance. Through regulatory measures such as capital adequacy requirements, liquidity thresholds, and periodic stress testing, the CBN seeks to enforce accountability and enhance managerial effectiveness (Sanusi, 2012). However, despite these frameworks, many banks still struggle with governance deficiencies and inefficiencies in operations. Common problems include fragile internal control systems and ineffective credit evaluation processes, both of which contribute to a surge in non-performing loans and a consequent decline in profitability (Okeke, 2023).

Incorporating technology into bank management has become increasingly crucial in enhancing efficiency. In the contemporary financial landscape, banks that adopt digital innovations - such as online banking systems, automated loan assessments, and FinTech solutions - tend to experience greater profitability. According to Omotayo and Oluwatosin (2021), Nigerian banks that have embraced FinTech have witnessed better service delivery and reduced operational costs, thereby improving their financial outcomes. This underscores the fact that managerial efficiency goes beyond traditional practices, extending to the strategic use of technological advancements to drive institutional performance.

Moreover, external factors such as inflation, interest rates, and overall macroeconomic conditions also impact the profitability of Nigerian banks. However, the effect of these external pressures can be mitigated by strong management. Banks with efficient leadership are better positioned to navigate economic turbulence and maintain profitability even during financial downturns (Aremu & Ekundayo, 2020). For instance, during periods of inflation or economic recession, competent managers can adjust pricing strategies, streamline expenditures, and maximize asset efficiency to safeguard earnings (Ekpe, 2019). Consequently, improving managerial efficiency remains a crucial imperative for sustaining the profitability and long-term success of Nigerian deposit money banks, as well as for ensuring their continued contribution to national economic development.

## 1.2 Statement of the Problem

Managerial efficiency and profitability have become critical focal points within Nigeria's deposit money banking sector, considering the essential role these institutions play in driving economic growth and supporting financial intermediation. Despite their pivotal importance, many banks continue to experience internal operational inefficiencies that adversely impact their profitability. Widespread issues such as inadequate risk evaluation, limited staff development, and inefficient resource management contribute to escalating operating costs and shrinking profit margins (Adeoye & Ademola, 2021). These internal shortcomings are further exacerbated by Nigeria's complex regulatory framework and ongoing macroeconomic instability (Aremu & Ekundayo, 2020).

A significant concern in the sector is the high incidence of non-performing loans, which, alongside weak governance frameworks, continues to erode bank profitability. Deficient credit assessment procedures and poor internal control systems have led to increased loan defaults, thereby undermining the financial health of numerous banks (Ologunde & Adekanbi, 2021). Although regulatory bodies have introduced reforms aimed at strengthening governance and ensuring managerial accountability, many banks have faced difficulties in aligning with these regulatory expectations (Sanusi, 2012). This has led to a gap between policy design and operational execution, which continues to stifle profitability in the sector (Okeke, 2023).

Additionally, technological advancement in banking operations remains limited across many Nigerian banks. While a select number of institutions have adopted financial technology (FinTech) tools to improve operational efficiency and customer experience, others have lagged behind, thereby missing out on cost-saving and revenue-enhancing opportunities (Omotayo & Oluwatosin, 2021). The reluctance to fully embrace technological innovation - coupled with enduring managerial inefficiencies - poses a serious threat to the long-term sustainability and profitability of Nigeria's deposit money banks (Oladejo & Yinus, 2020).

Furthermore, while much of the scholarly discourse on managerial efficiency and profitability has been concentrated in the manufacturing sector, this study narrows its focus to deposit money banks in Nigeria. It seeks to provide a sector-specific analysis of how managerial practices influence financial outcomes in the banking industry. The research explores the relationships between core financial ratios - such as loan-to-asset, loan-to-deposit, loan-to-capital, and loan-to-shareholders' funds ratios - and key performance indicators like return on investment. In particular, the study emphasizes the post-recapitalization period, analyzing how changes in capital structures following the reforms have impacted financial performance, especially in terms of returns on investment.

## 2.0 Literature Review

### 2.1 Managerial Efficiency

The quality of management reflects the positive and measurable outcomes that result from the strategic and operational decisions made by a bank's executive leadership (Al-Jafari & Alchami, 2015). As noted by Akshaya (2017), managerial efficiency acts as an indicator of a bank's administrative effectiveness, emphasizing how well leadership is able to generate income and optimize profitability. This notion encompasses not only compliance with

regulatory frameworks but also the leadership's agility in adapting to external market conditions and its overall governance capacity. In essence, it evaluates how competently management fulfills its roles and responsibilities. The productivity and overall success of any financial institution are deeply shaped by the expertise, abilities, and effectiveness of its management team, who are central to achieving performance targets (Nataraja, Nataraja & Ganesh, 2018).

Puja (2018) further emphasizes that efficiency metrics are strongly correlated with the financial performance of publicly traded insurance firms, as evidenced by traditional indicators like return on assets (ROA), return on equity (ROE), and the expense ratio. Similarly, Roman and Dănule (2018) suggest that effective management characteristics are essential for building a competitive edge - especially when managerial competencies are synergized with other corporate resources to enhance institutional productivity.

Akshaya (2017) also identifies managerial efficiency as a crucial internal determinant of banking profitability, often measured using financial benchmarks such as asset base expansion, loan growth, and rising earnings. Nonetheless, relying solely on numerical indicators to capture management quality poses limitations. Another important aspect of managerial performance is how well a bank manages its operating costs. Qualitative assessments usually focus on factors such as organizational governance, internal control procedures, personnel expertise, and workflow discipline. Still, certain financial ratios serve as useful proxies for gauging managerial effectiveness. These ratios evaluate how well a bank utilizes its assets, generates revenue, and curbs operational costs. For example, Engdawork (2019) points to the operating profit-to-income ratio as a key performance metric - where a higher ratio typically signals better operational effectiveness and stronger income performance. Additionally, the expense-to-asset ratio, which has a negative correlation with profitability, is frequently employed as a managerial efficiency indicator.

As part of the CAMEL rating system - which assesses Capital Adequacy, Asset Quality, Management, Earnings, and Liquidity - management efficiency plays an integral role in ensuring a bank's long-term growth and financial health. To assess this area in more detail, several financial ratios are often analyzed, including the loan-to-deposit ratio, loan-to-capital ratio, loan-to-asset ratio, and loan-to-shareholders' funds ratio.

In this context, the loan-to-deposit ratio (LDR) is defined by Okaro and Nwakoby (2016) as a measure of liquidity that compares a bank's loan portfolio to its total customer deposits over a specific time frame. Presented as a percentage, the LDR provides insights into a bank's capacity to handle potential defaults and withdrawal demands. It is a critical metric for investors during times of economic uncertainty, offering a window into the bank's financial stability and customer confidence. A rising deposit base indicates improved capital accessibility and an expanding client network, both of which can enhance lending activities and boost revenues (Bodla, 2018). Interestingly, in banking, loans are considered assets because of the income they generate through interest, while deposits are categorized as liabilities, representing funds owed to clients—usually at comparatively lower interest rates.

## 2.2 Profitability

Akaji, Nwadialor, and Agubata (2021) define financial performance as the achievement of financial goals and benchmarks that can be quantified in monetary terms over a specified period. Al-Jafari and Alchami (2015) make a distinction between financial (profit-based) and non-financial performance. They explain that profitability is the main concern for businesses focused on generating profit, while non-profit organizations tend to assess their success through alternative measures such as service delivery quality and user satisfaction - particularly in sectors like education and public administration, where financial returns are not the primary concern.

In contrast, for-profit organizations often rely on standard financial metrics such as return on assets (ROA), return on equity (ROE), and earnings per share (EPS) to evaluate performance. Abubakar (2015) views profitability as the firm's ability to create economic value and enhance shareholder wealth within a given timeframe. It serves as an indicator of how efficiently an organization utilizes its resources, including human capital and time, to reach set objectives, and it is frequently seen as a measure of long-term sustainability. A company's overall financial strength is generally assessed through its financial statements - namely, the balance sheet, income statement, and cash flow statement (Okaro & Nwakoby, 2016).

This research adopts return on investment (ROI) as the main metric for assessing financial performance. ROI is particularly relevant to ordinary shareholders, who receive residual profits after all other stakeholders - such as tax bodies, employees, lenders, suppliers, and preferred shareholders - have been settled. According to Abubakar, Maishanu, Abubakar, and Aliero (2018), ROI is a vital financial measure with broad applicability across various industries, as it gauges how efficiently an organization transforms its invested capital into profit. A higher ROI is indicative of better financial outcomes and optimal capital usage. Similarly, Adegbite, Akintoye, and Alu (2019) note that ROI reflects the effectiveness of management in utilizing shareholders' equity to generate returns.

## 2.3 Theoretical Review

This study is anchored in Asymmetric Information Theory (AIT), a foundational concept in modern economics and finance. The theory, introduced by George Akerlof (1970), examines situations where

there is an unequal distribution of information among parties involved in a transaction. Akerlof posits that such information imbalance arises when internal stakeholders, like managers (agents), possess more detailed knowledge about an organization's risks and opportunities than external parties such as investors or creditors (principals). This discrepancy often leads to suboptimal decisions and inefficiencies within the organization.

Supporting this viewpoint, Al-Jafari and Alchami (2015) define information asymmetry as a condition in which critical information is not equally accessible to all parties engaged in a financial transaction. In the realm of deposit money banks, such asymmetry may occur when bank managers -who are intimately familiar with internal operations and loan portfolios - present overly favorable or selectively filtered information to boards or shareholders. This is particularly problematic in areas like credit administration, which is central to a bank's operational efficiency.

Despite its relevance, AIT is not without its criticisms. One key critique is that the theory tends to assume that managers act primarily out of self-interest and may intentionally mislead other stakeholders. This assumption neglects the possibility that managers can act ethically and with transparency. Furthermore, AIT pays insufficient attention to institutional mechanisms such as regulatory oversight, robust internal controls, and board-level monitoring, which are often in place to mitigate the negative consequences of information imbalances.

A major concern with AIT arises when managerial insiders exploit privileged information for personal or organizational advantage. For example, a bank manager overseeing a high-capital project might use insider knowledge to justify excessive borrowing, thereby increasing credit exposure. In such scenarios, external financiers - without complete access to the relevant information—are unable to make informed lending decisions (George, 1970).

Okaro and Nwakoby (2016) explain that information asymmetry gives rise to two key problems in lending: moral hazard, where borrower behavior is difficult to supervise, and adverse selection, where the lender fails to accurately judge the risk profile of the borrower. These challenges are more evident in small-scale lending environments, where the cost of collecting and analyzing relevant information may exceed the loan amount itself. This illustrates a practical limitation of AIT - its tendency to assume that information collection and monitoring are always costly or ineffective, an assumption that doesn't fully reflect today's technological realities. Innovations such as FinTech and data analytics now offer more efficient ways to bridge these gaps.
In addition, supplier-financier relationships may reflect variable levels of asymmetry. For instance, suppliers often have more precise insights into cost structures and operational performance than traditional lenders, given their direct engagement with the business. This highlights an area where AIT oversimplifies - failing to account for the varied intensity of information asymmetry depending on relationship dynamics.

Daniel (2017) proposes that reducing information asymmetry requires intentional strategies by firms, such as investing in accurate data collection and conducting thorough due diligence before entering financial agreements. Reliable, timely, and relevant information is essential for assessing the trustworthiness of borrowers and business partners. However, this suggestion uncovers another limitation in AIT: the assumption that acquiring high-quality information is both feasible and economical. In many developing countries, high costs, limited access, and concerns over data authenticity make effective information gathering difficult.

Akerlof (1970) also makes a distinction between two forms of asymmetry: the first involves internal managers having greater insight than external investors, while the second pertains to unequal information access among different investor groups. In the financial sector, lenders frequently find themselves at an informational disadvantage due to limited disclosures from borrowers. Interestingly, deposit money banks can alternate roles, sometimes acting as informed borrowers and at other times as uninformed lenders, depending on the nature of the transaction.

In summary, Asymmetric Information Theory effectively highlights the vulnerabilities inherent in financial transactions caused by uneven information distribution. However, it is

limited in several respects. One major shortcoming is its portrayal of information asymmetry as static and unidirectional, when in reality, the flow of information and the distribution of power are dynamic and influenced by factors such as regulatory practices, governance structures, and institutional transparency. These factors can shift the informational advantage between parties, making the practical application of AIT more complex than the theory initially suggests.

## 2.4 Empirical Review

Andreou, Philip, and Robejsek (2016) investigated the role of managerial competence in shaping the performance of U.S. banks, utilizing data covering the years 1994 to 2010. Employing an ex-post facto research method, the study incorporated both correlation and regression analyses, with bank size controlled for in the model. Their findings indicated a significant and positive correlation between the loan-to-capital ratio and return on assets (ROA) among the sampled banks.

In a similar context, Eriki and Osagie (2017) examined how the debt-to-capital ratio influences the financial performance of gas companies listed on the Nigerian Stock Exchange. The study analyzed data from 2011 to 2015, drawing from financial statements of selected firms and using panel regression for analysis. The results revealed a negative, though statistically insignificant, relationship between debt-to-capital ratio and firm performance.

Likewise, Bodla (2018) conducted research in the UK to determine the impact of managerial efficiency on bank profitability. Utilizing time series data spanning 2001 to 2012 and panel regression models, the study identified the loan-to-deposit ratio as a significant determinant of bank profitability among several managerial efficiency indicators.

Sinta and Sylvia (2018) focused on how managerial ability affects compliance with financial reporting standards. Using panel data from publicly traded banks on the Indonesia Stock Exchange between 2010 and 2016, the researchers found that the loan-to-deposit ratio had a negative association with adherence to financial reporting standards.

In Nigeria, Adegbite, Akintoye, and Alu (2019) analyzed the connection between managerial efficiency and the financial performance of quoted firms. Their research adopted an ex-post facto approach and examined 169 listed companies as of December 31, 2017. Data were processed using descriptive statistics and panel regression analysis. Results showed that the debt-to-equity ratio had a moderate effect on variations in ROA.

Lastly, Nevine, Mohamed, and Nouran (2019) explored how operational efficiency, viewed through the lens of capital structure, impacts financial performance. Their sample included 65 non-financial firms listed on the Egyptian Stock Exchange over the period from 2013 to 2019. Employing panel regression, the study found a significant negative effect of the loan-to-equity ratio on the financial performance of these firms.

## 2.5 Gaps in Literature

Globally, a wide array of studies has investigated aspects of managerial efficiency, particularly focusing on how debt or loan management affects organizational performance. Nevertheless, many of these investigations tend to neglect the broader implications that loans or debts may have on other vital financial elements - such as total assets, customer deposits, capital structure, and shareholders' equity.

These variables are crucial indicators of managerial effectiveness during accounting periods and, when examined alongside performance metrics, can offer a more comprehensive understanding of how banks achieve profitability. This recurring omission represents a significant gap in the literature, which the present study seeks to address.

Furthermore, although there is a growing body of empirical research exploring the link between managerial efficiency and firm performance in Nigeria, very few studies have specifically focused on listed deposit money banks. Among the limited number of investigations available, none have evaluated financial performance using return on investment (ROI) as a core metric. This highlights a further deficiency in existing scholarship and underscores the importance of this research in contributing new perspectives on the relationship between managerial practices and financial performance within Nigeria's banking industry.

## 3.0. Methodology

This research adopts an ex-post facto design, which is particularly suitable for examining the link between managerial efficiency and profitability among deposit money banks in Nigeria. The method is appropriate as it utilizes existing historical data that cannot be manipulated, thereby facilitating an objective investigation into established trends and conditions. It allows for a structured and impartial analysis of how managerial decisions have influenced bank profitability over the defined study period.

The study relies on secondary data, specifically drawn from the audited annual financial statements of the selected banks, covering the years 2014 to 2023. These audited reports serve as reliable and authoritative sources for extracting essential financial metrics, including Return on Investment (ROI) - a key indicator used to assess profitability. Using audited financials enhances the credibility and accuracy of the data, ensuring the robustness of the findings.

The target population comprises all deposit money banks listed on the Nigerian Stock Exchange (NSE), representing the formal commercial banking sector in the country. From this population, the study employs a purposive sampling technique to select 10 banks. The selection criteria include the consistency and availability of financial data throughout the review period, ensuring comprehensive coverage and analytical validity.

For the analytical process, the study applies descriptive statistics to provide an overview of the dataset, correlation analysis to evaluate the strength and direction of relationships between variables, and panel regression models to assess the long-term influence of managerial efficiency on profitability.

Additionally, Analysis of Variance (ANOVA) is utilized to compare profitability levels across the sampled banks, offering further insight into how differences in managerial practices may account for variations in financial performance within the Nigerian banking sector.

## 4.0. Results of Findings

### 4.1 Descriptive Statistics

| Variables | Obs | Mean | Std. Dev. | Minimum | Maximum |
|---|---|---|---|---|---|
| ROI | 230 | 7.78 | 7.71 | -17.02 | 52.46 |
| LDR | 230 | 3.21 | 4.04 | -14.28 | 39.88 |
| AST | 230 | 0.93 | 0.30 | 0.06 | 1.51 |

The descriptive statistics table provides a concise overview of the primary variables examined in the study: Return on Investment (ROI), Loan-to-Deposit Ratio (LDR), and Asset Size (AST). It presents essential statistical indicators, including the number of valid observations, mean values, standard deviations, as well as minimum and maximum values for each variable.

In terms of ROI, the dataset comprises 230 observations, with an average return of 7.78% across the sampled banks over the study period. This suggests that the banks, on average, generated a 7.78% return on their investments. The standard deviation of 7.71% indicates significant variation in profitability among the institutions. While some banks recorded substantial gains—evident from the maximum ROI of 52.46%—others experienced losses, as reflected in the minimum ROI of -17.02%.

For the Loan-to-Deposit Ratio (LDR), the analysis also includes 230 data points, yielding a mean value of 3.21. This implies that, on average, loans amounted to 3.21% of the banks' total deposits. The standard deviation of 4.04 reveals a moderate level of variability in lending practices across the sample, indicating a mix of conservative and aggressive loan issuance strategies. The LDR ranges from -14.28% to 39.88%, with the negative figure potentially indicating issues such as high non-performing loan volumes or net loan contraction, while the upper bound reflects active lending policies by certain banks.

With respect to Asset Size (AST), the data again cover 230 observations, producing an average score of 0.93. This value likely represents the proportional asset size of each bank relative to the sample group.

The standard deviation of 0.30 shows a moderate spread in asset size, suggesting noticeable differences in bank capitalization. The lowest asset value recorded was 0.06, pointing to smaller institutions, while the maximum of 1.51 signifies the presence of significantly larger banks with expansive financial resources.

### 4.2 Pearson Correlation

**Pearson Correlation Analysis Result**

| Var. | ROE | LDR | AST |
|---|---|---|---|
| ROI | 1 | | |
| LDR | 0.532 | 1 | |

| | | | |
|---|---|---|---|
| AST | 0.005 | 0.083 | 1 |

The Pearson Correlation Analysis table provides insights into the linear relationships among the three core variables under investigation: Return on Investment (ROI), Loan-to-Deposit Ratio (LDR), and Asset Size (AST). The correlation coefficients derived from this analysis indicate both the direction and intensity of the relationships between variable pairs. Coefficients approaching +1 or -1 reflect strong positive or negative relationships, respectively, whereas values near 0 suggest a lack of linear association.

ROI and LDR: The computed correlation coefficient between ROI and LDR is 0.532, indicating a moderate positive relationship. This suggests that as banks increase their loan disbursement relative to deposits, their returns on investment also tend to rise. In practical terms, higher levels of lending are associated with improved profitability, underscoring the positive influence of credit extension on financial performance.

ROI and AST: The association between ROI and Asset Size is represented by a correlation coefficient of 0.005, which is virtually zero. This result implies that no significant relationship exists between a bank's total asset holdings and its return on investment. Within the parameters of this study, a bank's size - whether large or small - does not appear to have a measurable impact on its profitability.

LDR and AST: The correlation between Loan-to-Deposit Ratio and Asset Size yields a value of 0.083, reflecting a very weak positive correlation. This suggests that larger banks may marginally increase their lending activity relative to deposits, but the effect is negligible. As such, asset size does not substantially influence a bank's lending intensity.

### 4.3 Panel Regression Estimation Results

**Objective I:** Effect of loan to deposit ratio on the return on investment of deposit money banks in Nigeria

$$ROI_{it} = \alpha_0 + \alpha_1 LDR_{it} + \alpha_2 FIS_{it} + \alpha_3 AST_{it} + \mu_{it}$$

**Table 4.3: Results of Regression Estimate and Diagnostic Tests of Model I: Dependent Variable: ROI**

| | ***(1)*** | ***(2)*** | ***(3)*** |
|---|---|---|---|
| ***VARIABLES*** | ***OLS*** | ***FE*** | ***RE*** |
| | | | |
| LDR | 1.015*** | 0.6877*** | 0.783040*** |
| | (0.000) | (0.000) | (0.000) |
| AST | 1.3202 | -1.5573 | -0.252046 |
| | (0.3614) | (0.5006) | (0.8939) |
| Constant | 4.88304** | 9.997019*** | 8.414589*** |
| | (0.0227) | (0.0001) | (0.0005) |
| Observations | 230 | 230 | 230 |
| R-squared | 0.286879 | 0.518432 | 0.207181 |
| Adj. R-Squared | 0.277413 | 0.434466 | 0.196657 |
| F-Stat | 30.30563<br>Prob > F = 0.0000 | 6.174324<br>Prob > F = 0.0000 | 19.68623<br>Prob>chi$^2$ = 0.00000 |

| | **Hausman Test** | | |
|---|---|---|---|
| Chi2(1) = 20.224 | | | Prob>chi$^2$ = 0.0002 |

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1
**Source:** *Data Analysis, (2024).*

This study utilized panel regression analysis to examine the dataset, which comprises both cross-sectional and time-series dimensions, forming a balanced panel structure. Three regression models were considered in the analysis: the Pooled Ordinary Least Squares (OLS) model, the Fixed Effects (FE) model, and the Random Effects (RE) model. To identify the most appropriate model for interpreting the data, the Hausman test was conducted. The test produced a Chi-square statistic of 20.224 with a p-value of 0.0002, indicating statistical significance. This result supports the selection of the Fixed Effects model, which is preferred over the Random Effects model as it more effectively captures individual bank-level heterogeneity in relation to the independent variables.

The regression findings demonstrated that the Loan-to-Deposit Ratio (LDR) exerts a positive and statistically significant effect on the Return on Investment (ROI) of Nigerian deposit money banks. The coefficient for LDR was 0.6877, with a p-value less than 0.05 (p = 0.000), confirming the strength and significance of the relationship. This implies that a higher proportion of deposits allocated to lending activities contributes positively to profitability. In other words, banks that efficiently convert deposits into loans tend to achieve greater returns, highlighting the importance of lending strategies in driving financial performance.

### 4.4 Analysis of Variances

**Objectives II:** Evaluate the degree of variation in managerial efficiency among Deposit Money Banks in Nigeria

**Table 4.4: Results of Analysis of Variance of the difference among Deposit Money Banks in Nigeria**

| **Sources of Variables** | **Sum of Square (SS)** | **Degree of Freedom (DF)** | **Means Square (MS)** | **F-statistics** | **P-Value** |
|---|---|---|---|---|---|
| **Between Groups** | 2893.922 | 3 | 964.6408 | 124.7158 | 0.000 |
| **Within Groups** | 7084.998 | 916 | 7.734714 | | |
| **Total** | 9978.920 | 919 | 10.85846 | | |

The “Between Groups” variation in the ANOVA results captures the extent of differences in managerial efficiency across the various Deposit Money Banks (DMBs). The sum of squares for this component is 2893.922, indicating the degree to which efficiency levels vary from one bank to another.

This variability is spread across 3 degrees of freedom, resulting in a mean square value of 964.6408.

This mean square is then used to calculate the F-statistic, which compares the variance between groups to the variance within groups to determine if the group means differ

significantly. The computed F-statistic is 124.7158, a relatively high figure that suggests notable disparities in managerial efficiency among the banks. The corresponding p-value is 0.000, which is significantly below the conventional 0.05 threshold. This implies that the observed differences are statistically significant and unlikely to be due to random variation.

The "Within Groups" variation accounts for the internal differences in managerial efficiency within each individual bank. The sum of squares for this category is 7084.998, reflecting the level of variation present inside each bank. With 916 degrees of freedom, the mean square within groups is 7.734714, which serves as the denominator in the F-ratio calculation and represents the average intra-group variability.

In conclusion, the ANOVA results indicate a significant variation in managerial efficiency among Nigerian deposit money banks. The high F-value and the extremely low p-value provide strong evidence against the null hypothesis, which posits no significant difference in efficiency across the banks. Therefore, it can be confidently stated that managerial efficiency differs meaningfully among the DMBs included in the study.

**Objectives III:** ascertain the degree of variation in return on investment among Deposit Money Banks in Nigeria.

**Table 4.5: Results of Analysis of Variance of the difference between**

| **Sources of Variables** | **Sum of Square (SS)** | **Degree of Freedom (DF)** | **Means Square (MS)** | **F-statistics** | **P-Value** |
|---|---|---|---|---|---|
| Within Groups | 13634.92 | 687 | 19.84704 | | |
| Total | 21028.46 | 689 | 30.52026 | | |

The ANOVA table provides an in-depth examination of the variability in Return on Investment (ROI) across different Deposit Money Banks (DMBs). The "Between Groups" section captures the extent of ROI variation attributable to differences among the banks. The sum of squares for this component is 7,393.541, representing the total inter-bank variation in ROI. With 2 degrees of freedom, the resulting mean square is 3,696.770, which forms the numerator in calculating the F-statistic.

The computed F-statistic is 186.2630, a substantial value indicating that the variation in ROI between banks is significantly greater than the variation within individual banks. The associated p-value of 0.000 is well below the commonly accepted significance level of 0.05, suggesting that the observed differences in ROI across the institutions are statistically significant and unlikely to be the result of chance.

The "Within Groups" component accounts for the variability in ROI within each individual bank. The sum of squares for this category is 13,634.92, distributed over 687 degrees of freedom, leading to a mean square of 19.84704. This figure represents the average intra-bank variability in ROI.

Overall, the ANOVA results clearly indicate that ROI differs significantly among Nigerian deposit money banks. The high F-value and the very low p-value provide strong grounds for rejecting the null hypothesis, which asserts that there are no significant differences in ROI among the banks. Consequently, the findings confirm that ROI varies meaningfully across the

sampled financial institutions, reflecting disparities in performance levels linked to underlying management and operational factors.

## 5.0 Discussion of Findings

This research explored the impact of managerial efficiency on the financial performance of Deposit Money Banks (DMBs) in Nigeria over a ten-year span (2014–2023). The empirical findings demonstrate that the Loan-to-Deposit Ratio (LDR) has a significant and positive effect on financial performance, as measured by Return on Investment (ROI). The LDR coefficient, estimated at 0.6877 with a p-value of 0.000 (i.e., $p < 0.05$), implies that a 1% rise in LDR corresponds to an approximate 0.69% increase in ROI. This result underscores the importance of effective deposit utilization, as banks that allocate a higher proportion of their deposits to lending tend to benefit from increased interest income - an essential component of revenue generation. In the Nigerian economic context, where credit demand remains high, such lending strategies can significantly improve both asset productivity and investment returns.

From a theoretical lens, these results align well with the Asymmetric Information Theory (AIT), which posits that banks with greater informational advantages—particularly about borrower behavior - can make more prudent lending decisions. When banks have deeper insights into credit risk, they are able to manage their LDR more effectively without compromising loan quality, thereby enhancing profitability.

Additionally, strong borrower-lender relationships can help mitigate the adverse effects of information asymmetry, leading to improved loan performance and, by extension, better financial outcomes. These conclusions are consistent with the findings of Okaro and Nwakoby (2016), Bodla (2018), and Olabisi and Babatolu (2019), who reported significant positive relationships between LDR and bank performance. Similarly, Bishnu (2019) highlighted a positive effect of LDR on firm profitability.

However, contrasting evidence from Chembe and Jing (2018) found no statistically meaningful relationship between LDR and performance, suggesting contextual or institutional differences.

Furthermore, the study revealed notable disparities in managerial efficiency across the sampled banks, indicating that strategic and operational effectiveness varies widely within the Nigerian banking sector.

Banks with higher levels of managerial efficiency are typically characterized by better risk assessment, planning capabilities, resource deployment, and technology adoption, all of which contribute to stronger financial performance. These strategic competencies affect how well institutions control costs, allocate resources, and drive revenue generation. The results mirror those of Menik and Faisal (2023) and Heikal, Khaddafi, and Ummah (2019), who also identified substantial inter-bank differences in management quality and its influence on operational success.

Additionally, the findings pointed to significant variations in ROI among the deposit money banks examined. This suggests that profitability and return-generating capacity are not uniform across the sector. Several factors may contribute to these differences, including divergent strategic approaches, management competencies, market positioning, capital structures, and risk tolerance levels. Institutions with better cost efficiency, effective risk controls, and strong technological integration often outperform their peers in terms of ROI. These conclusions are in line with the research of Adegbaju and Olokoyo (2018), Owojori, Akintoye, and Adidu (2021), and Uremadu (2022), all of whom emphasized that variations in

asset quality, governance strength, and capital adequacy are critical determinants of financial performance differences among Nigerian banks.

## 6.0 Conclusion and Recommendations

Based on the outcomes of this empirical investigation, it is clear that the Loan-to-Deposit Ratio (LDR) plays a crucial and positive role in shaping the financial performance of Nigeria's Deposit Money Banks (DMBs). A higher LDR, reflecting more extensive lending activities, enhances returns on both investments and assets by increasing interest-related income. This is particularly effective in the Nigerian context, where there is robust demand for credit, allowing banks to convert deposits into high-yield loans. These findings align with the principles of Asymmetric Information Theory, which posits that banks with greater insight into borrower behavior are better positioned to make informed lending decisions, thereby boosting profitability. Collectively, the results underscore the strategic importance of effective lending policies in driving financial success in the banking industry.

In light of the study's key findings, the following actionable recommendations are put forward:

i. **Optimize Loan-to-Deposit Ratio (LDR) Management:**
Given the proven positive effect of LDR on financial performance, banks should strive to achieve and maintain an optimal LDR that balances profitability with prudent risk exposure. This entails a dual strategy of expanding loan portfolios while also ensuring effective deposit mobilization. Continuous monitoring and evaluation of the LDR are essential to maintain it within a sustainable threshold - one that supports earnings growth without increasing vulnerability to credit defaults or liquidity risks.

**ii. Enhance Managerial Competence and Operational Efficiency:**
The study identified significant variation in managerial efficiency across DMBs, highlighting the influence of leadership quality on bank performance. To address this, institutions should invest in capacity development programs targeting bank executives and senior managers. Areas of focus should include strategic management, credit risk analysis, financial modeling, and performance optimization. Additionally, adopting advanced financial technologies and data analytics tools will empower managers with real-time insights, enabling more responsive and evidence-based decision-making.

**iii. Improve ROI through Innovation and Revenue Diversification:**
The marked differences in Return on Investment (ROI) among banks reflect the competitive landscape of the Nigerian banking sector. To improve ROI, banks should diversify their income
streams by offering innovative financial services, including products that cater to evolving customer demands. Expanding non-interest income sources - such as transaction charges, advisory services, and digital fees - can reduce overreliance on traditional lending. Moreover, enhancing customer experience through digital transformation, personalized banking solutions, and strengthened client engagement can foster long-term loyalty and support sustainable profitability.

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