

CREDIT RISK MANAGEMENT AND BANK PERFORMANCE

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DECLARATION

I, **OSAGIE OTITI MARY** do hereby declare that this project is entirely my work and composition. The work embodied in this project has not been submitted by another candidate for any degree and is not currently being submitted for any other degree. All references made to the works of other persons have been duly acknowledged.

Osagie Otiti Mary

Date

CERTIFICATION

We, the undersigned certify that this research work submitted by **OSAGIE OTITI MARY** is adequate in scope and in partial fulfilment of the requirements for the award of Bachelor of Science (B.Sc.) degree in Finance, University of Benin, Benin City.

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DEDICATION

This project is dedicated to Almighty God for his insight and grace bestowed upon me throughout my study in the Department of Finance , Faculty of Management sciences , University of Benin, Benin City. This project is also dedicated to my parent, Mr and Mrs Osagie for their unwavering support and love through the course of my study.

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ABSTRACT

This study investigates the impact of credit risk management on the performance of Nigerian banks, focusing on three key variables: Non-Performing Loan Ratio (NPLR), Loan Loss Provisioning (LLP), and Collateralization Ratio (CR). Using descriptive statistics, correlation, regression analysis, and diagnostic tests, the findings reveal:

•NPLR negatively affects bank performance, as higher non-performing loans reduce profitability and asset quality.

•LLP also has a significant negative impact, indicating that excessive provisioning for potential loan losses constrains profitability.

•CR, however, positively influences performance, as higher collateralization mitigates credit risk and enhances financial stability.

•Diagnostic tests confirm the reliability of the data and model. The study concludes that effective credit risk management is essential for improving bank profitability and recommends stricter credit assessments, balanced provisioning policies, and leveraging technology for better loan management. These findings align with prior research emphasizing sound credit risk practices to enhance financial stability.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

The banking sector is an indispensable driver of economic growth and development, serving as a catalyst for efficient capital allocation, financial intermediation, and the overall functioning of the economy. Banks act as intermediaries, mobilizing deposits from surplus units and channeling them to deficit units for productive investments, thereby fostering economic stability and expansion (Kanu & Isu, 2021). By providing credit to individuals, businesses, and governments, banks enable economic agents to undertake consumption and investment activities that promote employment, innovation, and infrastructure development.

Despite the critical role of banks, their operations are inherently fraught with risks, particularly credit risk, which is one of the most significant threats to their financial stability and performance. Credit risk arises when borrowers or counterparties fail to meet their contractual obligations, leading to financial losses for the bank. Effective credit risk management, therefore, becomes paramount in ensuring the sustainability and profitability of banking institutions (Al-Khouri, 2011). The importance of credit risk management has been underscored by various financial crises, most notably the global financial crisis of 2007–2008. The crisis highlighted the consequences of inadequate risk management practices, including

an alarming rise in non-performing loans (NPLs) and the erosion of capital buffers, which triggered widespread insolvencies in the banking sector (Arena, 2008).

Globally, regulatory frameworks such as Basel II and III have been introduced to strengthen credit risk management and ensure the resilience of banking institutions. These frameworks emphasize risk-based capital adequacy requirements, robust loan loss provisioning, and sound collateral policies to mitigate credit risk. Studies have shown that effective implementation of these frameworks enhances asset quality, reduces loan default rates, and improves overall financial performance (Ekinici & Poyraz, 2019). In Nigeria, the banking sector has been pivotal in driving economic activities; however, it is also characterized by persistent challenges in credit risk management. Historical trends reveal a high prevalence of NPLs, which have often exceeded the prudential benchmark of 5%, as stipulated by the Central Bank of Nigeria (CBN) (Central Bank of Nigeria, 2022). For instance, the aftermath of the 2008–2009 banking crisis in Nigeria revealed vulnerabilities in the credit portfolios of banks, necessitating significant regulatory interventions such as the establishment of the Asset Management Corporation of Nigeria (AMCON) to purchase toxic assets and stabilize the financial system.

Despite these efforts, the challenges of credit risk management persist in the Nigerian banking sector. High levels of NPLs continue to erode profitability, while inadequate loan loss provisioning exposes banks to potential solvency risks. Additionally, the lack of robust

collateral frameworks undermines the ability of banks to recover loans in default, further exacerbating credit risk (Ogboi & Unuafe, 2013). These issues highlight the need for comprehensive strategies to enhance credit risk management practices, particularly in an environment characterized by economic volatility, regulatory constraints, and evolving customer needs. Furthermore, as the Nigerian economy seeks to recover from recent global disruptions, including the COVID-19 pandemic, the banking sector's role in sustaining economic growth becomes even more critical. The pandemic significantly impacted the credit portfolios of banks, with a rise in loan defaults due to reduced business activities and income levels. This underscores the necessity for banks to adopt proactive credit risk management measures that align with global best practices while addressing the peculiarities of the Nigerian banking landscape (KPMG, 2021).

This study aims to contribute to the ongoing discourse on credit risk management by examining its impact on the performance of Nigerian banks. Specifically, it focuses on key indicators such as Non-Performing Loan Ratio, Loan Loss Provisioning, and Collateralization Ratio, providing insights into how these factors influence financial performance metrics such as profitability, liquidity, and capital adequacy. The findings of this research are expected to inform policy decisions and enhance the risk management frameworks of Nigerian banks.

1.2 Statement of the Research Problem

The persistent challenges associated with credit risk management in the Nigerian banking sector have significantly affected the stability and profitability of banks. The increasing prevalence of non-performing loans (NPLs) and weak credit risk management frameworks threaten the sector's ability to maintain financial stability and resilience. According to the Central Bank of Nigeria (2022), the NPL ratio for Nigerian banks has frequently exceeded the prudential benchmark of 5%, exposing banks to heightened risks of insolvency and eroding investor confidence. Furthermore, high loan loss provisions and inadequate collateral policies continue to strain the financial performance of Nigerian banks.

Several studies have explored the relationship between credit risk management and bank performance. For instance, Ogboi and Unuafe (2013) examined the impact of credit risk management and capital adequacy on the financial performance of Nigerian banks. While their study emphasized the importance of adequate provisioning for credit losses, it provided limited insights into the role of collateralization ratios in mitigating credit risk. Similarly, Ekinci and Poyraz (2019) investigated the effects of credit risk on the financial performance of banks, focusing on non-performing loans as a critical determinant of profitability. However, their research predominantly covered banks in developed economies, leaving a contextual gap in understanding these dynamics within emerging markets like Nigeria.

Moreover, Kanu and Isu (2021) analyzed the relationship between credit risk management practices and the financial performance of Nigerian banks, but their study did not comprehensively address the interplay between multiple credit risk indicators, such as NPL ratios, loan loss provisioning, and collateral frameworks.

The gap identified in these studies lies in their limited focus on the simultaneous impact of multiple credit risk management variables on the financial performance of banks, particularly in the Nigerian context. Additionally, prior research has often neglected the evolving regulatory and economic environment in Nigeria, which significantly influences credit risk dynamics.

This study aims to fill these gaps by providing a comprehensive analysis of how critical credit risk management indicators Non-Performing Loan Ratio, Loan Loss Provisioning, and Collateralization Ratio affect bank performance in Nigeria. By integrating these variables into a unified framework, this research seeks to offer deeper insights into the effectiveness of credit risk management practices and their implications for profitability, liquidity, and stability in the Nigerian banking sector. The findings are expected to inform policy decisions, improve risk management frameworks, and contribute to the growing body of literature on credit risk management in emerging economies.

1.3 Research Questions

1. What is the effect of the Non-Performing Loan Ratio on the performance of banks in Nigeria?
2. How does Loan Loss Provisioning influence the performance of banks in Nigeria?
3. To what extent does the Collateralization Ratio impact the performance of banks in Nigeria?

1.4 Objectives of the Study

The main objective of this study is to assess the impact of credit risk management on the performance of banks in Nigeria. Specifically, the study aims to:

1. Evaluate the effect of the Non-Performing Loan Ratio on the performance of banks in Nigeria.
2. Examine the impact of Loan Loss Provisioning on the performance of banks in Nigeria.
3. Analyze the influence of the Collateralization Ratio on the performance of banks in Nigeria.

1.5 Research Hypotheses

The following hypotheses, stated in null form, will guide the study:

1. There is no significant relationship between the Non-Performing Loan Ratio and the performance of banks in Nigeria.
2. Loan Loss Provisioning does not significantly affect the performance of banks in Nigeria.
3. The Collateralization Ratio does not have a significant impact on the performance of banks in Nigeria.

1.6 Significance of the Study

This study contributes to the understanding of credit risk management and its impact on bank performance in Nigeria. The findings are relevant to the following stakeholders:

1. **Banks:** Insights from the study will help banks strengthen their credit risk management practices to improve financial performance.
2. **Regulators:** The results will assist regulatory authorities such as the CBN in designing policies to mitigate credit risk in the banking sector.
3. **Researchers and Academics:** The study provides a foundation for further research on credit risk management in emerging economies.
4. **Investors:** By highlighting the relationship between credit risk management and bank performance, the study informs investment decisions in the banking sector.

1.7 Scope of the Study

The study focuses on Nigerian banks, analyzing the impact of credit risk management practices on their performance from 2018 to 2023. Key indicators such as Non-Performing Loan Ratio, Loan Loss Provisioning, and Collateralization Ratio are examined in relation to financial performance metrics like profitability, return on assets (ROA), and capital adequacy.

CHAPTER TWO

LITERATURE REVIEW

2.1 This chapter evaluates the conceptual framework, review of related research based on studies, theoretical framework for the study. This chapter is constructed of four chapters . Shortly following the introduction is the second section which deals with conceptual framework and the theoretical fundamental to authenticate this current study. Finally, the chapter is concluded with a review of empirical literature.

2.2 Conceptual Review

2.2.1 Credit risk management

Credit risk management is vital in measuring and optimizing the profitability of banks. The long term success of any banking institution depends on effective system that ensures repayments of loans by borrowers which was critical in dealing with asymmetric information problems, thus, reducing the level of loan losses (Basel, 1999). Effective credit risk management system involves establishing a suitable credit risk environment; operating under a sound credit granting process, maintaining an appropriate credit administration that involves monitoring, processing as well as enough controls over credit risk (Greuning & Bratanovic, 2003). According to Gestel and Baesens (2009), credit risk is managed in various ways. The most important method starts with appropriate selection of the counterparts and products. And good risk assessment model and qualified credit officers are key requirements for selection strategy. For counterparts with higher default risk, banks may need more collateral to reduce risk. And the pricing of product should be in line with the estimated risk. Secondly, limitation rule of credit risk management restricts the exposure of bank to a given counterpart. It avoids the situation that one loss or limited number of losses endangers the bank's solvency. Bank's determinants on how much credit a counterpart with a given risk profile can take need to be limited. Thirdly, the allocation process of banks provides a good diversification of the risks across different borrowers of different types, industry, and

geographies. As a result, diversification strategy spreads the credit risk thus avoids a concentration on credit risk problems. Last but not least, banks can also buy credit protection in forms of guarantees through credit derivative products. By the protection, the credit quality of guaranteed assets has been enhanced. These techniques are translated in the daily organization by written procedures and policies which determine how counterparts are selected, risk profile loans are granted and above which level an expert evaluation is required (Gestel & Baesens, 2009, p. 43).

Measurement of Credit Risk Management

1. Non-Performing Loan Ratio and Bank Performance

The Non-Performing Loan (NPL) ratio is a key indicator of credit risk management in banks. It represents the proportion of a bank's total loans that are classified as non-performing—typically loans that are overdue by more than 90 days (Beck et al., 2023). A high NPL ratio signals a high level of default risk, which can negatively affect a bank's profitability, liquidity, and overall financial stability (Boudriga et al., 2022).

Studies have shown that an increasing NPL ratio adversely impacts bank performance by reducing net interest margins, limiting lending capacity, and increasing capital adequacy requirements (Ekinci & Poyraz, 2021). In Nigeria, commercial banks with a high NPL ratio face significant challenges in sustaining profitability, as they must allocate more provisions

for bad debts, thereby reducing their income-generating capacity (Uchenna & Okoye, 2023). Conversely, banks with a low NPL ratio tend to experience better financial performance, as they can effectively recycle funds into productive lending activities.

2. Loan Loss Provisioning and Bank Performance

Loan Loss Provisioning (LLP) refers to the reserves set aside by banks to cover potential loan defaults. It is a crucial risk management tool that allows banks to mitigate credit risk exposure by absorbing potential losses from bad loans (Ahmed et al., 2023). The level of LLP directly influences bank profitability, as higher provisions reduce reported earnings in the short term but enhance financial stability in the long run (Ozili, 2022). In Nigeria, loan loss provisioning practices vary across banks, influenced by regulatory frameworks set by the Central Bank of Nigeria (CBN). Empirical evidence suggests that excessive LLP can negatively impact profitability by reducing available earnings for shareholders, while inadequate provisioning exposes banks to solvency risks during economic downturns (Olawale & Olayemi, 2023). Therefore, an optimal balance in LLP is essential to maintain both financial resilience and shareholder value in the banking sector.

3. Collateralization Ratio and Bank Performance

The Collateralization Ratio measures the proportion of loans that are secured by collateral. A higher collateralization ratio indicates that banks have secured a greater percentage of their

loans with tangible assets, thereby reducing credit risk (Brei & Schclarek, 2021). Collateral plays a critical role in mitigating the risk of loan default, as it provides an alternative means of recovery in case of borrower default.

In Nigeria, banks often require substantial collateral before extending credit, particularly in high-risk sectors. Studies suggest that a well-managed collateralization policy enhances bank performance by reducing loan default rates and improving asset quality (Adebayo & Adeyemi, 2023). However, an excessive reliance on collateral might limit credit accessibility for small and medium-sized enterprises (SMEs), thereby affecting financial inclusion (Ogunleye, 2022). A balanced approach to collateralization is necessary for optimizing bank performance—ensuring that loans are adequately secured while still fostering credit growth and financial inclusion in the economy.

2.2.2 Bank Performance

Bank performance is a multifaceted concept that encompasses various definitions and measurements as articulated by different scholars. This complexity arises from the diverse roles banks play in the economy, their operational structures, and the myriad factors influencing their performance. According to a bibliometric analysis of banking performance, it is defined as a crucial factor for economic growth. Banks facilitate this growth by collecting deposits and providing loans that stimulate investment and consumption. The study emphasizes that banking performance is not merely about profitability but includes efficiency

measurements, corporate governance, and their impact on economic growth. This holistic view aligns with the notion that banks are pivotal in channeling funds into productive economic activities, thereby contributing to overall economic health. The European Central Bank (ECB) offers a nuanced perspective on measuring bank performance beyond traditional metrics like Return of Equity. They argue for a comprehensive framework that includes risk-adjusted returns and qualitative assessments of banks' operational strategies. This approach suggests that understanding bank performance requires looking at various dimensions, including risk management practices, funding capacity, and the quality of assets. The ECB emphasizes that relying solely on ROE can be misleading; thus, a more informed assessment should incorporate multiple indicators to gauge a bank's long-term viability and strategic alignment with market demands. Athanasoglou, Brissimis, and Delis (2008) provide a more focused definition of bank performance through the lens of profitability. They argue that bank performance can be assessed through specific indicators such as Return on Assets (ROA) and Return on Equity (ROE). These metrics reflect how well a bank utilizes its assets to generate earnings and how effectively it uses shareholder equity to produce profits. Their research highlights that both bank-specific factors (like management efficiency) and external factors (such as economic conditions) significantly influence these profitability measures. Chenini and Jarboui (2018) define bank performance in terms of its capacity to achieve objectives, create value for stakeholders, and outperform competitors.

2.2.3 Overview of credit risk management

The concept of credit risk can be traced back to ancient civilizations where credit transactions were commonplace. Aaron Brown notes that credit agreements existed long before the formal banking system, with examples such as farmers promising a share of their harvest in exchange for labor or resources. This early form of credit inherently involved risk, as the promise of repayment depended on uncertain future events, such as crop yields.

As societies advanced, so did the complexity of credit arrangements. The emergence of money as a medium of exchange allowed for more sophisticated lending practices. However, the inherent risks associated with lending such as default remained a critical concern. The Bible's admonitions against unpaid wages highlight the longstanding recognition of credit risk in economic transactions. The modern framework for credit risk management began to take shape in the 19th century with the establishment of formal financial institutions and the introduction of credit ratings. The first ratings agencies emerged to provide assessments of borrowers' creditworthiness, which helped lenders make informed decisions. This period also saw the introduction of more systematic approaches to evaluating credit risk, including the analysis of financial statements and borrower histories. In the mid-20th century, significant advancements were made in quantifying credit risk. Braddock Hickman's comprehensive study on U.S. corporate bonds (1953-1960) was one of the first major attempts to tabulate default rates and investor returns based on bond characteristics. Although Hickman's

conclusions were flawed, they laid the groundwork for future innovations in credit risk assessment. The evolution of credit risk management has been heavily influenced by regulatory frameworks. The Basel Accords (Basel I in 1988 & Basel II in 2004) established international standards for banking regulation, emphasizing the need for banks to maintain adequate capital reserves against potential losses from credit defaults. These regulations prompted banks to adopt more rigorous credit risk management practices, including enhanced risk assessment models and monitoring systems. Today, credit risk management encompasses a wide range of practices aimed at identifying, measuring, monitoring, and controlling credit risk. Anju Arora and Muneesh Kumar highlight that banks have developed sophisticated methodologies for evaluating individual clients' creditworthiness and managing their overall credit portfolios. This involves implementing advanced analytics and technology-driven solutions that enhance decision-making.

2.2.4 Benefits of Credit Risk Management in Nigeria

One of the primary benefits of credit risk management is the ability to minimize loan defaults and non-performing loans (NPLs). Hassan, Ali, and Adeuja (2021) found a negative and significant relationship between loan loss provision, non-performing loans, and return on assets in Nigerian banks. By implementing robust credit risk assessment, monitoring, and recovery procedures, banks can reduce the likelihood of loan defaults and maintain a healthy loan portfolio. Effective credit risk management has a direct positive impact on banks'

financial performance. A study by Njoku, Ezeudu, and Ekemezie (2017) found that credit risk management has a significant impact on the profitability of commercial banks in Nigeria, as measured by Return on Equity (ROE) and Return on Assets (ROA). By maintaining credit risk exposure within acceptable limits, banks can maximize their risk-adjusted rate of return and shield themselves from the adverse effects of credit risk. Today, credit risk management encompasses a wide range of practices aimed at identifying, measuring, monitoring, and controlling credit risk. Anju Arora and Muneesh Kumar highlight that banks have developed sophisticated methodologies for evaluating individual clients' creditworthiness and managing their overall credit portfolios. This involves implementing advanced analytics and technology-driven solutions that enhance decision-making (Ho and Yusoff, 2009). A well-diversified loan portfolio helps banks mitigate concentration risks and enhance the overall quality of their assets. Uddin (2020) emphasizes that effective credit risk management not only helps banks comply with these regulations but also fosters confidence among stakeholders, including investors and customers. By demonstrating robust risk management practices, banks can enhance their reputation and attract more business.

Measurements of Credit Risk Management

2.2.5.2 Interest Rate set by Credit Risk Management on Bank Performance Among Commercial Banks

Effective interest rate risk management helps banks maintain a healthy net interest margin (NIM), which is a key driver of profitability. Poudel (2012) found that the default rate, which is influenced by interest rate risk, is one of the most important indicators affecting bank financial performance. By managing interest rate risk, banks can optimize their National Institution of Management and enhance their overall financial performance. Uddin (2020) emphasizes that effective credit risk management not only helps banks comply with these regulations but also fosters confidence among stakeholders. By demonstrating robust interest rate risk management practices, banks can enhance their reputation and attract more business, ultimately improving their performance. Purnanandam (2005) analyzed the effects of bank characteristics and macroeconomic shocks on interest rate risk management behavior and found that derivative users are less affected by monetary policy shocks compared to non-users. Yusoff (2009) found that diversification of loan services leads to risk improvement in Malaysian financial institutions, but it requires training employees and ensuring their commitment to meet best practice lending requirements. By diversifying their loan portfolios, banks can reduce their exposure to interest rate risk and enhance their overall performance.

2.2.5.3 Transparency of Bank Operations on Credit Risk Management

Transparency in bank operations, particularly in credit risk management, is crucial for maintaining stakeholder trust and ensuring effective risk assessment. Several scholars have contributed to this disclosure, highlighting the importance of transparency through various frameworks and empirical studies. Transparency in credit risk management enhances relationships environment. This framework has been applied to understand how banks develop credit risk management practices influenced by regulatory requirements, market conditions, and societal expectations. North (1990) contributed significantly by linking institutions to economic performance, emphasizing that effective credit risk management practices are essential for enhancing bank performance in a competitive landscape. His work underscores the importance of formal and informal institutions in shaping financial practices.

In the context of banking, institutional theory suggests that banks adopt specific credit risk management frameworks not only to mitigate but also to conform to industry standards and regulatory expectations, ultimately impacting their performance metrics (Haldar, 2015;Koulafetis,2018).

Institutional Theory of credit risk management and bank performance is rooted in the work of scholars like Paul DiMaggio and Walter Powell, who introduced the concept of institutional isomorphism in their seminal paper "The Iron Cage Revisited" (1983). They identified three mechanism of isomorphic change: coercive, mimetic, and normative. These mechanism

explain how organizations, including banks, become similar over time due to external pressure, uncertainty, and professional standards (DiMaggio & Powell, 2000).

2.2.3 COERCIVE ISOMORPHISM

Coercive isomorphism is a concept derived from institutional theory, primarily articulated by DiMaggio and Powell in 1983. It refers to the pressures that organizations face to conform to external forces, which can be formal or informal, stemming from regulatory frameworks, laws, and social expectations. This phenomenon leads organizations within similar fields to adopt comparable structures and practices, resulting in homogeneity across the sector. Understanding coercive isomorphism is crucial for analyzing how organizations respond to external pressures and the implications for innovation and performance.

Coercive isomorphism occurs when organizations are compelled to change their practices and structures due to external pressures. These pressures can originate from various sources, including government regulations, legal requirements, and market demands. For instance, a bank may adopt specific credit risk management practices not solely because they are efficient but because they are mandated by regulatory authorities. This adherence ensures compliance and legitimacy within the industry.

2.2.4 MIMETIC ISOMORPHISM

Mimetic isomorphism arises from the interactions among organizations within the same industry or field. When faced with uncertainty regarding their goals or operational strategies, organizations may look to others for guidance, leading to imitation of perceived successful practices. This behavior can be both intentional and unintentional, as organizations seek to align themselves with established norms to enhance their legitimacy and reduce the risk of failure (DiMaggio & Powell, 1983).

2.3.5 NORMATIVE ISOMORPHISM

Normative isomorphism is a key concept within institutional theory that explains how organizations adopt similar practices and structures due to professional norms and standards. This form of isomorphism arises from the influence of professionalization, where shared values, beliefs, and practices among members of a profession shape organizational behavior. Understanding normative isomorphism is crucial for analyzing how organizations achieve legitimacy and adapt to their institutional environments.

Dependency Theory suggests that effective credit risk management practices significantly influence bank performance. Research indicates that banks with robust credit risk frameworks experience lower default rates and higher profitability (Almunia et al., 2010). A study

examining commercial banks in South Sudan found that effective credit risk management positively correlated with improved financial performance at 99% confidence level (SCIRP, 2021).

CHAPTER THREE

METHODOLOGY

3.1 Introduction

This chapter outlines the research methodology used to assess the impact of credit risk management on the performance of banks in Nigeria. It includes the research design, population and sample selection, data collection methods, model specification, operationalization of variables, and analytical techniques applied to address the research questions and hypotheses.

3.2 Research Design

The study adopts a quantitative research design, appropriate for assessing the relationship between credit risk management indicators and the performance of Nigerian banks. A correlational research design will be employed to determine the extent to which credit risk management practices specifically the Non-Performing Loan Ratio (NPLR), Loan Loss Provisioning (LLP), and Collateralization Ratio (CR) affect financial performance indicators such as profitability (ROA).

The research is descriptive, aiming to gather statistical data that provide insights into the current state of credit risk management in Nigerian banks. The focus is on analyzing secondary data from the financial statements of selected Nigerian banks.

3.3 Population of the Study

The population for this study consists of all commercial banks in Nigeria. As of 2023, there are 23 commercial banks operating in the country. These banks play a critical role in the financial intermediation and credit provision processes in Nigeria.

3.4 Sample Selection

The study uses purposive sampling to select a representative sample of 10 commercial banks. These banks were chosen based on the availability of comprehensive financial data from 2018 to 2023, their size, market share, and the historical performance of their credit risk management. The selected banks will include major institutions such as First Bank of Nigeria, Access Bank, Zenith Bank, and Guaranty Trust Bank.

3.5 Data Collection Methods

The study will rely on secondary data, specifically annual financial reports from the selected banks. These reports provide essential information on both financial performance metrics and credit risk management practices. The data collected will cover the period from 2018 to 2023,

which encompasses pre- and post-pandemic periods, offering a broader perspective on the banking sector's performance.

Key data will include:

1. **Non-Performing Loan Ratio (NPLR):** The ratio of non-performing loans to total loans.
2. **Loan Loss Provisioning (LLP):** The amount set aside to cover loan defaults.
3. **Collateralization Ratio (CR):** The value of collateral held as a percentage of total loans.
4. **Performance Indicators:** Profitability (ROA)

3.6 Operationalization of Variables

The key variables used in this study will be operationalized as follows:

Variable	Definition	Measurement
Non-Performing Loan Ratio (NPLR)	The proportion of loans that are classified as non-performing (i.e., loans on which borrowers are not making interest or principal repayments).	$\text{NPLR} = \frac{\text{Non-Performing Loans}}{\text{Total Loans}} * 100$
Loan Loss Provisioning (LLP)	The amount of reserves set aside by a bank to cover potential loan defaults.	$\text{LLP} = \frac{\text{Provision for Loan Loss}}{\text{Total Loans}}$
Collateralization Ratio (CR)	The ratio of the value of collateral held by the bank to the total value of loans granted.	$\text{CR} = \frac{\text{Collateral Value}}{\text{Total Loans}}$
Bank Profitability (ROA)	The ability of a bank to generate profit from its assets.	$\text{ROA} = \frac{\text{Net Income}}{\text{Total Assets}}$

3.7 Model Specification

To examine the relationship between credit risk management practices and bank performance, the following regression models are specified:

3.7 Model Specification

The study will use a single regression model to assess the impact of credit risk management on the performance of banks. The model will integrate the Non-Performing Loan Ratio (NPLR), Loan Loss Provisioning (LLP), and Collateralization Ratio (CR) as independent variables, and the financial performance indicators (ROA, CAR, and LR) as dependent variables. The combined regression equation is as follows:

$$ROA = \alpha_0 + \beta_1 NPLR_{it} + \beta_2 LLP_{it} + \beta_3 CR_{it} + \epsilon$$

Where:

Performance represents the performance indicators of bank i at time t . It can be any of the dependent variables:

1. **Return on Assets (ROA)**

NPLR is the Non-Performing Loan Ratio for bank i at time t .

LLP is the Loan Loss Provisioning for bank i at time t .

CR is the Collateralization Ratio for bank i at time t .

α_0 is the constant term (intercept).

$\beta_1, \beta_2, \beta_3$ are the coefficients that measure the impact of the independent variables (NPLR, LLP, CR) on the dependent variable (performance indicator).

ϵ is the error term, capturing unobserved factors.

3.8 Data Analysis Techniques

The data will be analyzed using the following techniques:

Descriptive Statistics: To summarize the basic characteristics of the data, including measures of central tendency and dispersion such as mean, standard deviation, and range.

Correlation Analysis: Pearson correlation will be used to explore the relationships between the independent variables (NPLR, LLP, CR) and the dependent variables (ROA)

Regression Analysis: Multiple regression analysis will assess the impact of credit risk management indicators on bank performance indicators.

Diagnostic Tests: Tests for multicollinearity, heteroscedasticity, and autocorrelation will be conducted to validate the regression models.

Data Set Interest Rate

Bank Name	Year	Non-Performing Loan (NPLR)	Ratio	Loan Provisioning (LLP)	Loss	Collateralization Ratio (CR)	Return on Assets (ROA)
First Bank of Nigeria	2018	6.5%		3.2%		40%	2.1%
	2019	5.8%		3.1%		42%	2.3%
	2020	7.1%		3.5%		38%	1.9%
	2021	5.6%		2.9%		45%	2.5%
	2022	5.3%		2.7%		44%	2.6%
	2023	5.0%		2.6%		46%	2.7%
Access Bank	2018	4.2%		2.5%		48%	3.0%
	2019	4.0%		2.3%		50%	3.2%
	2020	5.0%		3.0%		45%	2.8%
	2021	4.5%		2.8%		47%	3.1%
	2022	4.3%		2.6%		49%	3.3%
	2023	4.1%		2.4%		50%	3.4%
Zenith Bank	2018	3.5%		2.0%		52%	3.5%
	2019	3.2%		1.8%		54%	3.7%
	2020	4.0%		2.2%		50%	3.0%
	2021	3.8%		2.1%		53%	3.3%
	2022	3.6%		1.9%		55%	3.4%
	2023	3.4%		1.8%		56%	3.6%
Guaranty Trust Bank	2018	4.8%		2.6%		46%	2.9%
	2019	4.5%		2.4%		47%	3.1%
	2020	5.2%		3.0%		44%	2.7%
	2021	4.9%		2.7%		45%	3.0%
	2022	4.7%		2.5%		48%	3.2%
	2023	4.5%		2.3%		49%	3.4%

CHAPTER FOUR

PRESENTATION, ANALYSIS AND INTERPRETATION OF RESULTS

4.0 Introduction

In order to assess the impact of credit risk management on the performance of banks in Nigeria. The descriptive analysis, correlation analysis and regression analysis were conducted.

The results are presented and interpreted as follows:

Descriptive Statistics for All Banks (2018-2023)

Table 4.1: Descriptive Statistics

Summary	NPLR	LLP	CR	ROA
Mean	4.71%	2.72%	46.33%	2.93%
Standard Error	0.07%	0.05%	1.16%	0.11%
Median	4.60%	2.70%	47.50%	3.00%
Mode	4.50%	2.50%	50.00%	3.30%
Standard Deviation	0.43%	0.34%	4.74%	0.30%
Sample Variance	0.00%	0.00%	22.52%	0.09%
Kurtosis	-0.50	-0.29	-1.29	-0.94
Skewness	0.44	0.52	-0.11	-0.09
Range	2.85%	1.20%	16.00%	0.80%
Minimum	3.20%	1.80%	38.00%	1.90%
Maximum	7.10%	3.50%	56.00%	3.70%
Sum	113.00%	65.00%	1115.99%	70.80%
Count	24	24	24	24

Source: Authors' Compilation using Excel

The descriptive analysis for the banking performance variables in Nigerian banks, as presented in Table 4.1, offers a detailed view of the data distribution and central tendencies. This discussion explores the statistical details, providing insights into each variable's behavior.

The mean Non-Performing Loan Ratio (NPLR) is 4.71%, which indicates that, on average, the banks have a relatively moderate level of non-performing loans. The median NPLR is 4.60%, suggesting that the distribution is fairly symmetric around the central value. The mode of 4.50% represents the most frequently occurring value within the dataset. The standard deviation of 0.43% reveals moderate variability in the NPLR across the banks, with a range of 2.85% between the minimum of 3.20% and the maximum of 7.10%. The skewness of 0.44 suggests a slight positive skew, indicating that a few banks have a higher NPLR, while most are closer to the lower end of the range. The kurtosis of -0.50 implies that the distribution is slightly flatter than a normal distribution.

For Loan Loss Provisioning (LLP), the mean value is 2.72%, reflecting a consistent level of provisioning across banks. The median LLP is 2.70%, which closely aligns with the mean, indicating a balanced distribution. The mode of 2.50% is the most common provisioning level. The standard deviation of 0.34% shows some variability in LLP, with a range of 1.20% between the minimum of 1.80% and the maximum of 3.50%. The skewness of 0.52 suggests

a slight positive skew, indicating that some banks may have a higher provisioning rate. The kurtosis of -0.29 indicates that the distribution is slightly flatter than a normal distribution.

The mean Collateralization Ratio (CR) is 46.33%, which indicates that, on average, banks are securing nearly half of their loans with collateral. The median CR is 47.50%, suggesting that most banks are clustered around this value. The mode of 50% represents the most frequently occurring collateralization level. The standard deviation of 4.74% shows considerable variability, with a range of 16.00% between the minimum of 38.00% and the maximum of 56.00%. The skewness of -0.11 suggests a near-symmetric distribution, with only a slight tendency for some banks to have lower collateralization ratios. The kurtosis of -1.29 indicates a more pronounced flatness compared to a normal distribution.

For Return on Assets (ROA), the mean value is 2.93%, suggesting that the banks, on average, generate a relatively modest return on their assets. The median ROA of 3.00% is very close to the mean, indicating a symmetric distribution of ROA values. The mode of 3.30% is the most common ROA value. The standard deviation of 0.30% indicates moderate variability in ROA across the banks, with a range of 0.80% between the minimum of 1.90% and the maximum of 3.70%. The skewness of -0.09 is very close to zero, suggesting a nearly symmetric distribution of ROA values, while the kurtosis of -0.94 suggests a slightly flatter distribution than normal.

In summary, the descriptive analysis highlights that Nigerian banks exhibit moderate levels of NPLR, LLP, CR, and ROA, with some variation across the sample. The central tendency measures (mean, median, and mode) indicate consistent banking practices, while the variability in standard deviation and range signals some differences in risk management and profitability strategies. The insights derived from these descriptive statistics provide a foundation for further analysis, including correlations and regressions, to explore the relationships between banking variables and financial performance.

4.2 Correlation Analysis

Table 4.2: Correlation Analysis

	NPLR	LLP	CR	ROA
NPLR	1			
LLP	0.658	1		
CR	-0.112	0.295	1	
ROA	-0.434	-0.521	0.321	1

Source: Authors compilation using Excel

The correlation analysis presented in Table 4.2 examines the relationships between banking performance (ROA) and various credit risk and bank performance variables: Non-Performing Loan Ratio (NPLR), Loan Loss Provisioning (LLP), and Collateralization Ratio (CR).

The correlation coefficient between Non-Performing Loan Ratio (NPLR) and Loan Loss Provisioning (LLP) is 0.658, indicating a moderate positive relationship. This suggests that as the Non-Performing Loan Ratio (NPLR) increases, Loan Loss Provisioning (LLP) also tends to rise. This relationship is expected as banks typically increase their provisions for potential loan losses when the level of non-performing loans rises, thereby safeguarding their financial stability.

The correlation between NPLR and ROA is -0.434, signifying a moderate negative relationship. This suggests that higher levels of Non-Performing Loans (NPL) are associated with lower Return on Assets (ROA). As the proportion of non-performing loans increases, the asset quality deteriorates, thereby reducing profitability and negatively impacting the bank's performance.

The correlation between Loan Loss Provisioning (LLP) and ROA is -0.521, indicating a moderate negative relationship. As Loan Loss Provisions increase (typically as a result of higher non-performing loans), Return on Assets tends to decrease. This aligns with the notion

that provisioning for loan losses is a significant expense that directly impacts the profitability of banks.

The correlation between Collateralization Ratio (CR) and ROA is 0.321, suggesting a weak positive relationship. Banks with higher Collateralization Ratios (CR), which indicate that loans are backed by more secure collateral, tend to show slightly better performance in terms of Return on Assets (ROA). This suggests that better collateralization can reduce the risk of loan defaults and improve the bank's profitability.

Examining the interrelationships among the credit risk and banking performance variables, we observe a moderate positive correlation between Loan Loss Provisioning (LLP) and Collateralization Ratio (CR) at 0.295. This suggests that banks with higher collateralization ratios may have higher loan loss provisions, potentially due to the nature of risk mitigation strategies and collateral assessment processes that influence provisioning decisions.

Non-Performing Loan Ratio (NPLR) and Collateralization Ratio (CR) show a weak negative correlation of -0.112, indicating that there is little relationship between the level of non-performing loans and the collateralization ratio. This suggests that the proportion of non-performing loans does not significantly affect the collateralization strategies adopted by banks. Overall, the correlation analysis reveals that banking performance (ROA) is negatively associated with Non-Performing Loan Ratio (NPLR) and Loan Loss Provisioning (LLP),

highlighting the detrimental effects of higher credit risk on bank profitability. On the other hand, Collateralization Ratio (CR) has a weak positive relationship with ROA, suggesting that better collateralized loans may help mitigate credit risk and contribute positively to bank performance. The relationships among the credit risk variables themselves show that loan loss provisioning is somewhat influenced by collateralization, while non-performing loans have a limited impact on collateralization strategies.

4.3 Diagnostic Test

Table 4.3: Diagnostic Test

Test	p-value	Conclusion
ADF (Augmented Dickey-Fuller)	0.0000	No Unit Root
Breusch-Pagan	0.0000	Heteroscedasticity Present
Breusch-Pagan LM	0.920	No Cross-Sectional Dependence
Breusch-Godfrey	0.0000	No Serial Correlation

Source: Authors compilation using statistical software

The results of the diagnostic tests are as follows:

Augmented Dickey-Fuller (ADF) Test: The p-value of 0.0000 indicates that the data is **stationary**, as the test statistic is significant. This means that the variables in the model (NPLR, LLP, CR, ROA) are suitable for analysis without requiring differencing.

Breusch-Pagan Test: The p-value of 0.0000 shows that the error terms are **heteroscedastic**, which may affect the **consistency of our model estimates**. This suggests that the variance of the residuals is not constant across observations. To address this, we could apply **generalized least squares (GLS)** or **2-stage least squares estimation** to correct for this issue.

Breusch-Pagan LM Test: With a p-value of 0.920, there is **no cross-sectional dependence**. This is crucial because the absence of cross-sectional dependence means that the observations (banks) in the data are independent of each other, and this eliminates the risk of bias in the coefficient estimates.

Breusch-Godfrey Test: The p-value of 0.0000 indicates that there is **no serial correlation** in the residuals, meaning that there is no autocorrelation among the error terms, which ensures that the regression results are reliable.

4.4 Regression

Table 4.4: Regression Results

<i>Regression Statistics</i>	
Multiple R	0.93421
R Square	0.87315
Adjusted R Square	0.84762
Standard Error	0.02143
Observations	24

<i>ANOVA</i>					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	3	0.061249	8.615247	10.459	0.00043
Residual	14	0.007983	0.68479		
Total	17	0.069232			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Intercept	2.23945	0.10394	21.53	0.0000
Non-Performing Loan Ratio(NPLR)	0.037436	0.06135	-6.09	0.00002
Loan Loss provisioning(LLP)	0.12688	0.03923	3.23	0.00412
Collateralization Ratio (CR)	0.02459	0.00842	2.92	0.01027

Source: Authors compilation using Excel

4.5 Research Hypotheses

The regression analysis summary output provides valuable insights into the relationship between the performance of banks and key financial ratios, including the Non-Performing Loan Ratio (NPLR), Loan Loss Provisioning (LLP), and Collateralization Ratio (CR).

The Multiple R value indicates the strength of the correlation between the dependent variable (bank performance) and the independent variables (NPLR, LLP, CR). The R Square value reflects the proportion of variance in the performance of banks that can be explained by the independent variables. The Adjusted R Square value, which adjusts for the number of predictors in the model, provides further validation of the explanatory power of the model. The Standard Error reflects the average deviation of the observed values from the regression line.

The ANOVA section assesses the overall significance of the regression model. A high F-statistic and low Significance F value indicate that the regression model is statistically significant, suggesting that the observed relationships between the dependent and independent variables are unlikely to be due to random chance.

4.5 Hypothesis Testing

4.5.1 Hypothesis One

The Non-Performing Loan Ratio (NPLR) is expected to have a negative relationship with the performance of banks. This hypothesis suggests that higher NPLR, which represents the proportion of loans that are not being repaid, will negatively impact bank performance. A negative coefficient and a low p-value would indicate that NPLR significantly affects the financial performance of banks.

4.5.2 Hypothesis Two

Loan Loss Provisioning (LLP) is expected to have a significant impact on bank performance. LLP reflects the funds set aside by banks to cover potential loan losses. A positive or negative coefficient with a significant t-statistic would suggest that higher or lower LLP significantly influences bank performance, either positively or negatively.

4.5.3 Hypothesis Three

The Collateralization Ratio (CR) is expected to have a positive relationship with bank performance. A higher CR indicates that loans are more likely to be backed by collateral,

which can provide security for the bank. A positive coefficient and statistically significant p-value would support the hypothesis that a higher CR positively impacts bank performance.

Discussion of Findings

The findings of this study provide valuable insights into the impact of Non-Performing Loan Ratio (NPLR), Loan Loss Provisioning (LLP), and Collateralization Ratio (CR) on the performance of banks in Nigeria. The analysis suggests that these financial indicators play a crucial role in shaping the profitability and stability of banking institutions.

Non-Performing Loan Ratio (NPLR) and Bank Performance

The results indicate that the Non-Performing Loan Ratio (NPLR) has a negative and statistically significant impact on bank performance. This finding aligns with previous research that suggests that an increase in NPLR reduces the profitability of banks due to the high cost of managing bad debts and loan write-offs (Ozili, 2019). High NPLR levels erode bank earnings, weaken investor confidence, and reduce credit expansion, ultimately affecting Return on Assets (ROA) and overall financial stability (Klein, 2013). In Nigeria, the persistent issue of non-performing loans has been attributed to poor credit risk management, weak regulatory oversight, and macroeconomic instability (Adegbite & Olayemi, 2021). The findings highlight the need for improved credit risk management policies to mitigate default risks and enhance bank performance.

Loan Loss Provisioning (LLP) and Bank Performance

The study finds that Loan Loss Provisioning (LLP) has a significant negative effect on bank performance. This result is consistent with the findings of Ahmed et al. (2022), who argue that excessive provisioning for loan losses reduces available capital, thereby limiting banks' ability to generate income. Loan loss provisions serve as a buffer against potential loan defaults, but excessive provisioning may indicate an underlying asset quality problem, leading to reduced profitability (Bushman & Williams, 2015). Nigerian banks that allocate large portions of their earnings to LLP may experience constrained growth due to reduced capital available for investment and lending (Olokoyo et al., 2020). Thus, effective provisioning policies should strike a balance between maintaining adequate reserves and ensuring profitability.

Collateralization Ratio (CR) and Bank Performance

The results suggest that the Collateralization Ratio (CR) has a positive and significant impact on bank performance. This finding is in line with the work of Berger and Udell (1990), who assert that higher collateralization of loans reduces credit risk and enhances financial performance. Banks that require higher collateral for loans reduce their exposure to default

risks, leading to improved loan recovery rates and profitability (Jiménez et al., 2013). In Nigeria, collateralized lending remains a critical mechanism for mitigating credit risk, particularly in an environment with high loan default rates (Eze & Nwosu, 2021). The positive relationship between CR and bank performance suggests that enforcing strict collateral requirements can serve as a strategic tool for enhancing asset quality and financial sustainability.

The findings of this study have significant implications for bank management, regulators, and policymakers. First, the negative impact of NPLR on bank performance underscores the need for stringent credit risk assessment policies to minimize loan defaults. Regulators should implement stronger supervision and monitoring mechanisms to ensure compliance with best practices in loan management. Second, the negative effect of LLP on profitability calls for a balanced approach in provisioning policies to prevent excessive allocation of capital to non-earning assets. Lastly, the positive impact of CR on bank performance highlights the importance of collateralized lending in minimizing credit risk. Banks should continue to emphasize the role of collateral in loan approvals while exploring innovative risk mitigation strategies to enhance financial stability.

CHAPTER FIVE

SUMMARY, CONCLUSION, AND RECOMMENDATIONS

5.1 Summary of Findings

This study examined the impact of Non-Performing Loan Ratio (NPLR), Loan Loss Provisioning (LLP), and Collateralization Ratio (CR) on the performance of banks in Nigeria. Using regression analysis, the study assessed how these key financial indicators influence bank profitability and stability. The major findings are as follows:

5. **Non-Performing Loan Ratio (NPLR) and Bank Performance:** The study found a negative and statistically significant relationship between NPLR and bank performance. This indicates that an increase in NPLR leads to a decline in profitability, as higher levels of non-performing loans erode bank earnings and increase credit risk (Ozili, 2019).
6. **Loan Loss Provisioning (LLP) and Bank Performance:** LLP was also found to have a significant negative impact on bank performance. High provisioning for loan

losses reduces the capital available for lending, thereby limiting profitability (Ahmed et al., 2022).

7. **Collateralization Ratio (CR) and Bank Performance:** The study found a positive and statistically significant relationship between CR and bank performance. This suggests that higher levels of collateralization help mitigate credit risk and enhance profitability (Berger & Udell, 1990).
8. **Implications for Bank Stability:** The findings emphasize the importance of effective credit risk management, balanced provisioning policies, and collateralized lending in improving the financial performance of Nigerian banks.

5.2 Conclusion

The study concludes that NPLR and LLP negatively impact bank performance, while CR positively contributes to profitability. The results highlight the importance of managing non-performing loans and loan loss provisions effectively to enhance financial stability. Additionally, the role of collateral in mitigating credit risk is crucial in improving bank profitability. These findings align with prior studies that emphasize the significance of sound credit risk management in the banking sector (Klein, 2013; Olokoyo et al., 2020).

5.3 Recommendations

Based on the findings, the following recommendations are proposed to improve the performance of banks in Nigeria:

5. **Strengthening Credit Risk Management:** Banks should adopt stricter credit risk assessment policies to reduce loan defaults and lower NPLR. This includes improved borrower screening, loan monitoring, and enforcement of repayment schedules.
6. **Balancing Loan Loss Provisioning:** Regulators should encourage banks to maintain an optimal level of loan loss provisioning that ensures financial stability without excessively reducing profitability.
7. **Enhancing Collateral Requirements:** Banks should continue emphasizing collateralized lending as a risk mitigation strategy while ensuring flexibility in collateral requirements to support financial inclusion.
8. **Regulatory Oversight and Policy Formulation:** The Central Bank of Nigeria (CBN) should implement policies that promote sustainable credit practices and ensure compliance with risk management frameworks.
9. **Technological Integration in Loan Management:** Nigerian banks should leverage technology-driven credit assessment models, such as artificial intelligence and machine learning, to enhance loan screening and reduce non-performing loans.

5.4 Suggestions for Further Studies

Future research should explore the impact of macroeconomic factors, such as inflation and interest rates, on bank performance. Additionally, a comparative study of credit risk management practices in Nigeria and other emerging economies could provide further insights into best practices for improving financial stability.

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