

CREDIT RISK MANAGEMENT AND PROFITABILITY OF COMMERCIAL BANKS IN NAIROBI CITY COUNTY, KENYA

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ABSTRACT

The connection between credit risk management and profitability in Kenyan commercial banks is a significant issue, as the financial health and profitability of these institutions have been adversely affected by elevated non-performing loans. Thorough credit assessments and strong risk mitigation strategies are necessary for preventing defaults and maintaining stability; however, they can also result in decreased lending and lower revenue from interest income. The Kenyan banking sector faces a delicate balance between managing credit risk and maintaining profitability, which is further complicated by the country's fluctuating economic growth rates and political uncertainties that can exacerbate credit risk, leading to higher provisions for loan losses and reduced profitability. Lending remains the main purpose of commercial banks, making it the main cause of credit risk. Therefore, it is crucial for banks to reduce their exposure to credit risk in order to ensure their continued operation. The aim of this research was to analyse how credit risk management impacts the profitability of commercial banks in Nairobi City County, Kenya. Its main goal is to determine how credit approval, collateral policies, credit limitations, and solvency impact the profitability of commercial banks in Nairobi City County, Kenya. It was based on four theories: adverse selection theory, asymmetric information theory, credit risk theory, and lending credibility theory. Descriptive research design was utilized. The target group consisted of the 38 commercial banks located in Nairobi City County of Kenya according to the Central Bank of Kenya Report (2023). A census

was conducted due to the population being fewer than 100 individuals. A questionnaire was used to collect primary data, while a data collection sheet was used for secondary data. The analysis was assisted by a multiple regression model. Various assessments were conducted, such as autocorrelation, heteroskedasticity, multicollinearity, normality, and stationarity tests. Data analysis involved the use of descriptive statistics as well as multiple regression analysis. The findings revealed significant insights into the components of credit approval, with borrower character and collateral being crucial factors. Regarding collateral policies, a strong belief in the link between asset quality and profitability emerged; highlighting that high-quality collateral enhances bank profitability. In terms of credit restrictions, there was a strong consensus on the importance of borrower payment history in determining credit eligibility, with stringent restrictions seen as a means to improve profitability by reducing default risks. The study concluded that effective credit approval processes significantly enhance the profitability of these banks. Given the positive effect of credit approval on profitability, it is recommended that the management of commercial banks implement comprehensive credit approval processes that rigorously assess borrower character and financial history. While this study examined the impacts of credit approval, collateral policies, credit restrictions, and solvency on profitability, future research could investigate the interaction effects of these factors in greater detail.

Keywords: Asset Qualities, Credit Risk Management, Credit Approval, Collateral Policies, Profitability.

INTRODUCTION

Employing a risk-centric examination approach has been embraced to steer inspection procedures towards the more perilous domains within both operational and business spheres. Proficiency in risk-focused oversight is continually honed through exposure to pertinent training sessions (Jigeer & Koroleva, 2023). This strategy not only raises awareness within the banking sector, particularly among smaller institutions, about the imperative of establishing formal and documented risk management frameworks but also underscores the necessity of specialized, concentrated, and controlled management for increasingly intricate risk types.

Risk management, as postulated by Musa and Nasieku (2019), involves the implementation of processes by a bank to regulate its financial exposures. These procedures usually involve basic steps like recognizing risks, examining them, evaluating them, monitoring audits, and managing or regulating them. While certain risks can be measured with common methods such as standard deviation, others require more complex measurement approaches. Efficient risk management is not only a means of protection but also a proactive approach for financial institutions, depending on the quality of leadership and governance. Identifying a danger, as emphasized by Siriba (2020), makes it less risky compared to unknown dangers. Given its multifaceted and often interconnected nature, risk necessitates proactive management rather than passive apprehension. While it may not be entirely avoidable, risk is indeed manageable, with many banks thriving by intelligently navigating risks, as emphasized by Mwanzia (2021).

Banks in the US employ sophisticated risk assessment tools, including credit scoring models and stress testing, to evaluate borrower creditworthiness and mitigate potential risks. Robust underwriting standards are maintained to safeguard against defaults and non-performing loans (Abbas, Iqbal & Aziz, 2019). Profitability in the US banking sector is influenced by several factors, including interest rates, economic growth, and regulatory compliance costs. The interest rates were at historically low levels after the financial crisis in 2008 have compressed net interest margins, impacting banks' bottom line. However, US banks have adapted by diversifying revenue streams and embracing technological innovations to enhance operational efficiency and reduce costs.

In Europe, commercial banks face a similar regulatory landscape, with oversight from entities such as the European Central Bank (ECB) and national regulatory authorities. Credit risk management practices vary across European countries but generally emphasize prudent lending standards and risk diversification (Birhanu et al., 2021). The ECB performs stress tests to evaluate how well banks can withstand economic downturns, safeguarding the financial

framework's stability. Profitability difficulties in Europe are a result of reasons like low-interest rates, slow economic growth, and regulatory changes. Narrow net interest margins and non-performing loans have constrained profitability, prompting banks to explore alternative revenue sources and streamline operations. Furthermore, increased capital requirements under regulatory frameworks like Basel III have placed additional pressure on returns on equity.

In Asia, commercial banks operate in diverse markets with varying levels of regulatory oversight. While countries like China, Singapore, and Hong Kong boast robust regulatory frameworks, others may exhibit weaker supervision (Jigeer & Koroleva, 2023). Asian banks rely on a mix of traditional and innovative credit risk management practices, leveraging local market knowledge and relationship banking to mitigate risks effectively. Factors like economic growth, interest rate changes, and competitive pressures impact the profitability of the Asian banking industry (Al Zaidanin & Al Zaidanin, 2021). Rapid economic expansion has presented growth opportunities for banks in the region, but intense competition from non-bank financial institutions and fintech firms has intensified margin pressures. To enhance profitability, Asian banks are embracing digitalization, exploring new business models, and expanding their presence in emerging markets.

Regionally, in South Africa, the most developed economy on the continent, commercial banks operate within a well-established regulatory framework overseen by the South African Reserve Bank (SARB). Credit risk management practices are sophisticated, with banks employing advanced analytics and stringent underwriting standards to assess borrower creditworthiness and mitigate risks (Chilukuri & Rao, 2014). Profitability in South African banks is influenced by factors such as interest rate fluctuations, economic growth, and regulatory compliance costs. However, despite facing competition from both domestic and international players, South African banks have historically demonstrated resilience and profitability.

In Ethiopia, the banking sector is relatively nascent compared to other African countries. While the regulatory environment is evolving, supervision from the National Bank of Ethiopia (NBE) ensures adherence to basic risk management principles (Birhanu et al., 2021). Practices of managing credit risk in banks located in Ethiopia often rely on traditional collateral-based lending, with limited use of advanced risk assessment tools. Profitability is affected by factors such as government policies, access to financing, and infrastructure development. Despite challenges, Ethiopia's banking sector has shown potential for growth, driven by the country's expanding economy and increasing financial inclusion efforts.

Rwanda represents a unique case in Africa, characterized by a rapidly growing economy and a strong focus on technological innovation. The Rwanda Development Board (RDB) oversees the banking sector, promoting policies aimed at enhancing financial stability and inclusion (Rwechungura & Kaleshu, 2020). Rwandan banks' practices in managing credit risk emphasize innovation, such as digital loan platforms and alternative credit scoring methods to reach underserved segments of the population. Profitability is influenced by factors such as government initiatives, regional integration efforts, and investment in infrastructure. Rwandan

banks are exploring opportunities for collaboration and partnerships to drive profitability in a competitive market.

In Kenya, the banking sector is dynamic and highly competitive. The Central Bank of Kenya (CBK) is crucial in overseeing the banking sector in Kenya, maintaining compliance with prudential guidelines and risk management standards. Credit risk management practices in Kenyan banks are advanced, leveraging technology and data analytics to assess creditworthiness and manage risks effectively (Echwa & Atheru, 2020). Profitability is driven by factors such as mobile banking innovation, diaspora remittances, and a vibrant entrepreneurial ecosystem (Gitari, Mohamed & Huka, 2021). Kenyan banks have demonstrated resilience and adaptability, capitalizing on opportunities in digital finance and expanding their footprint in regional markets.

The CBK is responsible for guaranteeing the financial stability, liquidity, and effective operation of Kenya's commercial banks. Consequently, inadequate regulation of elements like capital adequacy ratios, liquidity levels, and asset quality could adversely affect the profitability of commercial banks, as reported by (CBK, 2019a). Variations in monitoring conditions within banking and financial markets may significantly impact the profitability of banks. Banks operate with credit policies that direct their procedures for extending credit. The credit control policy serves as the overarching framework dictating how credit is extended to bank customers (Kenya Bankers Association, 2019b). It delineates criteria for accessing credit, specifying timing, purpose, repayment terms, and requisite collateral. Within the credit control policy, methods for assessing and evaluating the risk associated with each potential applicant are integral components. The CBK oversees the regulation and licensing of commercial banks, supervising their operations to ensure compliance with regulatory standards. The rules and laws specified in the CBK Act (Chapter 491 of Kenyan legal code) underwent revision in 2012, becoming enforceable in January 2013 (CBK, 2023). These regulations and guidelines are essential for protecting the interests of investors and customers, upholding integrity in financial markets, mitigating industry risks, and shielding clients from exorbitant fees.

Credit Risk Management

When borrowers fail to repay loans or advances on time and in full, the incident of credit risk occurs, as highlighted by Muthoni, Mwangi, and Muathe (2020). An elevated level of credit risk for a bank significantly increases the chances of encountering financial turmoil. Interest rates are critical for influencing credit risk. The Central Bank of Kenya (2019b) suggests that lower rates for borrowing and lending over a short period of time can initially decrease banks' refinancing costs, thereby reducing their credit risk exposure. This reduction occurs because banks may ease their lending standards and offer new loans with higher associated risks while simultaneously narrowing loan spreads. However, this strategy may prove unsustainable over time, as prolonged periods for reduced interest rates can encourage banks to engage in excessive risk-taking, thereby exacerbating their exposure to credit risk.

Understanding credit risk requires differentiating between expected and unexpected credit risks. Mwangi, Ong'era, and Matanda (2022) explain that anticipated potential for financial

loss refers to the probability of a bank's credit portfolios will incur losses of a specific magnitude over a defined period, based on a function that describes the likelihood of various outcomes occurring. These anticipated defining the reduction in profits in a quantitative way calculated by multiplying exposure at default (EAD), loss given default (LGD), and probability of default (PD). In terms of economics, anticipated losses considered inevitable and banks should consider it as to be treated an inherent expense associated with lending operations, necessitating the maintenance of sufficient reserves.

Sudden credit risk is indicative of unforeseen circumstances, the gap amidst complete upcoming damages and those that were anticipated within a specific interval of certainty. When unforeseen losses impact funds reserved for capital purposes, banks are compelled to allocate provisions are funded by economic capital at a certain cost influenced by current market interest rates (Gitari, Mohamed & Huka, 2021). The financial capital is a careful balancing act in the high cost of equity needed for bank funding and the advantages of decreasing the risk of devaluing the bank as a whole.

Mwanzia (2021) argues that managing credit risk involves a systematic approach to tackling uncertainties, including risk evaluation, the development of practical strategies, and the implementation of risk-reduction measures using managerial resources. The core aim of credit risk management is to keep the bank's exposure to manage credit risk to optimize investment returns while maintaining acceptable levels of risk. In order to accomplish this goal, banks carefully assess, monitor, and mitigate credit risk by making sure they possess enough capital and are adequately rewarded for the risks they assume (CBK, 2023). The financial measures of effective credit risk management are largely cantered on the quality of loans, as high default rates are often linked with lending activities. Ratios such as loans to assets and loans to deposits shed light on the relative magnitude of the high-risk asset portfolios. When an individual who is receiving a loan defaults on their obligations under a loan agreement, the bank's cash flow is adversely affected, as payments on both principal and interest may be delayed, reduced, or lost altogether.

The Basel Committee issued instructions for banks to ensure robust credit risk management for a stable banking system. These guidelines include creating a supportive environment of credit risk, following prudent procedures for allocating credit, maintaining effective management of credit, implementing reliable quantifying and tracking systems, and establishing robust controls over credit risk (Kenya Bankers Association, 2019b). Various studies on credit risk management show mixed results: some indicate an effective credit risk management is positively correlated with bank profitability (Birhanu et al., 2021), while others suggest a negative relationship between these factors (Kandie & Bogonko, 2023).

Jigeer and Koroleva (2023) outlined key principles for credit risk management, highlighting the importance of clear operational frameworks, defined responsibilities to ensure accountability, prioritized processes to instil discipline, and transparent communication of duties at all organizational levels. For banks in Kenya that are for profit, incorporating thorough investigation in loaning operations is crucial for developing credit risk management strategies

that are impactful and in line with regulatory standards from the Basel Committee on Banking Supervision (BCBS) and the CBK, while also maximizing profitability.

Effective credit risk management strategies are designed to anticipate, mitigate, and prevent instances of non-payment. These strategies serve two primary purposes: improving internal efficiency in operations management of a bank and enabling regulators of financial institutions to oversee the overall system's financial stability (Chilukuri & Rao, 2014). Such strategies emphasize the importance of diversifying assets, balancing risk and return, maintaining high asset quality, and protecting depositor funds (Atambo & Mogwambo, 2019). Banks are advised to adopt the "Understand your client" approach, the BCBS advocated, to minimize exposure to credit risk.

In the Basel framework, credit risk is comprehensively managed through a series of components, each with specific measures designed to assess and mitigate the risk of borrower default (Musa & Nasieku, 2019). These components include credit approval, collateral policies, credit restrictions, and solvency. Credit approval is a critical initial step in the lending process, involving a thorough evaluation of potential borrowers. This evaluation is based on two key measures: character and collateral (Mwanzia, 2021). Character is the creditworthiness, integrity, and intention to pay back the borrowed money by the one who borrowed. Measures for assessing character include reviewing the borrower's credit history, which involves examining past credit behaviour, payment records, and any previous defaults.

Credit scores are utilized to quantify creditworthiness, and references or personal interviews may be conducted to gain insights into the borrower's reputation and reliability. Collateral is the collateral provided by the borrower to guarantee the loan, which minimizes the lender's exposure (Siriba, 2020). Measures for collateral include its valuation, ensuring the collateral's market value is appraised regularly. The ratio of loan amount to property value (LTV), the proportion of the loan amount compared to the value of the collateral, is also a significant determination (Rwechungura & Kaleshu, 2020). The type of collateral, considering its liquidity and marketability, is evaluated to determine its effectiveness in risk mitigation.

Collateral policies guide the management and assessment of collateral within the bank's credit risk framework. These policies are measured by asset qualities and asset types (Al Zaidanin & Al Zaidanin, 2021). Asset qualities are the attributes that determine how effectively the collateral can mitigate credit risk. Measures include assessing the quality and durability of the collateral, ensuring it is in good condition and has a long lifespan. The marketability of the asset is also evaluated to understand how easily it can be sold in the market if necessary (Echwa & Atheru, 2020). Asset types are the various categories of assets accepted as collateral. Measures include the diversity of assets, which ensures that various kinds of assets like real estate, cash, and inventory are accepted to spread risk. Compliance with regulatory standards and internal policies is also measured to ensure that the collateral types are acceptable and meet required standards.

Credit restrictions are the rules that limit the conditions under which credit is extended. These restrictions consider the borrower's payment history and the necessity of the loan, ensuring that credit is granted prudently (Muthoni, Mwangi & Muathe, 2020). Borrower's payment history involves reviewing the record of the borrower's previous loan repayments. Measures include monitoring delinquency rates, which track the frequency and severity of past late payments, and default rates, which indicate historical default rates of the borrower (Kandie & Bogonko, 2023). Need based ensures that the credit extended aligns with the borrower's actual financial needs. Measures include verifying the purpose of the loan to confirm its intended use and necessity. Additionally, the loan amount is assessed to determine if it is reasonable based on the borrower's financial situation, ensuring that the credit extended is justifiable.

Solvency measures the borrower's capacity to fulfill extended periods financial responsibilities. This component is evaluated by examining the outstanding loans and the borrower's total assets. Total outstanding loans are the aggregate amount of all loans currently owed by the borrower (Mwangi, Ong'era & Matanda, 2022). Measures include calculating the total debt and comparing it with industry standards to assess whether the borrower's debt levels are manageable. The borrower's debt servicing capacity is also evaluated based on their cash flow analysis to determine their ability to service existing debt. The total assets consist of the combined value of all owned assets by the borrower, indicating their overall financial health (Ngari, 2021). Measures include regular appraisal of the borrower's assets to ensure accurate valuation. The borrower's net worth is determined by subtracting total liabilities from total assets., is assessed to gauge their financial stability and ability to withstand potential financial stresses.

Profitability of Commercial Banks in Kenya

The banking sector in Kenya has played a vital role in promoting sustainable development through the provision of readily available financial services. Nevertheless, the sector currently encounters several emerging obstacles because of worldwide and local geopolitical changes, socio-environmental concerns, and fast technological progress. These elements have compelled banks to deviate from conventional business practices. Despite these changes, banks continue to contribute significantly to the economic and social landscape of Kenya (Kenya Bankers Association, 2019a). The ability of commercial banks to stay solvent and provide profitable returns to investors shows their value creation. Mwanzia (2021) argues that a bank's profitability is a key measure of its vulnerability to financial crises. Higher profitability suggests that banks are well positioned to boost their capital reserves quickly by holding on to their earnings.

Bank profitability is shaped by factors, whether they are internal or external, are subject to change across different nations and territories (CBK, 2019b). Traditionally, empirical research has focused on ROA and ROE are the main indicators of the profitability of banks (Nyabaga & Wepukhulu, 2020). In recent years, however, scholars have broadened this scope to include other metrics such as Economic Value Added (EVA) and Net Interest Margin (NIM). These additional metrics offer a broader perspective on the financial results and value creation of banks.

The variances in ROA and ROE are primarily attributed to changes in financial leverage. ROA assesses the efficiency of a bank in using its assets to make a profit, while ROE helps investors evaluate the returns on their investments. The ROA is commonly used as a benchmark, while ROE helps to support and enhance the conclusions drawn from ROA (Muthoni, Mwangi, & Muathe, 2020). In the commercial banking sector, ROAs tend to be modest, often around 1%, whereas ROEs usually fall between 10% and 30%. Consistently achieving higher-than-average ROE and ROA is indicative of strong bank performance. For banks that report positive profits, increased debt financing typically leads to a higher ROE, as ROE is closely connected to ROA through the Equity Multiplier (EM), determined by dividing the total assets by the shareholders' equity (Ngari, 2021). This study will employ ROA to evaluate the profitability of commercial banks due to its strength, ease of use, and ability to be easily compared, and its effectiveness as an essential instrument for evaluating both financial success and general effectiveness.

Over the past decade, Kenya's commercial banking sector has shown underwhelming performance, with average annual growth in Profits Before Tax (PBT) persistently falling below 20% between 2009 and 2019, as noted by the CBK (2019a). However, the industry demonstrated significant resilience in 2022, marked by a remarkable improvement in its financial standing (Kenya Bankers Association, 2023). During this period, the industry saw a substantial increase in total operating income, which grew faster than operating costs, leading to a favourable reduction in the cost-to-income ratio. Notably, total operating income rose by 17.7%, driven by an extraordinary 93.6% surge in foreign exchange gains, while income from loans and government securities continued to rise steadily.

Operating costs, on the other hand, increased by a more moderate 13.4%, reflecting improved operational efficiency within the industry, as the cost-to-income ratio decreased from 58.4% in 2021 to 56.7% in 2022 (Kenya Bankers Association, 2023). Additionally, the net interest margin improved to 6.8% in 2022, up from 6.5% the previous year. Total pre-tax profits saw a significant 23.0% increase, with key performance indicators such as the mean on assets and equity's return rising to 3.7% and 26.5%, respectively, compared to 3.3% and 22.1% in 2021. This improvement in profitability reflects the broader economic recovery from the pandemic's adverse effects and signals a positive shift in the financial health of the sector.

Commercial Banks in Nairobi City County of Kenya

Kenya's commercial banks are crucial in channelling financial resources into investments by offering credit to credit extended to companies and shareholders. Lending is at the core of the banking sector, as loans form the main assets and produce the majority of operational revenue (Echwa & Atheru, 2020). These loans pose the greatest risk for financial institutions. In January 2024, Kenya has a total of 38 licensed commercial banks, 8 Authorized Non-Operating Bank Holding Companies, as well as one mortgage finance company (CBK, 2023). This study selected Nairobi City County due to its status as the location of the headquarters of all these commercial banks. The financial results of banks in Kenya has suffered significantly because of continuous difficulties in handling credit risk. An important sign of this decrease is the elevated proportion of non-performing loans (NPLs). In 2023, the proportion of non-performing loans compared to total gross loans is still concerning, frequently surpassing 12%.

This on-going problem indicates that a significant portion of loans are either in default or at risk of default, underscoring serious weaknesses in the management of credit risk. Banks have been compelled to substantially increase their provisions for loan losses in recent years. This surge in provisioning has put a considerable strain on profitability, with some institutions reporting provision coverage ratios exceeding 50%. Such high provisioning levels reflect the significant financial burden and the growing challenges associated with managing credit risk. The impact of these issues is also evident in profitability metrics. The return on assets (ROA) for Kenyan banks has been on a downward trajectory. In 2022, the average ROA was approximately 3.7%, a decrease from around 4.0% in 2021 (Kenya Bankers Association, 2023). This decline is indicative of the adverse effects that rising non-performing loans and higher provisions have had on overall profitability. Although there was a slight improvement in the net interest margin (NIM), which rose to 6.8% in 2022 from 6.5% in 2021, this modest gain does not fully offset the negative consequences of increased credit risk (CBK, 2023). The persistent challenges related to credit risk continue to test banks' ability to sustain strong interest margins. Moreover, the ratio of expenses to revenue, an indication of operational efficiency, has been affected by these credit risk issues. In 2022, the ratio stood at 56.7%, down from 58.4% in 2021 (Kenya Bankers Association, 2023). While this decrease suggests some improvement in operational efficiency, the elevated levels of delinquent loans and increased provisioning continue to pressure financial results.

Statement of the Problem

Managing credit risk is a crucial issue for modern businesses and financial institutions, requiring the creation of advanced methods and systems to enhance forecasting and visibility of performance. Economies worldwide, both in developing and developed countries, face significant challenges (Gitari, Mohamed & Huka, 2021). Businesses are pivotal to economic growth, as they create jobs and provide a range of goods to meet consumer needs. In carrying out their operations, commercial banks encounter several risks, including liquidity risk, interest rate risk, credit risk, internal compliance risk, money laundering risk, and foreign exchange risk. The study is necessary because of the poor credit risk management leading to reduced profitability in commercial banks.

Risk management, particularly in handling credit risks, stands as an essential factor for the survival of commercial banks in Kenya's financial sector. The primary revenue stream for these banks emanates from interest accrued on loans extended. Amidst intensifying competition among financial entities, there exists a prevailing notion that larger, more diversified institutions inherently possess greater stability. However, this confidence often breeds a tendency towards assuming excessive risks in the pursuit of attracting a broader clientele base, thereby offering loans at reduced interest rates (Kajirwa & Katherine, 2019). While risk remains an inherent facet of any business endeavour, mismanagement of credit risks significantly undermines a bank's ability to generate profit and remain sustainable in the long run. In the middle of a chaotic situation global economy and the rise of unforeseen challenges like the Covid-19 pandemic, the banking sector remains constantly vulnerable to macroeconomic shifts (Kandie & Bogonko, 2023). As a result, skilfully managing

potential losses positions banks more favourably to drive growth, secure profitability, and stimulate broader economic development.

The interplay between managing credit risk and ensuring profitability in commercial banks in Kenya is a crucial concern, as elevated levels of loans that are not performing (NPLs) have severely affected both their financial health and profitability. To avoid defaults and ensure stability, it is essential to execute successful credit risk management methods, including thorough credit assessments and robust risk reduction tactics (Karanja, 2022). However, these measures can result in reduced lending and lower interest income. The Kenyan banking sector must navigate the challenging balance between managing credit risk and sustaining profitability, a task made more complex by the country's variable economic growth and political uncertainties that may elevate credit risk and result in increased loan loss provisions and reduced profitability.

Significant research projects have explored the relationship between credit risk management and its impact on bank profitability in both advanced and emerging markets (Karanja, 2022). Lending performance was used instead of profitability, thus presenting a conceptual gap. Findings from research conducted within the Kenyan domain showcase inconsistencies, attributable to the utilization of diverse model parameters and profitability metrics (Ngari, (2021; Gitari, Mohamed & Huka, 2021). Majority of these investigations have constructed their frameworks with a meticulous emphasis on credit approval, collateral policies, and credit restrictions. Despite the pivotal role these metrics play in gauging credit risk management within banking institutions, the ratio of loans to total assets (LAR) often remains overlooked, thus a conceptual gap. Onger, Nyangau, and Nyaboga (2021) contend that The ratio of loans to assets is a critical measure of credit risk that impacts the loan portfolio. The research concentrated on banks in Kisii County, resulting in a contextual void. Muthoni, Mwangi, and Muathe (2020) posit loans as the primary conduit for credit risk within banks. The research utilized an explanatory research design instead of a descriptive research design, causing a methodological gap.

Holding an excessive amount of credit in the form of loans amplifies default risk, consequently leading to unrecoverable bad debts. The escalation of default risk further necessitates augmented capital reserves to safeguard depositors' funds, particularly when banks undertake exceptionally high risks (Echwa & Atheru, 2020). A study by Muthoni, Mwangi, and Muathe (2020), focused on Commercial and Services Listed Companies instead of specifically analysing commercial banks, thus a contextual gap. Having a large amount of loans in a bank's overall assets can create an underlying liquidity risk. Therefore, the loan to assets ratio is crucial in assessing the bank's ability to meet short-term obligations without increasing credit risk or disrupting its operational stability.

Research Objectives

The general objective of this study is to determine the effect of credit risk management and profitability of commercial banks in Nairobi City County of Kenya. The study was guided by the following specific objectives.

- (i) To determine the effect of credit approval on the profitability of commercial banks in Nairobi City County of Kenya.
- (ii) To establish the effect of collateral policies on the profitability of commercial banks in Nairobi City County of Kenya.
- (iii) To assess the effect of credit restrictions on the profitability of commercial banks in Nairobi City County of Kenya.
- (iv) To determine the effect of solvency on the profitability of commercial banks in Nairobi City County of Kenya.

Research Hypotheses

H₀₁: There is no significant effect of credit approval on the profitability of commercial banks in Nairobi City County of Kenya.

H₀₂: There is no significant effect of collateral policies on the profitability of commercial banks in Nairobi City County of Kenya.

H₀₃: There is no significant effect of credit restrictions on the profitability of commercial banks in Nairobi City County of Kenya.

H₀₄: There is no significant effect of solvency on the profitability of commercial banks in Nairobi City County of Kenya.

Scope of the Study

The study will concentrate on 38 Nairobi-based commercial banks operating between 2019 and 2023 in Kenya. Limiting the study to the period from 2019 to 2023 allows for an examination of recent trends and developments in the banking sector. This timeframe covers a significant portion of the 2010s, a period marked by stability and significant changes in the global economy, including technological advancements, regulatory changes, and economic fluctuations. In the context of the economy, commercial banks have an important function of gathering savings and offering loans to both businesses and individuals. Gaining insights into the overall financial environment of Kenya and East Africa can be achieved by studying the performance, strategies, and obstacles encountered by commercial banks in Nairobi. Geographically, Nairobi serves as the economic and financial hub of Kenya, housing a substantial portion of the country's commercial banking sector, with all these commercial banks having their headquarters in Nairobi City County. Commercial banks in Nairobi City County function in a distinctive market setting defined by specific regulatory structures, consumer actions, and economic situations. Studying credit risk management and profitability within this context enables a focused analysis of factors shaping banking operations and performance in Kenya's primary financial centre. The way commercial banks perform in Nairobi City County has important effects on the general well-being and steadiness of Kenya's economy. Understanding how banks manage credit risks and strive for profitability in this key region offers valuable insights into broader economic trends, investment patterns, and financial stability at the national level.

LITERATURE REVIEW

Theoretical Review

The research was based on three theories: adverse selection theory, credit risk theory, and lending credibility theory. These theories are anticipated to offer theoretical frameworks for comprehending the correlation between credit risk management practices and profitability in the context of commercial banks.

Adverse Selection Theory

Pagano first introduced the Adverse Selection Theory in 1993, a fundamental concept in economics and finance that examines the effects of information asymmetry in transactions (Jang & Kang, 2020). The theory states that asymmetrical information in a transaction can result in negative consequences for the party with less knowledge. Specifically, it delves into scenarios where one party holds superior knowledge regarding their own attributes or behaviours, potentially resulting in unfavourable consequences for the party with lesser insight. Within the sphere of financial markets, Adverse Selection Theory accentuates the inherent risks associated with lending money or extending credit in instances where there exists incomplete information regarding the creditworthiness of borrowers (Chantal, Namusonge & Shukla, 2019). It underscores the notion that lenders may encounter heightened default rates and diminished returns if they fail to accurately gauge the risk posed by potential borrowers.

Adverse Selection Theory operates on several key assumptions. It assumes the presence of information asymmetry, with one party, typically the borrower, possessing more comprehensive information regarding their own characteristics, such as creditworthiness, compared to the other party, typically the lender (Arifin & Priyono, 2020). The theory presupposes rational behaviour, with individuals acting in a manner to maximize their own utility or profits. Consequently, borrowers with higher risk profiles may be inclined to seek credit, leveraging their superior information to exploit the lack of complete information on the part of lenders. The theory assumes a level of homogeneity among borrowers, implying that lenders cannot discern between borrowers with varying levels of risk without additional information. Within the scope of the research goal, which focuses on examining how credit approval affects the profitability of commercial banks, Adverse Selection Theory is seen as very relevant. The theory suggests that insufficient communication between lenders (commercial banks) and borrowers (investors and clients) can lead to adverse selection issues (Ioannidou, Pavanini & Peng, 2022). In such scenarios, lenders may inadvertently extend credit to higher-risk borrowers, fostering increased credit risk and elevated default rates, ultimately impinging upon the profitability of commercial banks. Despite its valuable insights, Adverse Selection Theory is not without its critiques. It heavily relies on simplified assumptions regarding rational behaviour and borrower homogeneity, which may not consistently align with real-world complexities (Chantal, Namusonge & Shukla, 2019). Moreover, the theory primarily focuses on the negative consequences of information asymmetry and may inadvertently overlook other factors influencing credit approval decisions and profitability. The practical implementation of solutions to mitigate adverse selection, such as credit bureaus, may encounter obstacles such as data privacy concerns and regulatory barriers.

Credit Risk Theory

The concept of Credit Risk Theory is crucial in risk management, particularly in the financial industry, where it is a key area of concern for regulators and risk managers (Quoc, 2021). This theory addresses the complex challenge of accurately measuring credit risk, with the goal of determining the appropriate capital levels needed to cover potential losses and effectively manage credit risk portfolios. Credit Risk Theory delves into the dynamics of risky debt yields and the probability of default, providing crucial insights for comprehending and managing credit risks. Robert Merton was instrumental in developing the Credit Risk Theory, introducing a model that connects credit risk with a firm's capital structure (Merton, 1977). Merton's concept revolves around the notion that a firm's financial framework comprises of both debt and equity securities. In this model, default happens when a company's assets are not enough to cover the promised debt repayment in the future. In this situation, creditors are paid the asset's value, leaving stockholders with no compensation. One important component of Merton's framework is viewing a firm's equity as a call option on its assets. The strike price of this option equals the debt's face value (Prastiwi & Anik, 2020). The model calculates risk-neutral probabilities of default and credit spreads on debt instruments by assessing the current value of a company's assets and their volatility through the market value of its equity. This approach provides a sophisticated framework for assessing and managing credit risk. Credit Risk Theory provides important perspectives on various aspects of credit risk management, including credit spreads, loss distribution, and credit portfolio management. To minimize the dangers encountered by lenders, it is advised that financiers regularly conduct credit evaluations on potential borrowers, verifying they possess adequate collateral and suitable insurance for their liabilities (Bülbül, Hakenes & Lambert, 2019). When default risks are elevated, lenders typically respond by imposing higher interest rates on debt instruments.

Connecting the theory of credit risk with the aim of the study, which focuses on analysing how collateral policies impact the profitability of commercial banks, becomes clear. The theory highlights the significance of collateral in reducing credit risks, since lenders can use collateral to counterbalance potential losses if there is a default (Prastiwi & Anik, 2020). Therefore, the effectiveness of collateral policies directly influences the credit risk exposure of commercial banks and, consequently, their profitability. Understanding the principles elucidated by Credit Risk Theory is paramount for devising sound collateral policies that strike a balance between risk mitigation and profitability within commercial banks. While Credit Risk Theory offers valuable insights into credit risk management, it's not devoid of criticism. Critics, including Naili and Lahrichi (2022) argue that the assumptions underlying the theory, such as the lognormal diffusion process of asset values, oversimplify the complexities of real-world credit risk dynamics. Additionally, the model's reliance on market-based inputs may pose challenges in scenarios where market conditions are volatile or illiquid. In spite of these criticisms, Credit Risk Theory remains essential for comprehending and controlling credit risks in the financial industry.

Lending credibility theory

The theory of Lending Credibility suggests that audited financial statements are essential for creating trust among stakeholders in terms of management's responsibility and openness. The

business landscape consists of numerous entities that impact or are impacted by the financial reporting standards set by regulatory bodies (Willems & Zettelmeyer, 2022). These entities encompass shareholders, executives, creditors, employees, government agencies, and other relevant parties. Shareholders, who range from individual investors with minor holdings to large institutional investors like banks and insurance companies, are the primary recipients of annual financial reports. Their investment choices are frequently influenced by the information in these statements and the actions of the company's management, who are obligated to act in the investors' best interests (Barigozzi & Tedeschi, 2019). This underscores the crucial importance of financial statements in providing stakeholders with a transparent and accurate depiction of the company's financial well-being and success.

Credit risk managers and auditors must present their assessments to stakeholders, emphasizing the precision and dependability of the company's financial reporting and overall results. This process aims to bolster shareholder confidence by ensuring the security of their investments and addressing risks associated with misleading accounting practices that could falsely enhance the company's image (Ashworth et al., 2021). As part of the goal to assess how solvency affects profitability, credit risk management and auditing validate the reliability and credibility of financial information, thereby improving the organization's transparency and accountability. Additionally, Lending Credibility Theory remains a vital framework for guiding investment decisions and managing credit risk within commercial banks (Jin & Zhang, 2019). By applying the principles of this theory, bank managers can work towards optimizing portfolio performance while effectively managing credit risk in a continually changing financial environment.

Empirical Literature

Jigeer and Koroleva's (2023) study explored the various factors influencing profits in city banks in China, using a panel data regression model to analyse how internal and external variables interact. Their evaluation considered various aspects such as the size of the bank, adequacy of capital, quality of credit, efficiency of operations, and macroeconomic indicators like inflation and provincial GDP. The study's findings underscored the significant impact of internal factors on profitability, while liquidity was found to have a negligible effect. These results highlight the imperative of understanding these determinants to inform strategies for enhancing bank profitability and provide actionable guidance for banking management and regulatory bodies.

Uddin (2022) conducted a thorough analysis of the banking industry in Bangladesh, exploring the complex connections between different factors and the financial success of commercial banks. Through examining a panel dataset of four state-owned and six private banks from 2017 to 2020, the study discovered that high levels of debt and bad loans had a negative impact on profit, although it was not statistically significant. Conversely, operating efficiency displayed a positive, albeit inconsequential, impact. Notably, the capital adequacy ratio emerged as a significant driver of profitability, underscoring its critical role in ensuring the financial resilience of banks. The study cautioned banks against over-reliance on debt financing and emphasized the importance of prudent borrower selection to maintain a robust financial profile.

Karanja (2022) investigated the impact of credit risk on the lending efficiency of commercial banks in Kenya. This study emphasized the important dangers that credit risk presents to both financial institutions and the wider economy, which have been demonstrated by financial crises in East Africa. Karanja conducted a study using a descriptive survey research design, focusing on workers from 42 commercial banks in Kenya. Data was gathered through purposive and random sampling methods using both structured and open-ended questions. Using descriptive and advanced statistical methods, the study revealed that credit risk management practices positively affected lending outcomes. The research revealed that the commercial banking sector had less operational capital due to a significant decrease in credit risk. Recommendations included developing policies in collaboration with relevant stakeholders to address credit risks and improve lending performance.

In a separate study, Birhanu et al. (2021) probed the factors influencing loan disbursement in private commercial banks in Ethiopia, with a focus on identifying the key determinants of loan distribution. Utilizing an unbalanced panel data model and a random sample of seven commercial banks, the research analysed data spanning from 1995 to 2016. The outcomes of the research showed that the size of deposits, credit risk, portfolio investments, average lending rates, real GDP, and inflation rates positively affected loan disbursement, while the liquidity ratio had a notable adverse effect. The authors suggested that banks focus on managing deposit size, credit risk, lending rates, and macroeconomic factors to encourage lending activities and boost sustainable economic success.

In an extensive analysis of the connection between credit risk management and financial performance in commercial banks, Al Zaidanin and Al Zaidanin (2021) carried out a practical study using panel data from 2013 to 2019 in the United Arab Emirates (UAE) conducted a thorough investigation on the connection between credit risk management and financial performance in commercial banks using panel data from 2013 to 2019 in the UAE. Their findings showed that non-performing loans and the cost-income ratio negatively impacted bank profitability, while capital adequacy, liquidity, and loans-to-deposits ratios had weak positive associations with return on assets. The findings underscored the imperative of vigilant loan performance monitoring, meticulous analysis of client credit histories, and enhancements in asset utilization and cost management to bolster financial performance.

Ngari (2021) conducted a separate study to examine how different loan products affect the asset quality of commercial banks in Kenya. Using a descriptive research method, the study examined how commercial loans, asset financing, vendor financing, and real estate loans impact asset quality. The examination showed that these loan offerings had a beneficial impact on the quality of assets, positively affecting the financial position of banks. The research suggested that commercial banks should focus on decreasing non-performing loans and develop strategic tactics to handle these loans efficiently.

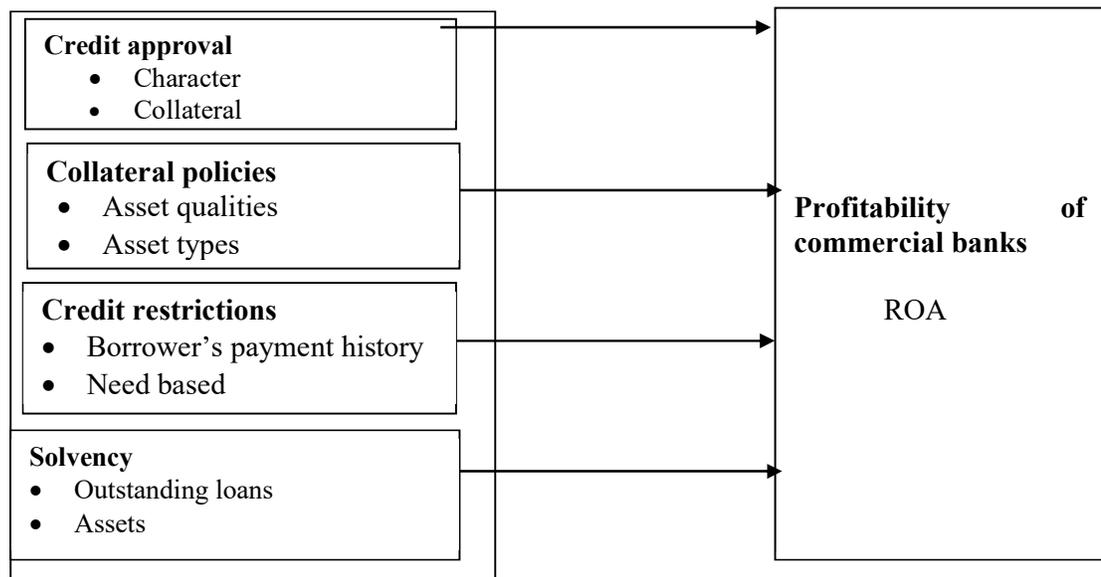
Muthoni and colleagues (2020) aimed to clarify the connection between credit management practices and loan performance in the commercial banking industry in Kenya. The research aimed to determine how much debt recovery strategies, client assessment protocols, and lending policies impact the effectiveness of loan portfolios. Utilizing an explanatory research design and a thorough census method, the researchers collected primary data via structured questionnaires and secondary data from bank loan records spanning from 2015 to 2018. The

analysis revealed that both debt collection and lending policies exerted a significant impact on loan performance, whereas client evaluation processes did not demonstrate a notable effect. The study's findings underscore the pivotal role of robust credit management practices in optimizing loan performance and recommended that banks regularly reassess and refine their credit management strategies to effectively mitigate credit risk and ensure sustainable lending practices. By doing so, banks can foster a more resilient and profitable loan portfolio, ultimately contributing to the overall stability of the financial system.

Rwechungura and Kaleshu (2020) conducted a distinct study, analysing the relationship between stability and profitability in Tanzanian commercial banks using panel data analysis for a decade period. Their research discovered mutual connections between return on equity (ROE) and measures of stability, such as the Z-score and the ratio of non-performing loans to total loans (NPL/TL). Notably, the research revealed a significant causal link between ROE and the NPL/TL ratio in smaller banks, suggesting that effective loan management and diversification of income sources are pivotal for maintaining stability. The authors recommended that smaller banks prioritize effective loan management and augment non-interest income to ensure stability despite challenges in their loan portfolios.

Conceptual Framework

The research seeks to explore the connections between various factors, with particular factors suggested to impact others. This conceptual framework visually illustrates the proposed relationships. Understanding that research includes different types of variables is crucial. Variables are categorized into two groups: independent variables, predictors, or explanatory variables, which affect others, and the dependent variable, also known as the regressor, which is influenced by the independent variables. In this specific research, independent variables will include credit approval, collateral policies, credit restrictions, and solvency, while profitability (ROA) was considered as the regressor. The regressor variable is anticipated to be influenced by the independent variables. Figure 2.1 illustrates these specifics. The research aims to determine the credit risk management and profitability of commercial banks in Nairobi County, Kenya.



Independent Variable

Figure 2.1: Conceptual Framework
Source: Researcher (2024)

Dependent Variable

RESEARCH METHODOLOGY

Research Design

A research design is a carefully organized strategy for gathering and examining data, balancing the relevance of the research with the effectiveness of the procedural approach, as described by Bryman and Bell (2003). This design acts as the central framework that guides the entire research project, including the methods used for collecting, measuring, and analysing data. The current research will use a descriptive research approach to examine how commercial banks in Nairobi are implementing credit risk management practices. As expounded by Sekaran and Bougie (2011), descriptive research is concerned with providing a detailed characterization of individuals or groups. The selection of a descriptive design is deemed appropriate owing to its pragmatic and cost-effective nature in data collection, which can be facilitated through the administration of questionnaires, as substantiated by Kandie and Bogonko (2023), Onsongo, Muathe, and Mwangi (2020), Gitari, Mohamed, and Huka (2021), and Muthoni, Mwangi, and Muathe (2020). This method allows the researcher to collect a large amount of data on the current credit risk management strategies used by commercial banks in Nairobi, thus offering a thorough understanding of the subject being studied.

Target Population

This study focused on the 38 commercial banks located in Nairobi City County, Kenya (CBK, 2024). The study focuses on commercial banks in Kenya and their particular financial metrics and ratios as the unit of analysis. This decision aligns with the research goals, guarantees data availability and comparability, and enables a thorough analysis of how credit risk management affects profitability (Onsongo, Muathe & Mwangi, 2020). Examining these components offers practical information for those involved and aids in creating specific plans to improve financial outcomes in the banking industry in Kenya. Selecting Nairobi County for researching commercial banks in Kenya is supported by its economic importance, high number of commercial bank branches, varied real estate market, data accessibility, urban changes, and policy implications.

Data Analysis

Data analysis is a detailed and organized approach focused on extracting valuable insights from raw data. Choosing an analytical method that aligns with the research design and goals is crucial for ensuring the accuracy and dependability of the results. This study utilized a mixed method approach, combining descriptive analytics - including central tendency, dispersion, and proportional analysis - with multiple regression analysis. This two-pronged strategy provides a clear benefit by aiding in finding the best model for showing results and ensuring a thorough diagnostic evaluation before making conclusions. The analysis was facilitated by SPSS Version 26, a cutting-edge statistical software package.

The model specification phase involves the judicious selection of an appropriate analytical framework, taking into account the potential endogeneity of explanatory variables. Multiple regression analysis was used as the guiding methodology, where the analytical model will act as a suggested function to determine the relationship between predictor variables and the dependent variable. This method allows for pinpointing the most important predictors and their impacts on the outcome variable, leading to a detailed comprehension of the relationships at play.

The function is modelled as:

$$y = \alpha + \beta_1x_1 + \beta_2x_2 + \beta_3x_3 + \beta_4x_4 + \varepsilon$$

y= Financial performance (ROA) , β = Regression coefficient, α = Constant, x_1 = Credit Approval, x_2 =Collateral policies, x_3 = Credit Restrictions, x_4 = Loan to Asset ratio, ε = Error

Operationalization and Measurement of Research Variables

Table 3.1 offers an extensive compilation of the variables under study, along with their operational descriptions and the methods utilized for assessing these variables.

Table 3.1: Operationalization and Measurement of Research Variables

Variable	Operationalization	Measurement	Hypothesis Testing
Profitability [Dependent variable]	Return on Assets (ROA) [i.e. Net income ÷ average balance of total assets]	Ratio	There is no significant effect of independent variables on profitability
Credit approval (Independent variable)	Character and collateral	Ordinal	H01: There is no significant effect of credit approval on profitability
Collateral policies (independent variable)	Asset qualities and asset types	Ordinal	H02: There is no significant effect of collateral policies on profitability
Credit restrictions (independent variable)	Borrower’s payment history and need based	Ordinal	H03: There is no significant effect of credit restrictions on profitability
Solvency (independent variable)	Loans-to-Assets ratio (i.e. Total outstanding loans ÷total assets)	Ratio	H04: There is no significant effect of solvency on profitability

Source: Researcher (2024)

RESULTS AND DISCUSSIONS

Descriptive Statistics

Credit Approval

Credit was described as an independent variable and measured through two indicators, including character and collateral. Participants used a 5-point Likert scale to rate five attributes

associated with credit approval, ranging from 1 ("Not at all") to 5 ("Very Great Extent"). Table 4.1 contains the presented results.

Table 4.1: Credit Approval

Statements	N	Min	Max	M	S.D
To what extent does the assessment of borrower character influence the credit approval process in your bank?	38	1	5	3.47	1.01
How does the inclusion of collateral assets impact the likelihood of credit approval in your bank?	38	1	5	3.50	1.03
What is the relationship between borrower's character evaluation and the profitability of credit extended by your bank?	38	1	5	3.92	1.08
To what degree does the quality and reliability of collateral influence the decision-making process in credit approval within your bank?	38	1	5	3.42	1.15
How do variations in borrower's character traits affect the risk assessment models used by your bank in credit approval?	38	1	5	3.74	1.25
What is the impact of collateral valuation methods on the profitability of credit portfolios managed by your bank?	38	1	5	3.84	1.03
Average Score	38	1	5	3.65	1.09

Source: Research Data (2024)

Table 4.1 results show that the average mean score of 3.47 (S.D = 1.01) for the influence of borrower character on credit approval shows that banks moderately consider character in their decision-making processes. This aligns with Karanja's (2022) findings, which emphasize that assessing character often linked with the borrower's integrity and creditworthiness plays a role in mitigating risks. According to Karanja, incorporating borrower character in risk assessment practices positively affects lending outcomes by ensuring that borrowers with strong reputations are more likely to meet their obligations, reducing the risk of defaults. The study found that collateral significantly impacts the likelihood of credit approval (M = 3.50, S.D = 1.03). This mirrors Ndero, Wepukhulu, and Bogonko's (2019) research, which demonstrated a strong association between collateral inclusion in credit appraisals and improved loan performance. Collateral serves as a safeguard, providing the bank with a tangible asset that can be liquidated in case of default, thus reducing the bank's exposure to credit risk. A higher mean score of 3.92 (S.D = 1.08) suggests that the evaluation of borrower character is closely tied to the profitability of credit extended by banks. This is crucial, as banks not only aim to minimize risk but also to maximize returns on credit portfolios. The findings are supported by Karanja's (2022) assertion that effective credit risk practices, including character evaluation, reduce operational costs and promote profitability by minimizing bad loans. The moderate mean score of 3.42 (S.D = 1.15) for the role of collateral quality and reliability indicates that while collateral is a key component, its quality can vary, affecting decisions. Poor-quality collateral

may lead to future complications in loan recovery, emphasizing the importance of reliable collateral valuation methods, as supported by Ndero et al.'s (2019) study. A score of 3.74 (S.D = 1.25) indicates that changes in borrower character traits influence the risk assessment models used by banks. As noted in Akerlof's (1970) moral hazard theory, asymmetric information and the inability to fully gauge character traits can lead to risky lending decisions. Banks must therefore rely on robust risk assessment models to adjust for character variations. Besides, collateral valuation methods scored a mean of 3.84 (S.D = 1.03), reinforcing the importance of accurate valuation for bank profitability. As collateral directly impacts recovery in case of default, poorly valued collateral can reduce the bank's capacity to recover its loans efficiently, impacting overall profitability.

The current findings build on earlier studies, particularly Karanja (2022) and Ndero et al. (2019), by delving deeper into how credit approval processes influence bank profitability. Both studies emphasize the need for comprehensive credit evaluation protocols, including the assessment of both borrower character and collateral. Additionally, Akerlof's (1970) moral hazard theory explains the need for better screening methods to mitigate the risk associated with character traits. This study contributes to the literature by confirming that effective credit approval mechanisms, assessing character and valuing collateral are integral to enhancing profitability within commercial banks in Kenya. These results suggest that Kenyan banks would benefit from policies and practices that place a stronger emphasis on accurate character assessment and collateral evaluation, supporting the findings from prior research. This reinforces the link between credit approval mechanisms and risk mitigation, which ultimately boosts the overall financial health of banking institutions.

Collateral Policies

Collateral policies were described as an independent variable and measured through two indicators, including asset qualities and asset types. Participants used a 5-point Likert scale to rate five attributes associated with credit approval, ranging from 1 ("Very weak") to 5 ("Very strong"). Table 4.2 contains the presented results

Table 4.2: Collateral Policies

Statements	N	Min	Max	M	S.D
How strongly do the asset qualities considered in collateral policies correlate with the overall profitability of your bank?	38	1	5	3.95	1.04
To what extent do the types of assets accepted as collateral influence the strength of the collateral base and subsequently the profitability of your bank?	38	1	5	3.84	1.12
How strongly do high-quality assets in collateral policies contribute to the resilience of your bank ' profitability during economic downturns?	38	1	5	4.08	0.90
What is the strength of the relationship between the diversity of asset types	38	1	5	3.79	1.19

accepted as collateral and the overall profitability of your bank?					
How does the quality of assets accepted as collateral impact the ability of your bank to mitigate credit risk and enhance profitability?	38	1	5	3.92	1.07
What is the relative strength of profitability for commercial banks with stringent collateral policies emphasizing high-quality assets compared to those with more lenient policies?	38	1	5	3.87	1.13
Average Score	38	1	5	3.91	1.07

Source: Research Data (2024)

Table 4.2 results indicate that the respondents rated the relationship between asset qualities considered in collateral policies and overall bank profitability with a mean score of 3.95 and a standard deviation (S.D) of 1.04. This indicates a moderately strong belief that high-quality assets used as collateral contribute positively to bank profitability, though there was some variability in responses. The implication is that banks that focus on high-quality assets as collateral tend to enjoy greater profitability, aligning with the common understanding that better collateral reduces risk and enhances returns. The study found that the type of assets accepted as collateral influences the strength of the collateral base and profitability, with a mean of 3.84 (S.D = 1.12). This suggests a moderate relationship between the diversity of assets and profitability, indicating that while diverse assets provide some stability and risk mitigation, not all asset types have the same strength in terms of profitability. The highest-rated statement was the contribution of high-quality assets to profitability resilience during economic downturns, with a mean of 4.08 (S.D = 0.90). This highlights a strong consensus that high-quality assets offer significant protection during challenging economic conditions, underscoring the importance of stringent collateral policies focused on high-value assets. The relationship between the diversity of asset types accepted as collateral and overall profitability was rated slightly lower, with a mean of 3.79 (S.D = 1.19). This indicates that while asset diversity can enhance profitability, it is not perceived as a major driver. The wide range of responses (S.D = 1.19) suggests that the effectiveness of asset diversity may depend on specific types of assets and how well they are managed.

The study revealed a moderate belief in the influence of asset quality on credit risk mitigation and profitability, with a mean of 3.92 (S.D = 1.07). This suggests that higher-quality assets help reduce credit risk and bolster profitability, although the extent of this impact varies across banks. The final statement, assessing the profitability of banks with stringent collateral policies versus more lenient ones, received a mean score of 3.87 (S.D = 1.13). This finding indicates that banks with more stringent collateral policies, especially those emphasizing high-quality assets, are perceived to be more profitable than banks with less strict policies, reinforcing the idea that strict collateral management drives better financial performance. Jigeer and Koroleva (2023) study emphasized the importance of internal factors, such as asset quality, in driving profitability. Similarly, this study highlights that higher-quality assets used as collateral (M = 4.08) are crucial for maintaining profitability, especially during economic downturns. Both studies suggest that internal management of assets is essential for sustaining profitability.

Birhanu et al. (2021) found that credit risk and asset quality were key determinants. The current study echoes this finding, demonstrating that the quality of assets accepted as collateral (M = 3.92) plays a role in mitigating credit risk and enhancing profitability. Both studies suggest that banks must carefully manage asset quality and risk to optimize lending and profitability outcomes. Muthoni et al. (2020) found that stringent debt collection and lending policies improve loan performance. The present study’s conclusion that banks with stringent collateral policies are more profitable (M = 3.87) aligns with Muthoni et al.'s recommendation for robust credit management practices to ensure stable and profitable loan portfolios. Both studies underscore the importance of maintaining strict control over collateral and credit management to safeguard bank profitability.

Credit Restrictions

Credit restrictions was described as an independent variable and measured through two indicators, including borrower’s payment history and need based. Participants used a 5-point Likert scale to rate five attributes associated with credit approval, ranging from 1 ("Strongly disagree") to 5 ("Strongly agree"). Table 4.3 contains the presented results

Table 4.3: Credit Restrictions

Statements	N	Min	Max	M	S.D
To what extent do stringent credit restrictions based on borrower's payment history positively impact the profitability of your bank?	38	1	5	3.82	0.83
How strongly do credit restrictions tailored to need-based criteria correlate with the overall profitability of your bank?	38	1	5	3.75	0.91
Do you believe that borrower's payment history should be a primary factor in determining credit restrictions to enhance the profitability of your bank?	38	1	5	3.92	0.79
How much do need-based credit restrictions contribute to the overall risk management strategy and profitability of your bank?	38	1	5	3.85	0.86
Do you agree that credit restrictions based on borrower's payment history effectively mitigate default risks and enhance the long-term profitability of your bank?	38	1	5	3.89	0.81
How strongly do you agree that incorporating need-based criteria into credit restrictions optimizes the balance between risk mitigation and profitability for your bank?	38	1	5	3.80	0.88
Average Score	38	1	5	3.84	0.85

Source: Research Data (2024)

Table 4.3 findings show that the statement regarding the extent to which stringent credit restrictions based on the borrower’s payment history positively impact profitability received a mean score of 3.82 (S.D = 0.83). This suggests that participants generally agree that careful consideration of payment history enhances profitability. The relatively high mean indicates a

consensus on the importance of payment history in credit assessment, reflecting its critical role in risk management and profitability. The participants rated the correlation between need-based credit restrictions and overall bank profitability at a mean of 3.75 (S.D = 0.91). This score implies a moderate agreement that tailoring credit restrictions to borrower needs can influence profitability positively. However, the slightly lower rating compared to payment history suggests that while need-based criteria are important, they may not be as universally recognized in their profitability impact. The mean score of 3.92 (S.D = 0.79) for the statement regarding the belief that a borrower's payment history should be a primary factor in determining credit restrictions indicates strong agreement among participants. This reinforces the notion that historical payment behavior is viewed as a critical metric for assessing creditworthiness and mitigating default risks.

The mean score of 3.85 (S.D = 0.86) for the contribution of need-based credit restrictions to overall risk management and profitability signifies a moderate to strong belief in their effectiveness. Participants acknowledge that understanding borrower needs can enhance risk management strategies, ultimately contributing to profitability. The statement assessing whether credit restrictions based on the borrower's payment history effectively mitigate default risks received a mean score of 3.89 (S.D = 0.81). This reflects a strong consensus that focusing on payment history is instrumental in reducing default risks, which is essential for maintaining long-term profitability. The statement regarding the incorporation of need-based criteria into credit restrictions received a mean score of 3.80 (S.D = 0.88), indicating a moderate agreement on the optimization of the balance between risk mitigation and profitability. This suggests that participants recognize the importance of both strict credit assessments and the adaptability of credit policies to individual borrower circumstances.

The overall average score for the responses was 3.84 (S.D = 0.85), suggesting that participants generally agree on the significance of both borrower payment history and need-based credit restrictions in driving profitability. This highlights a collective understanding of the importance of effective credit restrictions in managing risk and enhancing financial performance. Al Zaidanin and Al Zaidanin (2021) study aligns with these findings, reinforcing that effective credit risk management, including stringent credit restrictions, is crucial for profitability. They highlighted the negative impact of non-performing loans on profitability, which underscores the necessity of strict credit assessment based on payment history. Rwechungura and Kaleshu (2020) found significant causal relationships between return on equity (ROE) and effective loan management in smaller banks. The current study's results regarding the importance of stringent credit restrictions, particularly based on payment history, suggest that similar dynamics exist in the profitability of larger banks. Effective credit management practices, as highlighted by both studies, are essential for enhancing financial performance. Similarly, Kajirwa and Katherine (2019) found an inverse relationship between credit risk and profitability. This mirrors the current study's emphasis on the importance of borrower payment history as a primary factor in credit restrictions to enhance profitability. By mitigating risks through effective credit restrictions, banks can improve their financial performance, as suggested by the significant associations found in the literature.

Solvency

Solvency was described as an independent variable and measured through two indicators, including outstanding loans and assets. Participants used a 5-point Likert scale to rate five

attributes associated with credit approval, ranging from 1 ("Strongly disagree") to 5 ("Strongly agree"). Table 4.4 contains the presented results.

Table 4.4: Solvency

Statements	N	Min	Max	M	S.D
To what extent do outstanding loans influence the overall profitability of your bank?	38	1	5	3.68	0.82
How strongly do you believe that the level of solvency impacts the bank's ability to manage financial risks effectively?	38	1	5	3.52	0.95
To what degree do you agree that a higher ratio of assets to liabilities contributes positively to the profitability of your bank?	38	1	5	3.81	0.78
How strongly do you believe that maintaining adequate solvency levels enhances the trust and confidence of stakeholders in your bank's financial performance?	38	1	5	3.65	0.89
To what extent do you think that the management of outstanding loans is crucial for sustaining the bank's long-term profitability?	38	1	5	3.75	0.84
How strongly do you agree that effective asset management is vital for improving the profitability of your bank in the context of solvency?	38	1	5	3.59	0.92
Average Score	38	1	5	3.67	0.87

Source: Research Data (2024)

According to Table 4.4 results, Participants rated the influence of outstanding loans on overall profitability at an average score of 3.68 (SD = 0.82). This suggests that respondents generally agree that outstanding loans play a significant role in a bank's profitability, although the standard deviation indicates some variability in opinions. The average score of 3.52 (SD = 0.95) indicates that while participants recognize the importance of solvency for managing financial risks, there is less consensus compared to other statements. This could imply that while solvency is viewed as important, its perceived influence may not be as strong or direct as other factors. Respondents rated the positive contribution of a higher ratio of assets to liabilities at 3.81 (SD = 0.78), reflecting a relatively strong agreement that maintaining a good balance of assets and liabilities is crucial for profitability. With an average score of 3.65 (SD = 0.89), the results suggest that participants believe adequate solvency enhances trust among stakeholders. This is a vital aspect, as stakeholder confidence can significantly affect a bank's reputation and customer retention.

The average score of 3.75 (SD = 0.84) indicates that participants view effective management of outstanding loans as important for sustaining long-term profitability, aligning with general banking principles that emphasize loan portfolio management. The lowest average score of 3.59 (SD = 0.92) suggests some disagreement on the importance of asset management for profitability. While considered important, the variability suggests that opinions on asset

management’s impact on profitability may be divided. Uddin's (2022) analysis highlights the negative impact of high levels of debt and bad loans on profitability, which aligns with the current study's finding that outstanding loans influence profitability. Both studies emphasize the importance of prudent borrower selection and the management of loans to ensure banks maintain a robust financial profile. However, Uddin's findings on the capital adequacy ratio's significant positive impact on profitability highlight a potentially crucial aspect not directly addressed in the current study. Ngari’s (2021) research suggests that different loan products positively affect asset quality, contributing to a bank's financial position. This complements the current study's focus on outstanding loans, as effective management of these loans can enhance profitability by improving asset quality. The correlation between asset management and overall financial performance is further supported by previous findings. Nyabaga and Wepukhulu (2020) indicates that capital adequacy and bank size positively influence profitability, which reinforces the current study's findings regarding the importance of asset management and solvency. The emphasis on capital adequacy as a buffer against economic shocks in the previous research highlights a potential gap in the current study, which does not explicitly consider capital ratios or adequacy.

Correlation Analysis Results

The Pearson correlation measures the straight connection between two continuous variables, with values ranging from -1 to 1. A score of 1 represents an ideal positive linear connection, whereas -1 indicates an ideal negative linear connection. A coefficient near 0 indicates a lack of strong linear relationship. Table 4.5 displays the results of correlation analysis.

Table 4.5: Pearson Correlation Analysis Results

Variable	CA	CP	CR	SL	ROA
CA	1				
CP	0.702*	1			
CR	0.810*	0.801*	1		
SL	0.812*	0.776*	0.795*	1	
ROA	0.658*	0.704*	0.748*	0.813*	1

*Where: CA = Credit Approval; CP = Collateral Policies; CR = Credit Restrictions; SL= Solvency; ROA = Profitability; *= Significant correlation*

Source: Research Data (2024)

The Pearson correlation matrix explores the relationships among five key variables in the banking sector: Credit Approval (CA), Collateral Policies (CP), Credit Restrictions (CR), Solvency (SL), and Return on Assets (ROA). The analysis reveals significant correlations that underscore the interconnectedness of these factors and their collective impact on bank profitability. As per Table 4.5, there is a notable strong positive correlation between Credit Approval and Collateral Policies, with a correlation coefficient of 0.702 ($p < 0.05$). This indicates that higher rates of credit approval are associated with stricter collateral policies. Furthermore, Credit Approval is strongly correlated with Credit Restrictions ($r = 0.810, p < 0.05$), suggesting that more restrictive credit policies positively influence credit approval rates. Additionally, the relationship between Credit Approval and Solvency is also strong ($r = 0.812, p < 0.05$), reflecting that banks with better solvency positions tend to have higher rates of credit approval. A moderate positive correlation exists between Credit Approval and Return on Assets

($r = 0.658$, $p < 0.05$), implying that higher credit approval rates may contribute to improved profitability, though this relationship is not as pronounced as those with collateral and credit restrictions.

When examining Collateral Policies, the data shows a strong positive correlation with Credit Restrictions ($r = 0.801$, $p < 0.05$). This indicates that banks with more stringent collateral policies are likely to implement stricter credit restrictions as well. There is also a significant correlation between Collateral Policies and Solvency ($r = 0.776$, $p < 0.05$), suggesting that effective collateral policies positively contribute to a bank's solvency. Additionally, the strong positive correlation between Collateral Policies and Return on Assets ($r = 0.704$, $p < 0.05$) indicates that banks with robust collateral practices are likely to experience greater profitability. Credit Restrictions exhibit a strong positive correlation with Solvency ($r = 0.795$, $p < 0.05$), suggesting that stricter credit restrictions help improve the solvency of banks by minimizing default risks. Furthermore, the relationship between Credit Restrictions and Return on Assets is also strong ($r = 0.748$, $p < 0.05$), implying that effective credit restrictions can enhance profitability by reducing non-performing loans.

The correlation between Solvency and Return on Assets is particularly noteworthy, with a coefficient of 0.813 ($p < 0.05$). This indicates that higher levels of solvency are strongly associated with increased profitability, emphasizing the importance of effective management of assets and liabilities for enhancing financial performance. Overall, the analysis highlights significant positive correlations among Credit Approval, Collateral Policies, Credit Restrictions, Solvency, and Return on Assets. These strong relationships suggest that enhancements in one area can lead to improvements in others, ultimately contributing to better risk management and profitability for commercial banks. Notably, Solvency emerges as a crucial factor influencing both Credit Approval and Return on Assets. Banks with stronger solvency ratios tend to approve more loans and achieve higher profitability, reinforcing the need for financial stability in lending practices. The strong correlations between Credit Restrictions, Collateral Policies, and the other variables underscore the significance of rigorous risk management practices in boosting profitability. Stricter credit policies can lead to reduced risks and improved financial outcomes. Therefore, the findings suggest that banks should focus on maintaining strong solvency and implementing effective credit policies to achieve sustainable profitability in a competitive financial environment.

Regression Analysis Results

Multiple regression analysis was employed to analyse and comprehend the connection between credit management practices and profitability, focusing on commercial banks in Nairobi City County, Kenya. The results of regression analysis typically provide valuable understanding into the relationships between variables, the strength and significance of these relationships, and the predictive capacity of the model. Table 4.6 provides the estimation results derived from ordinary least squares analysis.

Table 4.6: Multiple Regression Results: Credit Risk Management and Profitability Summary of the Model

R	R²	Adj. R²	SEE		
0.897	0.805	.792	0.296		
Analysis of Variances (ANOVA)					
	Squares (Sum)	df	Squares (Mean)	F	p
Regression	27.102	3	9.034	89.224	0.001
Residual	6.407	34	0.188		
Total	33.509	37			
Regression Coefficients					
Coefficient	β (Unstandardized)		β(Standardized)		
Parameter	β	SE	β	t	p
Constant	0.302	0.412		2.104	0.002
CA	4.014	0.337	3.981	4.012	0.004
CP	2.995	0.226	2.775	3.774	0.002
CR	3.251	0.147	3.012	3.681	0.003
SL	2.401	0.408	2.156	4.022	0.002

a. Dependent Variable: Project Delivery

b. Predictors: (Constant), CA = Credit Approval; CP = Collateral Policies; CR = Credit Restrictions; SL= Solvency

Source: Research Data (2024)

The regression analysis results presented in Table 4.6 provide insights into the relationship between credit management practices and profitability among commercial banks in Nairobi City County, Kenya.

The new multiple regression model becomes;

$$y = 0.302 + 4.014x_1 + 2.995x_2 + 3.251x_3 + 2.401x_4 + \varepsilon$$

The model's fit statistics indicate a robust connection, with an R-squared value of 0.805, suggesting that approximately 80.5% of the variance in profitability can be explained by the independent variables: Credit Approval (CA), Collateral Policies (CP), Credit Restrictions (CR), and Solvency (SL). The adjusted R-squared value of 0.792 indicates a minor adjustment for the number of predictors, further supporting the model's explanatory power. The ANOVA results affirm the overall significance of the regression model, yielding an F-value of 89.224 ($p < 0.001$). This strong F-statistic suggests that the model significantly explains the variation in profitability and that the independent variables collectively have a substantial impact on the dependent variable. Examining the regression coefficients reveals that each credit management practice positively influences profitability. The coefficient for Credit Approval ($\beta = 4.014$, $p < 0.005$) indicates a significant positive effect, meaning that as credit approval increases, profitability also rises. Similarly, Collateral Policies ($\beta = 2.995$, $p < 0.005$) and Credit Restrictions ($\beta = 3.251$, $p < 0.005$) both demonstrate substantial positive relationships with profitability. This suggests that stringent collateral requirements and effective credit restrictions can lead to improved financial outcomes for banks. Additionally, the coefficient for Solvency ($\beta = 2.401$, $p < 0.005$) highlights its importance in enhancing profitability,

indicating that better management of assets and liabilities significantly contributes to financial performance.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

The conclusions of this study are drawn from the analysis of credit risk management and its impact on the profitability of commercial banks in Nairobi City County, Kenya. The first objective was to determine the effect of credit approval on the profitability of commercial banks. The findings indicate that effective credit approval processes significantly enhance the profitability of these banks. Specifically, the assessment of borrower character emerged as a crucial factor, with a positive correlation to financial performance. This highlights that banks that implement rigorous character evaluations tend to experience better profitability, underscoring the importance of thorough credit assessments in mitigating lending risks.

The second objective focused on the effect of collateral policies on profitability. The study concluded that strong collateral policies positively impact the profitability of commercial banks. High-quality collateral was shown to enhance financial resilience, particularly during economic downturns, thereby improving overall bank profitability. The findings support the notion that comprehensive asset management strategies, which prioritize valuable collateral, are essential for effective risk management and profitability enhancement.

The third objective examined the effect of credit restrictions on profitability. The results reveal that stringent credit restrictions based on borrower payment history significantly contribute to improved financial performance. The consensus among participants indicates that such restrictions play a vital role in mitigating default risks, thereby fostering a more profitable banking environment. This emphasizes the necessity for banks to tailor credit policies to individual circumstances while maintaining a focus on payment history to optimize profitability.

The fourth objective assessed the effect of solvency on profitability. The study concludes that maintaining a favorable ratio of assets to liabilities is crucial for enhancing the profitability of commercial banks. While respondents acknowledged the importance of solvency, the results suggest that its direct influence on financial risk management may be less pronounced than other factors. Nevertheless, effective asset management remains essential for achieving sustained profitability, indicating that banks must prioritize their financial health to ensure long-term success.

Recommendations for Policy and Practice

The policy recommendations arising from this research are aligned with the conclusions drawn regarding the impact of credit risk management on the profitability of commercial banks in Nairobi City County, Kenya. These recommendations aim to enhance banking practices and promote financial stability in the sector. Given the positive effect of credit approval on profitability, it is recommended that the management of commercial banks implement

comprehensive credit approval processes that rigorously assess borrower character and financial history. Banks should prioritize the development of standardized evaluation criteria that effectively mitigate lending risks while maintaining a focus on profitability. Training programs for credit officers could also enhance their ability to assess borrower integrity effectively. The study highlights the significant impact of collateral policies on bank profitability. Therefore, it is recommended that banks adopt more stringent collateral evaluation and management practices. This includes implementing robust asset valuation methods to ensure that collateral is of high quality and capable of safeguarding the bank's interests. Furthermore, banks should diversify the types of assets accepted as collateral while ensuring they align with profitability goals.

Given the findings that stringent credit restrictions contribute positively to profitability, banks should adopt tailored credit restriction policies that prioritize borrower payment history and creditworthiness. These policies should be flexible enough to adapt to individual borrower circumstances, allowing for a more nuanced approach to lending that balances risk and opportunity. The recognition of solvency's role in profitability underscores the need for banks to maintain a favorable asset-to-liability ratio. It is recommended that banks develop and implement comprehensive financial management strategies that focus on optimizing solvency. Regular financial health assessments should be conducted to ensure that the bank's financial position supports sustainable growth and profitability. Banks should engage in ongoing training and development programs to ensure that staff are equipped with the latest knowledge and skills in credit risk management. This includes adopting innovative technologies for risk assessment and credit management that enhance decision-making processes.

To enhance the effectiveness of credit risk management strategies, banks should establish transparent communication channels with their customers regarding credit terms, conditions, and policies. Clear communication can help build trust and encourage responsible borrowing practices among clients. Finally, it is essential for banks to conduct regular reviews of their credit risk management policies and practices. This should involve assessing the effectiveness of current strategies in relation to changing market conditions, economic trends, and regulatory requirements. Continuous evaluation will enable banks to adapt and remain resilient in a competitive and fluctuating financial landscape.

Suggestion for Further Research

The suggestions for further research stemming from this study focus on exploring the dimensions of credit risk management practices and their effects on the profitability of commercial banks. While this study examined the impacts of credit approval, collateral policies, credit restrictions, and solvency on profitability, future research could investigate the interaction effects of these factors in greater detail. Further studies could explore the influence of different economic indicators, such as inflation rates and exchange rates, on the relationship between credit risk management and bank profitability. Understanding how these macroeconomic variables interact with credit risk practices could provide deeper insights into their cumulative effects on financial performance.

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