

**FIRM CHARACTERISTICS AND LOAN PERFORMANCE OF COMMERCIAL
BANKS IN KENYA**

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DECLARATION

This study project is entirely my own concept, and it has never been offered for consideration by another university for a degree or other sort of acknowledgment.

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This research project has been forwarded for review with my consent as the University Supervisor.

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DEDICATION

This research work is wholeheartedly dedicated to my family and friends, who contributed their financial, psychological, intellectual, and moral assistance. To our fellow classmates who offered guidance and urged us to move forward with this project.

lastly, I dedicate this task to the All-powerful God in thanks for his guidance, mental strength, protection, and provision of a long and healthy life. All these, I offer to you.

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LIST OF ABBREVIATIONS AND ACRONYMS

CBK	Central Bank of Kenya
DEA	Data Envelopment Analysis
DT-SACCO	Deposit- Taking Savings and Credit Cooperatives
GDP	Gross Domestic Product
GMM	Generalized Methods of Moment
GOK	Government of Kenya
MENA	Middle East and North Africa
NPL	Non-Performing Loans
WDI	World Development Indicators
SSA	Sub-Saharan Africa

OPERATIONAL DEFINITION OF TERMS

Bank Size	This relates to the total assets of the banks which has grown over the years of the banks operational existence in Kenya. Therefore, the annual accumulated total asset of the banks was utilized as a measure of the bank size in the study.
Capital Adequacy	The Central Bank has established and lobbied for minimal capital standards. In this study, the ratio of core capital to total deposits was utilized to assess capital adequacy.
Loan Performance	Credits issued to customers by banks that do not provide revenue for a lengthy duration of time; consequently, the income or principal for these kinds of debts has still not been collected for at minimum 90 days.
Credit Size	This refer to the total quantity of loans given to customers, as indicated by the financial value of the loans and advances made to customers
Firm Characteristics	Certain elements that are unique to the institution and are under the authority of the institution's administration manipulation for the gains of the banks.
Management Efficiency	The capacity of an institution to convert assets into profits. Calculated as cost to revenue from commercial banking activities; a lower ratio is preferable.

ABSTRACT

The banking industry in Kenya is one of the most developed in East Africa and has great potential in this field. Commercial banks play a crucial part in improving the transition of credit from surplus to deficit, thus promoting local economic activities. However, in recent times, banks have found that customers' credit efficiency has decreased, late payments, or bad debts has affected the bank's profits. Bad loans from commercial banks in Kenya continue to erode banks' profitability, hampering the financial performance of the industry. Notably, the non-performance of these loans led to the acquisition of the National Bank of Kenya by KCB Group Plc, which is indicative of the severity of bad loans in the Kenyan banking sector. The alarming rate of bank failures has raised serious concerns among stakeholders inside and outside the banking industry in Kenya as it affects the history of commercial banks, borrowing performance has damaged the reputation of the industry and thus reduced results. In light of this background, the aim of this study was to ascertain the impact of business characteristics on the lending practices of commercial banks in Kenya. Its specific objective is to study the impact of management efficiency, capital adequacy, credit volume and bank size on the credit performance of commercial banks in Kenya. Efficiency structure theory, time capital theory, and information asymmetry theory formed the basis of the research. An illustrative study design was applied to the study covering 39 commercial banks from 2015 to 2021. The data came from secondary data sources, primarily using data mapping instructions. The data was evaluated utilizing inferential and descriptive statistics. Descriptive evaluation included means and standard variations while inferential assessment was done using regression table. A significance level of 0.05 was used to guide hypothesis testing. Several diagnostic tests were used, including stability test, multicollinearity, heteroscedasticity and Hausman test. The principles of ethical review shall be duly followed. The outcome of the investigation as demonstrated by the survey revealed that management efficiency insignificantly but positively affects loan performance; capital adequacy inversely affected the commercial banks' loan performance however, in a manner the is significant; credit size was shown to have a detrimental and negligible impact on the performance of commercial banks' loans; while the outcome showed that bank size directly and positively affected Kenyan commercial banks' loan performance in a manner that is irrelevant. The investigation recommends that the management of the commercial banks should employ better ways of managing their loans. This can be done through the use of assessing central information of the bank customers to determine customers' credibility in Kenya.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Banks are of great significance in the determination of development pace and economic development of any economy worldwide. They channel investment funds flow from one surplus sector of the economy to the other. They mobilize funds for effective performance of economic sectors. They ensure financial stability of the economy as the financial needs of businesses and individuals are met thereby reducing the cost of transaction (Ngumo, Collins & David, 2017). Commercial banks have remained the most important financial institutions that provide intermediation function to the businesses and people within an economy (Warue, 2013). They offer wide range of services which benefits all members of an economy which chiefly among them is lending (Jebet & Wepukhulu, 2020). However, in the quest for effective performance of these banks, they are regulated to maintain order within the financial market by Different economies apex banks and other regulatory agencies.

Firm considerations significantly affect how well the global banking industry performs. The manipulation of these specific factors which are internally based determine the success or failure of such banks (Ouhibi & Hammami, 2015). These factors shape banks intermediation role and determine the growth and development of the financial market. Therefore, effective management of these factors facilitate ensures banks profitability and stability. According to Nyabaga and Matanda (2020) firm specific factors are key to the determination of banks credit performance which affects the earnings of the banks and as well the performance of such banks. Conversely, inefficient and ineffective management of such factors exposes the banks to high intermediation

risk in the process of lending and as such reduces the performance of credit within the banking sector (Kisengo, 2014).

Credit is essential to the intermediation function of banks on a global scale. The banks mobilize financial resources for underperforming economic sectors. Most credit facilities granted to customers and other economic units of the economy regrettably default, leading to non-performing loans that, if unpaid, could result in bad debts that have a disastrous effect on banks' performance and the economy's overall well-being (Koskei, 2020). As a result, bank credit carries a low risk due to the efficient and effective management of the bank's characteristics. This defines the banks' lending channels and prepares them for any uncertainty that may arise from loan default. However, poor bank management qualities raise the risk of credit default, which puts banks and the economy at risk of financial disaster (Mustafa, 2020). Islam and Nishiyama (2019) found that business characteristics had a substantial influence on the rise in non-performing loans in their study on bad debt in South Asian commercial banks. Furthermore, Huljak, Martin, Moccero, and Pancaro (2020) noted that as of the end of 2017, the NPL ratio was below 5% in countries like Austria, Belgium, Estonia, France, Lithuania, and the Netherlands, while it was above 10% in the euro area countries most affected by the recent financial and economic crisis, namely Cyprus, Greece, Ireland, Italy, and Portugal. In addition, North America, East Asia and Pacific, Latin America and the Caribbean, Europe and Central Asia, Middle East and North Africa and South Asia recorded non-performing loans ratio of 0.7%, 1.8%, 2.5%, 3.8%, 5.4% and 8.4% respectively in 2018 (International Monetary Fund, 2021).

In Africa, there has been an increasing need for credit by both businesses and individuals. This is because credit facilities are provided to stimulate production capacity within economic sectors thereby improving quality of life of the people (Kibet, et al, 2015). Therefore, the capital ratio of

banks in African ought to be higher to cushion the effect of credit risk that is connected to lending (Arun & Murinde, 2010). In this case, the efficiency of banks management in Africa affect the issuance of credit facilities within the African financial space as higher capital base of banks determine the liquidity of the banks which in turn affect the amount of loans given to businesses and members of the public.

A high percentage of bad debts on the balance sheets of financial institutions can negatively affect the stability of the banking system and its capacity to finance the overall economy. Higher non-performance of commercial banks raise the need for more provisions, lower interest revenue, greater monitoring and management costs, and higher costs funding as the probability of risk-adverse investors to lend to institutions with poor credit quality is less (Huljak, Martin, Moccero & Pancaro, 2020). According to the IMF (2021), the greatest NPL ratio was recorded in Sub-Saharan Africa, where it was 11.7%. This figure is twice that of Europe and Central Asia, South Asia, and MENA, and more than four times more than the average volatility in other regions. The NPL ratio of Middle East and North African region increased from 13.2% to 13.4% from 2019 to 2020 (World Bank, 2021). Furthermore, the World Bank noted that Ghana recorded 15.07% with Mozambique 10.6%, Guinea 9.21%, Zambia 5.82%, Seychelles 5.45%, Botswana 4.24% and Lesotho 4.07% in NPL ratio as at 2021.

The banking sector in Kenya is characterized by deterioration in credit performance which affects the financial performance of banks (Makri et al, 2014). This result from liquidity risks which defines the banks inability to fulfill their financial obligation due to depletion of assets emanating from non-performing loans (Alshatti, 2015). Therefore, non-performing loan describe a situation of non-payment of loanable funds in both principal and interest within a contractual space of agreement which is usually ninety days of maturity (Hasanovic & Latic, 2017). Bad

debt from Kenyan banks continue to erode banks' profitability, preventing the functioning of the industry. The CBK report (2020) reported that the bad debt in 2015 was 5.99% and in 2016, it accumulated to 8.59%. This ratio continued to rise to 12.3% in 2017 and 12.7% in 2018 and maintained a steady rate through 2019 but increased to 13.1% in 2020. The CBK in 2020 discovered that the average lending rate for commercial banks decreased from 12.477% in 2019 to 11.89% in 2020, with interest rates on deposits declining from 7.19% in 2019 to 6.86% in 2020. This continuous increase in interest rates of bad debts continues to be a stumbling block on GDP growth, discouraging the banking industry from lending to other sectors of the economy (Central Bank of Kenya, 2020)

1.1.1 Firm Characteristics

Institutional indicators associated to an institution's cash flows are known as firm characteristics (Mdoe, 2017). Firm characteristics are elements that are largely underneath the purview of an institution's administration (Okpanachi, Doha, and Mohammed 2018). Kariuki (2016) states that Firm characteristics are the aspects of an institution that are impacted by company management. Kandiru, Gachunga, Muturi, and Ogutu (2015), on the contrary, define firm attributes as the socioeconomic and administrative elements that make up the company's bodily functions. Additionally, corporate factors are important aspects of a company that can sway the business (Ondigo, 2016). Diversity, liquidity, efficiency, resources, equity, organizational ownership, debt, company age, composition of the board, expansion, and socioeconomic external conditions, according to Kaguri (2013), have an effect on a bank's financial targets and its sound investment. According to Gulzara, Hongxing, and Muhammad (2018), bank attributes such as operational efficiency, distinctiveness, capital adequacy, investment costs, and bank liquidity have a massive effect on a banking organization's health. Ngungu and Abdul (2020) established that capital

adequacy significantly and positively affected non-performing loans of commercial banks. Al-Mamud and Mamun (2019) also found that managerial effectiveness had a negative, negligible impact on non-performing loans in Bangladeshi commercial banks. According to Hue (2015), the size of the bank influenced the rise of non-performing loans. Furthermore, Ekanayake and Azeez (2015) noticed that banks with strong credit growth have lower levels of non-performing loans. Therefore, the adoption management efficiency, capital adequacy, bank size and credit size are considered superior in the current study than other firm characteristics.

Management efficiency is the capacity of a commercial bank to make a profit from a finite source of income and produce revenue from a finite list of benefits (Phan & Daly, 2014). The capacity of a finance structure to provide advantages and maintain the application's stability demonstrates its competence. An institution is considered constantly efficient if it can generate a certain level of return with the smallest amount of inputs, resulting in a rise in effectiveness that contributes to greater income and thus financial soundness of banking sector (Dulah & Helal, 2017). An improperly administered banking industry can finish up becoming wasteful in its activities. A bank like this will have a lot of expenses compared to the amount of money coming in.

Capital adequacy is a measure of an institution's available resources that can be utilized to support the institution's operations and act as a backup plan in case of insolvency, minimizing the costs of economic hardship by decreasing the possibility of banking insolvency. Banking sector ought to have minimal capitalization standards, according to the Capital Adequacy Framework. Financial institutions stay stable and limit the danger of insolvency by requiring a regulatory requirement (Wafula, 2020). Capital sufficiency is also seen as an important fundamental component in financial institutions' credit quality (Oduora, Ngokab & Odongoba,

2017). The common consensus is that institutions with higher resource reserves have an edge in positioning and assisting companies and households in difficult times; reserves enable institutions manage past limits and keep lending money during a crisis (Gudmundsson, Ngoka-Kisinguh & Odongo, 2013).

Credit size is a component of bank administration that involves assessing a company's assets in attempt to determine the degree and extent of credit quality connected with its operations. It refers to the left-hand side of a financial statement and concentrates on the credit quality that generates profits. Creditsize is an aspect of management that is critical in the banking industry (Sile, Olweny and Sakwa, 2019). Credit size is a significant predictor of banking institutions success since it affects investment returns while also cutting the cost of credit losses control in accordance with legal standards. Institutions are obligated to allocate capital, which is taxable income, to guarantee that they can withstand any liabilities incurred as a result of credit default. The lower the credit size, the higher the NPA ratios to the category of the gross/net account, and vice versa, implying that exchange among credit consistency and fiscal success is projected to be unfavorable (Ombaba, 2013).

The financial position, branches distribution, and volume of sales all contribute to the institution's size, which can be thought of as the marketplace worth of the financial venture. The principal amount that represents worth to banking institutions is referred to as the financial strength. The financial position is not fixed, and it grows or decelerates in response to market factors. The asset value ratio is among the most important indications of a firm's financial strength. Total assets less total liabilities equals' total wealth, which is represented as shareholders' equity in a firm (Mainhi, 2019). Several elements, including banking sector legislation and legislation, affect the length of an institution. Financial institutions' ability to do

business for depositors and the delivery of financial products to clients is limited by regulations that limit banking business, bond yields on deposit accounts, and borrowing prices. These constraints may diminish banking institutions' significant position over other credit facilities (Kouser & Hassan, 2014).

1.1.2 Loan Performance

Loan performance is characterized as receivables that have been due or overdue for payment for more than 90 days but are not only producing interest (Edson, Joseph, Clifford, Manuere & Michael, 2012). According to Demirgunes (2016), loan performance is one that has either failed or is about to collapse. They went on to say that if the loan's income and main payments have not been resolved for 90 days, the loan may be considered nonperforming. Loan Performance are utilized as a barometer of financial health, notably in the commercial banks (Prasana, 2014). NPLs, according to Hammami and Ouhibi (2015), are a leading indicator of credit quality, creditworthiness, and efficiency in resource distribution to productive sectors.

Loan Performance refers to payments that haven't generated income for a while; specifically, the principal and/or payment on such loans have been past due for no more than 90 days. Loan performance can be seen as unintended consequences or costs for lending institutions, decreasing their performance. Loan Performance is defined as investments that do not generate revenue. When payment or interests is outstanding and has been unpaid for 90 days or longer, this is referred to as a default. Banks progressively prefer to take out internal consolidation to enhance asset quality in a high NPL situation, which limits the amount of loans made (Oganda, Mogwambo & Otieno, 2019). High NPL levels force banks to increase provisions for NPLs, which reduces their revenue and finances for new lending, hurting the corporate sector as they struggle to increase their working capital (Islam & Nishiyama, 2019).

Late payments on loans are unavoidable in any financing situation. The goal of institutions is to reduce the possibility of insolvency. Loans represent credits that have lapsed or are on the verge of failing because payments are no more possible. Loans that have not been paid for 3 months are often termed non-performing, though precise contractual terms may vary from time to time. Bank credits, net of provision of capital, can be used to assess loan performance. The amount of credit loans less the amount of special credit conditions is used as the ratio, and capital is used as the denominator (Warue, 2012). Another way to assess loan performance is to look at the ratio of credit loans to total gross loans. More so, in times of low economic resource production, which results in NPLs, the loan retirement process in banks slows down (Oganda, Mogwambo & Otieno, 2019). Banks should reduce the likelihood of having NPLs by performing an adequate assessment of a borrower's creditworthiness because a liquidity crisis is unavoidable in the event of a significant increase in the amount of NPLs.

1.1.3 Commercial Banks in Kenya

Commercial banks are accredited and governed by the Kenyan Central Bank. As of from December 2021 Kenya has 39 commercial banks operating (Statista, 2021). Most of the banking firms granted authorization to function in the nation were 20 regional private banking. As of the same year, the nation had Seventeen other international banks and two local state banks. The financial institutions in Sub-Saharan Africa (SSA) in whole, and Kenya in specifically, according to Radha (2010), are weak and fragile. Low expenditure, huge loan charge margins, increased levels of credit loans, and multiple banking crises indicate it.

Commercial banks perform a critical part in the system by aggregating excess deposits and supporting shortfall divisions. Financial integrity can be utilized as a monetary indicator to determine whether a business is adequately resilient to both internal and external shocks (Sopan

& Dutta, 2018). The CBK represents Kenyan financial institutions via different financial laws and regulatory rules. The legislation and financial rules are aimed at meeting the objectives of Kenya's Vision 2030, which calls for a progressive and well-functioning fiscal system that is solid, competent, and secure (CBK, 2016). While promoting options for the Kenyan commercial banks sector, Karumba and Wafula (2012) identified creditworthiness as one of the longest and most difficult challenges presented by banking sector. Late payments cause credit loans to accumulate on a banking institution's financial statements. It should also be highlighted that the cost of borrowing is a significant element influencing the total credit effectiveness of commercial banks in Kenya.

1.2 Statement of the Problem

The Kenyan banking industry is considered as one of the most developed in East Africa with much potential within the sector. However, the performance of loans within the sector has continued to dwindle over time. Non-performing loans of the banking industry in Kenya continues to deteriorate the profitability of banks thereby hindering the sectors financial performance. The CBK's report (2020), predictable that NPL stood at 5.99% in 2015 and grew to 8.59% in 2016. The rate continued to rise, reaching 12.3% in 2017 and 12.7% in 2018, remaining constant through 2019 before rising to 13.1% in 2020. According to CBK (2020), deposit rates likewise decreased from 7.19% in 2019 to 6.86% in 2020, while commercial banks' average lending decreased from 12.47% in 2019 to 11.89% in 2020. Following the increase of NPLs in Kenya, banks have opted for an increase in the provision of outstanding loan risk as a result of IFRA 9 commencement in 2018. This is because credit serve a major income source to banks which in associated with high risk in most cases (Ngungu & Abdul, 2020).

Numerous research have been conducted to determine the relationship between the characteristics of enterprises and bank performance. Nevertheless, very few research studies have been done on the effect of firm characteristics and loan performance of commercial banks. Ahmed et al (2021) in Pakistan evaluated bank specific factors of commercial banks on non-performing loans. It was observed that credit growth lead to an increase in NPLs significantly. NPL was significantly affected by banks size in an inverse manner. Olarewaju (2020) also looked at the firm macroeconomic and particular elements that determine bad debt in the banking industry across nine nations. The findings showed that capital sufficiency, real interest rates, and the ratio of cost revenue to credit growth all had a substantial impact on the nonperformance of loans in lower middle-income nations.

Following from the reviewed studies on the linkage between firm's characteristics and loan performance of commercial banks, the empirical evidence on the subject matter still remain scanty within the context of Kenya's banking firms. However, majority of the studies which have attempted in establishing such nexus were conducted in other countries whose findings cannot be applied to the banking industry in Kenya. Ahmed et al and Olarewaju isolated the concept of bank size which is key to the transition of banks' loan performance. Furthermore, the application of system general method of moment was applied in the aforementioned studies which remains significantly different from the panel regression framework which the current study intend to adopt to determine the correlation existing between firm characteristics and loan performance of commercial banks in Kenya. In addition, the studies mentioned were conducted in more than one country thereby exposing a contextual gap which the current study intends to fill by evaluating the nexus between Kenyan commercial banks loan performance and firm's characteristics.

1.3 Objectives of this study

1.3.1 General Objective

The study seeks to examine the impact of firm characteristics on loan performance of banking sector in Kenya.

1.3.2 Specific objectives

Specifically, the study objectives are to:

- i. Study the influence of management efficiency on the lending performance of financial institutions in Kenya
- ii. Assess the impact of capital adequacy on the lending performance of commercial banks in Kenya.
- iii. Examine the effect of credit size on the performance of commercial bank lending in Kenya.
- iv. Determine the effect of bank size on lending to commercial banks in Kenya

1.4 Research Hypotheses

- i. **H₀₁**: Management efficiency has no discernible impact on loan performance of commercial banks in Kenya.
- ii. **H₀₂**: Capital adequacy has no discernible impact on loan performance of commercial banks in Kenya.
- iii. **H₀₃**: Credit size has no discernible impact on loan performance of commercial banks in Kenya.
- iv. **H₀₄**: Bank size has no discernible impact on loan performance of commercial banks in Kenya

1.5 Significance of the Study

The results of this research would influence how efficiently laws and regulatory agencies of the government develop policy measures that steer acceptable and sustainable institution characteristics, which in turn affect loan performance levels positively in the sector. This would assist in minimizing the risk associated with loan non-performance in Kenya by redirecting loans to industries with strong positive prospects. This would make it possible to offer loan shocks to help banks cope with their high levels of nonperforming loans.

The results from this study would be beneficial to bank management and policy-makers in the area of controlling the level of lending resources. By determining the cause and effect on investment and the economy as a whole which would enable loan assessment and re-evaluation. As a result, commercial banks would be able to generate more money by lowering the rate of nonperforming loans. If the loan level control is effective, investors would have more confidence in the financial institutions, which would improve the health of Kenya's economy overall.

The study would broaden the focus of scholars and researchers on the correlation between commercial banks' loan performance and firm characteristics. This would increase the knowledge pool already available regarding the connection between firm characteristics and loan performance, specifically in African nations, and as such serve as reference material for other studies in the field.

1.6 Scope of the Study

This research looked at the 39 commercial banks that exist today, with an emphasis on the years 2015 to 2021. The research looked at the year 2015-2021 to see how loan has behaved before and after the interest cap was removed. Efficiency structure theory, buffer capital theory, and

information asymmetry theory served as the foundations of the research. The data was sourced from secondary data sources.

1.7 Limitations of the Study

This research is restricted to the influence of firm characteristics on loan performance of banking sector in Kenya. Therefore, obtaining the correctness of financial modifications owing to varied bank routines is one of the obstacles that may be faced within the investigation. It may be hard to anticipate how loan performance would respond to the banks' features because other circumstances may have occurred at the same moment that have an effect on loan performance. Multiple accounting times, with some banks ending their fiscal year in June or September while some in December. As each institution strives to provide statements that please clients, there may be concerns with the veracity of info pulled from accounting records. However, the investigator overcame the aforementioned restrictions by conducting a thorough examination of the loan system in order to detect the modifications that happen and ensure that accurate data is obtained. Also, due to the discrepancy recorded in data of the commercial banks unbalance panel framework would be employed as the most effective tools which harmonizes the parameters of the regression model.

1.8 Organization of the Study

This study is categorized into three chapters. The research background, problem statement, objectives, hypothesis, questions, importance of the study and its design are detailed in the first chapter. The second chapter discussed the literature review including the conceptual framework, theoretical evaluation, empirical evaluation, and gaps in the literature assessed when summarizing. The third chapter of the study is the methodology, which covered data sources, study design, data collection methods, and data analysis techniques. The fourth chapter of the

survey broke down the presentation of data, analysis and discussion of the hypotheses employed in the study. The final chapter which is the fifth chapter detailed the outcomes summary, conclusion, recommendation, contribution to knowledge and suggestions for advanced studies.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter investigated theoretically and empirically research to gain a more clear insight about the concepts that was employed in the research. The theoretical literature discovered and evaluated theories that are relevant to this investigation. An evaluation of empirical studies related to the research topic on firm characteristics and credit performance. There was an overview of the literature reviewed and a conceptual model.

2.2 Theoretical Review

2.2.1 Efficiency Structure Theory

Demsetz (1973) advanced the efficiency structure theory. The hypothesis posits that market operation of firms is connected to efficiency which is in term of cost and scale. Firms with low operating cost maximize profit. This theory is adequately captured by X-efficiency and scale efficiency. X-efficiency implies the efficient management of resources which give rise to lower costs accruals and increasing benefits of banks. Therefore, banks that operates on an effective productive scale as pointed out by Sami (2014) has higher advantages arising from low cost of operation.

X-efficiency connotes the effective and control expenses of operational activities which results into higher efficiency of the deposit bank. Contrary, scale-efficiency assumed that just few commercial banks have attained maximum efficiency that leads to lower cost of operation. The hypothesis generally stressed on lower operating cost which is significant to commercial banks performance in Kenya. Banks institutions work towards attaining and keeping up with optimum levels of efficiency that is demanded for effective firm's operational levels as well as in the

financial system (Saleh & Afifa, 2020). Therefore, low and high efficiency levels result into consequent impact on commercial banks credit performance.

Commercial banks with lower costs efficiency have greater profit growth potential which allows them expand faster thus, resulting in the utilization of credit efficiently (Ngungu & Abdul, 2020). Commercial banks that adopts efficient managerial strategies stand the better chance reducing their operational cost thus, maximizing the utilization of bank resources for optimum profit. The risk associated with loan default decreases when bank resource management becomes more effective. The hypothesis indicates how significant efficient structure adds to the performance of commercial banks laons hence, its significance to the study cannot be overstated.

2.2.2 Buffer Capital Theory

Calem and Rob (1996) were the pioneers of this hypothesis. The assumption of the theory was that banks struggle to uphold excess capital higher than the minimum required base which they use in curtailing shocks that may emanates from adverse risk in the process of operation. In this case standards are set to provide counter cyclical movement that result from insufficient capital that comes from lending activities of banks (Wakaba, 2014). Therefore, banks with low capital are exposed to bigger risks as a result of bankruptcy anticipation which is shouldered by insurance company. Contrary, banks with huge amounts of capital are tied up with risky investment and the expectation of high profitability through continuous capital utilization (Kibet et al, 2015).

Buffer capital theory establishes the link between capital adequacy ratio and credit performance of commercial banks. In view of this theorys postulation, commercial banks hold buffers in view of reducing the likelihood of operating below the minimum capital required level. Importantly, commercial banks capital enables the banks to plan against their credit issuance (Mennawi,

2020). As such, commercial banks' capacity in collecting sufficient deposits averts capital base depletion.

This theory is significant because it explains how banks used their credit authority to fulfill their intermediation duties. Banks with significant capital focus on maintaining their capital buffers, while those with capital below the minimal requirements strive to increase their capital base, in order to effectively perform their intermediation role. As a result, the risk of a credit default by commercial banks is reduced and vice versa as capital buffers increase.

2.2.3 Information Asymmetry Theory

The primary premise of this theory, knowledge asymmetry leads economies to become ineffective (Akerlof 1970). This is due to an absence of knowledge that should be publicly provided to allow users to making educated judgments. While one assembly offers insufficient data about the gathering participating in a transaction, it becomes difficult to create a firm decision when leading the transactions (Mishkin, 2004). Banking institutions make a choice in advance. The borrowers would probably know more about the hazards of the venture for that they are receiving resources than the institution (Matthews & Thompson, 2008). There is evidence that unfavorable choice as well as ethical risk having resulted in a massive accumulation of credit advances in institutions (Ombaba, 2013).

In this way, the credit size is correlated to the number of loan loss provisions incurred as an outcome of credit performance. The most serious threat that an institution can face is its credit failure. To assess its grandeur, it is compared to the total amount of credits that the institution has made. A large percentage of credit efficiency to advances gives the appearance of risky lending and weak board credit. It poses a threat to customers' funds. As an indicators of credit

magnitude, the research used the loan defaults to net revenue ratio. As a result, a low percentage is desired to guarantee commercial banks' credit performance.

The theory applies to this study because of the effects of asymmetry, internal borrowing, unsecured loans to bank customers, and other investors have further developed moral hazards, leading to high levels of credit size as well as NPLs and consequently credit risk, which in turn leads to problems with commercial banks' liquidity risk. Credit reference bureaus that reduce information asymmetry are handling the issue of adverse selection (Oganda, Mogwambo & Otieno, 2019). Therefore, in order to effectively prevent non-performing loans through negotiation, commercial banks should know more about the specific products they deal with borrowers.

2.3 Empirical Review

2.3.1 Management Efficiency and Loan Performance

Alber (2016) wanted to improve the commercial bank industry's effectiveness and profitability in the Middle East and North Africa (MENA) nations. The research utilized data envelopment analysis (DEA) as a measure for institutional efficiency and NPLs as a measure for financial soundness. From 2004 to 2013, the survey was conducted in 15 MENA nations. Generalized method of moments (GMM) was utilized to determine the link between the study parameters. According to the results, efficiency had a good and considerable impact on MENA countries' profitability. The research was conducted out in MENA countries with not so similar political, institutional, and technical settings to Kenya.

Atsango (2018) investigates the influence of management efficiency on the profitability of DT-SACCOs in Kenya. The study features 3 theories and studies: Resource Based View, Efficient Market Hypothesis, as well as Liquidity Preference Model. Descriptive surveying methodology

was used in the study to ascertain the impact of business factors on DT-SACCO profitability in Kenya. The research concentrates on 135 DT-SACCOs that are entirely registered with SASRA as well as possess accounting transactions for the report's five-year timeframe from 2013 to 2017. A total of 56 DT-SACCOs were utilized in the study. To determine the amount of DT-SACCOs that would be included in the research, simple random sampling was used. The research focused on secondary data on DT-SACCO business results. STATA was used to analyze the data, which yielded descriptive and inferential metrics. Average, standard deviation, minimal, and maximal were all used in the descriptive statistic. Diagnostic tests and panel data regression analyses were used in the inferential analysis. According to the data, operational efficiency had a statistical substantial impact on DT-SACCO profitability in Kenya. The study was done on depository banks, this study focused on Kenyan commercial banks.

Abel (2018) carefully inspected the correlation between cost efficiency and non-performing loans (NPLs) in the banking sector of Zimbabwe from 2009 to 2014. In the investigation, the Granger causality Test was applied. The study found that cost efficiency adversely Granger-causes NPLs, confirming the idea that weak credit management caused the low level of efficiency, which in turn caused a downward trend in the quality of banks' loan books. The study came to the conclusion that although bad credit policies could appear profitable in the short term, they had negative long-term repercussions on the level of excellence of banks' loan books. Although the study considered the study of cost efficiency with non-performing loans of the Zimbabwean banking industry, the current study focused on establishing the connection between firm characteristics and loan performance utilizing panel regression analysis.

Santoach (2019) investigates the effect of banking operational efficiency on Nepalese commercial bank profitability. The data was analyzed utilizing descriptive and fixed effect

regression. The research is based on panel data from nine commercial banks in Nepal, including Ninety samples from 2007/08 to 2016/17. Return on asset is the dependent variable, whereas operation efficiency, loans on deposits, size of the bank, and liquidity ratios are the endogenous variables. The survey results show that operating efficiency is negatively correlated with the profitability of the tested banking financial institutions tested. The study looked at Nepal commercialized banking establishments, this study observed Kenyan commercialized banking establishments.

2.3.2 Capital Adequacy and Loan Performance

Capital adequacy and credit worthiness in Africa were investigated by Oduora, Ngokab, and Odongoba (2017). Between 2000 and 2011, a total of 167 African banks participated in the survey, and also 145 banking institutions from 23 African nations from 2007 through 2013. As a measure of financial soundness, the NPL ratio was employed. According to the results, banking institutions have a favorable and significant impact on financial stability, meaning that increased equity in small banks leads to increased credit crunch in Africa, apart from banking institutions. The report's aim was excessively broad, and the nations it examined were not disclosed. The current research addressed commercial banks in Kenya.

The study by Yulianti, Aliamin, and Ibrahim (2018) examines the impact of capital adequacy and bank size on nonperforming loans in Indonesian government banking institutions from 2012 to 2016. Collected sources were utilized to gather information from Bank Indonesia's Accounting Records. This study was a hypothesis-testing experiment. The research used a purposeful selection strategy, and the total samples consisted of 81 extracts. To evaluate the hypotheses, multi-linear regression technique with panel data assessment was used. The findings suggest that the capital adequacy ratio has an impact on nonperforming loans at the same time. The findings

suggest that capital adequacy ratio has a favorable impact on non-performing loans in portion. The study main focus was on capital adequacy and bank size. It also focused on government banks. This study focused on different bank characteristics and it observed all banks in Kenya, the public, private and international banks.

Ruslim and Bengawan (2019) Examine the Effects of Capital Adequacy Ratio (CAR), Loan-to-Deposit Ratio (LDR) and Inefficiency on Non-Performing Loans of Indonesian Commercial Banks. Panel regression research on data from 41 banks collected between 2016 and 2018 revealed that CAR, LDR, and inefficiency all had an effect on NPL at the same time. While LDR and inefficiency demonstrated a significant and positive effect on NPL, CAR somewhat demonstrated a negative effect but did not significantly affect NPL. The research was conducted in Indonesia which is also a developing economy with peculiar features, the current study concentrated on Kenya's commercial banks' loan performance and how it is being affected by firm characteristics.

Wafulu (2020) explored the effect of capital adequacy on the financial stability of Kenyan commercial banks. The exchange rate was being used to ascertain the modifying influence of banking features on commercial bank financial stability in Kenya. The study used a causative study approach. Between 2011 and 2018, the investigation was conducted in 17 Kenyan commercial banks that were considered vulnerable. The findings of a dynamic panel regression analysis driven by Generalized Method of Moments (GMM) modelling demonstrated that capital sufficiency had a statistical substantial adverse impact on financial stability of Kenyan commercial banks. The research shows that capital adequacy is inextricably connected to commercial banks' financial stability in Kenya. The study mainly used fragile banks to carry out its analysis, but this study utilized all banks to carry out its assessment.

2.3.3 Credit Size and Loan Performance

The influence of credit size on bank liquidity risk in India was studied by Sopan and Dutta (2018). The study used panel data to determine the impact of lending size on Indian banks' liquidity risk. The assessment examined information from 45 Indian banks, all of which are part of the State Bank of India group. According to the results, credit size has a statistically substantial adverse impact on Indian banks' liquidity risk. The study, on the other hand, focused at credit size as defined by the ratio of loss loan provisions to operational revenue as an explanation parameter and the volatility indices as a tool for credit stability as a predictor variable. The GMM model was also used in the research. This research was conducted out at Kenyan commercial banks.

The effects of credit size on bad debts in the banking industry was researched by Syajarul, Mohd, and Shifa (2018) from 16 chosen Islamic nations (OIC). In the research, the loan loss reserve to net loan proportion was utilized as a measure for credit size, whereas the gross loans to total deposits was utilized as a measure for liquidity risk. The credit risks factors were studied using a fixed effect model. From 1999 and 2013, information was retrieved from of the Global Institution's World Development Indicator (WDI) and information from regional institutions. According to the results, credit size has a statistical substantial adverse impact on liquidity risk. The study observed this feature on organization of Islamic banks but this study focused on commercialized banks in Kenya.

Murunga (2018) evaluated the impact of mobile lending on bad loans in commercial banks in Nakuru City. A descriptive survey design was used for the investigation Using a stratified random sampling technique, a sample of 64 credit officers was drawn from the study population. Multiple regression and the Spearman rank correlation coefficient were used as inferential

statistics. The study found that, in terms of NPLs, the loan appraisal procedure was the most crucial component of mobile-based loans. On the other hand, it was discovered that the loan disbursement method had a negligible effect on NPLs. The study also discovered that commercial banks were more likely to record NPLs when more emphasis was placed on lending through mobile platforms. Additionally, it was found that there was a strong connection between NPLs and the loan assessment process. In conclusion, because the borrowers' required documentation was not obtained, commercial banks ran the risk of accruing more NPLs. The study came to the conclusion that NPLs in commercial banks were generally unrelated to the loan disbursement, monitoring, and evaluation systems. Although, the study was conducted in Kenya, it was focused on a particular county which may reflect differing results from other regions of the country.

Muhanji and Theuri (2020) sought to assess how credit size affected the amount of non – performing loan in financial institutions in Nakuru County. The emphasis of the assessment of the literature was on investment portfolio theory, capital asset pricing theory, and capital buffer theory of capital adequacy. The core information was acquired through survey questions, while auxiliary data was gathered from the banking survey 2017 and yearly regulatory statements from the Kenyan Central Bank. Multiple regressions were used in the research, and the results demonstrated that asset quality and non-performing loans had a favorable and statistical meaningful association. The study was carried out mainly in Nakuru a Kenyan count, but this study carried out its assessment on all Kenyan Banks.

2.3.4 Bank Size and Loan Performance

Nugraha and Setiawan (2018) investigated the return on Financing Profit, Bank size, Loss Sharing (PLS) and Inflation effect on Non Performing Financing (NPF) of Sharia Banks in

Indonesia. The results of the study showed that a substantial impact of loss sharing and return of financing profit on non-performing financing was recorded, and that this effect was in a negative direction. This was determined through applying a panel multiple linear regression approach to analyze the study data. Bank size demonstrated a significant negative influence on Non Performing Financing. Furthermore, a positive directional effect was recorded with inflation on Non Performing Financing without any significance. Conclusively, the study indicated that a simultaneous influence of Loss Sharing and return of financing Profit, inflation and bank size was reported on Non Performing Financing. The on Sharia banks in Indonesia, and its results cannot be utilized in the current context of this study since the unique characteristics of the business environment in the African continent.

The analysis of capital adequacy and bank size was carried out among public banks in Indonesia to determine their NPL rates by Yulianti and Aliamin (2018). Using 2012 to 2016 and employing 81 sampled banks, the results from the multiple linear panel analysis revealed that NPLs was affected positively and significantly by the ratio of capital adequacy. NPL was also affected significantly and negatively by bank size while inversely with loan to deposit ratio. This study was investigated in Kenya using commercial banks whereas Indonesia was used to determined NPL of banks.

Using data that from 40 commercial banks that spanned across the period 2013 to 2017, Ngungu and Abdul (2020) ascertained how nonperforming loans of Kenya's banks are affected by firms-characteristics. A Causal research design was utilized as the guiding framework of the study. Using panel regression analysis, liquidity indicated an insignificant effect on Kenya's commercial banks' non-performing loans. Commercial banks' nonperforming loan was affected in a significant manner by capital adequacy. The significant of bank size was recorded on

Kenya's commercial banks nonperforming loans. In addition, the research found that interest rate moderated insignificantly on the link between firm characteristics and commercial banks' nonperforming loans in Kenya. Although, the study was conducted amongst commercial banks in Kenya, 40 commercial banks were considered while 39 commercial banks were considered in the current study with the inclusion of credit size as one of the conceptual framework which the former study isolated as one of the most important variable that affects the performance of loans in Kenya.

Karim, Rohadi, and Steawan (2021) conducted an investigation on variables, such as bank-specific variables, macroeconomic variables, and corporate governance variables, that influence the risk level of NPF (non-performing Finance) in Islamic Banking. This quantitative study uses WarpPLS 7.0-based structural equation modeling and partial least squares (SEM-PLS) analysis tools to examine a sample of all Indonesian Islamic commercial banks from 2015 to 2019. According to the data analysis findings, the bank-specific variables capital adequacy ratio (CAR), financing to deposit ratio (FDR), and firm size are all significantly correlated with NPF. The examination of GDP and inflation data demonstrates how macroeconomic issues also have an effect on the NPF. The final corporate governance factors are board meetings of directors and female board of directors (FBD), which also demonstrate how they relate to NPF. The study was conducted amongst Indonesia Islamic banks whilst this study was conducted on commercial banks in Kenya.

2.4 Summary of Literature and Research Gaps

A summary of the empirical literature highlighting the literature gap is displayed in Table 2.1 to explain the impact of firm characteristics on the credit performance of commercial banks in Kenya.

Table 2.1 Summary of Reviewed literature and Research Gaps

Authors	Objectives	Key Findings	Research Gaps	Current study focus
Sritharan (2015)	Looked at how the age of a company affects its profitability in Sri Lankan resorts and tour companies that are publicly tradrd	The age of the firm is favorably associated to the profitability metric according to the findings	The study used fixed effects estimating methodology	This study used panel regression techniques.
Alber (2016)	Investigate the effect institutional efficiency on NPLs on MENA countries	Efficiency had a good and considerable impact on MENA countries	The research was conducted in MENA countries	This study was based in Kenya
Oduora, Ngokab and Odongoba (2017)	Assessed the effect of capital adequacy on credit worthiness in Africa	According to the results, banking institutions have a favorable and significant impact on credit worthiness	The study focused on banks in Africa, which is broad and the nations examined were not disclosed	This study focused on Kenyan commercialized banking establishment

Atsango (2018)	Investigated the impact of managerial efficiency on deposit taking sacco's profitability in Kenya	the result revealed that managerial efficiency had a statistical substantial impact on deposit taking sacco's	The study was done on deposit taking sacco's	This study was carried out on commercial bank
Sopan and Dutta (2018)	The influence of credit size on liquidity risk in India	Results, credit size has a statistically substantial adverse impact on India banks liquidity risk	The research was carried out in India	This study was conducted in Kenya
Yulianti, Aliamin and Ibrahim (2018)	Examines the impact of capital adequacy and bank size on NPLs in Indonesian government banks	The results indicate that capital adequacy has an impact on non-performing loans.	The study main focus was on capital adequacy and bank size and it only observed government owned banks	This study focused on different bank features and observed all commercialized banks operating in Kenya
Abel (2018)	Examined the relationship between cost efficiency and	The study found that cost efficiency adversely Granger-causes NPLs, confirming the idea that weak credit	Although the study considered the study of cost efficiency with non-	The current study focused on establishing the

	non-performing loans (NPLs) in the banking industry of Zimbabwe	management caused the low level of efficiency, which in turn caused a decline in the quality of banks' loan books	performing loans of the Zimbabwean banking industry.	relationship between firm characteristics and loan performance using panel regression analysis
Murunga (2018)	Assessed the effect of a mobile-based lending process on non-performing loans in Nakuru town's commercial banks	The study found that, in terms of NPLs, the loan appraisal procedure was the most crucial component of mobile-based loans. On the other hand, it was discovered that the loan disbursement method had no significant effect on NPLs. The study also discovered that commercial banks were more likely to record NPLs when more emphasis was placed on lending through mobile	Although, the study was conducted in Kenya, it was focused on a particular county which may reflect differing results from other regions of the country	The current study had it base on the whole commercial banks in Kenya

		platforms. Additionally, it was found that there was a strong connection between NPLs and the loan assessment process. In conclusion, because the borrowers' required documentation was not obtained, commercial banks ran the risk of accruing more NPLs		
Nugraha and Setiawan (2018)	Investigated the return on Financing Profit, Bank size, Loss Sharing (PLS) and Inflation effect on Non Performing Financing (NPF) of Sharia Banks in	The outcome of the study showed that a significant effect of Loss Sharing and return of financing Profit on Non Performing Financing was recorded which had a negative direction of influence. Bank size demonstrated a significant negative influence on Non Performing	The study was concentrated on Sharia Banks in Indonesia whose findings cannot be applied to the current context of this study due to the unique features of the business environment on the African continent	The current study focused on how firm characteristics affected nonperforming loans on commercial banks in Kenya

	Indonesia	Financing. Furthermore, a positive directional effect was recorded with inflation on Non Performing Financing without any significance		
Santoach (2019)	Examined the effect of banking operational efficiency on Nepalese commercial bank profitability	From the findings, operational efficiency has an adverse substantial relationship with profitability of banking institution	The study looked at Nepal commercialized banking establishments	This study observed Kenyan commercialized banking establishments
Ruslim and Bengawan (2019)	Examined the effect of the capital adequacy ratio (CAR), loan to deposit ratio (LDR), and inefficiency on the non-performing loans of commercial	Finding revealed that CAR, LDR, and inefficiency all had an effect on NPL at the same time. While LDR and inefficiency demonstrated a positive and significant effect on NPL, CAR somewhat demonstrated a negative effect but did not	The research was conducted in Indonesia which is also a developing economy with perculier features.	The current study concentrated on Kenya's commercial banks' loan performance and how it is being affected by firm characteristics.

	banks in Indonesia	significantly affect NPL		
Wafulu (2020)	Examined the impact of capital adequacy on financial stability of Kenyan commercial banking institution	The findings demonstrated that capital adequacy had a statistical substantial adverse impact on financial stability of Kenyan commercial banks	The study mainly used fragile banks to carry out its analysis	This study utilized all banks
Ngungu and Abdul (2020)	Ascertained how nonperforming loans of Kenya's banks are affected by firms-characteristics	Using panel regression analysis, liquidity indicated an insignificant effect on Kenya's commercial banks' non-performing loans. Commercial banks' nonperforming loan was affected in a significant manner by capital adequacy. The significant of bank size was recorded on Kenya's commercial banks nonperforming loans. In addition, the research found	Although, the study was conducted amongst commercial banks in Kenya, 40 commercial banks were considered.	39 commercial banks were considered in the current study with the inclusion of credit size as one of the conceptual framework which the former study isolated as one of the most important variable that affects

		that interest rate moderated insignificantly on firm characteristics relationship with commercial banks' non-performing loans in Kenya		the performance of loans in Kenya
Muhanji and Theuri (2020)	To find out the credit size affects the amount of NPLs on commercial banks in Nakuru	The study demonstrated that credit size and NPLs had a favorable and statistical meaningful association	The research took place primarily in Nakuru County, Kenya	This study carried out its assessment on all Kenyan Banks
Karim, Ruhadi, and Setiawan (2021)	Investigated variables, such as bank-specific variables, macroeconomic variables, and corporate governance variables, that affect	Results indicated that bank-specific variables capital adequacy ratio (CAR), financing to deposit ratio (FDR), and firm age are all significantly correlated with NPF. The examination of GDP and inflation data demonstrates how	Indonesia was the centre piece of the study	The current study was conducted on commercial banks in Kenya

	<p>the financing risk level of NPF (non-performing finance) in Islamic banking</p>	<p>macroeconomic issues also have an effect on the NPF. The final corporate governance factors are board meeting of directors (BMD) and female board of directors (FBD, which also demonstrate how they relate to NPF</p>		
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2.5 Conceptual Framework

It is a visual illustration of the link between research variables. This shows the relationship between the study's explanatory variables and the dependent variables, allowing the direction of the study's link to be determined. This explains the link between the explanatory variables and experimental variables in the study area in a diagrammatical form. As a result, the dependent variables was measured by loan performance of commercialized banks, while the link between the study explanatory variables was established using firm characteristics proxy by management efficiency, capital adequacy, credit size, bank size. The dependent variable is lending efficiency which was assessed by the use of bad debts compared to the total loans of commercial banks while management efficiency, capital adequacy and credit volume were independent variables. Bank utilization and size was measured by cost/income ratio, capital adequacy ratio, total loan outstanding history and total credit history. Bank assets.

Independent Variables

Dependent Variable

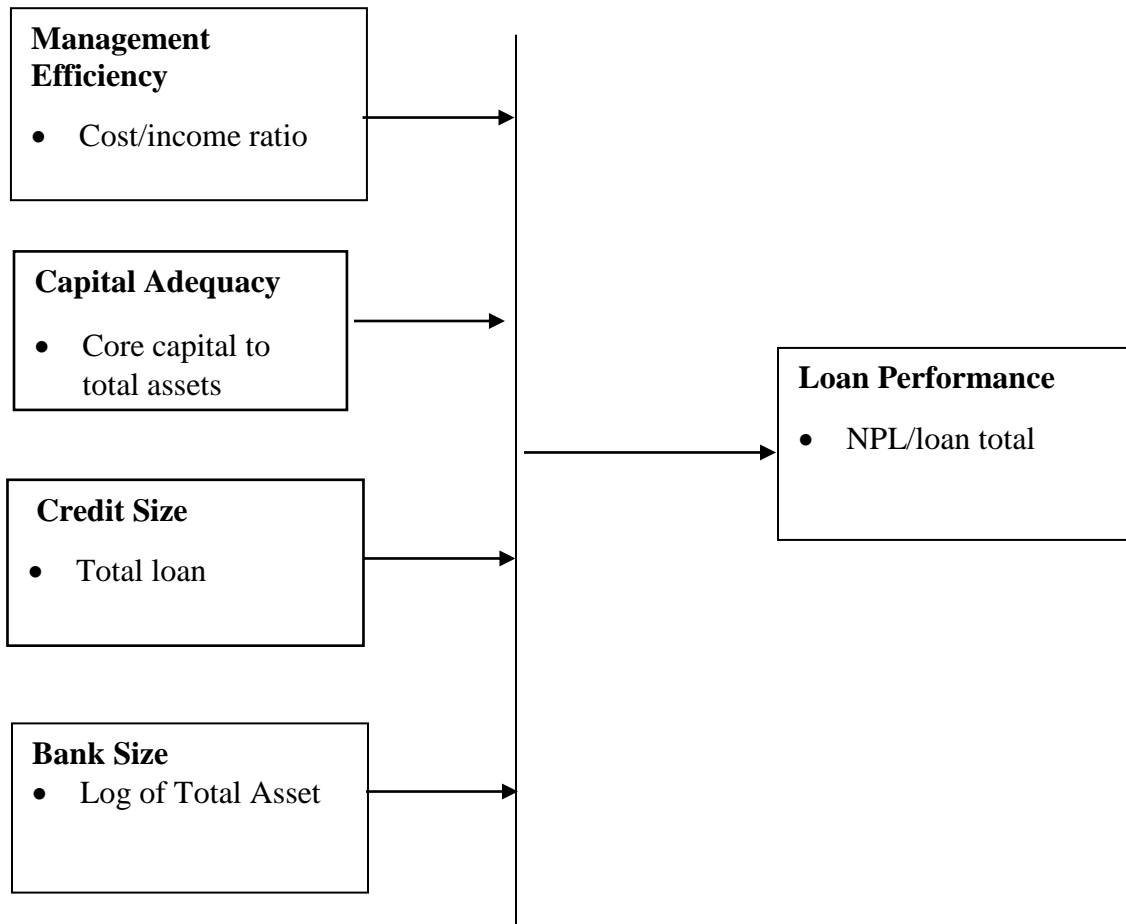


Figure 2.1 Conceptual Framework
Source: Researcher 2023

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This section outlined the method the investigation used to reach its findings and conclusions. This investigation section covered the methodological approach, targeted demographic, sample, information gathering, survey tool, and analytic procedure.

3.2 Research Design

In an investigation, research design gives a blueprint (Schindler and Cooper, 2009). The research methodology to be used in a survey would help to direct the numerous methodological approaches. The effect of firm characteristics (management efficiency, credit size, bank size and capital sufficiency) on loan performance of Kenyan commercial banks were investigated using an explanatory research approach. This study design was used in examinations since the goal is to determine the impact of different indicators on outcome measures. An explanatory research design was chosen to achieve the study's objectives. This design is noteworthy because it is theoretically grounded and evaluates research ideas in the context of particular objectives. The design emphasizes cause-and-effect links while providing methodical explanations for the underlying phenomena thus, making it suitable for the suggested study.

3.3 Target Population

Blumberg et al. (2014) referred to the study population as items, people, or groups that are interesting and should be taken into account in a study. Thus, the target audience is the category of groups, persons, or organizations in which the researcher is interested and will develop generalizations and estimates (Mugenda & Mugenda, 2013). The entire range of institutions of relevant to the investigation is referred to as the demographic in this study. Kenyan banks was

the report's primary audience. From 2016 to 2021, a total of 39 banks are fully functioning and was used. Since the populace is limited, the total sample was researched.

3.4 Sampling Design

Sampling is the process of choosing a subset of a specific group or set of firms from which generalizations about the entire group was drawn (Mugenda & Mugenda, 2013). Due to the large population size, sampling is typically done in order to save time and resources (Kothari & Garg, 2014). A subgroup of a study population is selected for sampling. The survey sample consisted of the thirty-nine completely functional Kenyan commercial Banks from 2016 to 2021. As a result, the assessment was a census, as it included all commercial institutions in Kenya.

3.5 Empirical Model

A clear connection amongst the investigation parameters was revealed by the model. The impact of business features on credit performance in Kenya's commercialized banking was applied. Information from commercial banking institutions were merged into the theoretical equations, which was utilized to arrive at the report's conclusion. This was presented in the following format:

$$LP_{it} = \beta_0 + \beta_1 ME_{it} + \beta_2 CA_{it} + \beta_3 CS_{it} + \beta_4 BA_{it} + \varepsilon$$

Where:

LP = Loan Performance

ME = Management Efficiency

CA = Capital Adequacy

CS = Credit Size

BA = Bank Size

T = Time period

I = Bank

E = Stochastic Variable

$\beta_1, \beta_2, \beta_3$, = Coefficients

3.6 Operationalization and Measurements of Variables

Table 3.1 Operationalization and Measurements of Variables

Table 3.1 was used to record the assessment parameters. This section lists the categories that the inquiry was utilized to determine the examination's parameters.

Type	Variable	Operationalization of variables	Measurement of variables	Measurement Scale
Dependent Variable	Loan Performance	The number of loans that remains unpaid.	NPL/total loans	Ratio
Explanatory variables	Management efficiency	Banks capability of changing resources to income	Cost/income ratio	Ratio
Explanatory variables	Capital adequacy	Degree of assets in which bank supposed to have or plan to keep	Capital adequacy ratio	Ratio
Explanatory Variable	Credit Size	The total loan volume issued by the bank	Total loan	Log
Explanatory Variable	Bank Size	The total amount of resources held by the banks	Total asset	Log

Source: Researcher (2023)

3.7 Data Collection

An organized plan that assists a researcher in acquiring information pertinent to the study serves as the instrument for data collection (Gujarati, 2003). The study used information from the sub-table from 2016 to 2021. The data collection table is in Appendix II to indicate the type of data that was collected. The study information was gathered from bank accounting records and CBK statistical bulletins. As a result, a data gathering guideline was used.

3.8 Data Analysis

The transformation of data obtained for study into accessible shape, typically for the goal of drawing findings, is referred to as data analysis. Once the data has been obtained, the survey data was analyzed. Information processing was performed in order to convert obtained data into a style that can be used for evaluation and decision. It was subjected to inferential and descriptive evaluation. The descriptive assessment was done with averages and standards variations, whilst inferential assessment was done with the panel regression methodology.

Because the research used panel data, the inferential analysis was based on multiple regressions. With the use of the STATA software, relevant inferential statistical procedures, such as panel regression methods, was used to evaluate the study's objectives. As a result, the panel regression methodology was employed to screen hypotheses and draw findings. The 0.05 significance threshold, or 95 percent confidence intervals, was used to direct the assessment of hypotheses. Several diagnostic procedures linked to panel regression analyses was carried out so as to ensure that the research results to be utilized is sufficient in form prior to research. Multicollinearity, heteroseasticity, and normalcy diagnostic examinations was performed.

3.9Diagnostics Tests

Before making any inferences following the fitting of a regression model, it is crucial to ensure that all of the model assumptions supporting the Ordinary Least Squares (OLS) estimation are valid. Diagnostic tests was used to determine how effectively multiple linear regressions' underlying assumptions are satisfied. A model's validity was constantly questioned and little trust may be placed in the conclusions if diagnostic testing for model appropriateness is unsuccessful. Infringement of these presumptions, in the opinion of Onyango (2018), calls into question the reliability of the conclusions reached. Therefore, there is a chance of getting skewed, ineffective, and inconsistent parameter estimates when the assumptions of the classical linear regression model (CLRM) are compromised. In order to prevent the conventional econometric problems arising from violating the assumptions of the classical linear regression model, it is necessary to perform the necessary model inference.

3.9.1Stationarity Test

When performing panel regression, it is assumed that the study set of data is steady (Verbeek, 2012). This is primarily owing to the database's time series nature. The existence of a unit root causes incorrect deductions and, as a result, incorrect judgments. The Hadri LM Test was used to check for stationarity in the study.

3.9.2Multicollinearity Test

According to Wooldridge (2013), it is a circumstance in which predictive parameters in a study have a degree of relationship. Severe multicollinearity leads to inaccurate estimations because it increases the P-values; the correlation matrix was employed in accordance with Greene to determine the extent of linkage amongst the independent parameters (2008). As a result, the

testing was directed by a 10 limit. In the event that substantial multicollinearity is discovered, the impacted parameter was removed.

3.9.3 Hausman Test

The Hausman test was used to select the model (static or random) to be utilized for analytical estimates. The hausmann test was based on the null hypothesis that the random effect is the selected type and that the fixed effect is the alternate. A (0.05) % threshold of importance was used to conduct the testing. As a result, a probability ratio of less than 0.05 implies that the null hypothesis must be denied, implying that the fixed effect model was used. A probability score greater than 0.05, on the other hand, indicates that the random effect was the appropriate choice, and so the null hypothesis was not dismissed.

3.9.4 Heteroscedasticity Test

The confidence region increases whenever the theory has heteroscedasticity. This indicates that the variability of the erroneous component will change with term and between data sets. In this instance, the incorrect phrases have different outcomes based on their assessment. This will lead in a bias error in the benchmark, which will lead to inaccurate results. Heteroscedasticity was detected using the Breusch Pagan-Godfrey test. The decision was made using a 5% level of significance.

3.9.5 Normality Test

The standard error and t-tests, for instance, are based on the assumption that the erroneous approach is commonly transmitted and it has a constant variance. The research needed to build up the one directional inaccuracy components in the panel informative benchmarks and goals in such a manner that they are consistently dispersed and constant. Bera and Jarque (1981) was

used to check for normalcy in this investigation. If the P- value is less than 5% level of significance, the investigation invalidated the null hypothesis.

3.10 Ethical Considerations

The investigation explored into a variety of ethical questions impacting investigation at Kenyatta University and throughout Kenya. This included anything from plagiarism to falsification prevention. Authors whose work was referenced in the publication were appropriately credited.

CHAPTER FOUR
RESEARCH FINDINGS AND DISCUSSIONS

4.1 Introduction

The outcome of the investigation is displayed in this part of the study to reflect the conversion of raw data to meaningful decision making about the research problem. Following from the outcome of the panel regression framework the analysis was conducted in view of the objectives of the survey. This is to show the consistency of the outcomes with existing research studies conducted in similar field by other scholars.

4.2 Descriptive Statistics

The descriptive statistical evaluation of the data was carried out to determine the single parameters that illustrate the behaviour of the data employed in the study. The summary of the data is displayed in Table 4.1.

Table 4.1 Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min.	Max.
Loan Performance	274	0.1285	0.1174	0	0.6962
Management Efficiency	270	1.9342	5.5530	0	65.6153
Capital Adequacy	273	0.1389	0.0670	-0.2058	0.4854
Credit Size	274	4.3712	0.5996	2.3710	5.7286
Bank Size	273	4.6160	0.5755	3.4166	5.8288

Source: Study Data (2023)

The outcome of the survey displayed in Table 4.1 revealed that loan performance has a mean average of 0.1285. This follows the standard deviation of the loan performance of commercial banks as indicated by 0.1174. This showed that the data employed in the survey varies within the

minimum and maximum ratio between 0 and 0.6962. Management efficiency showed a mean value of 1.9342 with a corresponding standard deviation of 5.5530 indicating high level of variance among the data employed to capture management efficiency. The information employed fall within the range of the minimum and maximum values of 0 and 65.6153. Capital adequacy of the commercial demonstrated a mean value of 0.1389. The capital adequacy of the banks varied across the banks observations as noted by 0.0670 standard deviation value. The variation indicated that the data used in the survey do not fall outside the range of -0.2058 and 0.4854 as minimum and maximum values. Credit size from the result in Table 4.1 demonstrated a mean value of 4.3712. The outcome depicted that the variation in the data was captured by 0.5996, signifying that all the data used to illustrated credit size of the commercial banks ranges between 2.3710 and 5.7286 as lowest and highest values. Bank size utilized in the survey has a mean value of 4.6160 with the size of the banks varying at 0.5755 in terms of capital assets based. The range of values employed to capture bank size indicated that 3.4166 and 5.8288 were used as minimum and maximum values in the study.

4.3 Diagnostic Tests

The evaluation of time series data using ordinary least squares entails the procedures that ensures that all the axioms guiding its operations are followed to avoid biased parameter estimates. This is to ensure that the parameters adequately captured the sample employed in the study to arrive at a valid conclusion about a particular phenomenon. The study therefore, employed test for normality, stationarity, autocorrelation, heteroscedasticity and model specification.

4.3.1 Normality Test

In research study it is expected that the better the sample to the population, the better the estimator. Normality implies that the residuals of the model employed for the study should be

distributed in a manner that reflects the true mean of the population. This allows for the reliability of the model for policy implication and adequacy. The Shapiro-Friancia W test was adopted since it captures the chance of the density function and the distributive cumulative function of the conventional normal random variable displayed skew-normal behaviour (González-Estrada & Cosmes, 2019). It is therefore presumed that the data are normal when the p-value is high and over 0.05. The test suggested that the residuals are normal when the p-value is above 0.05 where the reverse is the case. The outcome is displayed in Table 4.2.

Table 4.2 Shapiro-Friancia W test for Normality

Variable	Obs	W	V	z	Prob>z
Loan Performance	274	0.8240	37.544	7.651	0.00001
Management Efficiency	270	0.1907	170.509	10.834	0.00001
Capital Adequacy	273	0.8603	29.705	7.155	0.00001
Credit Size	274	0.9677	6.888	4.073	0.00002
Bank Size	273	0.9538	9.827	4.821	0.00001

Source: Study Data (2023)

Drawing from the outcome of the survey displayed in Table 4.2, loan performance, management efficiency, capital adequacy, credit size and bank size demonstrated p-values that above the threshold of 0.05 level of significance. This implies that the residuals across the observations are not distributed in a normal way hence, the null hypothesis was rejected. However, in the event that the data or observation used in the survey is large and adequate, the data is termed normally distributed thus tilting towards normality. To buttress this view, Akims (2016) observed that survey with more than 30 observations need not to be considered as the sample is large enough.

4.3.2 Multicollinearity Test

Variance inflation factor is used to measure the degree of association between the explanatory variables in a study empirical model. When the VIF coefficient is high and above 10, such association is said to affect the outcome of the survey. A Variance Inflation Factor of less than 10 indicates the lack of multicollinearity (Besley, 1991; Gujarati, 2003), an estimation coefficient of VIF less than 10 signifies weak collinearity whereas VIF above 10 demonstrates substantial collinearity among the predictor variables. The VIF results from the survey are displayed in Table 4.3.

Table 4.3 Tests for Multicollinearity

Variable	VIF	1/VIF
Management Efficiency	1.11	0.901388
Capital Adequacy	1.07	0.935138
Credit Size	1.05	0.950894
Bank Size	1.00	1.000000
Mean VIF	1.06	

Source: Study Data (2023)

Table 4.3 revealed the outcome of the VIF analysis of the investigation. Concluding from the outcomes obtained, it was noted that all the explanatory variables employed in the study have VIF values below 10. This is implication of this is that the model do not suffer from high collinearity issues which is acceptable for subsequent analysis in the study. Therefore, drawing conclusion from the mean VIF 1.06, the model is free from collinearity problem, thus the outcome of the regression is unaffected confirming onward procession to further evaluation.

4.3.3 Heteroscedasticity Test

The occurrence of a situation that shows an unequal variance across the observations in a time series analysis model is termed as heteroscedasticity. The occurrence of this in a regression model indicates that the residuals affect the estimated parameters of the model, hence, its performance. Therefore, it is expected that the residuals in the model be the same across the observations in the model. To ascertain the presence or absence of heteroscedasticity in a model the Breusch-Pagan test was performed and the result is displayed in Table 4.4.

Table 4.4 Breusch-Pagan/Cook-Weisberg test for heteroskedasticity

Breusch-Pagan/Cook-Weisberg test for heteroscedasticity

Ho: Constant variance

Variables: fitted values of Loan Performance

Chi2(1)=16.88

Prob>chi2=0.0000

Source: Study Data (2023)

The findings suggested that the stated likelihood Chi-square is 0.0000 less than the 0.05 level of significance. This outcome reflected the rejection of the null hypothesis signifying that the model suffers from heteroscedasticity. This outcome informed the ideal that a robust standard test is needed to correct for the variation in the residual across the observations. To affirm the outcome, Wooldridge (2002), observed that the effectiveness of the explanatory variables can be corrected by utilizing robust standards errors estimation.

4.3.4 Stationarity Test

For estimation of time series data, it is expected that the series exhibits some degree of stability to avoid spurious estimation which do not reflect the true outcome of the study. In most cases, time series variables are non-stationary over the study period which causes uncertainty about survey outcomes. Owing to this, Box and Jenkins (1978) observed that unstationary variables

can be made stationary by taking the derivative of the variable to smoothen the trend of the data. With this, the problem of unit roots existence is eliminated as Fisher-type test was employed to ensure stationarity of the variables utilized in the study. The product of the Fisher-type test is captured in Table 4.5.

Table 4.5 Fisher-type test for Stationarity

Variable	Fisher-type Statistic	P-value	Comment
Loan Performance	149.4978	0.0000	Stationary
Management Efficiency	170.1304	0.0000	Stationary
Capital Adequacy	164.6777	0.0000	Stationary
Credit Size	200.0779	0.0000	Stationary
Bank Size	180.4008	0.0000	Stationary

Source: Study Data (2023)

Table 4.5 displayed the outcome of the investigation as it pertains to the stationarity of the variables employed in the study. The stationarity of the variables is illustrated by the p-values less than 0.05 level of significance. This signifies that loan performance, management efficiency, capital adequacy, credit size and bank size are stationary depicting constant mean and variance of the variables across the study period. With the above outcome, all the variables are free from unit roots at the asymptotic level of significance.

4.4.4 Model specification test

The Hausman Test was utilized to evaluate the random effect and fixed effect models and determine which is better suitable for the inquiry. The Hausman test result, which showed that the random effect model is the most useful model, supported the null hypothesis. The results of the Hausman test are exhibited in Table 4.6.

Table 4.6 Model Specification Results

	(b)	(B)	(b-B)	Sqrt (diag(V _b -V _B))
	Fixed	Random	Difference	S.E.
Management Efficiency	0.0016621	0.0029994	-0.0013373	-
Capital Adequacy	-0.5133427	-0.3983431	-0.1149996	-
Credit Size	-0.0174696	-0.0332994	0.0158299	-
Bank Size	0.0152111	0.2231239	-0.2079128	-
chi2(3)	5.54			
Prob>chi2	0.2360			

Source: Study Data (2023)

The results of the Hausman test, which are provided in Table 4.6, determined that the null hypothesis should be accepted. This result led the estimator to recommend using the random effect model as opposed to the fixed effect model. For a 5% (0.05) level of significance, the Hausman test generated a prob > chi2 value of 0.2360, which is higher than a p-value of 0.05. Because of the aforementioned results, the investigation utilized the random effect regression model.

4.4.5 Correlation Analysis

Correlation analysis was performed to assess the relationship between the variables. This was to determine how strongly the study's variables are related to one another. The outcome of the survey is noted in Table 4.7 as thus.

Table 4.7: Correlation Results

Variable	Loan Performance	Management Efficiency	Capital Adequacy	Credit Size	Bank Size
Loan Performance	1				
Management Efficiency	0.0345	1			
Capital Adequacy	-0.04004*	0.2155*	1		
Credit Size	-0.1726*	-0.3478*	-0.1765*	1	
Bank Size	-0.2415*	-0.2495*	-0.1031	0.9696*	1

Source: Study Data (2023)

The investigation's findings showed that management efficiency and Kenyan commercial banks' loan performance had a favourable but negligible relationship. This is demonstrated by the coefficient of 0.0345. Capital adequacy, credit size and bank size had negative and significant relationship with loan performance of commercial banks in Kenya. The association of the variables is demonstrated by the coefficient of -0.4004*, -0.1726* and -0.2415* respectively. The significant of the strength is illustrated by the asterisks values in the table.

4.4.6 Regression Analysis

The regression framework was utilized to evaluate the hypotheses of the investigation. This is to establish the effect on the explanatory factors on the explained factor in the investigation. In the quest to evaluate such effect, panel regression technique was deployed where the independent variables were regressed on the dependent variables (loan performance). According to Creswell (2016) panel regression encompasses group of data over a defined period of time. The outcomes of the study were displayed in Table 4.8 to indicate the significance of the explanatory variables on the dependent variables.

Table 4.8 Direct Effect Model Results

Financial Performance	Coef.	Robust Std. Err.	z	P> z	[95% Conf. Interval]
Management Efficiency	0.0016	0.0014	1.13	0.257	-0.0012107 0.0045349
Capital Adequacy	-0.5133	0.1579	-3.25	0.001	-0.8230108 -0.2036746
Credit Size	-0.0174	0.0995	-0.18	0.861	-0.2124981 0.177559
Bank Size	0.0152	0.1097	0.14	0.890	-0.1999129 0.2303351
_cons	-0.1978	0.1171	1.69	0.091	-0.031734 0.4274128
R ²	0.1893				
Wald chi2 (4)	12.87				
Prob> chi2	0.0119				

Source: Study Data (2023)

Drawing from the outcome obtained in Table 4.7, the regression equation is expressed as:

$$LP_{it} = -0.1978 + 0.0016ME_{it} - 0.5133CA_{it} - 0.0174CS_{it} + 0.0152BA_{it} + \varepsilon$$

LP = Loan Performance

ME = Management Efficiency

CA = Capital Adequacy

CS = Credit Size

BA = Bank Size

ε = Error term

Table 4.7's results demonstrates that management effectiveness influences Kenyan commercial banks' loan performance in a favourable and insignificant manner.. The coefficient of 0.0016 has a corresponding insignificant value of 0.257. The outcome indicated Kenyan commercial banks' loan performance improved by 0.0016% with a percentage increase in management efficiency. On the contrary hand, capital adequacy suggested a negative but considerable impact on the lending performance of Kenyan commercial banks. The inverse effect of capital adequacy on loan performance is depicted by -0.5133. The significant of capital adequacy is represented by $0.001 < 0.05$ implying that an increase in the adequacy of capital of the commercial banks would reduce the loan performance of commercial banks in Kenya.

The size of the banks' credit had a detrimental but negligible impact on Kenyan commercial banks' lending performance. The outcome as illustrated by the coefficient of -0.0174 yet insignificant signified that as loan performance of the commercial banks in Kenya decrease by an equal amount of the coefficient, as a consequence, credit size would have increased by a percentage. The lending performance of Kenya's commercial banks was positively but negligibly impacted by bank size. The outcome noted a coefficient of 0.0152 and a p-value of 0.091 which

is greater than 0.05 level of significance employed in the investigation. Furthermore, from the outcome, a coefficient of 0.1978 was recorded as a constant.

The robust random effect model displayed in the table above demonstrated a Wald Chi-Square of 12.87 having a p-value of 0.0119 to illustrate how significant the model is consisting of the joint effect of the explanatory variables on the loan performance of the commercial banks in Kenya. This means that management efficiency, capital adequacy, credit size and bank size have joint significant effect on the loan performance of commercial banks in Kenya. It was reported that changes in loan performance of the commercial banks in Kenya is only 18.93% caused by management efficiency, capital adequacy, credit size and bank size in the model with other portion of the changes caused by the error term indicating other factors not included in the model.

4.5Hypotheses Testing

The hypotheses of the study as drawn from the specific objectives were evaluated in this section of the investigation. The hypotheses used in the study tallied with the number of objectives employed in the investigation. The first hypothesis stated that management efficiency does not significantly affect the commercial banks loan performance in Kenya. Followed by that which noted that capital adequacy does not statistically affect the Kenyan commercial banks' loans performance. Noting by the third hypothesis, it is observed credit size does not significantly affect the loan performance of commercial banks in Kenya while bank size was captured to have no significant effect on loan performance of commercial banks in Kenya.

4.5.1 Effect of Management Efficiency on Loan Performance of Commercial Banks

The management efficiency of the bank was reported to have positive and insignificant effect on commercial banks' loan performance in Kenya. With such outcome, the null hypothesis of management efficiency having insignificant effect on loan performance of commercial banks in Kenya was not rejected. The result of the investigation could be linked to the techniques of management employed by the commercial banks which has not yielded significant effect on the loan performance. Therefore, such outcome could be that there is high information asymmetry amongst commercial banks and the customers. The findings of the enquiry do not support the experimental confirmation from Alber (2016) who found that efficiency had a good and considerable impact on MENA countries' profitability. Atsango (2018) established that operational efficiency had a statistical substantial impact on DT-SACCO profitability in Kenya. Contrarily, Santoach (2019) established that operating efficiency is negatively correlated with the profitability of the tested banking financial institutions tested. The diverse setting in which the research was performed may have contributed to the study's inconsistent results.

4.5.2 Effect of Capital Adequacy on Loan Performance of Commercial Banks

The study's findings also showed that capital adequacy has an unfavourable and substantial impact on the loan performance of commercial banks in Kenya. Following from the null hypothesis of the survey which states that capital adequacy does not significantly affect the commercial banks' loan performance in Kenya, the null hypothesis was rejected. The outcome led to the conclusion that capital adequacy significantly affect loan performance of commercial banks in Kenya. The significant of capital adequacy could be attributed to the capital adequacy regulation of the central banks which has helped the banks in holding adequate funds to overcome adverse selection issues that may arise in the course of banking intermediation

activities in Kenya. The finding is consistent with Yulianti, Aliamin, and Ibrahim (2018) found that capital adequacy ratio has an impact on nonperforming loans. Ruslim and Bengawan (2019) also found that CAR, LDR, and inefficiency all had an effect on NPL.

4.5.3 Effect of Credit Size on Loan Performance of Commercial Banks

The product of the investigation revealed that credit size was negatively and insignificantly affected by the loan performance of commercial banks in Kenya. The hypothesis stated that credit size has no significant effect on the loan performance of commercial banks in Kenya. The outcome of the investigation supported the null hypothesis implying that credit size has insignificant effect on loan performance of commercial banks in Kenya. The outcome of the survey could be attributed to the rate or effectiveness of these banks in ensuring the performance of the bank loans. The conclusion of the survey consistently agreed with Sopan and Dutta (2018) established that credit size has a statistically substantial adverse impact on Indian banks' liquidity risk. Syajarul, Mohd, and Shifa (2018) established that credit size has a statistical substantial adverse impact on liquidity risk. Murunga (2018) discovered that the loan disbursement method had a negligible effect on NPLs. However, the outcome is inconsistent with Muhanji and Theuri (2020) demonstrated that asset quality and non-performing loans had a favorable and statistical meaningful association. The results of the study is at variance with the current outcome as it may have been conducted under different context and country which has different regulatory framework.

4.5.4 Effect of Bank Size on Loan Performance of Commercial Banks

The study's findings also showed that bank size has a positive but insignificant effect on Kenyan commercial banks' loan performance. The survey's null hypothesis, according to which bank size

has insignificant effect on Kenyan commercial banks' loan performance, was accepted. The results led to the conclusion that bank size had little bearing on Kenyan commercial banks' loan performance. The central bank's regulation, which directs loans to important economic sectors and hence affects how well loans generally perform in Kenya, may be to blame for the insignificant effect of the size of the banks. The finding is inconsistent with Nugraha and Setiawan (2018) who noted that bank size demonstrated a significant negative influence on Non Performing Financing. Karim, Rohadi, and Steawan (2021) discovered that firm size are all significantly correlated with NPF.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

The study's contribution to knowledge was portrayed in relation to the survey, which noted the summary of the findings, the conclusion, and the study's recommendations for policy measures. The research also mentioned further suggestions for the study's advancement. In light of the results, all of the aforementioned actions were executed in line with survey's specific objectives.

5.2 Summary of Findings

The research summary was written in accordance with the set objectives, indicating that the effect of management efficiency, capital adequacy, credit size, and bank size on Kenyan commercial banks' loan performance had been established. Overall, the survey aimed to ascertain how firm characteristics affect Kenyan commercial banks' loan performance. Following the theoretical foundation of the study, the quest to reach the study's conclusion was carried out using the panel regression analysis technique.

Correlation outcome indicated that management efficiency positively relates to loan performance of commercial banks in Kenya in an insignificant way. The study documented that management efficiency had an insignificant positive effect on Kenyan commercial banks' loan performance as per the regression result. The positive effect of management efficiency on loan performance indicated that increasing the efficiency of management would enhance loan performance in Kenya.

The investigation into the effect of capital adequacy on commercial banks' loan performance was ascertained. Report from the survey noted that capital adequacy had a significant negative effect on commercial banks' loan performance in Kenya as noted by the correlation technique.

Capital adequacy as noted by the regression outcome signify an inverse significantly effect on loan performance of commercial banks in Kenya. The loan performance decreases as capital adequacy increases among the commercial banks in Kenya.

The correlation assessment showed that credit size affect commercial banks' loan performance in Kenya. The report of the regression analysis showed that credit size had an inversely insignificant effect on Kenyan commercial banks loan performance. The implication of the study outcome displayed that credit size increase would result in decline in the commercial banks' loan performance in Kenya.

The outcome associated with the correlation noted that bank size directly in a positive manner is linked to commercial banks' loan performance significantly. The regression outcome displayed in the investigation indicated that bank size affect commercial banks' loan performance in a positive manner significantly. This denotes a situation of direct effect on the commercial banks' loan performance in Kenya.

5.3 Conclusion

The investigation's objective majorly sought how effective firm characteristics are on commercial banks' loan performance in Kenya. With particular reference to the survey, the effect of management efficiency was determined on commercial banks' loan performance in Kenya. Discoveries from the investigation noted that commercial banks' loan performance was insignificantly affected by management efficiency in Kenya. Conclusively, management efficiency does not act as a significant feature of the banks in achieving optimum performance of the loans.

Sorting the objectives of the investigation, the effectiveness of capital adequacy was determined on commercial banks' loan performance in Kenya. Observation from the investigation noted that commercial banks' loan performance was affected greatly by capital adequacy. The conclusion that emanates from the investigation is that capital adequacy significantly plays a determining role in the performance of commercial banks' loan in Kenya. Therefore, capital adequacy provides the commercial banks with the platform for effective loan management options toward optimum performance in Kenya.

Observing from what the study put forward as its objective in determining the effect of credit size on commercial banks' loan performance in Kenya, the outcome was recorded. Deductively, from the results of the investigation, credit size had insignificant effect on commercial banks' loan performance in Kenya. The investigation arrived at the conclusion that the credit size has no major role in the determination of commercial banks' loan performance in Kenya.

Pointing to the objective of the investigation which sought to arrive at the effect of bank size on Kenyan commercial banks' loan performance, the result was reached. The result of the survey pointed out that bank size insignificantly affects commercial banks' loan performance in Kenya. The investigation concluded that banks size is irrelevant in the determination of commercial banks' loan performance in Kenya.

5.4 Recommendations

Recommendations emanating from this investigation were made in view of what the explanatory variables' outcome. Indication from the survey noted that management efficiency insignificantly has a direct effect on commercial banks' loan performance. With reference to this, it is suggested that the management of the commercial banks should employ better ways of managing their

loans. This can be done through the use of assessing central information of the bank customers to determine customers' credibility in Kenya.

Capital sufficiency has a beneficial and considerable impact on commercial banks' loan performance in Kenya. In accordance to this, the investigation suggest that the size of the board should be determined by the companies listed strength as this is critical due to the fact that each company has unique tax planning goal hence the determination of the size of the board should be strengthen by each firm.

Credit size from the outcome showed an inverse and insignificant effect on commercial banks' loan performance in Kenya. With reference to the outcome of the investigation, is recommended that the management of the banks should device means through which the loan performance can be enhanced. This can be done through reducing the amount of loans issued to unproductive sectors as well as customers in Kenya.

The inquiry's outcome showcases that bank size insignificantly affect commercial banks' loan performance in a positive manner. Drawing from the outcome of the investigation, the management of the commercial banks should strengthen their loan managerial prowess to ensure that such loans issued are efficiently utilized to for the growth of the banks.

5.5Contribution to Knowledge

Numerous studies have been conducted regarding the performance of loans by commercial banks in Kenya. However, this study is special because it added to the body of already-known information by using management efficiency, capital adequacy, credit size, and bank size to assess the performance of loans made by commercial banks in Kenya. The study's adopted

theoretical framework has inspired the use of these ideas to explain the performance of loans made by Kenyan commercial banks.

The analysis effectively tested the hypotheses that were developed, revealing the effect of firm characteristics on the performance of loans made by Kenyan commercial banks. The management efficiency, credit size, and bank size hypotheses had insignificant effect on how well Kenyan commercial banks loan performed.

5.6 Suggestion for Further Research

Further research might be done on financial institutions other than commercial banks, such as microfinance banks, in regards to the report of the investigation on the effect of firm characteristics on the performance of loans made by commercial banks in Kenya. There are more research that can be done to find out why management efficiency, credit size, and bank size have little impact on the performance of commercial banks' loans in Kenya.

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APPENDICES

Appendix I: Licensed commercial banks

ABC Bank (Kenya)
Absa Bank Kenya
Access Bank Kenya
Bank of Africa
Bank of Barod
Bank of India
Citibank
Consolidated Bank of Kenya
Cooperative Bank of Kenya
Credit Bank
Development Bank of Kenya
Diamond Trust Bank
Dubai Islamic Bank
Ecobank Kenya
Equity Bank Kenya
Family Bank
First Community Bank
Guaranty Trust Bank Kenya
Guardian Bank
Gulf African Bank
Habib Bank AG Zurich
Housing Finance Company of Kenya
I&M Bank
Kingdom Bank Limited
Kenya Commercial Bank

Middle East Bank Kenya

M Oriental Bank

National Bank of Kenya

NCBA Bank Kenya

Paramount Universal Bank

Prime Bank (Kenya)

SBM Bank Kenya

Sidian Bank

Spire Bank

Stanbic Bank Kenya Limited

Standard Chartered Kenya

United Bank for Africa

Victoria Commercial Bank

Source: Central Bank of Kenya, 2021.

Source: Central Bank of Kenya, 2021.

Appendix II: Document Review Guide-are these components; management efficiency and capital adequacy provided directly in the financial statements?

Year	Management Efficiency	Capital Adequacy	Credit Size	Bank Size	Loan Performance
2015					
2016					
2017					
2018					
2019					
2020					
2021					