

**EFFECT OF LENDING PRACTICES ON CREDIT RISK OF
COMMERCIAL BANKS IN KENYA**

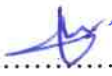
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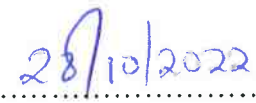
**A RESEARCH PROJECT SUBMITTED IN THE FACULTY OF
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DECLARATION

This research project is my original work that has never been presented in any University for the award of a degree

Signature.....

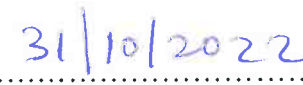
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ABBREVIATIONS AND ACCRONYMS

CBK	Central Bank of Kenya
KYC	Know Your Customer
MPT	Modern Portfolio Theory
NPLs	Non-Performing Loans
PAR	Portfolio at Risk
SEM	Structural Equation Modeling

ABSTRACT

The study sought to establish the effect of lending practices on credit risk of commercial banks in Kenya. Descriptive survey design was adopted targeting 40 commercial banks in Kenya and census were used, but only 35 commercial banks had the reliable data for analysis. The study covered the period 2017-2021 and both primary and secondary data was collected. The analysis was done through Statistical Package for Social Sciences version 24 supported by means and standard deviations, correlation and regression analysis and presented through tables. The study established that lending practices and the control variables could explain 60.9% of credit risk and they also significantly affect credit risk ($F_{\{df=4,30\}} = 12.065; p=0.000$). It was further established that lending practices positively contributes to the improvement of credit risk of the commercial banks ($\beta=0.021; p= 0.000$). It was further determined that bank size contributes to the credit risk of the banks ($\beta=0.016, p=0.000$). On the operational efficiency, it was determined that it contributes to the credit risk of the banks ($\beta=0.008; p= 0.047$). Finally, on the bank liquidity, it was also determined that it significantly contribute to the credit risk of the banks ($\beta=0.034; p=0.000$). The study concludes that lending practices mainly KYC play an instrumental role when it comes to credit risk of commercial banks. The study recommends that the credit managers working in commercial banks in Kenya should come up with clear lending policies and practices. In order to mitigate the risk occasioned by non-performing loans, comprehensive customer appraisal systems and techniques should be embraced by commercial banks in Kenya. The policy makers working at the Kenya Bankers Association should develop sound industry practice in regard to lending practices for members. Policy makers working in commercial banks in Kenya ought to relevant industry practice to guide the operations as far as lending practices and credit risk are concerned.

CHAPTER ONE: INTRODUCTION

1.1 Background to the Study

Credit risk arises from the lending which is the core activity of the financial institution. Reflected in the value of Non-Performing Loans (NPLs), an increase in credit risk in a financial institution may have negative effect on overall stability and soundness with potential to threaten the going concern assumption of the institution (Pal & Mitra, 2017). When a financial institution fails to control the level of credit risk, its financial intermediation role would be compromised and spillover effects would be felt in the entire economy of the country. Effective management of credit risk among financial institutions starts by critically examining the lending practices (Tehulu & Abegaz, 2016). Weaknesses in the lending practices of the financial institution can contribute towards an increase in credit risk which may in turn have negative effect on soundness of the lending institutions. Hence, lending practices play an instrumental role as far as credit risk of lending institution is concerned (Teferi, 2019).

The modern portfolio theory and financial intermediation theory provided theoretical basis of the lending practices credit risk nexus. Developed by Markowitz (1952), the MPT require financial institutions to diversify their lending practices so as to minimize credit risk. Hence, the theory will be used to provide an explanation of how best the financial institutions can maximize their returns through minimization of their exposure to credit risk which in turn would translate to financial stability. Proposed by Akerlof (1970) and latter one developed by Spence (1973) and Rothschild and Stiglitz (1976), the financial intermediation theory recognizes the intermediation role that financial institutions play by linking depositors and borrowers in an economy. The theory therefore supports the

independent variable lending practices which are part of the mechanisms that financial institutions leverage to drive financial intermediation in an economy (Rothschild & Stiglitz, 1976). Through lending, it is expected that commercial banks would grow their depth and reach more customers which is the very purpose of financial intermediation in a growing economy.

Commercial banks are designed to provide loans and other financial services to like acceptance of deposits from customers (Karanja, 2019). These institutions play an instrumental role in eradication of poverty and realization of economic empowerment of the poor people in the society (Murigi, 2018). However, credit risk among commercial banks in Kenya has remained a key challenge as demonstrated by the trend in Non-Performing Loan ratio of 11.38%, 14.92%, 12.0% and 14.3% in 2017, 2018, 2019 and 2020 respectively (CBK, 2020). This increase in NPLs among commercial banks is policy challenge that has attracted little attention among scholars and thus the motivation of the present study.

1.1.1 Lending Practices

Lending is the major activity that is undertaken in any financial institution. Lending practices are activities that are undertaken by the financial institution from the time customer make a loan application to the time the same is either accepted or rejected and the amount disbursed (Ibrahim & Ndidi, 2020). Lending practices allow financial institutions to realize their financial intermediation role in an economy. Conventional wisdom requires financial institutions to carry out Know Your Customer (KYC) practice, credit analysis, credit scoring and reporting and credit monitoring. KYC practice is the

identification of the identity of loan applicants and it is regarded as part of the due diligence of the financial institution (Roebuck, 2012). KYC practice allows the financial institution to have a clear understanding of the customers and their financial dealings in a better way. Credit analysis practice is about the assessment of the probability of borrower's default on a loan facility (Sandhu, 2020). During credit analysis, the financial conditions and needs of the borrowers are evaluated including the personal traits. The credit history of the borrower informs credit analysis. The collateral requirement is also analyzed at this phase (Karanja, 2019).

Credit scoring and reporting practice aims at determining the credit worthiness of the borrower. It is conducted to enable the financial institutions to decide on whether the loan applicant qualifies or is not qualified for a given loan facility (Mashigo, 2012). Credit scoring aims at establishing if a loan account after a given period has expired will continue being performing asset (Adhikari & Jha, 2020). This practice is aimed at predicting if the borrower will be capable meet his/her financial obligation in future. Credit monitoring practice is the last phase that is done once a loan facility has been advanced to a borrower. This includes the analysis of the repayment behavior of the borrower based on the agreed terms and conditions. It may also include review of the credit terms and condition especially the interest rate depending on the prevailing economic conditions. Credit recovery and collection efforts are also part of the credit monitoring practice (Al-Hawatmah & Shaban, 2020). During credit monitoring, financial institutions are required to set aside adequate loan loss provisions in the event that the borrower fail to honor their financial obligations as they fall due (Omollo, 2017). A proper and sound credit monitoring system will seek to make sure that lending institutions have an understanding of the present

financial status of the borrowers, monitor the ability of borrowers to comply with the terms and conditions, identify NPLs and enforce sound classification and loan loss provisioning efforts (Maina, 2016). This study operationalized lending practices using Know Your Customer (KYC) practice, credit analysis, credit scoring and reporting and credit monitoring.

1.1.2 Credit Risk

Credit risk is the loss occasioned by the refusal of the borrower to repay the loan facility as agreed in the terms and conditions (Sifrain, 2022). It is the exposure that the financial institution faces in the event that there is default on the side of the borrower to repay the loan when it is due. A persistent rise in credit risk can increase the financial distress probability of the financial institution (Kargi, 2011). Credit risk arises when a borrower has failed to meet the payment commitments. Credit risk results into losses that have direct implication on financial viability of the lending institutions. Credit risk can arise the fact that borrower is not able to make loan payment or when he/she cannot pay the outstanding loans on time. It is difficult for lending institutions to eliminate credit risk though it is possible to diversify it since a greater proportion of default risk may stem from systematic risk (Necesito, 2016).

There are different measures of credit risk in a lending institution that have been documented in literature including non-performing loan (NPLs) ratio and loan loss provision, portfolio at risk (PAR), repayment rate and arrear rate (Murigi, 2018). PAR is determined by taking the outstanding loans on overdue loans against total outstanding loans multiplied by 100%. Out of these measures, NPLs ratio is one of the widely documented

measures of credit risk in a financial institution (Wachira, 2017). The present study used NPLs ratio as a measure of credit risk. This is determined by taking the value of gross NPLs against total loans.

1.1.3 Lending Practices and Credit Risk

From the theoretical point of view, existence of sound lending practices is considered as an effective mechanism of managing credit risk in financial institutions. According to the MPT perspective, credit risk most arises from the systematic risk component that can easily be minimized through diversification of the lending practices (Markowitz, 1952). Thus, based on the MPT theoretical lenses, a negative nexus is anticipated between lending practices and credit risk of the financial institutions (Markowitz, 1952). The financial intermediation theory on the other hand predicts that effective lending practices provide a platform for financial institutions to effectively realize their financial intermediation role in an economy (Spence, 1973 & Rothschild & Stiglitz, 1976).

Empirically, Sandhu (2020) observed that lending practices of the financial institutions depend on numerous factors some of which are not quantifiable like education of the borrowers. It emerged that the prevailing information asymmetry has an adverse implication on lending and thus credit risk of the financial institutions. Pal and Mitra (2017) noted existence of a direct link between gross loan portfolio and credit risk. Teferi (2019) also indicated existence of positive relationship between outstanding loan ratio and credit risk. Al-Hawatmah and Shaban (2020) shared that friendly lending practices are associated with a rise in demand for loans among borrowers. Kerimkulova, Nazekova, Sovetbekova, Muravskiy and Krasovska (2021) indicated that sound lending practices

helps in management of credit risk. Ibrahim and Ndidi (2020) said that sound lending practices contribute to reduction in unemployment thus contributing to an increase in disposable income that encourages repayment of the loan facilities.

1.1.4 Commercial Banks in Kenya

Commercial banks are financial institutions that are designed to accept deposits and advance loan facilities to customers to generate interest income. In Kenya, the role of CBK is to promote stability of the commercial banks by formulating relevant regulations and guidelines to guide the operations of banks (Murigi, 2018). There are 40 operational commercial banks in Kenya (appendix III) and these will be the focus by the present study. All these institutions have their head offices in Nairobi. These institutions have been classified into their respective tiers depending on their deposit base, assets and market share among other proxies. In total, there are three broad tiers, I, II and III of these institutions as classified and established by the CBK. While the first and second tiers exhibit some degree of stability commanding relatively large market shares, tier III comprises of smaller and relatively unstable banks.

Over the years, credit risk has remained a challenge among these institutions in Kenya as attributed by the NPL ratio (Karanja, 2019). For example, the NPL ratio for the period 2017 all through to 2020 stood at 11.38%, 14.92%, 12.0% and 14.3% in 2017, 2018, 2019 and 2020 respectively (CBK, 2020). This trend is worrying and requires urgent policy intervention. Asset quality determined through NPLs is a key predictor of stability of the financial institution. The long term implication of such a rising trend in NPLs among financial institutions includes constrained liquidity which may have negative implication

on the available capital needed to advance loans to customers. It is therefore pertinent that a clear understanding of the aspects of credit risk in operations of these institutions is critical in their financial intermediation efforts where credit risk is one of the important considerations.

1.2 Research Problem

Credit risk arises when borrowers fail to repay their loan balances within the established timeframes (Sifrain, 2022). Credit risk affects the quality of loan portfolio resulting into NPLs that are not good indicators in any financial system (Murigi, 2018). Sound lending practices are key in mitigation of credit risk (Adhikari & Jha, 2020). From the MPT perspective, it is predicted that credit risk among financial institution are hard to be completely eliminated although diversification of the lending practice can minimize the exposure of lenders to these risks. The financial intermediation theoretical perspective on the other predicts that sound lending practices allow financial institutions to effectively realize their financial intermediation role in an economy.

Commercial banks in Kenya are regulated by the CBK and these institutions are 40 in number. These institutions accept deposit from customers besides advancing loan facilities to borrowers. Because lending is the major activity of these institutions, their operations are greatly exposed to credit risks. In fact, credit risk has remained a key challenge among these institutions in Kenya. For example, the NPL ratio for the period 2017 all through to 2020 stood at 11.38%, 14.92%, 12.0% and 14.3% in 2017, 2018, 2019 and 2020 respectively (CBK, 2020). This sharp increase in NPLs is not a good indicator since it may provide an indication of eminent financial distress of these institutions unless careful policy

and scholarly attention is exercised. Failure to do so may result to long term collapse of these institutions and depositors will stand to lose their huge deposits and adverse ripple effect would be felt by the entire economy of Kenya as a whole.

The available studies from a global perspective include Sandhu (2020) who used a case of India to explore lending practices of banks to farmers. It emerged that bank lending practices depend on a number of quantifiable issues like the income and education of the borrowers. Al-Hawatmah and Shaban (2020) used Jordan as a point of consideration to analyze the nexus between lending policy and profitability of commercial banks. It was noted that sound lending policies contribute towards profitability of the lending entity. While focusing on Kazakhstan, Kyrgyzstan and Ukraine, Kerimkulova et al (2021) did an assessment of bank lending and performance of businesses with the adoption of structural equation modeling (SEM). It was shown that lending practices of the banks in Ukraine have potential to speed up development efforts. The study conducted in Nigeria by Ibrahim and Ndidi (2020) was an assessment of bank lending and growth of small firms. It emerged that lending practices contribute towards creation of employment that improve the income of borrowers contributing to reduce credit risk.

Locally in Kenya, Wachira (2017) undertook an analysis of credit risk management practices and their implication on loan performance among commercial banks in Nyeri. The study reported that credit risk and loan performance are significantly connected. Namutenda and Muturi (2017) conducted a study whose focus was on lending policies and their effect on financial performance of MFIs in Kisumu. It was noted that lending policies in terms of liability at group level, monitoring policies and repayment frequency are significantly linked with financial performance. Lagat, Mugo and Otuya (2013) did a study

on credit risk management practices and lending portfolio among savings and credit cooperatives in Nakuru context where a significant nexus was reported. Maina (2016) did an appraisal of LPs and FP using a survey of commercial banks in Nairobi and KYC procedures, credit guideline policies and interest rates were significant.

The above documented studies create gaps as some like Hawatmah and Shaban (2020) were done in Jordan and not in Kenya creating contextual gaps. Other studies like Namutenda and Muturi (2017) covered financial performance and not credit risk as dependent variable leading to conceptual gaps. Other studies like Kerimkulova et al (2021) create methodological gaps by adopting SEM for analysis unlike the present study that will adopt ordinary least square (OLS). Similarly, the study by, Kerimkulova et al (2021) adopted a comparative methodology where three countries Kazakhstan, Kyrgyzstan and Ukraine were covered unlike the present study that only focused on one country being Kenya without taking a comparative approach. Thus, in response to these gaps, the present study sought to provide answers to the following research question: what is the relationship between lending practices and credit risk of commercial banks in Kenya?

1.3 Research Objective

To establish the effect of lending practices on credit risk of commercial banks in Kenya

1.4 Value of the Study

The adoption of sound lending practices would be critical in minimizing credit risk exposure of the commercial banks in Kenya. This would enhance the ability of these institutions to effectively play their financial intermediation role in the economy. The study would create knowledge and understanding in the management of the commercial

banks to embrace sound lending practices. Through the study, the credit and loan officers of the commercial banks would be able to implement sound frameworks in regard to lending activities.

The policy makers at CBK would be able to implement and adopt adequate measures of minimizing exposure to credit risks by these deposit taking commercial banks. CBK would be able to implement sustainable lending policies and guidelines for these institutions that would aim at minimizing exposure to credit risk. As such, more policies and regulations are expected to be formulated to guide the overall operations of the commercial banks especially in regard to asset quality as well as the lending practices.

The study would contribute to existing literature and information with regard to lending practices and credit risk. It would support or extend the theoretical views existing when it comes to lending practices and credit risk. Future scholars conducting related studies would be in position to utilize the content of this inquiry. More light on lending practices credit risk nexus would be established and create gaps on the same that future scholars can address. By leveraging the literature of this study, more knowledge and information needed for decision making on lending practices and asset quality determined by NPLs will be available.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

The chapter is set out to document literature covering the theories and the information on determinants of credit risk among commercial banks. The study considers lending practices, inflation, size, operational efficiency and liquidity position of the bank as the key determinants of credit risk among financial institutions. The choice of these determinants was informed by the survey of existing literature. The past empirical studies and gaps as well as the conceptual framework are also pointed out.

2.2 Theoretical Review

The MPT and the financial intermediation theory will be used to anchor the study. The main theory of the study is the MPT since it anchors credit risk which is the key focus of the proposed study. The financial intermediation theory is used to underpin the main independent variable lending practices. The discussion of these two theories begins by mentioning their proponents and the key argument by bringing in their relevance to the study.

2.2.1 Modern Portfolio Theory

The proponent of this theory was Markowitz (1952) and it relates risks against returns. The theory hypothesizes that minimization of risk require investors to diversify their assets in the portfolio (Markowitz, 1952). According to Markowitz (1952), a portfolio is a collection of assets which are well diversified so as to maximize returns by minimizing any given level of exposure to risks. To put this in the context of this proposed study, it then follows that financial institutions can minimize their exposure to credit risks by diversification of

their lending practices. Thus, adoption of sound lending practice is viewed as the right step towards minimization of credit risk in the lending institutions (Markowitz (1952.

This theory is guided by a number of assumptions including the fact that lending institutions are always guided by the motive of maximizing returns from their lending activities for a given level of exposure to credit risk. The dependent variable credit risk and how adoption of sound lending practices can minimize it will be linked through this foundation. From this theory, a negative nexus is predicted between lending practices and credit risk.

2.2.2 Financial Intermediation Theory

This theory was proposed by Akerlof (1970) and latter one developed by Spence (1973) and Rothschild and Stigliz (1976). The main argument of this theory is that financial intermediaries exist to lower transaction and information costs that arise from information asymmetry between lending institutions and the borrowers of funds. There are two key foundations that provide the premise of this theory; the first one is the position of lending entities in enhancing liquidity of borrowers. The emphasis of the second foundation is the ability of lending entities in transformation of the risk aspects of the assets in place. These two premises have the capability of minimizing the costs involved to channel funds between lenders and borrowers and leading to efficiency in how resources are shared.

The transformation of the risk nature of the assets allows lending entities to counter forces in the market likely to lead the institution into failure. This is important in addressing concerns in regard to asymmetrical nature of the information in financially established markets (Kautohutohu, 2003). In the event that borrowers possess privileged information

in regard to their projects as opposed to lenders, this leads to asymmetry in information. This situation can arise either ex ante or ex post. In ex ante point of view, lenders are unable to make a distinction between borrowers having varied credit risks before loan is advanced and this leads to adverse selection situation. For ex post perspective, only borrowers and not lending institutions are in position of observing actual return after the completion of the investment project leading to moral hazard condition. Moral hazard is a condition that arises from ability of the borrowers to take part in activities which have the potential to lead to loan default. This theory is used to underpin the dependent variable lending practices since through this; financial institutions are able to realize their intermediation role.

2.3 Determinants of Credit Risk

Credit risk is a threat towards survival and normal functioning of any financial institution. Too much exposure to credit risk in a financial institution may create ripple effects on survival and lending ability of these institutions. As such, an appraisal of the determinants of credit risk is important so that any efforts made to address the same would lead to enhancement of the viability of commercial banks. Thus, the subsequent section is a review of literature on determinants of credit risk among commercial banks.

2.3.1 Lending Practices

Lending is the major activity of the financial institution. Commercial banks generate most of the interest income by lending loans to customers. Loans that are advanced to customers by these institutions come in different ranges depending on time and the intended use (Roebuck, 2012). Depending on these aspects, commercial banks can advance bank

overdrafts, collateralized or non-collateralized loans to customers. Before a loan is advanced to a customer, detailed appraisal is conducted to determine the credit worthiness of the borrower. This is aimed at minimizing the possibility of NPLs which may be a threat towards survival of the commercial banks (Sandhu, 2020).

The financial intermediation theory predicts that financial institutions exist to reduce the transaction and information related costs that results from asymmetrical information between the borrowers and the lenders (Setargie, 2013). The implication of this information asymmetry between the borrowers and the lenders lead to moral hazard and adverse selection challenges that in turn contribute towards credit risk (Abara, Mengesha & Reddy, 2017). The MPT perspective theorizes existence of negative nexus between lending practices and credit risk. The adoption of sound lending practices can lead to minimization of exposure to credit risk among financial institutions (Noomen & Abbas, 2018). The study will operationalize lending practices using Know Your Customer (KYC), credit analysis, credit scoring and reporting and credit monitoring.

2.3.2 Bank Size

Bank size is a variable that has received considerable attention in literature as far as its implication on credit risk is concerned. In a study conducted by Ouma (2020), the focus was on the nexus between the components of bank size and credit risk with emphasis to Kenyan commercial banks. The study observed existence of significant link between size and credit risk of the commercial banks. The study conducted by Alzoubi and Obeidat (2020) indicated that bank size and credit risk are negatively linked with each other. This means that an increase in size of bank reduces the probability of credit risk. This could be

explained by the fact that large banks have greater ability of diversification which allows them to minimize their exposure to risks.

2.3.3 Operational Efficiency

As key component of the financial system, commercial banks play an instrumental role in the financial intermediation process of the economy. The operational efficiency of the commercial banks has direct connection with their resource allocation mechanisms in place (Juwita, Raga, Prasetyo & Rimawan, 2018). More recently, commercial banks have put in place mechanisms and systems to adjust and restructure their existing structures and systems aimed at enhancing operational efficiency. Through adoption of technologies and new systems, the appraisal of credit facilities may be accurate contributing towards reduced NPLs. Thus, a negative relationship is predicted between management efficiency and credit risk of the bank (Phan, Narayan, Rahman & Hutabarat, 2019).

2.3.4 Bank Liquidity

Liquidity is the ability of the financial institution to meet the most current obligations by leveraging the available current assets. Literature on liquidity credit risk nexus includes Marozva (2020) who established existence of a negative relationship. This implies that banks facing liquidity constraints are associated with high level of NPLs which characterize credit risk exposure. Banks are faced with liquidity issues when they lack adequate capital needed to advance loan facilities to borrowers (Al-Homaidi, Tabash, Farhan & Almaqtari, 2019). A significant proportion of capital for lending purpose of the commercial banks is generated from the deposits that customers make. The central bank can also play a critical role as far as liquidity position of the commercial banks is concerned

especially through reduction of the cash reserve ratio that commercial banks maintain with the regulator (Tran, Nguyen & Long, 2019). Reducing the cash reserve ratio would imply that more cash would be available for lending purpose in commercial banks would in turn would improve the liquidity position thus contributing to an increase in financial intermediation (Alshatti, 2015).

2.4 Empirical Review

The study by Sandhu (2020) was an appraisal of bank lending practices to farmers within the context of India. The concern and key focus of the study was on how lending decisions are made by managers of banks. The approach adopted was survey and information was obtained from first hand sources guided by semi-structured questionnaire. The participants covered 42 banks and 185 farmers. It emerged that the farming sector in India is faced with a lot of complexity with strong dependence on both private and public sectors. It was shown that default rate among banks can be minimized through adoption of relational banking practices. Al-Hawatmah and Shaban (2020) focused on commercial banks within the context of Jordan to appraise the nexus between lending policy and profitability. Descriptive analytical approach was the one adopted in this study and information was obtained through the use of questionnaire. In total, 13 banks were targeted over the period 2016-2020. It emerged from analysis that credit decisions of banking entities in Jordan have significant contribution towards the profits generated.

The study by Kerimkulova et al (2021) focused on Ukraine and was guided by SEM during the analysis. It emerged from evidence that business lending sector in Ukraine has potential to enhance development. Ibrahim and Ndidi (2020) obtained evidence from Nigeria to

analyze the link between bank lending and growth of small firms. The approach adopted in this study revolved around qualitative and quantitative techniques. A total of 200 participants were purposively selected and included in the analysis. Tables and percentages helped the analysis of data. It was shown that bank lending and economic activities as well as the growth of the SMEs are significantly connected with each other. Okoye and Eze (2013) also covered the Nigerian case to analyze how bank lending rate impact on performance of deposit money banks. The horizon covered by the study was 2000-2010 and the key focus was on lending rate and monetary policy rate and their effect on performance. Information was gathered from auxiliary sources where a positive link was registered between monetary policy and lending rate and performance.

In Kenya, Wachira (2017) covered the commercial banks in Nyeri and analyzed the interplay between practices of managing credit risk and loan performance. Census was utilized where 86 branch managers, credit managers and officers were targeted. It was shown that clear written credit policy was in place among commercial banks and that quantitative credit scoring was conducted by few banks. Namutenda and Muturi (2017) did a study on lending policies and their implication on financial performance of MFIs in Kisii. The study narrowed down and used a case of Kenya Women Finance Trust (KWFT). The inquiry embraced descriptive case study approach where 116 KWFT loan officers were targeted. It emerged that credit policy and financial performance are strongly and positively connected with each other. The study noted that credit monitoring and frequency of repayment contribute towards an improvement in financial performance of the MFIs.

Lagat, Mugo and Otuya (2013) did an analysis of practices of managing credit risk and their link with lending portfolio where SACCOs were the context. The variables covered

identification, analysis, monitoring and evaluation as well as mitigation of credit risk. Information was sought from 59 SACCOs sampled from Nakuru. Regression models helped in the analysis of the evidence. It was shown that most SACCOs have embraced risk management practices aimed at managing their portfolios. Maina (2016) did an analysis of lending practices and their interplay with FP of Kenyan commercial banks. The design embraced was descriptive. The target was listed commercial banks with operations in Nairobi where 57 participants were purposively selected. Information was gathered with aid of the structured questionnaire. It emerged that KYC produce helped banks to lower their exposure to negative credit activities and transactions.

Munyiri (2010) conducted a study with focus on lending policies and performance of Kenyan commercial banks. The adopted design was descriptive survey and 46 commercial banks were covered. Information was generated through questionnaire where it was shown that lending policies and financial performance of Kenyan banks had significant interaction. Omollo (2017) did a study on lending practices and their nexus with investment performance among banks in Kisumu. The variables adopted include KYC, loan repayment and cash lending policies. Financial acceleration theory was used to anchor the study. Participants include credit, operations and branch managers who added up to 81 participants from 27 banks. A total of 71 participants were purposively selected. Information was gathered through questionnaire. It was shown that KYC procedures, loan repayment and cash lending policy had direct and significant nexus with investment.

2.5 Summary of Literature and Gaps

The chapter has reviewed different studies that create gaps. The study by Sandhu (2020) was done in India, Al-Hawatmah and Shaban (2020) focused on Jordan adopting descriptive analytical approach where 3 banks were covered while 40 banks in Kenya will be covered in the proposed study. Kerimkulova et al (2021) focused on Ukraine and was guided by SEM as the analytical method while OLS will be adopted in the present study. Ibrahim and Ndidi (2020) focused on growth of SMEs in Nigeria while credit risk will be of interest among commercial banks in the proposed study. Wachira (2017) used loan performance as the dependent variable, Namutenda and Muturi (2017) focused on MFIs with financial performance as the dependent variable and Lagat, Mugo and Otuya (2013) focused on SACCOs. Maina (2016) focused on providing the link between lending practices and financial performance. Munyiri (2010) used financial performance as the dependent variable which is conceptually different from credit risk. A summary of the gaps is as presented in Table 2.1.

Table 2.1: Summary of Literature and Gaps

Author	Study	Key Finding	Gap	Focus of Present Study
Sandhu (2020)	an appraisal of bank lending practices to farmers within the context of India	default rate among banks can be minimized through adoption of relational banking practices	The study was done in India	The Kenyan context was the focus of the present inquiry
Al-Hawtmah and Shaban (2020)	to appraise the nexus between lending policy and profitability	Credit decisions of banking entities in Jordan have significant contribution towards the profits generated.	focused on commercial banks within the context of Jordan	The Kenyan context was the focus of the present inquiry
Omollo (2017)	Lending practices and their nexus with investment performance among banks in Kisumu.	KYC procedures, loan repayment and cash lending policy had direct and significant nexus with investment performance	investment performance was covered as a dependent variable	Credit risk was the dependent variable
Namuteinda and Muturi (2017)	Lending policies and their implication on financial performance of MFIs in Kisii.	credit monitoring and frequency of repayment contribute towards an improvement in financial performance of the MFIs	Case study methodology was adopted	The study covered 40 commercial banks in Nairobi in Kenya
Wachira (2017)	analyzed the interplay between practices of managing credit risk and loan performance	clear written credit policy was in place among commercial banks and that quantitative credit scoring was conducted by few banks	practices of managing credit risk was the independent variable	Lending practices was independent variable

Source: Researcher (2022)

2.6 Conceptual Framework

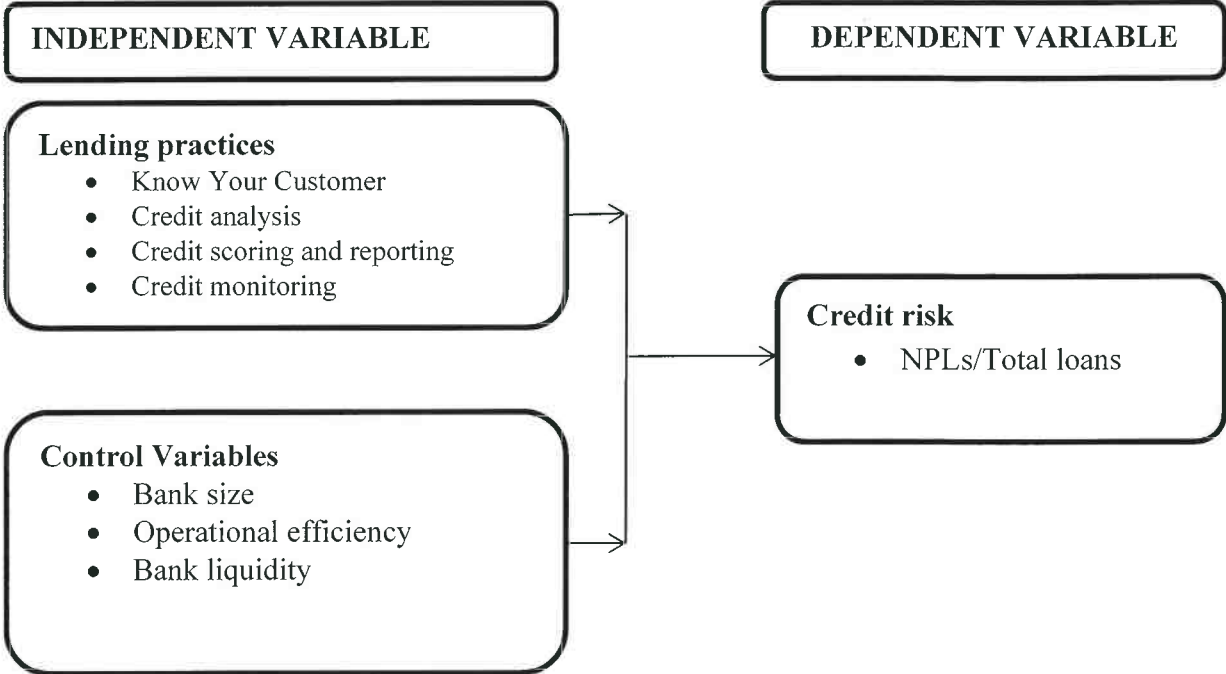


Figure 2.1: Conceptual Framework

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

The details of this chapter include the review of the research design, target population and data collection. Reliability and validity of the study tools are also discussed besides data analysis techniques.

3.2 Research Design

The study adopted descriptive survey design to meet the stated objectives. This design will be critical in determining the lending practices adopted by commercial banks and their credit risk exposure. Yin (2017) argues that descriptive survey studies are more structured with well-defined and stated hypotheses or research questions. The past empirical studies that similarly adopted descriptive survey design include Sandhu (2020) as well as Munyiri (2010). The justification of adopting descriptive survey design is because all the commercial banks in Nairobi were covered and part of the information aimed at achieving the objectives was gathered using survey questionnaire.

3.3 Population

The study targeted 40 licensed commercial banks in Kenya as at December, 2021 (appendix III). These institutions are regulated by the CBK. Since their population was relatively small, census was adopted and thus all of them were covered in the study.

3.4 Data Collection

Both primary and secondary data was collected in this study with aid of the structured questionnaire and the data collection sheet respectively. The questionnaire was used to gather information on lending practices and it was administered to credit managers, operations managers and loan officers of the commercial banks in Kenya. The items on the questionnaire was developed using a five point Likert scale of 1-strongly disagree and 5-strongly agree. Secondary data was obtained on total assets, NPLs, total loans, operating income and operating expenses from CBK reports and financial statements of respective institutions. This information was obtained on a time period of 2017-2021 on an annual basis. Data collection sheet helped in gathering this secondary data.

3.5 Validity and Reliability Test

The questionnaire was pilot tested among 10 respondents from commercial banks which was not included in the final study to avoid biasness. Piloting of the questionnaire was meant to test for reliability. The dully filled in questionnaire from the pilot study was used to compute the values of Cronbach Alpha coefficients that was interpreted at 0.7 (Chandran, 2004). The study test used content validity with aid of the supervisor and two experts in the field of lending. The experts and supervisor reviewed the contents of the questionnaire and shared their views that were incorporated in the final version of the questionnaire before proceeding to the field.

3.6 Data Analysis

The findings of the study were analyzed through SPSS version 24 utilizing means and standard deviations for the cross sectional data obtained through the questionnaire on lending practices. Longitudinal data obtained from secondary sources on credit risk was analyzed by exploring a trend using a graph over the period of consideration to determine whether there was a drop or a rise in the trend of NPLs. Besides, correlation and regression analysis was also adopted to draw relevant inferences with regard to lending practices and credit risk. This support the generalization of the findings.

3.6.1 Model Specification

The study adopted the following regression model:

$$CR = \beta_0 + \beta_1 LPs + \beta_2 BS + \beta_3 OE + \beta_4 BL + \varepsilon$$

Where;

CR-Credit risk (NPLs/Total loans)

LPs- Lending practices (as a composite of Know Your Customer (KYC), credit analysis, credit scoring and reporting and credit monitoring)

BS-Bank Size (Natural logarithm of assets)

OE-Operational efficiency (operating expenses/operating income)

BL-Bank liquidity (total loans/total assets)

ϵ is the error term

β_0 is the regression beta coefficient

The results were presented tables.

Table 3.1: Operationalization of Variables

Variable type	Measurement	Source	Scale of measure	Source of data
Independent lending practices	Know Your Customer (KYC), credit analysis, credit scoring and reporting and credit monitoring	Karanja (2019)	Ordinal	Questionnaire
Control Bank Size	Natural logarithm of assets	Ouma, (2020)	Continuous	CBK, financial statements of commercial bank
Control Operational efficiency	Operating expenses/operating income	Aminul, (2019).	Ratio	financial statements of commercial bank
Control Bank liquidity	Total loans/Total assets	Marozva, (2020)	Ratio	financial statements of commercial bank
Dependent credit risk	NPLs/Total loans	Murigi, (2018)	Ratio	CBK, financial statements of commercial

Source: Researcher (2022)

3.6.2 Diagnostic Tests

Diagnostic tests were performed so as to test the assumptions of regression analysis. Multicollinearity arises when at least one of the independent variables are related with each other (Osborne & Waters, 2002). It was determined through Variance of Inflation Factors (VIF) values with 1-10 taken as the threshold. Shapiro-wilk test was conducted to test this assumption with $p > 0.05$ indicating presence of this assumption. When the variance of the

error term in the model is constant across predicted values homoscedasticity condition is assumed (Warner, 1963). Breusch Pagan test was adopted to test for this assumption.

3.6.3 Test of Significance

The study established and computed the p-values that were interpreted at 5% level of significance. Any $p < 0.05$ provided an indication of significant relationship. The value of R-square was appropriately interpreted by attributing it to variation in the dependent variable credit risk. F-test was used to test for the overall significance of the regression model of the study.

CHAPTER FOUR: DATA ANALYSIS AND DISCUSSION

4.1 Introduction

The chapter covers the analysis of the findings informed by the objectives. It covers the descriptive statistics, diagnostic tests, and correlation and regression analysis results. The discussion of the findings is also provided in this chapter.

4.2 Response Rate

From the 40 questionnaires that were administered to credit managers, operations managers and loan officers of the commercial banks in Kenya, 35 of them were completely filled and returned. This was equivalent to a response rate of 87.5% which was adequate and consistent with Babbie (2010) who shared that an above 80% response rate is excellent for analysis in a survey.

4.3 Descriptive Statistics

The subsequent sections detail the findings of descriptive statistics on lending practices in the studied banks.

4.3.1 Lending Practices

The study focused on four lending practices that covered know your customer, credit analysis, credit scoring and reporting as well as credit monitoring. Table 4.1 is a summary of the descriptive statistics on KYC.

Table 4.1: Know Your Customer

Statements on Know Your Customer	Mean	Std. Dev
The borrowers education, business experience, credit history (character) guide the KYC procedures	4.40	.678
The KYC procedures involve determination of the borrower's ability to repay the loan through income and the stability (capacity)	3.97	.582
The KYC procedures entail evaluation of the savings, investments and assets of the borrowers (capital)	4.48	.799
The KYC procedures entail assessment of the collaterals of the borrowers	4.76	.840
The KYC procedures entail evaluation of the intended use of the loan by borrowers (conditions)	4.53	.649
Composite Score	4.43	0.710

Source: Research Data (2022)

From Table 4.1, the composite mean is (M=4.43), this means that majority of the commercial banks studied highly rated on the statements under KYC. It then follows that KYC was practiced among the studied commercial banks. In particular, the most practiced aspect of KYC among the commercial banks in Kenya included assessment of the collaterals of the borrowers (M=4.76, SD=.840), evaluation of the intended use of the loan by borrowers (conditions) (M=4.53, SD=.649), evaluation of the savings, investments and assets of the borrowers (capital) (M=4.48, SD=.799) and leveraging the borrowers education, business experience, credit history (character) to guide the KYC procedures (M=4.40, SD=.678). Respondents also shared that KYC procedures involved determination of the borrower's ability to repay the loan through income and the stability (capacity) (M=3.97, SD=.582). Therefore, character, capacity, capital, collateral and conditions were critical as far as the KYC requirement in the studied banks was concerned.

The findings of descriptive statistics on credit analysis were established and summarized as shown in Table 4.2.

Table 4.2: Credit Analysis

Statements on credit analysis	Mean	Std. Dev
Credit analysis is conducted to determine the probability of borrower's default in this commercial bank	4.55	.827
The financial conditions of borrowers are evaluated during credit analysis in this commercial bank	3.78	.879
The needs of the borrowers are evaluated during credit analysis in your commercial bank	3.99	.728
Credit analysis is conducted to determine credit history of the borrowers in your commercial bank	4.51	.869
Composite Score	4.21	0.826

Source: Research Data (2022)

The findings in Table 4.2 indicate the composite score as (M=4.21), this means that most of the studied banks shared that credit analysis was conducted. Through credit analysis, the studied credit analysis was conducted to determine the probability of borrower's default in this commercial bank (M=4.55, SD=.827) and credit analysis was conducted to determine credit history of the borrowers in your commercial bank (M=4.51, SD=.869). Respondents agreed that the needs of the borrowers were evaluated during credit analysis in the commercial bank (M=3.99, SD=.728) and that the financial conditions of borrowers were evaluated during credit analysis (M=3.78, SD=.879). Thus, credit analysis greatly helped the commercial banks in determination of the probability of borrower's default as well as in determination of credit history of the borrowers. The findings of descriptive statistics on credit scoring and reporting were determined and summarized as shown in Table 4.3.

Table 4.3: credit scoring and reporting

Statements on credit scoring and reporting	Mean	Std. Dev
Your commercial bank relies on credit scores of borrowers to make lending decision	4.50	.587
Credit scores are used to predict if the borrower will be capable meet his/her financial obligation in future	4.40	.931
Credit scoring aims at establishing if a loan account after a given period has expired will continue being performing asset	4.43	.961
Credit scoring is done to determine the credit worthiness of borrowers in this commercial bank	3.96	.711
Composite Score	4.32	0.798

Source: Research Data (2022)

The results in Table indicate the composite score as (M=4.32, SD=0.798), this implies credit scoring and reporting was conducted in the studied commercial banks. Credit scoring and reporting helped the studied banks to generate credit scores of borrowers to make lending decisions (M=4.50, SD=.587) and that credit scoring aimed at establishing if a loan account after a given period has expired will continue being performing asset. The study observed that credit scores were used to predict if the borrower would be capable meet his/her financial obligation in future (M=4.40, SD=.931) and that credit scoring was done to determine the credit worthiness of borrowers (M=3.96, SD=.711). The implication of the findings in Table 4.3 is that credit scoring and reporting was one of the lending practices in the studied commercial banks and it played a key role in generation of credit scores. Table 4.4 is a breakdown of the findings on credit monitoring as another aspect of lending practices.

Table 4.4: Credit Monitoring

Statements on credit monitoring	Mean	Std. Dev
Loan repayment behavior of the borrowers are analyzed based on the agreed terms	3.68	.786
Adequate loan loss provisions are set aside during credit monitoring	4.56	.826
NPLs are identified during credit monitoring exercise	4.09	.708
Credit monitoring helps your commercial bank to have an understanding of the present financial status of the borrowers	3.86	.851
Composite Score	4.05	0.793

Source: Research Data (2022)

As per the results in Table 4.4, the study noted the value of the composite score as (M=4.05), this means that respondents were in agreement on the statements that had been provided under credit monitoring. In other words, credit monitoring was conducted in the studied commercial banks. Through credit monitoring, the study noted that commercial banks were able to set aside adequate loan provisioning (M=4.56, SD=.826) and identify NPLs (M=4.09, SD= .708). Credit monitoring also helped the studied banks to have an understanding of the financial status of the borrowers (M=3.86, SD=.851) and analyze borrowers on the basis of the agreed terms (M=3.68, SD=.786). This means that credit monitoring was practiced by the commercial banks in Kenya and it majorly helped in ensuring that adequate loan provisioning has been set aside. The overall ranking of the lending practices among commercial banks in Kenya is provided in Table 4.5.

Table 4.5: Ranking on Lending Practices

	Mean	Rank
Know Your Customer	4.43	1
credit scoring and reporting	4.32	2
Credit Analysis	4.21	3
Credit monitoring	4.05	4

Source: Research Data (2022)

From Table 4.5 shows that on overall, KYC was highly practiced (m=4.43) follow credit reporting and scoring (M=4.32), credit analysis (M=4.21) and credit monitoring (M=4.05) respectively.

4.3.2 Control Variables

The panel data was based on a five-year period from 2017 to 2021. Table 4.1 presents mean, standard deviation, skewness and kurtosis of bank size, operational efficiency and bank liquidity. The findings of descriptive statistics were determined and summarized as shown in 4.6.

Table 4.6: Control Variables

	N	Mean	Std. Deviation	Skewness	Std. Error	Kurtosis	Std. Error
	Statistic	Statistic	Statistic	Statistic	Error	Statistic	Error
Asset Base	35	45.331	5.378	2.701	.193	1.102	.468
Operational Efficiency	35	4.8597	.08462	-.105	.193	-.859	.468
Bank Liquidity	35	1.6825	.12782	.472	.193	.069	.468
Valid N (listwise)	35						

It was determined that the average asset base for the 35 banks was 45.331 per year and standard deviation was 5.378. The high standard deviation implied that there was a variation from the mean. It was also determined that the average operational efficiency was 4.8597 and standard deviation was 0.08462 the low standard deviation implied that there was a low variation from the mean. Finally, on the bank liquidity it was determined that the average bank liquidity was 1.6825 and standard deviation was 0.12782, the low standard deviation implied that there was a low variation from the mean. Skewness values ranged within 2.701 to -0.105 and kurtosis values ranged within 0.069 to 1.10, this implied that there was no normality problem on the data collected on asset base, operational efficiency and bank liquidity.

4.3 Credit Risk

The researcher further sought to determine the distribution of credit risk among the 35 banks during the period of five years. Mean, standard deviation, skewness and kurtosis were also used to illustrate this. Credit risk was measured using NPLs/Total loans.

Table 4. 7: Credit Risk

	N	Mean	Std.	Skewness	Std.	Kurtosis	Std.
			Deviation				
	Statistic	Statistic	Statistic	Statistic	Error	Statistic	Error
Credit Risk	35	.731	.1378	1.701	.193	2.988	.468
Valid N (listwise)	35						

Source: Research Data (2022)

The findings in Table 4.7 indicate that the average credit risk per annum for all the 35 banks was 0.731 and standard deviation was 0.1378, which implied that non-performing loans for the banks during the five-year period was 13.78%. The skewness and kurtosis values were within the threshold implying that the data on the credit risk were normally distributed.

4.4 Diagnostic Tests

Diagnostic tests were performed so as to test the assumptions of regression analysis. These covered multicollinearity test, normality test and Homoscedasticity Test as discussed on subsequent sections.

4.4.1 Multicollinearity Test

Multicollinearity arises when at least one of the independent variables are related with each other (Osborne & Waters, 2002). It was determined through Variance of Inflation Factors (VIF) values with 1-10 taken as the threshold.

Table 4.8: Multicollinearity Test

	Collinearity Statistics	
	Tolerance	VIF
Lending practices	.523	1.912
Bank Size	.385	2.599
Operational efficiency	.613	1.630
Bank liquidity	.554	1.806
Mean VIF	.529	1.937

Source: Research Data (2022)

From Table 4.7, the mean value of VIF is given as 1.937 and the respective values for the variables all happen to fall within the range 1-10. This provides an indication of absence of multicollinearity in the data. This is consistent with Osborne and Waters (2002) who also shared that VIF values in the range of 1-10 provide an indication of absence of multicollinearity in the data.

4.4.2 Normality Test

Shapiro-wilk test was conducted to test this assumption with $p > 0.05$ indicating presence of this assumption.

Table 4.9: Normality Test

	Shapiro-Wilk		
	Statistic	df	Sig.
Credit risk	.895	4	.406
Lending practices	.768	8	.513
Bank Size	.523	10	.675
Operational efficiency	.722	13	.601
Bank liquidity	.636	70	.345

Source: Research Data (2022)

The findings in Table 4.8 indicate that all the p-values are above 0.05, this means there was normality assumption in the sample data.

4.4.3 Homoscedasticity Test

When the variance of the error term in the model is constant across predicted values homoscedasticity condition is assumed (Warner, 1963). Breusch Pagan test was adopted to test for this assumption.

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity

$$\text{chi2}(1) = 11.69$$

$$\text{Prob} > \text{chi2} = 0.0027$$

The p – value = 0.0019 < α = 0.05. There is constant variance in the data i.e. heteroscedasticity is absent.

4.5 Correlation Matrix

Correlation analysis was conducted to predict the relationship between lending practices and credit risk among commercial banks. All the indicators of lending practices Know Your Customer (KYC), credit analysis, credit scoring and reporting and credit monitoring were transformed to form a composite variable which was correlated with other variables.

Table 4.10: Correlation Matrix

		Credit risk	Lending practices	Bank Size	Operational efficiency	Bank liquidity
Credit risk	Pearson Correlation	1				
	Significance					
	N	35				
Lending practices	Pearson Correlation	.404	1			
	Significance	.000	.000			
	N	35	35			
Bank Size	Pearson Correlation	.387	.528	1		
	Significance	.034	.000	.004		
	N	35	35	35		
Operational efficiency	Pearson Correlation	.323	.348	.585	1	
	Significance	.000	.054	.000	.000	
	N	35	35	35	35	
Bank liquidity	Pearson Correlation	.600	.332	.634	.461	1
	Significance	.000	.003	.000	.000	.000
	N	35	35	35	35	35

Source: Research Data (2022)

The findings in Table 4.10 indicated that there exists a significant moderate and positive relationship between lending practices and credit risk among commercial banks in Kenya ($r=0.404$; $p=0.000$). The findings on lending practices showed that they had a significant moderate and positive correlation with credit risks of commercial banks in Kenya ($r=0.387$; $p=0.034$). On operational efficiency, it was determined that there was a significant moderate and positive correlation between operational efficiency and credit risks of the banks ($r=0.323$; $p=0.000$). The study observed that bank liquidity had a significant strong and positive correlation with credit risk among commercial banks in Kenya ($r=0.600$; $p=0.000$). Generally, it was determined that lending practices and the control variables were all positive and significantly related with credit risk of commercial banks in Kenya.

4.6 Regression Results

The findings on regression analysis were determined and summarized in subsequent sections. The findings of model summary were established and shown in Table 4.11.

Table 4.11: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.786 ^a	.617	.609	.02558

Source: Research Data (2022)

The results in Table 4.11 indicate that 60.9% change in credit risk among commercial banks in Kenya is explained by lending practices and the control variables. This shows that there are other factors aside from those that the present study focused on, there are other additional factors that affect credit risk among commercial banks in Kenya which should be the focus of future studies. Table 4.12 is a breakdown on ANOVA findings.

Table 4.12: ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Regression	.185	4	.046	12.065	.000 ^b
Residual	.115	30	.0038		
Total	.299	34			

Source: Research Data (2022)

Table 4.12 shows that the overall regression model used in the study was significant (F=12.065, p<0.05). Being significant, it follows that the model was fit for use in predicting the nexus between lending practices and credit risk.

Table 4.13: Beta Coefficients

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.120	.010		12.098	.000
Lending practices	.021	.003	.406	7.362	.000
Bank Size	.016	.004	.302	4.172	.000
Operational efficiency	.008	.004	.117	2.000	.047
Bank liquidity	.034	.003	.700	11.446	.000

a. Dependent Variable: ROA

Source: Research Data (2022)

From Table 4.13, the following equation is predicted between lending practices, control variables and credit risk.

$$\text{CR} = 0.120 + 0.021\text{LPs} + 0.016\text{BS} + 0.008\text{OE} + 0.034\text{BL} + \varepsilon$$

Where;

CR-Credit risk (NPLs/Total loans)

LPs- Lending practices (as a composite of Know Your Customer (KYC), credit analysis, credit scoring and reporting and credit monitoring)

BS-Bank Size (Natural logarithm of assets)

OE-Operational efficiency (operating expenses/operating income)

BL-Bank liquidity (total loans/total assets)

At 5%, the study established that lending practices ($\beta=0.021$; $p= 0.000$) this implies that a unit increase in lending practices would significantly lead to 0.021 unit increase in credit risk among commercial banks in Kenya. The findings on bank size were that ($\beta=0.016$, $p=0.000$), implying that a unit increase in the size of the commercial banks in Kenya would to 0.016 unit increase in credit risk. Operational efficiency had the following findings ($\beta=0.008$; $p= 0.047$) which means that an increase in operational efficiency in Kenyan commercial banks by a unit would result into an improvement in credit risk by 0.008 units. The results on bank liquidity were that ($\beta=0.034$; $p=0.000$) which means that an improvement in liquidity position of the Kenyan commercial banks significantly affect credit risk. This thus implies that the greatest contributor towards credit risk among

commercial banks was bank liquidity followed by lending practices, bank size and lastly operational efficiency.

4.7 Discussion

At 5%, the study established that lending practices ($\beta=0.021$; $p=0.000$), this implies that a unit increase in lending practices would significantly lead to 0.021 unit increase in credit risk among commercial banks in Kenya. These findings agree with Al-Hawatmah and Shaban (2020) who noted that sound lending policies contribute towards profitability of the lending entity. The finding further agree with Kyrgyzstan and Ukraine, Kerimkulova *et al* (2021) who established that lending practices of the banks in Ukraine have potential to speed up development efforts. The finding further agrees with Ibrahim and Ndidu (2020) who noted that lending practices contribute towards creation of employment that improves the income of borrowers contributing to reduce credit risk. Namutenda and Muturi (2017) noted that lending policies in terms of liability at group level, monitoring policies and repayment frequency are significantly linked with financial performance.

The findings on bank size were that ($\beta=0.016$; $p=0.000$), implying that a unit increase in the size of the commercial banks in Kenya would lead to 0.016 unit increase in credit risk. The finding agrees with Ouma (2020) who observed existence of significant link between size and credit risk of the commercial banks. The findings however disagree with Alzoubi and Obeidat (2020) who indicated that bank size and credit risk are negatively linked with each other. Operational efficiency had the following findings ($\beta=0.008$; $p=0.047$) which means that an increase in operational efficiency in Kenyan commercial banks by a unit would result into an improvement in credit risk by 0.008 units. The finding contradicts

Phan *et al.* (2019) who noted existence of a negative relationship between management efficiency and credit risk of the bank. The results on bank liquidity were that ($\beta=0.034$; $p=0.000$) which means that an improvement in liquidity position of the Kenyan commercial banks significantly affect credit risk. This finding disagrees with Marozva (2020) who established existence of a negative relationship.

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter is set out to present the summary of the findings, conclusion and recommendations. The areas that require further research are further pointed out.

5.2 Summary of the Findings

The study was set out to document the effect of lending practices on credit risk among commercial banks. The study found that the borrowers' education, business experience, credit history (character) guide the KYC procedures and the KYC procedures involve determination of the borrower's ability to repay the loan through income and the stability (capacity). It was also revealed that KYC procedures entail evaluation of the savings, investments and assets of the borrowers (capital) and KYC procedures entail assessment of the collaterals of the borrowers. Finally, on KYC it was determined that the KYC procedures entail evaluation of the intended use of the loan by borrowers (conditions).

On credit analysis it was determined that credit analysis is conducted to determine the probability of borrower's default in this commercial bank and the financial conditions of borrowers are evaluated during credit analysis in this commercial bank. It was also determined that financial conditions of borrowers are evaluated during credit analysis in this commercial bank and credit analysis is conducted to determine credit history of the borrowers in your commercial bank.

On the credit scoring and reporting the results revealed that commercial bank relies on credit scores of borrowers to make lending decision and credit scores are used to predict if the borrower is capable meet his/her financial obligation in future. It was also shown that credit scoring aims at establishing if a loan account after a given period has expired will continue being a performing asset and credit scoring is done to determine the credit worthiness of borrowers in this commercial bank.

On credit monitoring it was determined that loan repayment behavior of the borrowers is analyzed based on the agreed terms and adequate loan loss provisions are set aside during credit monitoring. The study further determined that NPLs are identified during credit monitoring exercise and credit monitoring helps the commercial bank to have an understanding of the present financial status of the borrowers. Generally, the findings of descriptive statistics showed that KYC was highly practiced followed by credit reporting and scoring, credit analysis and credit monitoring respectively.

From correlation analysis, the study noted that there exists moderate and positive relationship between lending practices and credit risk among commercial banks in Kenya. The findings on lending practices showed that they had moderate and positive correlation with commercial banks in Kenya. On operational efficiency, the study observed that it had moderate and positive correlation with credit risk among commercial banks. The study observed that bank liquidity had strong and positive correlation with credit risk among commercial banks in Kenya.

Regression analysis played an instrumental role as far as the prediction of lending practices on credit risk was concerned. From the findings, over half percent change in credit risk of

commercial banks in Kenya is explained by changes in lending practices and the control variables. At 5% level of significance, the study document that lending practices, operational efficiency and bank liquidity were all significant predictors of credit risk among commercial banks in Kenya. This thus implies that the greatest contributors towards credit risk among commercial banks were bank liquidity followed by lending practices, bank size and lastly operational efficiency.

5.3 Conclusion of the study

Various commercial in Kenya faces challenges associated with credit risk. Modern portfolio theory provides the basis in which this challenge can be mitigated. For commercial banks to mitigate this problem, they should adopt sound lending practices, since increase in credit risk can be explained using lending practices, operational efficiency and bank size.

The link between lending practices and credit risk positively affects credit risks and an improvement in lending practices will allow commercial banks to positively manage their credit risks. The study also concludes that KYC practices is the most important lending practices adopted by commercial banks compared with credit scoring and reporting, credit analysis and credit monitoring, respectively. As control variables, operational efficiency and bank liquidity all positively affected and predicted credit risk among commercial banks in Kenya. The implication of this positive effect of these control variables is that an improvement in operational efficiency and liquidity positions of commercial banks can allow them to effectively manage and reduce their credit risks.

5.4 Recommendations

The study recommends that the credit managers working in commercial banks in Kenya should come up with clear lending policies and practices. There is need to review the KYC procedures adopted by commercial banks in Kenya. In order to mitigate the risk occasioned by NPLs, comprehensive customer appraisal systems and techniques should be embraced by commercial banks in Kenya.

The CBK should come up with relevant and informed policies and regulations to guide credit risk in commercial banks in Kenya. The policy makers working at the Kenya Bankers Association should develop sound industry practice in regard to lending practices for members. Policy makers working in commercial banks in Kenya ought to relevant industry practice to guide the operations as far as lending practices and credit risk are concerned.

5.4 Limitations of the Study

The study was limited by a small sample of 40 commercial banks. Given this small number of commercial banks, it was hard to generalize the results to other firm's way from commercial banks. The study was limited to the analytical method of ordinary least square that was utilized during the analysis. However, there are other analytical methods that can be adopted.

5.5 Suggestions for Further Research

In the present study, the focus was on commercial banks. Future studies can be conducted top establish additional factors aside firm commercial banks. Future studies can be done focusing on variables like operational performance, profitability as well as the general

performance of the firm. This can provide room for comparison of the findings and for a more robust generalization of the findings.

The value of adjusted R^2 in the present study was 0.609, which imply that 60.9% change in credit risk among commercial banks in Kenya as a result of lending practices. These practices include know your customer, credit scoring and reporting, credit analysis and credit monitoring. This means that aside from these lending practices, there are still others that were covered in the present which explain the remaining 39.1% that future studies should seek to establish.

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APPENDICES

Appendix I: Questionnaire

SECTION A: GENERAL INFORMATION

1. Kindly indicate the number of years your commercial bank has been in operation

Less than 5 years

6-10 years

11-15 years

Over 16 years

2. Kindly indicate peer group classification of your commercial bank

Tier I

Tier II

Tier III

SECTION B: LENDING PRACTICES

3. Below are several statements on Know Your Customer (KYC) as lending practices. Kindly indicate the extent of your agreement with each of them. Use a scale of 1-4, where 1-strongly disagree, 2-disagree, 3-undecided, 4-agree and 5-strongly agree.

Statements on Know Your Customer	1	2	3	4	5
The borrowers education, business experience, credit history (character) guide the KYC procedures					

The KYC procedures involve determination of the borrower's ability to repay the loan through income and the stability (capacity)					
The KYC procedures entail evaluation of the savings, investments and assets of the borrowers (capital)					
The KYC procedures entail assessment of the collaterals of the borrowers					
The KYC procedures entail evaluation of the intended use of the loan by borrowers (conditions)					

4. Below are several statements on credit analysis as lending practices. Kindly indicate the extent of your agreement with each of them. Use a scale of 1-4, where 1-strongly disagree, 2-disagree, 3-undecided, 4-agree and 5-strongly agree.

Statements on credit analysis	1	2	3	4	5
Credit analysis is conducted to determine the probability of					

borrower's default in this commercial bank					
The financial conditions of borrowers are evaluated during credit analysis in this commercial bank					
The needs of the borrowers are evaluated during credit analysis in your commercial bank					
Credit analysis is conducted to determine credit history of the borrowers in your commercial bank					

5. Below are several statements on credit scoring and reporting as aspects of lending practices. Kindly indicate the extent of your agreement with each of them. Use a scale of 1-4, where 1-strongly disagree, 2-disagree, 3-undecided, 4-agree and 5-strongly agree.

Statements on credit scoring and reporting	1	2	3	4	5
Your commercial bank relies on credit scores of borrowers to make lending decision					

Credit scores are used to predict if the borrower will be capable meet his/her financial obligation in future					
Credit scoring aims at establishing if a loan account after a given period has expired will continue being performing asset					
Credit scoring is done to determine the credit worthiness of borrowers in this commercial bank					

6. Below are several statements on credit monitoring as aspects of lending practices. Kindly indicate the extent of your agreement with each of them. Use a scale of 1-4, where 1-strongly disagree, 2-disagree, 3-undecided, 4-agree and 5-strongly agree.

Statements on credit monitoring	1	2	3	4	5
Loan repayment behavior of the borrowers are analyzed based on the agreed terms					

Adequate loan loss provisions are set aside during credit monitoring					
NPLs are identified during credit monitoring exercise					
Credit monitoring helps your commercial bank to have an understanding of the present financial status of the borrowers					

THANK YOU

Appendix II: Raw Data

Raw Data Collected

Bank	Bank Size	Operational efficiency	Bank liquidity	Credit risk
KCB Bank Kenya Ltd	4.756	4.189	8.563	0.114
Co-operative Bank of Kenya Ltd	4.829	4.763	4.842	0.118
Equity Bank Kenya Ltd	4.810	4.866	5.608	0.087
I & M Bank Ltd	4.463	4.302	5.574	0.128
Absa Bank Kenya Plc	4.604	4.132	2.867	.233
Standard Chartered Bank Kenya Ltd	4.715	4.414	3.022	0.146
NCBA Bank Kenya PLC	5.096	4.980	1.769	0.115
Stanbic Bank Kenya Ltd	4.719	4.630	3.557	0.111
Bank of Baroda (Kenya) Limited	4.631	5.579	1.381	0.093
Citibank N.A. Kenya	4.856	5.401	0.594	0.033
Diamond Trust Bank Kenya Limited	4.783	5.298	2.953	0.102
Bank of India	4.659	5.590	0.479	0.051
Prime Bank Ltd	4.675	5.295	1.399	0.093
Family Bank Ltd.	4.659	6.011	1.687	0.165
SBM Bank Kenya Ltd	4.638	4.753	0.664	0.523
Gulf African Bank Ltd	4.490	4.618	0.836	0.138
Guaranty Trust Bank Ltd	4.520	5.058	0.495	0.165
Victoria Commercial Bank Limited	4.512	5.480	0.848	0.057
National Bank of Kenya Ltd	4.498	4.549	2.243	0.397
First Community Bank Ltd	4.556	5.061	0.418	0.382
African Banking Corporation Ltd	4.485	5.407	0.719	0.229
Middle East Bank (K) Ltd	4.547	4.772	0.160	0.234
Sidian Bank Ltd	4.551	3.854	0.532	0.172
Paramount Bank Ltd	4.504	3.760	0.258	0.167
Guardian Bank Limited	4.572	3.795	0.276	0.119
UBA Kenya Bank Ltd	4.580	3.616	0.096	0.258
M-Oriental Commercial Bank Ltd	4.478	4.195	0.304	0.178
Development Bank of Kenya Ltd	4.485	0.441	0.390	0.295

Credit Bank Ltd	4.591	4.390	0.413	0.133
Ecobank Kenya Ltd	4.646	3.844	0.522	0.225
Consolidated Bank of Kenya Limited	4.704	4.971	0.208	0.263
Bank of Africa (K) Ltd	4.687	5.883	0.567	0.358
DIB Bank Kenya Ltd	4.481	4.086	0.270	0.189
Spire Bank Limited	4.769	3.835	0.093	0.553
Access Bank Plc	4.624	3.820	0.129	0.149

Appendix III: List of Commercial Banks in Kenya

1. Absa Bank Kenya Plc
2. Access Bank Plc
3. African Banking Corporation Ltd
4. Bank of Africa Ltd
5. Bank of Baroda (K) Limited
6. Bank of India
7. Charterhouse Bank Ltd**
8. Chase Bank (K) Ltd**
9. Citibank N.A. Kenya
10. Consolidated Bank of Kenya Limited
11. Co-operative Bank of Kenya Ltd
12. Credit Bank Ltd
13. Development Bank of Kenya Ltd
14. Diamond Trust Bank
15. DIB Bank Kenya Ltd
16. Ecobank Kenya Ltd
17. Equity Bank Kenya Ltd
18. Family Bank Ltd.
19. First Community Bank Ltd
20. Guaranty Trust Bank Limited
21. Guardian Bank Limited
22. Gulf African Bank Limited
23. Habib Bank A.G Zurich
24. HFC Ltd
25. I & M Bank Limited
26. Imperial Bank Ltd*
27. KCB Bank Kenya Ltd
28. Kenya Limited
29. Kingdom Bank Limited
30. M Oriental Commercial Bank Limited

31. Mayfair CIB Bank Ltd
32. Middle East Bank (K) Ltd
33. National Bank of Kenya Ltd
34. NCBA Bank Kenya PLC
35. Paramount Bank Ltd
36. Prime Bank Ltd
37. SBM Bank Kenya Ltd
38. Sidian Bank Ltd
39. Spire Bank Limited
40. Stanbic Bank Kenya Ltd
41. Standard Chartered Bank (K) Ltd
42. UBA Kenya Bank Ltd
43. Victoria Commercial Bank Limited

Source: CBK (2020)

*Bank in Receivership

**Banks in Liquidation

Source: CBK (2022)

EFFECT OF LENDING PRACTICES ON CREDIT RISK OF COMMERCIAL BANKS IN KENYA

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