

**CREDIT RISK MANAGEMENT AND LEVEL OF NON-PERFORMING LOANS IN  
COMMERCIAL BANKS IN KENYA**

**NYANGORI WILFRED MAKORI**

**D53/CTY/PT/21111/2012**

**A PROJECT REPORT SUBMITTED TO THE SCHOOL OF BUSINESS IN PARTIAL  
FULFILMENT FOR THE AWARD OF THE DEGREE OF MASTERS OF BUSINESS  
ADMINISTRATION (FINANCE OPTION) OF KENYATTA UNIVERSITY**

**MAY, 2018**

**DECLARATION**

This research project is my original work and has not been presented to any other institution or University for award of a degree or certificate. No part of this work may be reproduced without prior permission of author and/or Kenyatta University.

.....

Signature

.....

Date

**NYANGORI WILFRED MAKORI**

D53/CTY/PT/21111/2012

I confirm that the work in this research project was done by the candidate under my supervision

.....

Signature

.....

Date

**DR. FREDRICK. W.S NDEDE**

Department of Accounting and Finance

Kenyatta University

## **DEDICATION**

This work is dedicated to my wife Judith Ratemo, Son Calvin Nyambane, Daughter Sandra Kerubo for giving me hope and drive to undertake my research.

## **ACKNOWLEDGEMENT**

I would like to foremost thank and express my great gratitude to all those who helped in this Research. I would like to thank my supervisor Dr. Ndede Fredrick, who has helped and guided me to overcome many difficulties during the research. Further, I would like to offer my gratitude to my friends and family for their support and encouragement throughout the writing of this research paper.

## TABLE OF CONTENTS

DECLARATION .....	ii
DEDICATION .....	iii
ACKNOWLEDGEMENT .....	iv
TABLE OF CONTENTS.....	v
LIST OF FIGURES .....	viii
ABBREVIATIONS .....	ix
ABSTRACT.....	x
CHAPTER ONE.....	1
INTRODUCTION .....	1
1.1 Background to the study .....	1
1.1.1 Credit Risk Management.....	3
1.1.2 Non-performing loans .....	5
1.1.3 Credit risk management and Non-performing loans .....	6
1.2 Statement of the problem.....	7
1.3 Objectives of the study.....	8
1.3.1 General Objectives .....	8
1.3.2 Specific Objectives.....	9
1.4 Research Questions.....	9
1.5 Scope of the study.....	9
1.6 Significance of the study.....	10
1.7 Limitations of the study and Delimitations.....	10
CHAPTER TWO .....	11
LITERATURE REVIEW .....	11
2.1 Introduction.....	11
2.2 Theoretical literature.....	11
2.2.1 Capital Asset Pricing Theory .....	11
2.2.2 Modern Portfolio Theory .....	13
2.2.3 Information Asymmetry theory.....	15

2.3 Empirical Review.....	16
2.3.1 Risk Identification .....	17
2.3.2 Risk Assessment.....	18
2.4 Summary of Knowledge gap .....	22
2.5 Conceptual Framework.....	23
CHAPTER THREE .....	25
RESEARCH METHODOLOGY.....	25
3.1 Introduction.....	25
3.2 Research Design.....	25
3.3 Target Population.....	25
3.4 Sampling Design.....	26
3.5 Data Collection Instruments .....	26
3.6 Data Collection procedure .....	27
3.7 Pilot Study.....	27
3.7.1 Data Reliability .....	28
3.7.2 Data Validity.....	29
3.8 Data Analysis and Presentation .....	30
CHAPTER FOUR.....	31
DATA ANALYSIS, PRESENTATION AND INTERPRETATION .....	31
4.1 Introduction.....	31
4.2 Response rate .....	31
4.3 Demographic Results .....	32
4.3.1 Distribution of respondents by age.....	32
4.3.2 Distribution of the respondent by education level .....	32
4.3.3 Distribution of the respondents by duration of service .....	33
4.3.4 Availability of Credit Policy Manual .....	34
4.4 Credit risk identification and the level of non-performing loans.....	35
4.5 Credit risk assessment and level of non-performing loans .....	37
4.6 Credit risk monitoring and the level of non-performing loans .....	39
4.6.1 Effect of credit risk monitoring on the level of non-performing loans .....	39
4.7 Level of non-performing loans in commercial banks in Kenya .....	42

4.8 Regression Results .....	44
Table 4.8.1: Regression Analysis Model Summary .....	45
Table 4.8.2: Analysis of Variance Table.....	46
4.8.1 Regression Coefficients .....	46
4.9 Interpretation and Discussion of the results.....	48
CHAPTER FIVE .....	51
SUMMARY, CONCLUSIONS AND RECOMMENDATIONS.....	51
5.1 Introduction.....	51
5.2 Summary of the study .....	51
5.2.1 Influence of credit risk identification on the level of non-performing loans .....	51
5.2.2 Influence of credit risk assessment on the level of non-performing of loans .....	52
5.2.3 Influence of credit risk monitoring on the level of non-performing loans.....	52
5.3 Conclusions of the study.....	53
5.4 Recommendations of the study.....	54
5.4.1 Risk Identification .....	54
5.4.2 Credit Risk Assessment.....	55
5.4.3 Credit Risk Monitoring .....	55
5.5 Limitations and Area for further research.....	55
REFERENCES .....	57
APPENDICES.....	61

**LIST OF FIGURES**

Figure 2.1: Conceptual Framework Presentation .....24

Figure 4.3.4: Review of Credit Policy.....34



## ABBREVIATIONS

<b>BCBS:</b>	Basel Committee on Banking Supervision
<b>CBK:</b>	Central Bank of Kenya
<b>CAR:</b>	Capital Adequacy Ratio
<b>NPL:</b>	Non-performing Loan
<b>NPLR:</b>	Non-performing Loan Ratio
<b>ROA:</b>	Return on Assets
<b>ROE:</b>	Return on Equity
<b>ROC:</b>	Return on Capital
<b>RWA:</b>	Risk-Weighted-Assets

## ABSTRACT

The management of non-performing loan has been a major challenge facing financial institutions especially commercial banks. According to the Central Bank of Kenya Bank Supervision Annual Report 2014, Non-performing loans increased by 32.4 per cent to Kshs. 108.3 billion in December 2014 from Kshs. 81.8 billion in December 2013. However, the ratio of gross NPLs to gross loans increased marginally from 5.2 per cent to 5.6 per cent in December 2014. The ratio for total loans to total assets of the banking sector for the quarter ended 30th September 2015 was 62.68% a slight increase from 61.38% reported in September 2014. Further, the pile of bad bank loans rose from Kshs 47 billion to Kshs 259 billion to December 2017 in the latest credit officer survey report for the quarter ending December 2017 by the Central Bank of Kenya. This resulted in significant annual increase in the ratio of non-performing loans to gross loans rising to 10.56 per cent from the 9.1 per cent for the ending December 2016. This lead to banks giving profit warnings for coming financial years. The objective of this study was to establish the relationship between credit risk management approaches employed by commercial banks in Kenya and the loans performance using credit risk identification, risk assessment and risk monitoring to measure credit risk management. In order to achieve this objective, both primary and secondary data were be used. The data was collected using a questionnaire. The questionnaire had have both closed and open-ended questions. The closed ended questions enabled the collection of quantitative data while open-ended questions enabled collection of qualitative data. The secondary data obtained from the annual reports of the commercial banks for period 2011 to 2016. The data collected include the amount of credit, number of non-performing loans, number and value of total loans. The collected data was analyzed though descriptive and inferential statistics. The Statistical Package for Social Sciences (SPSS) was used to analyze data. The results were presented in tables, charts and bar graphs. The study established that credit risk identification, credit risk assessment and credit risk monitoring influence loan performance positively. The ANOVA analysis was intended to investigate whether the variation in the independent variables explained the observed variance in the outcome, in this study the loan performance in commercial banks in Kenya. ANOVA findings in this study showed that there was correlation between the predictor variables these are the credit risk identification, credit risk assessment and credit risk monitoring and response variable, loan performance since P value was less than 0.05. This indicated that there was a strong relationship between the study variables.

# **CHAPTER ONE**

## **INTRODUCTION**

### **1.1 Background to the study**

Banking services are subjected to a great deal of regulations. The minimum capital requirement commercial banks must hold in absorbing loss if unexpected huge losses occurred. Such requirement is conducted by Basel Committee which aims to enhance the key supervisory issue and improve the quality of banking supervision (Bis.org, 2014). In Europe 1974, some disruptions took place in the international financial markets. West Germany's Federal Banking Supervisory Office withdrew Bankhaus Herstatt's banking license after finding that the bank's foreign exchange exposures amounted to three times its capital. Consequently, banks outside Germany took heavy losses as a result on their unsettled trades with Herstatt. In the same year, the Franklin National Bank of New York also closed its door after racking up huge foreign exchange losses (Bis.org, 2014). These events contributed to the debacle of financial market which led to the Basel Committee on Banking Regulations and Supervisory Practices by central bank governors of the G-10 countries.

In Latin American debt crisis burst in early 1980's. Mexico's bank indebtedness expanded almost 230% over the six-year period from 1976 to 1982, Brazil's 160%, Venezuela's obligations spurted 330%, Argentina's by a monstrous 550% and Chile's 850% (Wessel 1984). This has attracted the attention of Basel Committee, and the capital adequacy soon became the main focus of its activities. In December 1987, the capital measurement system called Basel Accord was approved by the G-10 central bank governors and came into effect in 1988 (Bis.org, 2014). The Basel Accord

(Basel I) mainly focused on credit risk and called for a minimum capital ratio of capital to risk-weighted assets of 8% to be implemented by the end of 1992 (Bis.org, 2014).

In June 2004, Basel II was introduced. Basel II framework contained three pillars. However, the 2007 financial crisis made the Basel committee realize that Basel II seems not enough in the complicated financial markets. A major overhaul of Basel II was necessary. The banking sector had entered the crisis with high leverage, too much loans and inadequate liquidity. The high leverage and inadequate liquidity accompanied by poor corporate governance and risk management, as well as inappropriate incentive structures lead to mispricing of credit and liquidity risk, and excess credit growth. Therefore, a new standard Basel III was published in December 2010 and will be fully effective by the end of 2019. The new standard Basel III strengthened the Basel II framework and made some innovations, including tightened definition of capital, requirements for leverage ratio and a countercyclical buffer.

Credit risk is one of the important risks of banks by the nature of their activities. Through effective mitigation of credit risk exposure banks not only support the viability and profitability of their own business but also contribute to systematic stability and to an efficient allocation of capital in the economy (Psillaki, Tsolas, and Margaritis, 2010). Credit risk is a risk of borrower default, which happens when the counterpart fails to pay on time. There can be many reasons for default. One of the most common ones is the obligor is in a financially stressed situation. Besides, if a borrower with high credit quality has deteriorated profile, it can also cause credit risk loss to the banks. Banks invest in debt of those customers. The price of debt sold might be lower than the price as the bank bought debt. This makes a net loss of banks. However, the loss from the default of the bank does not have to be great. It depends on the percent of recover from obligor and total exposure of banks. And a good risk management and mitigation tries to avoid high exposure on risk (Gestel

& Baesems, 2008). Although the regulations have been evolutionarily developed, the three Basel Accords all have placed explicitly the burden on banks to adopt sound internal credit risk management practices to assess their capital adequacy requirement.

As challenges posed by difficult economic development continues to increase, banking and financial institutions are subsequently exposed to increasing risks. The degree of non-performing credits and advanced loans in the banking system is an alarm for major concern to different key stakeholders in the banking industry including bank management which grant the loans, depositors whose funds has been expropriated and trapped, and regulatory agencies responsible for protecting the banking system and sound financial system in the economy. In Nigerian, commercial banks have invested huge sums of funds to credit risk management practices and modeling with a view to maximizing returns and minimizing bank's risk exposure through provision for potential loan losses against advanced credits. In Kenya, commercial banks play an important role in mobilizing financial resources for investment and enhancing resilient sound financial system by extending credit to various businesses and investors. Lending represents the heart of the banking industry and loans are the dominant assets as they generate the largest share of operating income. Loans however expose the banks to the greatest level of risk. There are 43 licensed commercial banks in Kenya.

### **1.1.1 Credit Risk Management**

Basel committee define credit risk as the potential that a bank borrower or counterparty will fail to meet its obligations in accordance with agreed terms (Basel, 2000). Credit risk management is a structured approach to managing uncertainties through risk assessment, developing strategies to manage it, and mitigation of risk using managerial resources. The strategies include transferring to another party, avoiding the risk, reducing the negative effects of the risk, and accepting some or

all of the consequences of a particular risk. The process of risk management is a two-step process. The first is to identify the source of the risk, which is to identify the leading variables causing the risk. The second is to devise methods to quantify the risk using mathematical models, in order to understand the risk profile of the instrument.

It is crucial for banks to have comprehensive risk management framework as there is a growing realization that sustainable growth critically depends on the development of a comprehensive risk management framework (Greuning & Iqbal, 2007). Credit risk management forms a key part of a banks' overall risk management strategy. Weak credit risk management is a primary cause of many bank failures. The goal of credit risk management is to maximize a bank's risk-adjusted rate of return by maintaining credit risk exposure within acceptable parameters. Banks need to manage the credit risk inherent in the entire portfolio as well as the risk in individual credits or transactions. Banks should also consider the relationships between credit risk and other risks. The effective management of credit risk is a critical component of a comprehensive approach to risk management and essential to the long-term success of any banking organization (Hull, 2007).

The main techniques for measuring credit risk include: credit scoring, development of a credit policy, assessment of credit exposure, determination of credit risk premium and credit ratings. Credit risk is important in monetary and credit institution because resources applied for facilities are in debt of monetary institution (bank) to its shareholders and if the money doesn't have flow, power of giving credit and shareholders' capital return reduces (Jamaat & Asgari, 2010). The purpose of credit risk management is that by maintaining of credit risk in acceptable range; the ratio of return level banking facility to risk be maximized. Therefore, responsibilities in bank should be determined clearly thereby ensure that bank's policies and procedures in risk management are managed effectively.

### **1.1.2 Non-performing loans**

Non-performing loans are loans that are in default or close to being in default. Many loans become non-performing after being in default for 90 days, but this can depend on the contract terms. A loan is non-performing when payments of interest and principal are past due by 90 days or more, or at least 90 days of interest payments have been capitalized, refinanced or delayed by agreement, or payments are less than 90 days overdue, but there are other good reasons to doubt that payments will be made in full (International Monetary Fund, 2005). Prudential Guidelines (2006) defines non-performing loan as a loan that is no longer generating income. The guidelines state that loans are non-performing when: principal or interest is due and unpaid for 90 days or more; or interest payments for 90 days or more have been re-financed, or rolled-over into a new loan.

Non-performing loans problems tend to emerge after credit booms or protracted periods of low growth in structurally weak financial systems. Non-performing loans crowd out new lending, eroding both the profitability and solvency of banks. When high non-performing loans levels affect a sufficiently large number of banks, the financial system stops functioning normally, and banks can no longer provide credit to the economy. A prompt recovery can be obstructed by impaired market functioning and coordination failures among banks. In such circumstances, authorities usually step in to lead the crisis response. To this end, they can deploy a variety of resolution instruments, although these typically require a large amount of resources and take time to deliver results according to Bis org, 2017.

Several tools are available to gauge the size of the non-performing loan portfolio problem, such as on-site branch inspections, asset quality reviews and stress testing. In general, commercial banks can assess the scale of non-performing loan problem with reasonable accuracy by combining backward-looking assessments, via on-site branch inspections and credit risk management, with

forward-looking ones, such as stress testing (Bholat et al (2016). An assessment of banks' loss-absorption capacity is also needed. Once the size of the non-performing loan stock has been estimated, together with some projections over new non-performing loan flows measure against banks' provisions and capital buffers. Create buffers for non-performing loans absorption, Improve information gathering and sharing on non-performing loans and related collaterals. In the absence of sufficiently large buffers, non-performing loan losses can quickly erode banks' solvency.

### **1.1.3 Credit risk management and Non-performing loans**

The strength of the banking industry is an important prerequisite to ensure the stability and growth of economy. As a consequence, the assessment of banks' financial condition is a fundamental goal for regulators (Halling & Hayden, 2010). The safety of banking system depends on the profitability and capital adequacy of banks. Profitability is a parameter which shows management approach and competitive position of bank in market-based banking. This parameter helps the banks to tolerate some level of risk and support them against short-term problems according to Tabari, Ahmadi and Emami (2013).

The profitability of banks is influenced by different factors including management, size, location and time according to a study conducted by Haslem (2008). And it is of great interest to see how the profitability is affected by the risks faced by commercial banks. In Sweden for example, several studies have been done and found a positive relationship between credit risk management and profitability of commercial banks in Sweden. Kolapo, Ayeni and Oke (2012) showed that credit risk management is positively related to profitability of banks in Nigeria. Kithinji (2010) assessed the effect of credit risk management on the profitability of commercial banks in Kenya and found that banks' profitability is not affected by credit risk management. When it comes to both credit risk and liquidity risk, Ruziqa (2013) has tested the impact of credit risk and liquidity



risk on the financial performance of conventional banks in Indonesia. The results illustrated that credit risk was negatively related to profitability while liquidity risk demonstrated a positive effect. These kinds of researches show that no exact final conclusion could be drawn until now and thus make this area worth studying.

Ekrami and Rahnama (2009) stated that the high amount of non-performing loans represents high credit risk in today bank system and this encounters banks with market risks and liquidity risk. Although banks are trying to control the risks within the organization, but high percentage of this risk and its consequences for the future could not be ignored. Non-performing loans emerge due to weak criteria of credit assays, ineffective policies, risk acceptance without regard to limitation of bankroll and wrong functional indicators (Morton, 2003). For instance a study by Haneef et al (2012) concluded that nonperforming loans are increasing due to lack of risk management which threatens the profitability of banks.

## **1.2 Statement of the problem**

Credit plays an important role to individuals, businesses and investors in the economy. Credit is mainly granted by banks, banks also offer services like mobilizing deposits, local and international transfers, and currency exchange service. Hence, the issue of credit management has a profound implication both at the micro and macro level. When credit is allocated poorly it raises costs to successful borrowers, erodes the fund, and reduces banks flexibility in redirecting towards alternative activities (Haneef et al, 2012). Moreover, the more the credit, the higher is the risk associated with it. The problem of loan default, which is a result of inefficiency in credit management, reduces the lending capacity of a bank. It also denies new applicants' access to credit as the bank's cash flow management problems augment in direct proportion to the

increasing default problem. Consequently, it negatively affects the normal inflow and outflow of funds thus a bank has to keep staying in sustainable credit market.

Hence, adequately management of credit in commercial banks is critical for the survival and growth of the commercial banks. The issue of credit management among commercial banks is of even greater concern because of the higher levels of perceived risks resulting from some of the characteristics of clients, business conditions and economic environment in which they find themselves. The very nature of the banking business is so sensitive because more than 85% of their liability is deposits mobilized from depositors (Saunders, Cornett, 2005). The credit creation process, if not managed properly, exposes the banks to high default risk which might led to financial distress including bankruptcy.

Even though preliminary studies are undertake in preparing the master business plan for the opening of new banks and branches; little work is done in studying the performance of credit management of the branches that would alleviate the problems encountered and contribute to the growth of market share and income generation of the bank. Hence the study contribute to the objectives of the banks in general in assessing the gaps in credit risk management performance which is crucial in the prevailing stiff competition in line with the modern financial measurements. Therefore, the main concern of this study is to establish and determine the effect of credit risk management on performance of loans in commercial banks in Kenya.

### **1.3 Objectives of the study**

#### **1.3.1 General Objectives**

The overall objective of the study is to determine the effect of credit risk management on loan performance by commercial banks in Kenya

### **1.3.2 Specific Objectives**

The study's specific objectives were;-

- i) To determine the effect of credit risk identification on the level of non-performing loans by commercial banks in Kenya.
- ii) To establish the effect of credit risk assessment on the level of non-performing loans in commercial banks in Kenya.
- iii) To examine the effect of credit risk monitoring on the level of non-performing loans by commercial banks in Kenya.

### **1.4 Research Questions**

Given the various issues relating to the impact of credit risk mitigation on banks profitability among commercial banks in Kenya, The following research questions were used in the study;-

- i) What is the effect of credit risk identification on loan performance by commercial banks in Kenya?
- ii) What is the effect of credit risk assessment on the level of non-performing loans in commercial banks in Kenya?
- iii) To what extent does credit risk monitoring affect the level of non-performing loans by commercial banks in Kenya?

### **1.5 Scope of the study**

The study was carried out among the licensed 43 commercial banks in Kenya as registered by Central Bank of Kenya by December 31, 2015. The list of the banks is provided in Appendix V. Out of the 43 banks that operate in Kenya, 39 commercial banks are privately owned while the

Kenya Government holds controlling stakes in the remaining 3 commercial banks. 25 of the 39 privately owned banks and the 1 mortgage finance institution are locally owned while 14 banks are foreign owned. Licensed banks usually have higher level of transparency and strict regulations hence the secondary data was collected from the published annual reports for the period from 2011 to 2016.

### **1.6 Significance of the study**

The study investigated the effect of credit risk management techniques and strategies employed by commercial banks on the management of loan portfolios and the overall bank performance. The study is of importance to portfolio managers across financial institutions to develop sound credit risk policies that will help them come up with efficient tools of measuring, controlling and evaluating credit risk in their loan portfolio so as to effectively contribute to the development of more efficient financial systems. Further the study will benefit The Government, Ministry of Finance and Central Bank of Kenya as the regulator of banking sector in Kenya by informing on the critical prudential regulations that the Government needs to issue to the banking sector to prevent moral hazards and information asymmetry.

### **1.7 Limitations of the study and Delimitations**

The study intends to focus on the licensed 43 commercial banks in Kenya. Thus, the small and medium size banks and other financial institutions operating in Kenya will not be included in the study. In addition, the banks could have mixed activities from commercial banking services and investment banking. The main risks faced by commercial banks and investment banks are not usually identical. For instance, credit risk is more important to commercial banks while market risk and credit risk are important to investment banks. The difference between concentrations of risks might make bias to the study.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

This chapter presents the literature review. It covers the theoretical review which discusses the theories that guide the study. Further it discusses the empirical review where research work by other researcher and authors in the field under study is discussed. Lastly, a summary of the chapter is provided.

#### **2.2 Theoretical literature**

According to Torraco 2011, Theories are formulated to explain, predict, and understand phenomena and, in many cases, to Challenge and extend existing knowledge, within the limits of the critical bounding assumptions. A theory consists of concepts, together with their definitions, and existing theory/theories that are used for the particular study. The theoretical review will seek to establish some of the theories that are attributed by other researchers, authors and scholars, which are relevant to this study. The study will be guided by the capital asset pricing theory, modern portfolio theory, and information asymmetry theory.

##### **2.2.1 Capital Asset Pricing Theory**

Capital asset pricing theory was published in 1964 by Sharpe. Parallel work was also performed by Treynor (1961) and Lintner (1965). Capital Asset pricing theory extended Markowitz's portfolio theory to introduce the notions of systematic and specific risk. For his work on Capital asset pricing theory, Sharpe shared the 1990 Nobel Prize in Economics with Markowitz and Miller, (1961). In such a simple world, Tobin's (1958) super-efficient portfolio must be the market portfolio. All investors will hold the market portfolio, leveraging or de-leveraging it with positions

in the risk-free asset in order to achieve a desired level of risk. Capital asset pricing theory decomposes a portfolio's risk into systematic and specific risk. Systematic risk is the risk of holding the market portfolio.

As the market moves, each individual asset is more or less affected. To the extent that any asset participates in such general market moves, that asset entails systematic risk. Specific risk is the risk which is unique to an individual asset. It represents the component of an asset's return which is uncorrelated with general market moves (Lintner, 1965). No matter how much we diversify our investments, it's impossible to get rid of all the risk. As investors, we deserve a rate of return that compensates us for taking on risk. The capital asset pricing theory helps us to calculate investment risk and what return on investment we should expect. Here we look at the formula behind the model, the evidence for and against the accuracy of Capital asset pricing theory, and what Capital asset pricing theory means to the average investor (Sharpe, 1964).

When the Capital asset pricing theory was first introduced, the investment community viewed the new model with suspicion, since it seemed to indicate that professional investment management was largely a waste of time. It was nearly a decade before investment professionals began to view the Capital asset pricing theory as an important tool in helping investors understand risk. The key element of the model is that it separates the risk affecting an asset's return into two categories. The first type is called unsystematic, or company-specific, risk. The long-term average returns for this kind of risk should be zero. The second kind of risk, called systematic risk, is due to general economic uncertainty.

The Capital asset pricing theory states that the return on assets should, on average, equal the yield on a risk-free bond held over that time plus a premium proportional to the amount of systematic risk the stock possesses (Markowitz, 1952). The treatment of risk in the CAPM refines the notions

of systematic and unsystematic risk developed by Markowitz in the (1950s). Unsystematic risk is the risk to an asset's value caused by factors that are specific to an organization, such as changes in senior management or product lines. For example, specific senior employees may make good or bad decisions or the same type of manufacturing equipment utilized may have different reliabilities. In general, unsystematic risk is present due to the fact that every company is endowed with a unique collection of assets, ideas and personnel whose aggregate productivity may vary.

### **2.2.2 Modern Portfolio Theory**

Modern portfolio theory explains how risk-averse investors can construct and hold portfolios that optimizes or maximize expected asset return based on a given degree of market risk, emphasizing that risk is an inherent part of higher reward. This theory was developed by Harry Markowitz in his paper portfolio selection published in 1952 by the journal of finance which explains the four basic steps involved in portfolio construction as; security valuation, asset allocation, portfolio optimization and performance management. The essence of coming up with the theory is to validate construction of an efficient portfolio that optimizes returns of a particular investment.

It suggests that it is not enough to look at expected risk and return of a particular stock, but by investing in more than one stock, an investor can reap the benefits of diversification, particularly a reduction in the riskiness of a portfolio. MPT quantifies the benefits of diversification also known as not putting all your eggs in one basket. It considers that, for most investors, the risk they take when they buy a stock is that the return will be lower than expected. In other words, it is the deviation from the average return. Each stock has its own standard deviation from mean which Modern Portfolio Theory calls it risk. Markowitz theory asserts that, the risk in a portfolio of diverse individual stock will be less than the risk inherent in holding any one of the individual stocks provided the risk of the various stocks are not directly related. He showed that investment

is not just about picking stocks, but about choosing the right combination of stocks which to distribute ones' nest egg (Seibel, 2006).

An increasing body of analytical work has attempted to explain the functioning of credit markets using new theoretical developments. Challenging the model of competitive equilibrium, they have explored the implications of incomplete markets and imperfect information for the functioning of credit markets in developing countries. These provide a new theoretical foundation for policy intervention. . In this explanation, interest rates charged by a credit institution are seen as having a dual role of sorting potential borrowers and affecting the actions of borrowers. Interest rates thus affect the nature of the transaction and do not necessarily clear the market. Both effects are seen as a result of the imperfect information inherent in credit markets (Horne, 2006).

Adverse selection occurs because lenders would like to identify the borrowers most likely to repay their loans since the banks' expected returns depend on the probability of repayment. In an attempt to identify borrowers with high probability of repayment, banks are likely to use the interest rates that an individual is willing to pay as a screening device. Since the bank is not able to control all actions of borrowers due to imperfect and costly information, it will formulate the terms of the loan contract to induce borrowers to take actions in the interest of the bank and to attract low risk borrowers. The result is an equilibrium rate of interests at which the demand for credit exceeds the supply. Other terms of the contract, like the amount of the loan and the amount of collateral, will also affect the behavior of borrowers and their distribution, as well as the return to banks (Moti et al., 2012).

Raising interest rates or collateral in the face of excess demand is not always profitable, and banks will deny loans to certain borrowers. Since credit markets are characterized by imperfect information, and high costs of contract enforcement, an efficiency measure as exists in a perfectly



competitive market will not be an accurate measure against which to define market failure. These problems lead to credit rationing in credit markets, adverse selection and moral hazard. Adverse selection arises because in the absence of perfect information about the borrower, an increase in interest rates encourages borrowers with the most risky projects, and hence least likely to repay, to borrow, while those with the least risky projects cease to borrow (Ewert et al., 2000).

Interest rates will thus play the allocation role of equating demand and supply for loan funds, and will also affect the average quality of lenders' loan portfolios. Lenders will fix the interest rates at a lower level and ration access to credit. Imperfect information is therefore important in explaining the projects have identical mean returns but different degrees of risk, and lenders are unable to discern the borrowers' actions. An increase in interest rates negatively affects the borrowers by reducing their incentive to take actions conducive to loan repayment. This will lead to the possibility of credit rationing (Boland, 2012).

### **2.2.3 Information Asymmetry theory**

In a debt market, information asymmetry arise when a borrower who takes a loan usually has better information about the potential risks and returns associated with investment projects for which the funds are earmarked. The lender on the other hand does not possess adequate information pertaining the borrower (Edward and Turnbull, 2004), for Perceived information asymmetry brings about two problems for financial institutions, moral hazard and adverse selection. Commercial banks finds it difficult to overcome these problems as it is not economical to devote resources to appraisal and monitoring where lending is for small amounts. This is because data is needed to screen applicants and monitor borrowers are not freely available as and when it is required by banking institutions before giving out loans to its clients.

Hence commercial banks face a situation of information asymmetry while assessing lending applications (Binks & Ennew, 2004). Derban, Binner and Mullineux (2005) recommended that borrowers should be screened especially by banking institutions in form of credit assessment. Collection of reliable information from prospective borrowers becomes critical in accomplishing effective screening as indicated by asymmetric information theory. Qualitative and quantitative techniques can be used in assessing the borrowers although one major challenge of using qualitative models is their subjective nature. However according to Derban et al (2005), borrowers attributes are assessed through qualitative models can be assigned numbers with the sum of the values as compared to a threshold. This technique minimizes processing costs, reduces subjective judgments and possible biases.

The rating systems will be important if it indicates changes in expected level of credit loan loss. Brown (2008) concluded that quantitative measures make it possible to numerically establish which factors are important in explaining default risk, evaluating the relative degree of importance of the factors, improving the pricing of default risk, screening out bad loan applicants and calculating any reserve needed to meet expected future loan losses. The theory is relevant in the sense that, if borrowers could provide true and complete information regarding their financial status to the lenders at the time of seeking for credit, then lenders could be at a better position of making informed credit decisions thereby reducing the risks associated with credit. When credit risk is reduced, level of non-performing loans is reduced hence a good portfolio quality for the commercial banks.

### **2.3 Empirical Review**

This section presents the empirical literature review. It covers a review based on observations, induction, deduction, testing and evaluation of research work by other researchers and authors in

the field under study. The review for this study was guided by Risk identification, Risk Assessment and Risk monitoring.

### **2.3.1 Risk Identification**

Risk identification is vital for effective risk management among financial institutions especially commercial banks in Kenya. In order to manage credit risk associated with advancing credit effectively, commercial banking management have to identify risks facing the bank. The important thing during risk identification is not to miss any risks out. There are a number of different techniques that can be used in risk identification The first step in organizing the implementation of the risk management function is to establish the crucial observation areas inside and outside the corporation (Kromschroder and Luck, 2008). Then, the departments and the employees must be assigned with responsibilities to identify specific risks. For instance, interest rate risks or foreign exchange risks are the main domain of the financial department.

In relation to commercial banks' practice of risk management, Al-Tamimi (2002) found that the United Arab Emirates commercial banks were mainly facing credit risk. The study also found that inspection by branch managers and financial statement analysis are the main methods used in risk identification. The main techniques used in risk management are establishing standards, credit score, credit worthiness analysis, risk rating and collateral. The recent study by Al-Tamimi and Al-Mazrooei (2007) was conducted on banks' risk management of United Arab Emirates national and foreign banks. Their findings reveal that the three most important types of risks encountered by United Arab Emirates commercial banks are foreign exchange risk, followed by credit risk, then operating risk.

Risk identification is positively significant to influence risk management practices. In the case of banks, studies made especially on risk identification and risk mitigation includes the work of Haron

and Hin Hock (2007) on market and credit risk, and Haron (2007) specifically on operational risk. Haron and Hin Hock (2007) explain the inherent risk; credit and market risk exposures in Banks. Also, they illustrate the notion of displaced commercial risk that is important in Banks. They conclude that certain risks may be considered as being inherent in the operations of conventional banks. Although the risk exposures of Banks differ and may be complex than conventional financial institution, the principles of credit and market risk management are applicable to both. In addition, the International Financial Standards Board's standards on capital adequacy and risk management guiding principles mark the first steps in an ongoing process of developing prudential standards and filling regulatory gaps in the field of finance.

### **2.3.2 Risk Assessment**

There are many conceptual studies made on risk analysis and assessment by reference to measurement and mitigation of risk. In practice, it is useful to classify the different risks according to the amount of damage they possibly cause. This classification enables the management to divide risks that are threatening the existence of the corporation from those which can cause slight damages. Frequently, there is an inverse relationship between the expected amount of loss and its corresponding likelihood, that is; risks that will cause a high damage to corporation, like earthquakes or fire, occur seldom, while risks that occur daily, like interest rate risks or foreign exchange risks, often cause only relatively minor losses, although these risks can sometimes harm the corporations seriously. The empirical findings by Al-Tamimi and Al-Mazrooei (2007) highlighted that UAE banks are somewhat efficient in analyzing and assessing risk and there is a significant different between UAE national and foreign banks in the practice of risk analysis and assessment.

Additionally, the findings show that risk analysis and assessment are influencing risk management practices. The measures are used not only for risk control purposes, but also for performance measurements and pricing. In the context of banking, few conceptual studies (Sundararajan, 2007) discuss the risk measurement aspects particularly on the unique risk. Notwithstanding the report title, Risk: Analysis, Perception and Management, the working definitions employed by the Royal Society Study Group (1992) do not include the term risk analysis. According to the study group, risk estimation comprises identification of the outcomes and estimation of both the magnitude of the consequences and the probability of those outcomes. The addition of risk evaluation completes the process of risk assessment. British Standard 4778 considers risk assessment to refer to analysis of inherent risks and their significance in an appropriate context. It therefore seems possible at this stage to conclude that risk assessment and risk analysis are synonymous terms.

Risk analysis now goes beyond evaluation to include some of the decision making processes of risk management. Brainstorming is the main intuitive technique, involving a group generating ideas off the top of their heads with a philosophy of nobody is wrong - let's get the ideas on the board. Although quick and simple, it lacks the comprehensive approaches of the more sophisticated techniques. A comprehensive risk measurement and mitigation methods for various risk arising from financing activities and from the nature of profit and loss sharing in the source of funds especially investment account holders are explained by Sundararajan (2007). He concludes that the application of modern approaches to risk measurement, particularly for credit and overall banking risks is important for banks. Also, he suggests that the need to adopt new measurement approaches is particularly critical for banks because of the role play, the unique mix of risks in finance contracts.

### **2.3.3 Risk Monitoring**

The main function of the risk manager is to monitor; measure and control credit risk. The Risk Manager's duty includes identification of possible events or future changes that could have a negative impact on the institution's credit portfolio and the bank's ability to withstand the changes. The areas to examine critically are: economic or industry changes, Market risk events and Liquidity conditions. Effective risk management requires a reporting and review structure to ensure that risks are effectively identified and assessed and that appropriate controls and responses are in place (Institute of Risk Management-IRM, The Association of Insurance and Risk Manager-AIRMIC and The Public Risk Management Association -ALARM; 2002). Risk monitoring can be used to make sure that risk management practices are in line and proper risk monitoring also helps bank management to discover mistake at early stage (Al-Tamimi and Al-Mazrooei, 2007).

Monitoring is the last step in the corporate risk management process (Pausenberger and Nassauer, 2002). According to Parrenas, (2005), the shareholders of the institutions can use their rights to demand information in order to judge the efficiency of the risk management system. The director's report enables the shareholders to assess the status of the corporation knowledgeably and thoroughly. Khan and Ahmad (2001) conducted a survey of risk management practices and found that on average the lowest percentage is on the measuring, mitigating and monitoring risk that is 69% score as compared to risk management policies and procedures that is 82.4%, and internal control of banks that is 76%. Al-Tamimi and Al-Mazrooei (2007) found that there is significant difference between UAE national and foreign banks in risk monitoring and controlling. Also, the UAE commercial banks have an efficient risk monitoring and controlling system and it has positive influence on risk management practices.

Efficient monitoring and management of exposures is necessary for banks to reduce its losses on earnings, solvency and depositors' refunds in case of insolvency (Van Gestel & Baesens, 2010). Banks also needs to carefully monitor risk arising from elaborate bank products as per the regulators requirements (Hull, 2012). However, it is error to believe that meeting regulatory requirements is the sole for establishing a sound, scientific risk management system.

Managers need reliable risk measures to direct capital to activities and estimate the size of potential losses to stay within limits imposed by available capital, creditors and regulators (Pyle, 2007). They need mechanisms to monitor positions and create incentives to be prudent in taking risk. Consequently, risk management is the process by which managers satisfy these needs by identifying key risks, obtaining consistent, understandable, operational risk measures, deciding which risks need to be manage and by which methods, and establishing procedures to monitor the resulting risk position (Pyle, 2007).

The area of interest rate risk is the second area of major concern and on-going risk monitoring and management. However, the tradition has been for the banking industry to diverge somewhat from other parts of the financial sector in their treatment of interest rate risk. Most commercial banks make a clear distinction between their trading activity and their balance sheet interest rate exposure. Investment banks generally have viewed interest rate risk as a classic part of market risk, and have developed elaborate trading risk management systems to measure and monitor exposure. For large commercial banks and European-type universal banks that have an active trading business, such systems have become a required part of the infrastructure. But, in fact, these trading risk management systems vary substantially from bank to bank and generally are less real than imagined. In many firms, fancy value-at-risk models, are up and running. But, in many more cases, they are still in the implementation phase. In the interim, simple ad hoc limits and close monitoring

substitute for elaborate real time systems. While this may be completely satisfactory for institutions that have little trading activity and work primarily on behalf of clients, the absence of adequate trading systems elsewhere in the industry is a bit distressing.

## **2.4 Summary of Knowledge gap**

Banks' strength plays an important role in the stability and growth of economy. The stability of banks depends on the profitability and capital adequacy. From the forgone previous studies, studies has been carried on the impact of credit risk management and financial performance of commercial banks, most of these studies have leaned heavily towards the various tools and techniques of credit risk management, practices and strategies used by various institutions. Credit risk still remains one of the most significant risks that the commercial banks in Kenya face, considering that granting and giving credit is one of the main sources of income in commercial banks.

A review of empirical studies discussed in this study shows that there are mixed results on how credit risk management practices adopted by financial institutions impact on non-performing loans. In some instances, some studies shows that credit risk management has a significant impact on the profitability of commercial banks while on the other hand, results show that credit risk management was found to have a negative impact on banks' profitability. Therefore, there is need for a study in the Kenyan context for comparison of results. Moreover, though there is increased literature on credit risk management and financial performance of commercial banks in developing countries; the literature on the Kenyan context is scare. There are few studies conducted on this context. It is based on these identified gaps that this study seeks to fill these knowledge gaps by conducting a study on the relationship between credit risk management and the level of non-performing loans by commercial banks in Kenya.



## **2.5 Conceptual Framework**

The foundation of this study is built on effect of credit risk management on levels of non-performing loans by commercial banks in Kenya. To achieve this, Risk Identification, Risk Assessment and Risk Monitoring were used as independent variables representing effects of credit risk management on the dependent variable level of non-performing loans by the commercial banks in Kenya.

Independent Variables

Dependent Variable

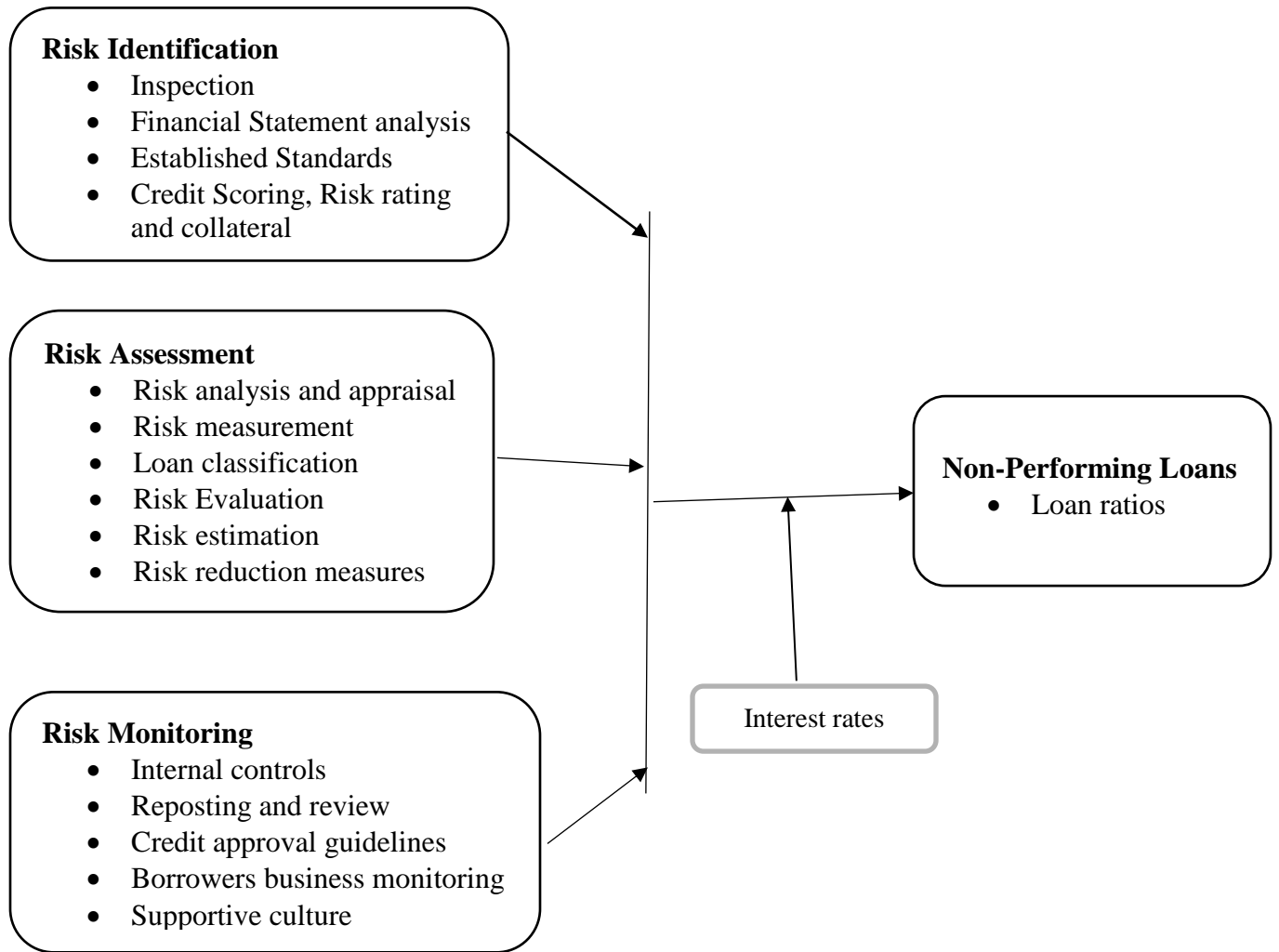


Figure 2.1: Figure of Conceptual Framework Presentation

Source: Author 2018

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

This chapter discusses the methodology to be adopted by the researcher in carrying out the study. The chapter presents the population to be studied, the methods to be used to sample it, the instruments used in data collection and procedures that were used in data analysis.

#### **3.2 Research Design**

The study adopted descriptive research design. According to Robson (2002), descriptive study portrays an accurate profile of persons, events or situation. Descriptive study describes the existing conditions and attitudes through observation and interpretation techniques, Chandran (2004). Descriptive research design is one of the best methods for conducting research in human contexts because it portrays accurately current facts through data collection for testing hypothesis or answering questions to conclude the study through use of descriptive and inferential statistics, thus this design is deemed the best design to fulfill the objective of this study.

#### **3.3 Target Population**

The study targeted all the 43 commercial banks in Kenya as registered by Central Bank of Kenya by December 31, 2015. The list of the banks is provided in Appendix V. Out of the 43 banks that operate in Kenya, 39 commercial banks are privately owned while the Government of Kenya holds controlling stakes in the remaining 3 commercial banks. 25 of the 39 privately owned banks and the 1 mortgage finance institution are locally owned while 14 banks are foreign owned. Licensed banks usually have higher level of transparency and strict regulations hence the secondary data to be collected from the published annual reports were reliable.

### **3.4 Sampling Design**

The target population of this study was all the 43 commercial banks in Kenya as registered by Central Bank of Kenya by December 31, 2015. The list of the banks is provided in Appendix V. Since the population is small and variable, the study adopted a census study approach. According to Cooper and Schindler (2006) a census is feasible when the population is small and necessary when the elements are quite different from each other. When the population is small and variable, any sample drawn may not be representative of the population from which it is drawn. Therefore since the target population for this study is small and variable, it is appropriate to choose census method because the population is small and the institutions are easily accessible, hence the sample size was all 43 banks commercial banks in Kenya targeting bank branch managers, credit managers and credit officials.

### **3.5 Data Collection Instruments**

The study was carried out using primary and secondary data. Primary data is the information obtained from the field. Primary data was collected using semi-structured questionnaires. According to Michael S (1998), a self-administered questionnaire is the only way to elicit self-report on people's opinion, attitudes, beliefs and values. The questionnaire contains both closed-ended and also a few open ended questions. These types of questions were accompanied by a list of possible alternatives from which respondents were required to select the answer that best describes their situation. The main advantage of close ended questions is that they are easier to analyze since they are in an immediate usable form, they are easy to administer because each item is followed by an alternative answers and also they are economical to use in terms of time saving. The questionnaires were administered using drop and pick method. The questionnaires were used because they allow the respondents to give their responses in a free environment and help the

researcher gather information that would not have been given out had interviews been used. The questionnaire were self-administered to some respondents while for others the researcher administered.

### **3.6 Data Collection procedure**

The questionnaires was administered using drop and pick method or as may be agreed by the respondents. The questionnaires were used because they allow the respondents to give their responses in a free environment and help the researcher gather information that would not have been given out had interviews been used. The questionnaire were self-administered to some respondents while for others the researcher administered. The Secondary data was collected from past published scholarly articles and annual reports of the target commercial banks for the period of 6years from 2011 to 2016.

### **3.7 Pilot Study**

Piloting was carried out to test the validity and reliability of the instruments. Validity indicates the degree to which the instrument measures the constructs under investigation (Mugenda and Mugenda, (1999). There are three types of validity test which include content, criterion and related construct validity. The study used content validity because it measures the degree to which the sample of the items represents the content that the test is designed to measure. A pilot study was conducted by taking some questionnaires to some commercial banks to be filled by respondents at random. From this pilot study the researcher was able to detect questions that need editing and those that are ambiguous. The final questionnaire was be then printed and to be used to collect data for analysis.

### **3. 7.1 Data Reliability**

Reliability is the extent to which the same answers can be obtained using the same instruments more than one time according to Babbie, E. R. (2010). Bryman & Bell 2011 refer to reliability is “the consistency of a measure of a concept”. One of the important factors when considering whether a measure is reliable and stable over time. The need to be able to generate the same results, using the same research methods under similar conditions over time. It focuses on the stability of measure over time, therefore the results from that measure will have little variation (Bryman & Bell, 2011).

In the study, a pre-test of the questionnaire was out prior to the actual data collection. The developed questionnaire was checked for its validity and reliability through pilot testing. Reliability test helped establish the internal consistency of the instrument. Test re-test method was used to pilot the questionnaires, which do not form sample of the study. Reliability was tested by the Cronbach’s alpha test which was calculated with the help of Statistical Package for Social Sciences (SPSS). A pilot study of 8 respondents was undertaken on from the targeted population through random sampling. The reliability of the questionnaire was evaluated through Cronbach’s Alpha which measures the internal consistency. The reliability values were checked for the three independent variables. The results illustrated that all the four variables were reliable as their reliability values exceeded the prescribed threshold of 0.7 according to Loehlin (2004). The results of reliability test are shown on table 3.7.1 presented below.

Table 3.7.1: Reliability test

Study variables	Cronbach's Alpha ( $\alpha$ )	Number of Items
Credit risk identification	0.85	8
Credit risk assessment	0.81	8
Credit risk monitoring	0.87	8

*Source: Author 2018*

### 3. 7.2 Data Validity

Carmines and Zeller (2014) mention the validity is regarded as an indicator of “abstract concept” and is measured exactly to what it intend to measure. It is also regarded as the most important criterion of research by Bryman & Bell (2011).

In the study, pilot study was carried out to test the validity of the research instruments. Validity indicates the degree to which the instrument measures the constructs under investigation (Mugenda and Mugenda, (1999). There are three types of validity test which include content, criterion and related construct validity. The study used content validity because it measures the degree to which the sample of the items represents the content that the test is designed to measure. A pilot study was conducted by taking some questionnaires to some commercial banks to be filled by respondents at random. From this pilot study the researcher was able to detect questions that need editing and those that are ambiguous. The final questionnaire was be then printed and to be used to collect data for analysis.

### 3.8 Data Analysis and Presentation

The collected data was analyzed through descriptive and inferential statistics. The Statistical Package for Social Sciences (SPSS) was used to analyze data. The results were presented in tables, charts and bar graphs. The study adopted the following regression model to establish the form of relationship between credit risk management and the level of non-performing loans by the commercial banks in Kenya. The equation took the following form;

$$Y = \beta_0 + \beta_1 Ri + \beta_2 Ra + \beta_3 Rm + \varepsilon$$

Where: Y = Non-performing loans, Dependent Variable

Ri = Risk Identification                  Ra = Risk Assessment

Rm = Risk Monitoring                   $\beta_0$  = the constant

$\beta_1$ -n = the regression coefficient or change included in NPL by each factor

$\varepsilon$  = error term



**CHAPTER FOUR**  
**DATA ANALYSIS, PRESENTATION AND INTERPRETATION**

**4.1 Introduction**

This chapter presents data analysis and the findings of the study based on the objectives, research methodology and research questions.

**4.2 Response rate**

Response rate is critical for a study for validity and reliability of the results. An excellent rate of response should be above 70% according to Mugenda and Mugenda (2003). For this study, there were 43 questionnaires issued to the respondents in commercial banks in Kenya out of which 38 questionnaires were completed and returned as indicated by table 4.1.

**Table 4.1: Response rate**

<b>Response Rate</b>	<b>Frequency</b>	<b>Percent</b>
Questionnaires issued	43	100.0
Questionnaires returned	38	88.37
Questionnaires not returned	5	11.63

*Source: Author 2018*

The questionnaires which were completed and returned represented the information about the population and the respondents of the study. The completed questionnaires from the 38 commercial banks in Kenya represented 88.37% response rate, which is excellent response and satisfactory to answer the study questions and objectives. According to Mugenda and Mugenda (2003), a response rate of 70% and above is excellent. A response rate of 88.37% is therefore adequate to generate a valid and reliable result.

### 4.3 Demographic Results

Demographic factors tend to affect human characteristics including management. In this, Demographic factors were analyzed on the basis of age, level of education and experience at work.

#### 4.3.1 Distribution of respondents by age

Age factor is believed to have influence on risk management. The reponenents were asked to indicate their ages. The results are indicated by table 4.3.1 below.

**Table 4.3.1: Distribution of respondents by age**

Age	Frequency	Percent
31-35 years	3	7.9
36-40 years	16	42.1
41-45 years	19	50.0
Total	38	100.0

*Source: Author 2018*

The results given by table 4.3.1 the majority of the respondents were between the age of 41 and 45 years respresented by 50% (n=19). This was followed by 36-40 years representing 7.9% (n=16). The rest (n=3) were between 31 and 35 years. Most of respondents were noted to be between 41 years and 45 years of age. Since age is perceived to provide good guidelines for decision, the majority of respondents were in an appropriate decision making age.

#### 4.3.2 Distribution of the respondent by education level

The study sought to find out the education level of the respondent. This is for general information and is not a direct objective of the study.

**Table 4.3.2: Distribution of the respondent by education level**

<b>Level of Education</b>	<b>Frequency</b>	<b>Percent</b>
Diploma	1	3
Degree	15	39
Masters	19	50
PhD	3	8
Total	38	100.0

*Source: Author 2018*

Out of the 38 respondents 3% of the respondents had attained education to the diploma level, 39% degree level, 50% to the masters level, 8% to the PhD level. The data as displayed on the table 4.3.2 above depicts that the commercial banks in Kenya employs well learned and trained professionals for the credit management.

#### **4.3.3 Distribution of the respondents by duration of service**

The respondents were asked on the number of years worked so as to assess the level of experience and knowledge of information regarding the organization.

**Table 4.3.3: Distribution of the respondents by duration of service**

<b>Duration of service</b>	<b>Frequency</b>	<b>Percent</b>
less than 5years	7	18
6-10 years	20	53
11-15 years	9	24
16 and above	2	5
Total	38	100

*Source: Author 2018*

From the above table 4.3.3, Most of the respondents were observed to have worked in the bank between 6-10 years represented by 53%. This was followed by respondents who have worked in

the bank between 11-15 years at 24% while those below 5 years are 18%. Those with an experience of 16years and above were only 5%. This means that all the respondents had a wide range of experience in the credit management position as represented on table 4.3.3 above.

#### 4.3.4 Availability of Credit Policy Manual

The study sought to establish from the respondents how often the formal written credit policy manual was reviewed. The study findings are presented in the figure 4.3.4 Review of Credit policy below.

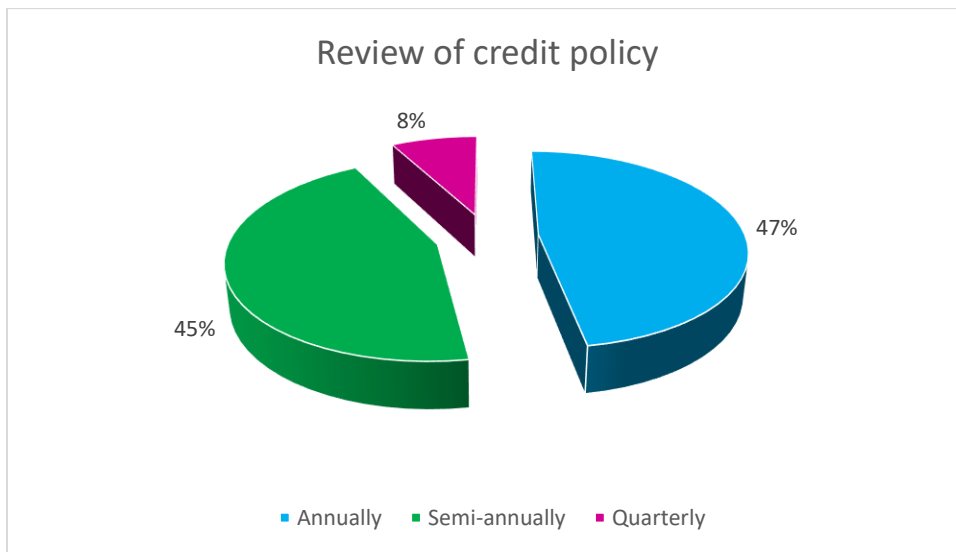


Fig 4.3.4: Review of credit policy

Source: Author 2018

From the figure 4.3.4 above 45% of the respondents from commercial banks in Kenya indicated that their formal written credit policy manual was reviewed on semi-annual basis, 47% of respondents indicated their formal written credit policy manual is reviewed annually while 8% indicating their formal written credit policy manual is reviewed quarterly. The commercial banks in Kenya review their policies in different durations and timelines depending on their management style in place, specific products and markets or responding to changes in the market place. The

study therefore established that all commercial banks in Kenya review their formal written credit manual policies within the year.

These findings are consistent with the findings of Haneef, Riaz, Ramzan, Mansoor, Ishaq and Karim (2012) examined the impact of risk management on non-performing loans and profitability of banking sector of Pakistan. Their study revealed that there was no proper mechanism for risk management in banking sector of Pakistan. The study also established that risk identification affected the level of nonperforming loans in their banks to a great extent.

#### **4.4 Credit risk identification and the level of non-performing loans**

Credit risk identification is one of the factors that may influence the level of performance of loans. The first objective of this study was to determine the effect of credit risk identification on level of non-performing loans. The credit risk identification was analyzed on the basis of availability of credit policy manual, inspection by branch managers of commercial banks in Kenya, financial statement analysis, established standards, credit scoring, risk rating and collateral secured against a loan advanced. The data on the variables was collected using a five point likert scale and analyzed on the basis of mean and standard deviation.

**Table 4.4.1: Risk Identification and the level of non-performing loans**

<b>Statement</b>	<b>Mean</b>	<b>Std. Deviation</b>
To what extent risk identification affect the level of nonperforming loans in your bank?	4.4737	0.506
To what extent does the inspection by the branch managers influence identification of risk in your bank?	3.7368	0.6851
To what extent does financial statement analysis influence risk identification?	3.4211	0.5004

To what extent does establishing standards influence risk identification?	3.6053	0.6384
To what extent does credit scoring influence risk identification?	3.4211	0.5987
To what extent does risk rating and collateral influence risk identification?	3.4474	0.7952

*Source: Author 2018*

The study observed that risk identification affect the level of non-performing loans to a very great extent, represented by a mean and standard deviation of 4.4737 and 0.506 respectively. The inspection by the branch managers influence identification of risk in the banks to a great extent represented by a mean of 3.768 and standard deviation of 0.6851. Financial statement analysis by the credit management staff influence risk identification to a great extent represented by a mean and standard deviation of 3.4211 and 0.5004 respectively. Establishing standards in the banking industry influence risk identification to a great extent with a mean and standard deviation of 3.6053 and 0.6384 respectively. Credit scoring of the borrowers influence risk identification by the credit analyst to a great extent as represented by a mean and standard deviation of 3.4211 and 0.5987 respectively.

Risk rating and collateral influence performance of loan to a great extent as represented by a mean of 3.4474 and standard deviation of 0.7952. Credit rating influence loan performance to a great extent as represented by a mean of 3.2895 and standard deviation of 0.5651. The respondents agreed that risk identification is important on performance of loans in the commercial banks in Kenya; and the overall performance of the banks.

These findings are consistent with the findings of Haneef, Riaz, Ramzan, Mansoor, Ishaq and Karim (2012) examined the impact of risk management on non-performing loans and profitability

of banking sector of Pakistan. Their study revealed that there was no proper mechanism for risk management in banking sector of Pakistan. The study also established that risk identification affected the level of nonperforming loans in their banks to a great extent.

Risk rating and collateral, Credit scoring, Credit worthiness analysis affected the the level of nonperforming loans in their banks to a great extent. These were some of the risk management practices adopted by commercial banks in Kenya. These findings are consistent with those of Talel (2010) who did a survey of risk management practices adopted by banking institutions in Kenya that revealed that risk management in Kenya was considered a vital factor for organizations to meet their desired goals and objectives.

#### **4.5 Credit risk assessment and level of non-performing loans**

Credit risk assessment is one of the factors that influence the level of performance of loans. The second objective of this study was to assess the effect of credit risk assessment on level of non-performing loans.

##### **4.5.1 Influence of Credit risk assessment on level of non-performing loans**

The respondents were asked on the influence of the credit risk assessment on the performance of loans in the commercial bank in Kenya. Credit risk assessment was analyzed on the basis of credit risk analysis, risk appraisal, risk measurement, loan classification, risk evaluation, risk estimation and risk reduction measures using a five point likert scale and results presented on the basis of mean and standard deviation by table 4.5.1

**Table 4.5.1: Credit risk assessment and the performance of loans**

<b>Statement</b>	<b>Mean</b>	<b>Std. Deviation</b>
To what extent does risk assessment, analysis and appraisal affect the level of nonperforming loans in your bank?	3.4737	.8617
To what extent does risk measurement influence the performance of loans?	3.2368	.97077
To what extent does loan classification affect the performance of the bank loans?	3.4737	.7618
To what extent does risk evaluation influence the performance of the loan?	3.2632	.8601
To what extent does risk estimation influence the performance of the loans	3.3947	.7898
To what extent does risk reduction measures influence the performance of the loans	3.6053	.7101

*Source: Author 2018*

From the above table, respondents of the study indicated that risk assessment, analysis and appraisal affect the level of nonperforming loans in the bank to a great extent as represented by a mean of 3.437 and a standard deviation of 0.8617. Risk measurement influence the performance of loans to a great extent as represented by a mean of 3.2368 and standard deviation of 0.97077. Loan classification affect the performance of the bank loans to a great extent as represented by a mean of 3.4737, and standard deviation of 0.718 this enhances the strategies of follow-up of the borrowers. Risk evaluation influences the performance of the loan to a great extent as represented by a mean of 3.2632; the management is therefore able to evaluate the amount of loan to disburse to the borrowers. The respondents agreed that risk reduction measures influence the performance of the loans as represented by a mean of 3.6053 on the Table 4.5.1 above.



Risk analysis and appraisal affected the level of nonperforming loans their bank to a great extent. Risk evaluation, Measurement, Risk estimation and Determining risk reduction measures affected the performance. Despite the critical importance of risk management in determining the overall success of organizations, risk management was still evolving in Kenya and the major challenges faced by banking institutions included inadequate capital resources, staff competencies and system limitations (Talel, 2010). Risk analysis comprised the probability of outcomes while risk assessment comprised magnitude estimation of the consequences.

#### **4.6 Credit risk monitoring and the level of non-performing loans**

Credit risk monitoring is one of the factors that influence the level of performance of loans. The third objective for this study was to examine the effect of credit risk monitoring on the level of non-performing loans by commercial banks in Kenya.

##### **4.6.1 Effect of credit risk monitoring on the level of non-performing loans**

The respondents were asked on the effect of credit risk monitoring on the level of non-performing loans by commercial banks in Kenya. Credit risk monitoring was analyzed on the basis of controls put in place by commercial banks in Kenya, responses in place, reposting and review, established processes, credit approval guidelines and monitoring of borrowers businesses using a five point likert scale. The results were presented by table 4.6.1

**Table 4.6.1: influence of credit risk monitoring on the level of non-performing loans**

<b>Statement</b>	<b>Mean</b>	<b>Std. Deviation</b>
To what extent does risk monitoring influence the performance of the bank?	3.7368	.55431
To what extent does controls in place influence the performance of the bank?	3.5000	.55750

To what extent does responses in place influence the performance of the bank?	3.6316	.58914
To what extent does reposting and review influence the performance of the bank?	3.5263	.50601
To what extent do internal controls influence the performance of the bank?	3.6053	.54720
To what extent does clearly established process influence the performance of the bank?	3.7105	.61106
To what extent does the credit approval guidelines influence the performance of the loans?	3.4737	.50601
To what extent does monitoring of borrowers business influence the performance of the bank?	3.7105	.69391

*Source: Author 2018*

The respondents indicated that risk monitoring influence the performance of the bank to a great extent as represented by a mean of 3.7368. The respondents also acknowledged that the controls in place influence the performance of the bank to a great extent as represented by a mean of 3.5. Reposting and review influence the performance of the bank to a great extent as represented by a mean of 3.5263. The internal controls influence the performance of the bank to a great extent as a result of overall control and management of the risks that the bank may be exposed to. Clearly established process influence the performance of the bank to a great extent as represented by a mean of 3.7105 this makes it clear on the terms and conditions of each product offered by the bank. The respondents agreed to a great extent that credit approval guidelines influence the performance of the loans to a great extent represented by a mean of 3.4737. This ensures that any credit product offered to a borrowers meet the set limit, terms and conditions, thus controlling the borrowers from

over borrowing. Monitoring of borrowers business influence the performance of the bank to a great extent, by ensuring that security and follow-up measures are taken in case of any default.

#### **4.6.2: effect of credit risk monitoring on the level of non-performing loans**

The study further sought to find out the effect of credit risk monitoring on the level of non-performance loans from the respondents in commercial banks in Kenya on the basis of frequent contact with borrowers, supportive culture to borrowers by the commercial banks, borrowers business account monitoring, review of borrowers financial reports, updating borrowers records and periodic review of borrowers ratings. The findings are presented below on table 4.6.2.

**Table 4.6.2: effect of credit risk monitoring on the level of non-performing loans**

<b>Statement</b>	<b>Mean</b>	<b>Std. Deviation</b>
Frequent contact with borrowers creates an environment that the bank can be seen as a problem solver and adviser	3.8947	.72743
The banks create a supportive culture to the borrowers whenever they are recognized to be in difficulties	3.8158	.72987
The bank monitors flow of borrowers business through the bank account	3.9211	.71212
Regular review of borrowers financial reports influence the performance of the bank	3.5263	.86170
Updating borrowers credit files influence the performance of the bank	3.6579	.87846
Periodical review of the borrowers rating assigned at the time the credit was granted influence borrowers repayment	3.5789	.75808

*Source: Author 2018*

From the results tabulated above, the respondents agreed that frequent contact with borrowers creates an environment that the bank can be seen as a problem solver and adviser represented by a mean of 3.8158. The respondents agree that the banks create a supportive culture to the borrowers whenever they are recognized to be in difficulties in repayment of the loans as represented by a mean of 3.8158. The bank also monitors flow of borrowers business through the bank account as represented by a mean of 3.9211. The respondents agree that regular review of borrowers financial reports influence the performance of the bank as represented by a mean 3.5263. This enables the risk assessor to keep monitoring the ability of the borrowers to making loan repayments. The respondents agree updating borrowers' credit files influence the performance of the bank, because it gives the track records of the customers. Thus enhancing measurement and monitoring of risks. Finally the periodical review of the borrowers rating assigned at the time the credit was granted influence borrowers repayment this represented by a mean of 3.5789, as per the table 4.6.2 above. Risk monitoring affects the performance of the banks to a great extent. Periodically reviewing the borrowers rating assigned at the time the credit was granted, frequent contact with borrowers, creating an environment that the bank can be seen as a solver of problems and trusted adviser, regular review of the borrower's reports as well as an on-site visit affects positively the level of non-performing loan book value of the banks.

#### **4.7 Level of non-performing loans in commercial banks in Kenya**

The level of non-performing loans in commercial banks in Kenya was analyzed on the basis of established process for approving new credits and extending credits, written guidelines on credit approval process, prudent credit practices and credit committee approvals of loans. The data on the variables was collected using a five point likert scale and analyzed on the basis of mean and standard deviation.

**Table 4.7: Loan performing loans in the Commercial banks in Kenya**

<b>Statement</b>	<b>Mean</b>	<b>Std. Deviation</b>
Clear established process for approving new credits and extending the existing credits has been observed to be very important while managing credit risks.	3.6316	.48885
Monitoring of borrowers is very important as current and potential exposures change time.	3.9211	.78436
The bank have in place written guidelines on credit approval process	4.3158	.61973
Prudent credit practice requires that credit approval officers should not have customer relationship responsibility	2.1842	.39286
Credit committee approve some loans depending on the size and complexity of credit transaction	3.9737	.43414
Credits to related parties are closely analysed and monitored so that no senior staff override the established credit granting process	3.8684	.62259

*Source: Author 2018*

The respondents agreed to a great extent that clear established process for approving new credits and extending the existing credits has been observed to be very important while managing credit risks as represented by a mean and standard deviation of 3.6316 and 0.48885 respectively. Monitoring of borrowers is very important as current and potential exposures change time to a great extent as represented by a mean of 3.9211. The respondents agreed to a very great extent that the bank have in place written guidelines on credit approval process as represented by a mean of 4.3158. The respondents agreed to a moderate extent that prudent credit practice requires that credit approval officers should not have customer relationship responsibility as represented by a mean of 2.1842. This means that risk is spread as the loan approvals are made at different levels and each

level is allowed to critique and disapprove any loan applications that do not meet the set standards. The respondents agreed to a great extent that the credit committee approve some loans depending on the size and complexity of credit transaction as represented by a mean of 3.9737. Credits to related parties are closely analyzed and monitored to a great extent so that no senior staff override the established credit granting process as represented by a mean of 3.8684 on the table 4.7 above. Monitoring of borrowers, Credit approval guidelines and clear established process affected the level of non- performing loans among commercial banks in Kenya. These findings are consistent with those of Kabiru (2010) who examined the effect of risk management practices on the financial performance of commercial banks in Kenya. In most cases banks had adopted a proactive and enterprise wide approach to their risk management practices by have a risk department with a manager, and had a documented risk management policy which was fairly well communicated throughout all levels of the organization from the Board to Staff. From the research conducted it was evident that risk management and the related practices are considered significantly important to the operations and financial performance of these commercial banking institutions.

#### **4.8 Regression Results**

In this study, a multiple regression analysis was conducted to test the influence among predictor variables. In order to determine the effect of risk management on the level of non-performing loans in commercial banks in Kenya, the research used statistical package for social sciences (SPSS Version 20) to code, enter and compute the measurements of the multiple regressions. The results of regression analysis are presented in the table 4.8.1 of Regression analysis model summary.

**Table 4.8.1: Regression Analysis Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.887	.787	.752	.26548

*Source: Author 2018*

From the table above, R is the correlation coefficient which shows the relationship between the study variables, from the findings shown in the table above there was a strong positive relationship between the study variables as shown by R 0.887 at 5% significance level. The Adjusted R squared is coefficient of determination which tells us the variation in the dependent variable due to changes in the independent variable, from the findings in the table above the value of adjusted R squared was 0.752 an indication that there was variation of 75% on non - performing loans due to changes in credit risk identification, credit risk assessment, credit risk monitoring process at 95% confidence interval. This is an indication that 75% of the changes in credit risk management could be accounted for by the independent variables. Therefore the relationship between non-performing loans and the independent variables (credit risk identification, credit risk assessment, credit risk monitoring) is strong.

Further, an analysis of variance of the regression model was done to establish the data for the study is idea for making study conclusions. The results of the analysis of variance are presented in the table 4.8.2.

**Table 4.8.2: Analysis of Variance Table**

Model	Sum of Squares	Df	Mean Square	F	Sig.
	Regression	3.256	3	0.814	3.524
	Residual	7.854	34	0.231	
	<b>Total</b>	<b>11.11</b>	<b>37</b>		

*Source: Author 2018*

From the table above, the processed data, which is the population parameters, had a significance level of 2.6548% which shows that the data is ideal for making a conclusion on the population's parameter as the value of significance (p-value ) is less than 5%. The F critical at 5% level of significance, 4 degrees of freedom, 34 degrees of freedom was 2.6548, while F computed was 3.524, since F calculated is greater than the F critical (value = 2.6548), this shows that the overall model was significant.

#### **4.8.1 Regression Coefficients**

The general objective of this study was to determine the credit risk management and the level of non-performing loans in commercial banks in Kenya. There were more than one study objective and they were to determine the effect of credit risk identification on the level of non-performing loans, establish the effect of credit risk assessment on the level of nonperforming loans and to examine the effect of credit risk monitoring on the level of non-performing loans in commercial banks. The results of regression coefficients are presented in table 4.8.3.



**Table 4.8.3: Regression Coefficients**

Mode 1	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
Constant	.417	.984		1.101	.017
Risk identification	.737	.537	.334	2.679	.006
Risk assessment	.695	.441	.029	3.093	.027
Credit risk monitoring	.480	.258	.681	3.247	.018

*Source: Author 2018*

From the results tabulated above on table 4.8.3, the coefficients of the regression are used to come up with the following regression equation:

$$Y = 0.417 + 0.737 X_1 + 0.695 X_2 + 0.48 X_3$$

Where  $X_1$ ,  $X_2$ , and  $X_3$  are risk identification, credit risk assessment and credit risk monitoring respectively.

From the regression equation above it was found that holding Credit risk identification, Credit Assessment and Credit risk monitoring to a constant zero, the level of non-performing loans will be 0.417, a unit increase in risk identification would lead to decrease in the level of non-performing loans by 0.737 units, a unit increase in risk assessment would lead to decrease in the level of non-performing loans by 0.695 units, a unit increase in risk monitoring would lead to decrease in the level of non-performing loans by 0.48 units respectively.

These results imply that increase in risk identification would lead to reduction of the level of non-performing loans in the commercial banks in Kenya. A positive increase in credit assessment would lead to a reduction in the level of non-performing loans. An increase in credit risk monitoring would also lead to a decline in the level of non-performing loans. Risk identification

has the highest influence on the level of non-performing loans as represented by 0.737 followed by risk assessment as represented by 0.695 and finally credit risk monitoring as represented by 0.480. All the three variables were noted to have a positive influence on the level of non-performing loans in the commercial banks in Kenya.

At 5% level of significance and 95% level of confidence, risk identification had a 0.006 level of significance; risk assessment had a 0.027 level of significance while risk monitoring had a 0.018 level of significance. All the variables were statically significant ( $p < 0.05$ ).

#### **4.9 Interpretation and Discussion of the results**

A multiple regression analysis was conducted out of the data collected for the study to test the influence among predictor variables. From table 4.8.1 of Regression analysis model summary results, R is the correlation coefficient which shows the relationship between the study variables, from the findings it was established that there is a strong positive relationship between the study variables as shown by R 0.887 at 5% significance level. The Adjusted R squared being coefficient of determination which gives more insights on the variation in the dependent variable due to changes in the independent variable. The value of adjusted R squared was 0.752 an indication that there was variation of 75% on non - performing loans due to changes in credit risk identification, credit risk assessment, credit risk monitoring process at 95% confidence interval. This is an indication that 75% of the changes in credit risk management are explained by the independent variables. Therefore the relationship between the level of non-performing loans and the independent variables (credit risk identification, credit risk assessment, credit risk monitoring) is strong and statistically significant.

In addition to regression analysis model summary, an analysis of variance of the regression model was done. The results had a significance level of 2.6548% which showed that the data was ideal

for making research conclusions on the population parameters. The level of significance (p-value) was found to be less than 5%. The F critical at 5% level of significance, 4 degrees of freedom, 34 degrees of freedom was 2.6548, while F computed was 3.524, since F calculated is greater than the F critical (value = 2.6548), this showed that the overall model was significant.

Regression coefficients represent the mean change in the response variable for one unit of change in the predictor variable while holding other predictors in the model constant. This statistical control that regression provides is important because it isolates the role of one variable from all of the others in the model.

From the regression equation above it was found that holding Credit risk identification, Credit Assessment and Credit risk monitoring to a constant zero, the level of non-performing loans will be 0.417, a unit increase in risk identification would lead to decrease in the level of non-performing loans by 0.737 units, a unit increase in risk assessment would lead to decrease in the level of non-performing loans by 0.695 units, a unit increase in risk monitoring would lead to decrease in the level of non-performing loans by 0.48 units respectively.

These results imply that increase in risk identification would lead to reduction of the level of non-performing loans in the commercial banks in Kenya. A positive increase in credit assessment would lead to a reduction in the level of non-performing loans. An increase in credit risk monitoring would also lead to a decline in the level of non-performing loans. Risk identification has the highest influence on the level of non-performing loans as represented by 0.737 followed by risk assessment as represented by 0.695 and finally credit risk monitoring as represented by 0.480. All the three variables were noted to have a positive influence on the level of non-performing loans in the commercial banks in Kenya.

At 5% level of significance and 95% level of confidence, risk identification had a 0.006 level of significance; risk assessment had a 0.027 level of significance while risk monitoring had a 0.018 level of significance. All the variables were statically significant ( $p < 0.05$ ).

## **CHAPTER FIVE**

### **SUMMARY, CONCLUSIONS AND RECOMMENDATIONS**

#### **5.1 Introduction**

This chapter presents the summary of findings and conclusions made. Recommendations of this study are also presented in this chapter.

#### **5.2 Summary of the study**

The overall objective of the study was to determine the effect of credit risk management on loan performance by commercial banks in Kenya. The study specifically sought to determine the effect of credit risk identification on the level of non-performing loans, establish the effect of credit risk assessment on the level of non-performing loans and examine the effect of credit risk monitoring on the level of non-performing loans by commercial banks in Kenya. The study employed quantitative research as the main approach to guide the study. The target population was 43 commercial banks in Kenya. The research instrument used in data collection was a questionnaire issued to all respondents. Data analysis was started immediately after the field work. Data was summarized into frequencies, percentages and presented in tables as presented below by the following discussion.

##### **5.2.1 Influence of credit risk identification on the level of non-performing loans**

The study find that credit risk identification influence the level of non-performing loans in the commercial banks. This is due to the fact that once risks are identified they can be controlled. The risks are identified through the risk registers managed by the risk and audit officers in the banks. The staff are also taken through training of the credit policy and the risk register to create awareness and the ability of identifying and curbing risk. The study findings are consistent with

Kodithuwakku (2015), where banks have a well-defined or clear and documented methodology for identifying and assessing the credit risk of their system. This is necessary for a bank to mitigate the impact of credit risk, as this would enable all the staff members to clearly identify the risks and assess them on the reasonable conditions. If a bank is aware of its risk, including credit risk, then it can develop all the necessary controls and strategies, based on risk assessment to mitigate the risk.

### **5.2.2 Influence of credit risk assessment on the level of non-performing of loans**

Credit assessment influences the performance of the loans in the commercial banks. Quality credit risk assessment helps in evaluation of the credit worthy customers. The credit staff analyse and appraise all loans applications submitted within a month in order to assess the level risk attached to the loans. They advise the management on the loans that may perform, which determines approval of loans within the month, against the set limit. This agree with a study by Kagoyire (2016) where it revealed that client appraisal is a viable strategy for credit, aspects of collateral are considered while appraising clients, failure to assess customer's capacity to repay results in loan defaults, client appraisal considers the character of the customers seeking credit facilities and that commercial banks in Rwanda have competent personnel for carrying out client appraisal.

### **5.2.3 Influence of credit risk monitoring on the level of non-performing loans**

The banks have clear credit approval guidelines, internal controls and monitoring structures; due to the stringent measures put by the central bank. The structures monitor loan performance and classify the loans into current, performing, substandard, and doubtful and loss in order for the management to make provisions based on the risk attached to each category. The risk monitoring helps the credit officers in the bank to follow-up on the borrowers also follow the set up procedures of recoveries in cases of default. Credit risk monitoring is done on a daily basis due to the

diversified products offered by the bank, because the repayment schedules vary. The level and strength of risk monitoring determines the performance of the bank's profitability. The banks have a well-established credit committee, which monitors loan performance mostly on a monthly basis. The credit committee plays a great part in the monitoring of loan performance and also give recommendations to the management where the loan performance is poor.

This study agrees with study by Gatuhu (2013) which established that Credit committees involvement in making decisions regarding loans are essential in reducing default, credit risk, the use of credit checks on regular basis enhances credit management, Penalty for late payment enhances customers commitment to loan repayment, the use of customer credit application forms improves monitoring and credit management, flexible repayment periods improve loan repayment and finally that the use of credit checks on regular basis enhances credit management. This concurs with a study by Onkoba (2014), which established that is a significant relationship between financial performance, in terms of profitability and credit risk management in terms of loan performance, loan loss reserves and capital adequacy. In addition bank managers need to practice prudent credit risk management, safeguard the assets of the bank and protect the shareholders' interests.

### **5.3 Conclusions of the study**

The study concluded that all the three independent variables influence the level of non-performing loans positively in the commercial banks in Kenya. Credit risk identification, credit risk assessment, credit risk monitoring positively influence the level of loan book portfolios in the commercial banks in Kenya. The banks have put in place credit policies that control their terms when lending to the customers. The Central bank in Kenya has also been very proactive on the banking sector to ensure maximum compliance, in credit management. A study by Kibor (2015)

established that effective lending policies played a significant role in credit risk management amongst commercial banks in Nakuru town. It was inferred that lending policies have significant influence on the performance of bank loans. The study concluded that credit standards were adopted by commercial banks in Nakuru town. In the same light, it was deduced that putting a ceiling on the loans advanced to bank customers could enhance credit risk management. The study further concluded that determination of borrowers' credit worthiness is crucial in credit risk management. Lastly, credit standards were found to strongly affect loan performance of commercial banks.

#### **5.4 Recommendations of the study**

On the basis of above study conclusions, the following recommendations were made after analyzing the findings the study.

##### **5.4.1 Risk Identification**

The banks should ensure that they have competent personnel who appraise the borrowers, in addition ensure that they are credit worthy. The staff should be well oriented with the bank standards and policies to ensure that they understand them and comply. The credit portfolio can also be used to assess staff performance as this would enhance further control to ensure that staff do not only aim to meet targets but ensure that loans are disbursed to the credit worthy customers. Risk awareness campaigns should be continuously done so that the management and all the staff are aware of the possible risk on appraisal and monitoring of the credit facilities. The credit committee meetings should be regular with a clear agenda to ensure that over 95% of the loans are performing. Daily performance reports should be closely scrutinized so that risk of default is identified at an early stage and control measures taken. Securities attached to the loans should be charged and of a higher value than the amount disbursed to the borrowers.



### **5.4.2 Credit Risk Assessment**

The study recommends to the commercial banks in Kenya to bench-mark with best performing banks in terms of credit risk identification. Credit risk identification factors such as credit risk registers should be updated on a continuous basis so that the management and the staff are able to focus on the risks in the credit management. The management and the credit committee should be independent when assessing the loan applications and ensure that all the applicants meet the required standards as set in the policy.

### **5.4.3 Credit Risk Monitoring**

The management should also focus on the credit reports continuously so that before a loan becomes substandard the necessary measures are taken to prevent loss. This agrees with a study by Kibor (2015), which recommended that credit standards for commercial banks should be customized to the credit worthiness of prospective borrowers. The foregoing is likely to enhance their financial performance by mitigating financial losses that would otherwise emanate from credit risks.

## **5.5 Limitations and Area for further research**

The study was conducted among the licensed 43 commercial banks in Kenya. Thus, the small and medium size banks and other financial institutions operating in Kenya were not included in the study. In addition, the banks have mixed activities from commercial banking services, several differentiated products and services and investment banking. The risks facing commercial banks and investment banks are not usually identical. For instance, credit risk is more important to commercial banks while market risk and credit risk are important to investment banks. The difference between concentrations of risks also vary greatly.

Further research and studies should be conducted to examine the influence of information technology on the credit management among financial institutions in Kenya, there is also need to research on the influence of the staff training on the performance of the loans in the commercial banks in Kenya and further studies on the influence of leadership on the performance of the loans in the commercial banks in Kenya.

Moreover a study should also be carried out to establish the relationship between the risk management strategies on unsecured loans in both the banking and non – banking financial institutions in Kenya. This will help the policy makers in coming up with an air tight Risk management framework to guide the monetary sector in improving the performance of unsecured loans.

## REFERENCES

- Al-Tamimi, H. (2002) “Risk Management Practices: *An Empirical Analysis of the UAE Commercial Banks*”. Finance India, Vol. XVI, pp. 1045-1057.
- Al-Tamimi, H. and Al-Mazrooei M., (2007), Banks’ Risk Management: *A Comparison Study of UAE National and Foreign Banks*, The Journal of Risk Finance, Vol. 8 No.4, pp. 394-409.
- Babbie, E. R. (2010) “The Practice of Social Research” Cengage Learning
- Basel II (2006) “*International Convergence of Capital Measurement and Capital Standards, A revised Framework Comprehensive Version*”, July 2006.
- Bryman. A, Bell. E, Mills. A. J and Yue. A.R, (2011) Business Research Methods. First Canadian Edition, Toronto, Oxford University Press.
- Carmines, E.G and Zeller, R. A (2014), Reliability and Validity Assessment, Newbury Park sage Publications
- Cooper, D., & Schindler, P. (2008). Business research methods (10th ed.). New York, McGraw-Hill/Irwin.
- Derban, W.K., Binner, J.M., & Mullineux, A. (2012). “*Loan Repayment Performance in Community Development Finance Institutions in the UK*”: Small Business Economics, 25, 319-332.

- Fathi, S., Zarei, F. and Esfahani, S. S. (2012). Studying the Role of Financial Risk Management On Return on Equity. *International Journal of Business & Management*,
- Gaitho, Mary Wangui (2010) “A survey of credit risk management practices by SACCOs in Nairobi”, unpublished MBA project, University of Nairobi.
- Guru, B.K., Staunton, J., Balashanmugam, B., (1999). Determinants of commercial bank Profitability in Malaysia. In: *Paper presented at the Proceedings of the 12<sup>th</sup> Annual Australian Finance and Banking Conference*, Sydney, Australia, December 16–17, 1999.
- Kolapo, T. F., Ayeni, R. K. & Oke, M. O (2012). Credit risk and commercial banks’ Performance in Nigeria: A panel model approach. *Australian Journal of Business and Management Research*, 2 (2), 31 – 38.
- Kosmidou, K., Tanna, S., Pasiouras, F., (2005). Determinants of profitability of UK domestic Banks: panel evidence from the period 1995–2002. In: *Proceedings of the 37<sup>th</sup> Annual Conference of the Money Macro and Finance (MMF) Research Group*,
- Kwambai, K. D., W and Era, M. (2013). Effects of credit information sharing on nonperforming Loans: The case of Kenya commercial banks. *European Scientific Journal*, 9 (13)
- Medina Cas, S and I Peresa (2016): “What makes a good ‘bad bank’? The Irish, Spanish and German experience“, *Discussion Paper*, no 036, European Commission.

Ministry of Economy and Finance, Italy (2016): “Scheme introduced to facilitate the disposal of Banks’ bad loans“, Press Release, no 20, Rome.

Mohaddes, K, M Raissi and A Weber (2017): “Can Italy grow out of its NPL overhang? A panel Threshold Analysis“, *IMF Working Paper*, WP/17/66, Washington DC.

Moti et al., (2012), Effectiveness of Credit Management System on Loan Performance: “*Empirical Evidence from Micro Finance Sector in Kenya*”, JKUAT

Mugenda, O. Mugenda (2009) *Research Methods: Quantitative and Qualitative Approaches*. Nairobi

Mwirigi, P.K. (2006) “*An Assessment of credit risk management techniques adopted by micro-Finance institutions in Kenya*”, unpublished MBA project, University of Nairobi.

Ongore, V. O. and Kusa, G. B. (2013). Determinants of Financial Performance of Commercial Banks in Kenya. *International Journal of Economics & Financial Issues* (IJEFI), 3 (1).

Powell A., Mylenko N., Miller M. and Majnoni G. (November 2004) “*Improving Credit Information, Bank Regulation and Supervision: On the Role and Design of Public Credit Registries*,” World Bank Policy Research Working Paper 3443

Psillaki, I. E. Tsolas and D. Margaritis, (2010) “Evaluation of Credit Risk Based on Firm Performance,” *European Journal of Operational Research*.

Saunders and Cornett (2007) "*Financial Markets and Institutions: An Introduction to the Risk Management Approach*", McGraw Hill Pub. 2007.

Saunders and Cornett (2005) "*Financial Institution Management*", McGraw Hill Pub.2005.

Wilson, J. (2010) "Essentials of Business Research: A Guide to Doing Your Research Project"  
SAGE Publications.

## **APPENDICES**

### **Appendix I: Questionnaire**

#### **Introduction Letter**

#### **RE: REQUEST TO COLLECT DATA**

I am student at Kenyatta University pursuing a degree of Masters in Business Administration. Pursuant to the pre-requisite course work, I am currently undertaking a research project on Credit Risk Management and the level of non-performing loans in commercial banks in Kenya.

I kindly request you to participate in this study by assisting in filling the questionnaires and providing with any other relevant information. The information collected will be treated with utmost confidentiality and is for academic purpose only. The findings and recommendations of the research will be availed to you upon completion of the research.

Thank you in advance.

Yours faithfully,

Nyangori Wilfred Makori

## Research Questionnaire

Dear respondent this questionnaire aims to collect information on “*Credit risk management and the level of non-performing loans in commercial banks in Kenya*”. The information given is for academic purpose only and would be treated as very confidential. Please fill the questions by ticking on the boxes or provide your opinion according to the question.

Please tick your options where applicable.

### 1. Age Bracket:

- |                |                          |               |                          |
|----------------|--------------------------|---------------|--------------------------|
| Up to 25 years | <input type="checkbox"/> | 26 –30 years  | <input type="checkbox"/> |
| 31– 35 years   | <input type="checkbox"/> | 36 – 40 years | <input type="checkbox"/> |
| 41– 45 years   | <input type="checkbox"/> | Over 50 years | <input type="checkbox"/> |

### 2. Highest education level

- |                 |                          |                   |                          |
|-----------------|--------------------------|-------------------|--------------------------|
| Secondary level | <input type="checkbox"/> | Certificate level | <input type="checkbox"/> |
| Diploma level   | <input type="checkbox"/> | Degree level      | <input type="checkbox"/> |
| Masters level   | <input type="checkbox"/> | PhD level         | <input type="checkbox"/> |

### 3. Number of years working in the bank?

- |                   |                          |                |                          |
|-------------------|--------------------------|----------------|--------------------------|
| Less than 5 years | <input type="checkbox"/> | 6-10 years     | <input type="checkbox"/> |
| 11-15 years       | <input type="checkbox"/> | Above 16 years | <input type="checkbox"/> |

## Credit Policy

### 4. Does your bank have a formal written credit policy manual? And how often is it Reviewed?

Yes  No

If yes explain how often it is reviewed.

- |                  |                          |           |                          |
|------------------|--------------------------|-----------|--------------------------|
| Monthly          | <input type="checkbox"/> | Quarterly | <input type="checkbox"/> |
| Semi –Annually   | <input type="checkbox"/> | Annually  | <input type="checkbox"/> |
| Others (specify) | <input type="checkbox"/> | -----     |                          |

## Credit Risk Management practices

### Risk Identification



5. To what extent does risk identification affect the level of nonperforming loans in your bank?

Not at all [ ]

Little extent [ ]

Moderate extent [ ]

Great extent [ ]

Very great extent [ ]

6. To what extent do the following facets of risk identification affect the level of nonperforming loans in your bank? Use a scale of 1-5 where 1= not at all and 5 = very great extent

	Not at all	Little extent	Moderate extent	Great extent	Very great extent
Inspection by branch managers					
Financial statement analysis					
Establishing standards					
Credit scoring					
Risk rating and collateral					
Credit worthiness analysis					

7. What is your level of agreement with the following statements that relate to the effect of employee welfare programs on your work? Use a scale of 1-5 where 1= strongly disagree and 5= strongly agree

	1	2	3	4	5
The credit manager establish the crucial observation areas inside and outside the bank					
The department and the employees are assigned with responsibilities to identify specific risks					
Risk identification is positively significant to influence risk management process					

**Risk Assessment, analysis and appraisal**

8. To what extent does risk assessment, analysis and appraisal affect the level of nonperforming loans in your bank?

- Not at all [ ]
- Little extent [ ]
- Moderate extent [ ]
- Great extent [ ]
- Very great extent [ ]

9. To what extent do the following aspects of risk analysis and appraisal affect the performance of the bank? Use a scale of 1-5 where 1= not at all and 5= very great extent

	1	2	3	4	5
Measurement					
Classification					
Risk evaluation					
Risk estimation					
Determine risk reduction measures					

10. To what extent do you agree with the following statement about risk analysis and assessment in credit risk management? Rate using a scale of 1 to 5 where 1 is strongly disagree, and 5 is strongly agree.

<b>Risk analysis and assessment in credit risk management</b>	1	2	3	4	5
Risk analysis and assessment comprises identification of the outcomes					
Risk analysis and assessment comprises estimation the magnitude of the consequences					
Risk analysis and assessment comprises the probability of those outcomes					
Others, please specify					

### **Risk Monitoring**

11. What is the extent to which risk monitoring affect the performance of the bank?

- Not at all [ ]
- Little extent [ ]

Moderate extent [ ]

Great extent [ ]

Very great extent [ ]

12. To what extent do the following aspects of credit risk monitoring affect the performance of the bank?

	<b>Not at all</b>	<b>Little extent</b>	<b>Moderate extent</b>	<b>Great extent</b>	<b>Very great extent</b>
Controls in place					
Responses in place					
Reporting and review					
Internal controls					

13. To what extent do the following risk monitoring practices affect the performance of the bank? Use a scale of 1-5 where 1= strongly disagree and 5= strongly agree

	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
Frequent contact with borrowers, creating an environment that the bank can be seen as a solver of problems and trusted adviser					
Developing the culture of being supportive to borrowers whenever they are recognized to be in difficulties and are striving to deal with the situation					
Monitoring the flow of borrower's business through the bank's account					
Regular review of the borrower's reports as well as onsite visit					
Updating borrowers credit files					
Periodically reviewing the borrowers rating assigned at the time the credit was granted					

14. To what extent do the following features of credit-approval affect the performance of the bank?

	<b>Not at all</b>	<b>Little extent</b>	<b>Moderate extent</b>	<b>Great extent</b>	<b>Very great extent</b>
Clear established process					
Credit approval guidelines					
Monitoring of borrowers					

15. What is your level of agreement with the following statements that relate to the effect of credit approval on the performance of the bank? Use a scale of 1-5 where 1= strongly disagree and 5= strongly agree.

	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
Clear established process for approving new credits and extending the existing credits has been observed to be very important while managing credit risks					
Monitoring of borrowers is very important as current and potential exposures change with both the passage of time and movements in the underlying variables					
The bank must have in place written guidelines on credit approval process					
Prudent credit practice requires that officers empowered with the credit approval authority should not have the customer relationship responsibility					
Some approval authorities will be reserved for the credit committee in view of the size and complexity of the credit transaction					
Credits to related parties should be closely analyzed and monitored so that no senior individual in the institution is able to override the established credit granting process					

**Thank you for your response**

## **Appendix II: Directory of commercial banks in Kenya**

1. African Banking Corporation Ltd.
2. Bank of Africa Kenya Ltd.
3. Bank of Baroda (K) Ltd.
4. Bank of India
5. Barclays Bank of Kenya Ltd.
6. CFC Stanbic Bank Ltd.
7. Charterhouse Bank Ltd – under Statutory Management
8. Chase Bank (K) Ltd. – Under Statutory Management
9. Citibank N.A Kenya
10. Commercial Bank of Africa Ltd.
11. Consolidated Bank of Kenya Ltd.
12. Co-operative Bank of Kenya Ltd.
13. Credit Bank Ltd.
14. Development Bank of Kenya Ltd.
15. Diamond Trust Bank Kenya Ltd.
16. Dubai Bank Kenya Ltd – Under statutory Management
17. Eco bank Kenya Ltd
18. Equatorial Commercial Bank Ltd.
19. Equity Bank Ltd.
20. Family Bank Limited
21. Fidelity Commercial Bank Ltd
22. Fina Bank Ltd

23. First community Bank Limited
24. Giro Commercial Bank Ltd.
25. Guardian Bank Ltd
26. Gulf African Bank Limited
27. Habib Bank A.G Zurich
28. Habib Bank Ltd.
29. Imperial Bank Ltd –under Statutory Management
30. I & M Bank Ltd
31. Jamii Bora Bank Limited.
32. Kenya Commercial Bank Ltd
33. K-Rep Bank Ltd
34. Middle East Bank (K) Ltd
35. National Bank of Kenya Ltd
36. NIC Bank Ltd
37. Oriental Commercial Bank Ltd
38. Paramount Universal Bank Ltd
39. Prime Bank Ltd
40. Standard Chartered Bank Kenya Ltd
41. Trans-National Bank Ltd
42. UBA Kenya Bank Limited
43. Victoria Commercial Bank Ltd

Source: Central Bank of Kenya Website, 2017