

**THE RELATIONSHIP BETWEEN CREDIT RISK MANAGEMENT
PRACTICES AND THE LEVEL OF NON-PERFORMING LOANS FOR
COMMERCIAL BANKS IN KENYA**

BY

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DECLARATION

This research project is my original work and has not been submitted for a degree award in any other University

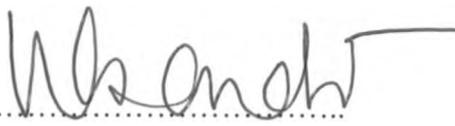
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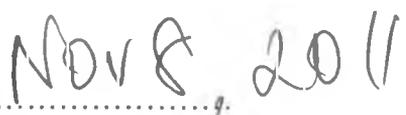
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DEDICATION

To Almighty God, your grace is sufficient. May your Holy Spirit be my light, strength and guide. Thank you for providing me with knowledge that has helped to make this project a reality.

To Salome, my loving wife, thank you for your tireless support and encouragement during my entire MBA course.

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ABSTRACT

Commitment to credit risk management is an essential component of a comprehensive technique to risk management and critical to the long-term success to all banking institutions. The rising non-performing loans and compressed profit margins, combined with slow economic growth over the past years have created a much more challenging environment for banks. The objective of this study was therefore to find out the relationship between credit risk management practices and the level of non-performing loans for commercial banks in Kenya.

Causal research design was used for the study. The population of the study consisted of all the 44 commercial banks in Kenya. The study involved the collection of primary and analysis of secondary data for the purpose of meeting its objective. Self-administered questionnaires were used to collect the data. The study intended to establish the relationship between credit risk management and the level of non-performing loans and therefore linear regression analysis model was used to determine the nature of this relationship.

The study revealed that commercial banks review their credit policy yearly and half yearly, and that employees are made aware of credit policies through credit manual, regular training, regular meeting and supervision. The study further revealed that methods mostly used in credit risk assessment among commercial banks in Kenya are; risk adjusted return on capital and linear probability model. The study established that there is a negative relationship between the level of non-performing loans and credit risk management practices in banks with a correlation coefficient of 0.918, implying that the level of non-performing loans is inversely affected by credit risk management practices. The study recommended that there is need for commercial banks to adopt various credit risk management's practices in order to reduce their level of non-performing loans. It further recommended for sustainable and reliable credit database for immediate and quicker use when needed by banks.

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CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Credit risk management is the measurement of loss potentials and their impact on banks and financial institutions. It involves thorough risk analysis, assessment and evaluation of prospective customers before granting them credit. The risk management process allows banks to evaluate and track risk on an industry, individual, or portfolio basis. The effective management of credit risk is critical component of comprehensive approach to risk management and essential to the long-term success of any banking organization (Central Bank of Kenya Risk Management Survey, 2004).

Credit management can rightly be said to start when the client walks into the bank's office for loan application. If during the discussion with the client, the credit manager finally agrees to grant credit or lend money, the lender has embarked on a process called credit risk management and the nature of that process will directly be influenced by the quality of that decision (Clarke and Survirvarma, 1999). Credit risk management is normally enhanced by setting proper credit standards that should be met by borrowers before a facility is granted as this has a direct effect on the level of non-performing loans (Mc menamin, 1999).

Non-performing loans are loans that are 90 days or more past due or are not accruing interest. They are also referred to as those facilities with arrears which are regarded as uncollectible and where security is worthless or has been disposed off and the proceeds have not covered the total debt (Saunders, 2008). These loans arise from persistent default in scheduled repayments by customers to a bank on a facility granted. The rising non-performing loans and compressed profit margins, combined with slow economic growth over the past years have created a much more challenging environment for banks. This has caused management teams to focus on nurturing high performing units, cutting costs, and adopt ways of eliminating these non-performing

loans such as efficient and effective credit risk management strategies (Central Bank Annual Supervision Report, 2009).

In Kenya, a component of reforms has been the restructuring of financial institutions. According to Central Bank economic review, the country experienced a bank crisis in 1986 when a number of specified non-bank financial institutions and small commercial banks collapsed. Many commercial banks also accumulated a lot of non-performing loans. To avoid a repeat, eight financial institutions were taken over and merged into a state bank in 1989 – Consolidated Bank of Kenya Ltd. non-performing loans has also been witnessed in banking sector by some financial institutions such as National Bank of Kenya Limited and EABS Bank Limited which reported provisions for losses of over 50 per cent of total loans advanced in 2007 (Central Bank Annual Supervision Report, 2007). The increased build up of non-performing loans in commercial banks of Kenya from 2007 clearly demonstrates that the credit risk management system has not been effective. To improve the performance of financial sector, the Central Bank of Kenya has strengthened the supervision and the inspection of financial institutions and introduced a Depository Protection Fund which guarantees deposits not less than Ksh100, 000. The initial capital for setting up financial institutions has been increased both for commercial banks and specified non-financial bank institutions.

Worldwide the Bank for International Settlement (BIS) provides guidelines to commercial banks on the effective operation of banking institutions. It's sub-committee, the Basle committee on banking supervision, encourages banking supervisors globally to promote sound practices for managing risk. The committee recognizes that the major cause of banking problems continues to be directly related to lax credit standards for borrowers and counter parties, poor portfolio risk management, or lack of attention to changes in economic or other circumstances that can lead to deterioration in the credit standing of a bank's counter parties (Saunders, 2008).

Several theories such as "Business Cycle Theory" and "Interest Rates Theory" have been advanced by different scholars that relate to financial crisis as a facilitator of credit risk in commercial banks. Business Cycle Theory proposes that, a crisis is said

to occur at the peak of the expansion of the business cycle phase of the business with deterioration of the financial position of several firms. A reduced outlook future profitability leads to creditors reevaluating the amount of credit to be issued, they refuse to give additional credit and seek liquidation of outstanding loans. The inability of firms to refinance debt forces them to liquidate assets and induces a multiplicative contraction in business profit leading to distress, assets markets crash and financial crisis ensues (Kindleberger and Aliber, 2005). This theory is in consistent with what facilitated to an increase of non-performing loans in Kenya in 1980s. According to Interest Rates Theory, sky rocketing rates lead to; a decline in asset prices, increased bankruptcy and insolvency leading to substantial drops in the stock of money in circulation, a breakdown in allocation mechanism of financial capital leading to financial crisis (Kindleberger and Aliber, 2005). High interest rates have therefore been a contributing factor to high default rate hence bad and doubtful debts among commercial banks.

The financial sector in Kenya is still in the development phase and many small commercial banks have not been able to establish a firm risk management framework, particularly credit risk management, in order to prevent unfavorable events. This is dangerous when banks' customer services are still in their infancy and banks' revenue depends heavily on lending activities (Infotv, 2010). In addition, the control work from the central bank, though playing a growing role, has not been protective enough and access to credit information and history is very limited. To achieve dramatic improvement in financial sector, there is need for fundamental re-thinking, management and interventional strategies geared towards elimination of Non-performing loans.

Though most banks' pride is clear and sound lending policies, the reality is that they have been quite reckless in lending activities (Market Intelligence, 2001). Banks can compete against their rivalries by understanding and embracing sound risk management policies. The article Prudential Supervision, Banking and Economic Progress (Ardrey et al., 2009), points out several facts of the banks' bad credit risk management framework, such as: - limited experience in modern banking techniques, products, and risk management models to predict and reduce default rate on loan

advances as well as lack of accurate, reliable and complete data for decision making in pertaining who to lend or not.

Credit risk has always been the biggest threat to any bank's performance and the principal cause of bank failures (Greuning and Bratanovic, 2009). There has been a continuous build up of non-performing loans burden causing stress in a number of banks despite control measures already undertaken. The researcher is far more worried about the practices in credit risk management in commercial banks which are always under competitive and profit pressure in an unfair banking market. Sales and profit targets make banks at times ignore what should be carefully done and this poses an extreme risk to their overall performance. Sound credit risk management framework is therefore indispensable, which is the core idea of this study as the level of non-performing loans are directly related to the way credit risk is managed.

1.2 Statement of the Problem

Commercial banks are increasingly facing credit risk in their various financial instruments, a fact which is detrimental to their long term growth. Although several sources of risk exist throughout the activities of banks, loans are the largest and most obvious source of credit risk. Lawson (1995) defines credit risk as losses from the refusal or inability of credit customers to pay what is owed in full and in time. This persistent default on loans by customers has contributed to the provision for bad debts and high level of non-performing loans in many commercial banks in Kenya (Central Bank Supervision Annual Report, 2008).

The dismal performance on collection of receivables and continuing build up of non-performing loans burden clearly demonstrates that the banks' credit management system has not been effective in mitigating credit risks. Further, the deterioration in commercial credit quality accompanied by high provisions for loan losses, malpractices of bank directors and credit concentration, suggests that commercial banks need to pursue asset-liability structures and the need for more intensive loan servicing and strong internal credit risk control (Central Bank Annual Supervision Report, 2009).

Non-performing loans have been a hindrance to economic stability in Kenya. Ongweso (2006) revealed that the weaknesses in the banking sector in Kenya include high level of Non-performing loans arising from political lending from public sector banks, insider or connected lending and pervasive legal problems in enforcing creditor rights, under-capitalization which leaves banks vulnerable to negative shocks, low or negative profitability and high cost, weak banking supervision and fragmented legal framework for insolvency and creditor rights. All these factors demonstrate poor credit risk management in commercial banks.

Weak credit risk management is the primary cause of many business failures (Mc Menomin, 1999). Hempel et al. (1994) carried out a study of national banks that failed in the mid 1980s in the USA and found out that the consistent element in the failures was inadequacy of bank's management systems for controlling loan quality. Mutwiri (2003) carried out a study on the use of 6 C's credit risk appraisal model and its relationship with the level of Non-performing loans of commercial banks in Kenya and found out that banks are generally expected to manage their credit risk through proper customer and credit risk analysis with the help of the 6 Cs so as to avoid unnecessary high level of bad debts. The 6 Cs are the capacity, capital, character, collateral, conditions and control. Abedi (2002), on his study to highway to success on credit risk management of financial institutions, found out that character and capacity to pay the loan are the most important criteria in risk assessment of non-performing loans for commercial banks and other financial institutions in America.

Since 2008, commercial banks in Kenya have reported increased loans default levels as shown by the gross non-performing loans and loan impairment provisions for 2008 and first quarter of 2009. The stocks of non-performing loans expanded by 7.8 per cent to sh. 64.9 billion by March 31, 2009 from Sh. 58.3 billion the previous year, according to the April 2009 Central Bank Monthly Review. As a result, asset quality, which is measured by the proportion of net non-performing loans to gross loans deteriorated to 3.7 per cent from 3.6 per cent during the same period. The Central Bank clearly stated that loss provision rose by 14 per cent in the year to March 2009 compared to similar period in 2008.

The licensing of credit reference services has probably had an effect on the Kenyan financial system. It would be worth researching to know what effect these bureaus and other credit services have to bank lending and to the risks involved as loan loss provisions and non-performing loans have increased at an alarming rate over the years. The researcher has therefore raised concern on the credit risk management practices applied by commercial banks. The reality is that if the trend continues, many financial institutions will collapse. This has raised a question on, how has credit risk management been done by commercial banks in Kenya over the last years and how has it been related to the level of non-performing loans?

1.3 Objectives of the Study

The objective of this study was to find out the relationship between credit risk management practices and the level of non-performing loans for commercial banks in Kenya.

1.4 Significance of the Study

The findings of the study will be important to the following groups:-

Top management team; It will provide top management team of financial institutions guidelines of making vital decisions regarding credit risk management strategies as areas requiring special attention in credit control and monitoring will be highlighted.

Regulator and policy makers; It will provide the Central Bank, which is the main regulator; overall observations of the credit risk management strategies implemented and provide support to financial institutions in their effort of managing credit risk. It will also form a basis of strengthening regulatory framework to commercial banks and establish foundation of long-term growth as measures for credit risk management will be provided.

Academicians and scholars; It will be of a significant contribution in the area of finance to future researchers as well as fill the existing gaps in terms of literature in this field and part of scholarly work for private and public universities. It will provide knowledge to the academic community regarding analysis of credit risk management practices and its relationship to the level of non-performing loans.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This section plays a role as the foundation that supports the main theories of credit risk management. It will provide some knowledge of banking risks in general so that we understand the position of credit risk among the banking risks and hence, see the significance of good credit risk management in relation to non-performing loans. Some details of risk management and especially banking credit risk management will be focused and the evaluation criteria for an effective credit risk management framework will be made.

2.2 History of Credit

Origins of the word 'credit' can be found in the Latin word, 'credere' meaning to trust. The fundamental nature of credit assumes an element of trust between the creditor and debtor. Development of the modern industrial, commerce and agricultural economies would not have been possible without the use of credit (Edwards, 1997). Reference to the use the credit can be found in the Bible over 3000 years ago in the civilizations of Assyria, Babylon and Egypt. Medieval Europe has a lot of evidence pointing at the development of complex systems of credit trading which started as early as the 12th Century. The Western Europe forged great business ties of trade such as the champagne fares. During these fares, merchants traveling to different towns in various territories came up with currency exchanges and inter-linked successful credit arrangements for the business. The current global trade and commerce consequently grew out of these initiatives.

Modern firms must sell on credit in this competing environment to enable sales turnover. Commercial banks have therefore served as a ground for promoting inter-sector linkage in terms of financial support through credit facilities. The implication is that sound credit risk management is essential for determination of banks performance. While there are many bank performance criteria, the commonest and the one with sound theoretical foundation are solvency and profitability both of which are derived from Microeconomic theory of the banking firm (Stiglitz and Weiss,

1981). These two aspects can be used in assessing the bank performance in short run (in which case the focus is on profitability and liquidity) and in the long run (in which the focus is on sustainable profitability and solvency). According to the theory, the general fundamental banking firm problem is to keep realizable value of assets equal to its liabilities to depositors. The short term banking firm problem is being able to meet all current demands as they are presented (liquidity) whereas the long- term problem is that of solvency (referred to as safety at the micro-level). At the micro-level the quality of liquidity refers to the ability to exchange a particular asset promptly for cash without loss; or borrow upon its full book value whereas safety relates to the realization of all anticipated payments both interest and principal. The task of solving the fundamental banking problem is complicated by the fact that the features which enable particular assets to satisfy banking needs (Liquidity and profitability or its long run variant- solvency and sustainable profitability) may be more or less in conflict with one another. In acquiring earning assets in the short-run, a banker must constantly consider the criteria of liquidity (short-run solvency) and profitability. However, profitability-liquidity ordinarily varies inversely with liquidity.

High provisions for bad and doubtful debts (also referred to as loan loss provisions) on short-run banks performance (profitability and liquidity) have a negative effect on banks' performance (Central Bank Annual Supervision Report, 2009). The huge specific and general loan loss provisions, which according to the accounting standards are all charged to the profit and loss for the year, have made deep inroads on Commercial banks' profitability. The poor financial performance has also been compounded by the reckless lending policies, high and volatile interest rates charged by commercial banks and the low yields on Treasury Bills (Stiglitz and Weiss, 1981). Similarly, the loan loss provisions adversely affect a banks' liquidity position as it affects their ability to meet obligations that are currently falling due. The bad debt situation facing the banking sector therefore has been partly blamed on poor credit risk management on potential borrowers.

Commercial banks derive income primarily from lending and securities portfolio; hence loans constitute the largest portion of banks' asset that requires good management. If loan losses exceed bank's compulsory and voluntary reserves as well as its equity cushion, then the bank will become insolvent. The maintenance of asset

quality is fundamental to sound operation of commercial banks. Commercial banks need to establish policies and procedures which ensure well documented credit granting process, strong portfolio management, effective credit review and loan classification procedures.

2.3 Risk Management in Banking Firms

The banking business, compared to other types of business, is substantially exposed to risks, especially in this ever-changing competitive environment. Banks no longer simply receive deposits and make loans. Instead, they are operating in a rapidly innovative industry with a lot of profit pressure that urges them to create more and more value-added services to offer to and better satisfy the customers. Risks are now much more complex since one single activity can involve several risks.

Banks form a crucial part of the financial market and any moves by banks can have immediate impacts on the country's or even the global financial healthiness. The world has been observing a lot of crises stemmed from banking institutions then spread to the whole financial sector, typically of which is the 2008 economic downturn. The issue of a safe and sound banking sector and the importance of a feasible credit risk management framework in banks are now more alarming than ever.

Credit risk management in a bank therefore involves its practices to minimize the risk exposure of bad debts and their occurrence. For a commercial bank, lending activities form a critical part of its products and services. A study conducted by Greuning and Bratanovic (2009), on banking risk analysis indicated that more than 70 per cent of a bank's balance sheet generally relates to this aspect of risk management as loans are the largest and most obvious source of credit risk. Credit risk is therefore one major risk that needs to be efficiently managed and investigated. Banks should involve screening and monitoring loan applicants to ensure that managers fund the most creditworthy borrowers.

Banking risk management in the modern business world takes place in such a great scale and unexpected manner. On the one hand, the creation and development of a number of risk instruments allow higher risk diversification, better prediction and

more effective solutions to the potential dangers in the global financial market. In spite of the risky world they operate in, banks are truly risk machines in the economies. They take risks, they transform them, and they embed them in banking products and services. The first and foremost aim is to increase revenues for the bank. This relationship between risk and expected return is built on two economic theories; the portfolio theory and the Capital market theory (Markowitz, 1952).

Credit risk management in a bank involves a set of policies to manage and monitor transactions and activities which can adversely impact banking operations, and enact proactive measures to identify, control and minimize risks (Ardrey et al., 2009). The policies are mostly reviewed on an annual basis except for sudden happenings that urge a quick response. The policies in practice usually establish standard processes, models, practices, management tools, evaluation criteria and review time intervals which are to be implemented in the bank's entire system. Abedi (2002) conducted a study on highway to success on credit management and proposes several models used by banks in their attempt to improve credit management. These models include; credit scoring models, linear probability models, linear discriminant models, risk adjusted return on capital, option pricing theory models, Neural networks and 6 C's model (Saunders and Cornett, 2008) among others.

Credit scoring models are some of the techniques used to determine the credit worthiness of borrowers. Credit scoring refers to the mathematical or statistical process of converting data about prospective applicant characteristics on delinquencies and defaults (Mester, 1997). Credit scoring model produces a score card that enables one to analyze historical data on the performance of previously made loans to determine which borrowers' characteristics are useful in predicting whether the loan performed well. A well designed model should give a high percentage of high scores to borrowers whose loans will perform well, and a high percentage of low scores of borrowers whose loans won't perform well. Linear probability models uses past data such as accounting ratios as inputs into a model to explain repayment experience on old loans. The relative importance of the factors used in explaining past repayment performance are used to forecast probabilities on new loans. Linear discriminant models divide borrowers into low or high default risk classes, contingent on their observed characteristics. It provides a score that separate

potentially good loans from weak loans. Risk adjusted return on capital models measures how much risk the bank is taking, and helps to determine if returns are providing adequate compensation for risk and assesses if the bank is providing shareholders with value added through its part it participated in business.

Option pricing theory models starts with the observation that a borrower's limited liability is comparable to a put option written on the borrower's assets with the strike price equal to the value of the debt outstanding. If in some future period, the value of the borrower's assets falls below the value of its outstanding debt, the borrower may default. This model infers the probability of a firm will default from an estimate of the firm's asset price volatility, which is usually based on the observed volatility of the firm's equity prices.

Neural networks are artificial intelligence algorithms that allow some learning through experience to discern the relationship between borrower characteristics and the probability of default and determine which characteristics are not important in predicting default. This method is more flexible than the standard statistical techniques since no assumptions have to be made about the functional form of the relationship between characteristics and default probability or about distribution of the variables or errors of the model and correlation among the characteristics.

6 C's model is used to assess credit risk and worthiness of customers. This model covers all areas that affect credit risk assessment and evaluation of customers and their characteristics. The 6 C's refers to; character, capacity, collateral, conditions, capital and control (Saunders and Cornett, 2008). Character refers to the probability that the loan applicant will try to honor the loan obligations. Capacity is a subjective judgment regarding applicant's ability to pay the bank according to the terms of the loan. Collateral is represented by assets that the loan applicant offers as security backing the loan. Condition refers to any general economic trends or special developments in certain geographic regions or sectors of the economy that might affect the applicant's ability to meet the loan obligations. Capital is measured by the general financial condition of the applicant as indicated by an analysis of the applicant's financial statements and his or her leverage. Control refers to the internal controls to which an applicant is able to meet laid down process of loan repayments.

Although banks still play the most vital part in protecting themselves from unfavourable occurrences, bank regulators have their important responsibilities. Banking in most countries falls under extremely strict supervision despite the increasing trend of liberalization and deregulation. Two main reasons are banks collect deposits from ordinary savers and they play a key role in the payment and credit system but in case that bank fails to meet their obligations, the governments will be the rescuers (Crouhy, et al. 2006).

Internationally, the most well-known regulation is the Basel Accords issued by the Basel Committee on Bank Supervision. Basel II (2004), which is the successor of Basel I (1988), is currently being in use. The overall aim of Basel II is adequate capitalization of banks and best practice risk management to reinforce the banking system's stability through "three pillars": minimum capital requirements, supervisory review and market discipline (Crouhy, et al. 2006). Many countries have adhered to their operations with Basel II. However, most developing nations, including Kenya, are still on the way to adopt it. In those cases, central banks have a significant role in issuing nationwide control policies, guiding banks to implement them and following up banks' performance.

Implementation of the credit risk management strategies should be applied in conjunction with sound practices related to the assessment of asset quality, the adequacy of provisions and reserves, and the disclosure of credit risk. Basel II provide guidelines such as full disclosure of credit history, independent credit analysis, legal consideration, sharing credit information between agents, and prompt response to problems. Based on a study by Wu and Huang (2007) on risk management and monitoring practices of local and foreign banks in Taiwan, top management support is important for risk management and mechanism to be successful.

2.4 Credit Risk

Most financial institutions find that loans are the largest and most obvious source of credit risk; however, other sources of credit risk exist throughout the activities of a bank (Saunders, 2002). Financial institutions are increasingly facing credit risk in various financial instruments other than loans, including acceptances, trade financing,

foreign exchange transactions, inter-bank transactions, financial futures, options, bonds, equities, swaps and in the extension of commitments and guarantees.

Since exposure to credit risk continues to be the leading source of problems in banks world-wide, banks and their regulators should be able to draw useful lessons from past experiences. Banks should now have a keen awareness of the need to identify, measure, monitor and control credit risk as well as to determine that they hold adequate capital against these risks. It is also vital they are adequately compensated for the risks incurred in the running of their businesses.

In recent years, credit risk management at banks has come under increasing scrutiny. Banks and bank consultants have attempted to sell sophisticated credit risk management Systems that can account for borrower risk, for example rating, and, perhaps more important, the Risk-reducing benefits of diversification across borrowers in a large portfolio. Regulators have even begun to consider using banks' internal credit models such as historic or back simulation model to devise capital adequacy standards (Saunders, 2008). According to historic or back simulation model, the essential idea is to take the current market portfolio of assets (loans, bonds, equities, among others) and revalue them on the basis of the actual prices (returns) that existed on those assets yesterday, the day before that, and so on.

Why do banks bother? In a Modigliani –Miller world, firms generally should not waste resources managing risks because shareholders can do so more efficiently by holding a well-diversified portfolio. Banks (intermediaries) would not exist in such a world, however. Financial market frictions such as moral hazard and adverse selection problems require banks to invest in private information that makes bank loans illiquid (Diamond, 1984). Because these loans are illiquid and thus costly to trade, and because bank failure itself is costly when their loans incorporate private information, banks have an incentive to avoid failure through a variety of means, including holding a capital buffer of sufficient size, holding enough liquid assets, and engaging in risk management such as loan diversification, proper training of personnel, tracking result, setting standard and rewarding success (Wesley 1993). Froot, et al. (1993) and Froot and Stein (1998) present a rigorous theoretical analysis of how these frictions can affect non- financial firms' investment as well as banks' lending and risk-taking

decisions. According to their model, active risk management can allow banks to hold less capital and to invest more aggressively in risky and illiquid loans.

Loans being the largest and most obvious source of credit, the Basel Committee's capital adequacy guideline aim to encourage global banking supervisors to promote sound practices for managing credit risk through: establishing an appropriate credit risk environment; operating under a sound credit-granting process; maintaining an appropriate credit administration, measurement and monitoring process; and ensuring adequate controls over credit. A comprehensive list of procedures and recommendations by the Basel II Framework can be found in: *Basel II: International Convergence of Capital Measurement and Capital Standards: A Revised Framework*, Bank for International Settlements. The three major pillars include minimum capital requirements, supervisory review process and market discipline.

Due to the importance of credit risk management approaches, Saunders (2002) stressed that Basel II proposal is to encourage banks to upgrade these practices and banks with sufficiently sophisticated risk measurement and management systems have more flexibility to use their own internal systems to determine regulatory capital minimums.

In Africa, the financial sectors are still heavily burdened by public demands for credit, with the central government alone (excluding public enterprises) absorbing more than 30 per cent of domestic credit. The major constraints to successful financial development of financial institutions in Sub-Sahara Africa are therefore inadequate regulation and supervision. The neo-structuralisms argue that a high interest rate policy may be inflationary by increasing the cost of working capital and by reducing real wages, aggregate demand and investment. High interest rates may also worsen the budget deficit by increasing the cost of debt service. They may also increase bank losses and the distress of financial system as clients become unable to service loans, leading to curtailment of bank credit. High interest rate increases the probability of default by borrowers, and the extreme can lead to a situation where borrowing is done to pay interest on previous loans or to stave off bankruptcy, rather than to invest or to finance working capital. High interest rates, as proposed by "Interest Rates Theory"

have therefore been a contributing factor to high default rate hence bad and doubtful debts among commercial banks.

The imperfection information paradigm propagated by Stiglitz (1989, 1993) and Stiglitz and Weiss (1981) argues that liberalizing interest rates would not necessarily eliminate credit rationing –denying loans to some borrowers at prevailing interest rates or restricting loan sizes to below desired levels. Because of information asymmetry between lenders and borrowers (information possessed by the borrowers but not availed to the lenders), higher rates would tend to attract more risky projects, worsen the portfolio of financial institutions and increase the cost of monitoring the loans. Lenders may therefore use interest rates as a mechanism for affecting the quality of loan portfolio rather than clearing the loan market by inducing investment in less risky projects.

High real interest rates may aggravate the problems of adverse selection and moral hazard. They may worsen the financial soundness of banks if they are induced to lend at these high rates to remain profitable, thereby assuming more risk than prudent financial practices would warrant. Adverse selection occurs when borrowers with investment projects that are viable at reasonable risk are discouraged from seeking credit and give way to borrowers with projects with higher returns but involving more risk. The increased risk of default to financial institutions may however offset the gains from the higher interest rates. Moral hazard arises when borrowers increase loan repayment default rates as interest rates increase.

Given asymmetric information between lenders and borrowers, default on loans may persist even with financial liberalization (Nissanke et al., 1995). This is particularly the case in less developed countries where information flows between debtors and lenders are quite limited. There is also little ability to raise collateral by riskier borrowers hence making legal focus as the only available recourse of dealing with defaulters. Dependence on the legal process as a credit control measure is rather a reactive approach to credit management and therefore more effective and pro-active system becomes essential.

The presence of deposit insurance – to reduce the risk of systematic failure and hence stabilize the financial system – has also exacerbated financial problems due to moral hazard on part of financial institutions which select more risky projects with higher returns as deposits are now guaranteed (Villanueva and Mirakhor, 1990).

2.5 Non-Performing Loans and Financial Crisis

In the relationship between borrower and lender, unexpected misfortunes sometimes occurs leading to default in schedule repayments. This default on a persistent basis becomes bad debt to financial institution. These bad debts are referred to as non-performing loans. In the commercial banks' balance sheet, these loans are recorded as assets. Non-performing loans are the challenge experienced by the lenders of loans. This occurs when the clients are not able to service the loans as per the agreed terms. Many a times, this is experienced when poor credit rating is done to gauge the credit worthiness of the clients. In addition, some clients may not reveal their wanting capacities that may dilute their credit worthiness. There has been hue and cry over this crisis all over the world and in certain cases the long and unbarring litigation process has been sort for redress. Such a case was highlighted in the New York Times Newspaper of May 20th 2010 in the Business column where it was reported that a number of significant improper and imprudent practices related to loan originations, operations, accounting and financial reporting processes.

Loans when not being serviced or not performing, the quality of assets of the bank becomes poor (Saunders, 2008). A mismatch in management of major balance sheet items can cause a bank to close down. Loans when they turn out to become bad debts reduce asset base of a bank and affects bank's ability to lend further.

To assess the magnitude of non-performing loans, bad debts are weighted against the total portfolio of all loans and advances that the bank has extended. A high ratio of Non-performing loans to advances is a reflection of imprudent lending practices and poor credit management; hence a low ratio of non-performing loans is desirable.

The inter-bank deposit market is very sensitive to hints of difficulties faced by a bank reflected by the huge loans provisions, sometimes overreacting by rapidly withdrawing funding. This could force the bank to liquidate assets quickly, moving

the market against it, and possibly force the bank into insolvency, even if initially the bank was merely illiquid. This can however, be alleviated to a certain extent for solvent banks, by lender of the last resort Central Bank liquidity support facilities (Saunders, 2008).

2.6 Credit Risk Management Practices

The high level of non-performing loans continues to be an issue of major supervisory concern in Kenya. The level of non-performing loans has been increasing steadily and this has been a big challenge to commercial banks and policy makers (Central Bank Supervision Annual Report 2009). To mitigate the impact of these non-performing loans, commercial banks have adopted the following credit risk management techniques;

2.6.1 Credit Criteria

Credit criteria are factors employed to determine a borrower's creditworthiness or ability to repay debt. These factors include income, amount of existing personal debt, number of accounts from other credit sources, and history. A lender is free to use any credit-related factor in approving or denying a credit application so long as it does not violate the equal credit protections. Swarens (1990) suggested that the most pervasive area of risk is an overly aggressive lending practice. It is a dangerous practice to extend lending term beyond the useful life of the corresponding collateral. Giving out loans to borrowers who are already overloaded with debt or possesses unfavorable credit history can expose banks to unnecessary default and credit risk. To reduce these risks, banks take into consideration some common applicants' particulars such as debt to income ratio, business history and performance record, credit history, and for individual loan applicants their time on the job or length of time at residence.

2.6.2 Credit Culture

Sound and effective credit risk management is enhanced by a well established credit culture which consists of a policy that guides credit ethics, a practice that drives lending and an audit that protects assets and credit mechanism. Mueller (1984, 1990), on a study to risk management and credit culture, stressed that the significance of installing a sound credit culture is vital in order to track banks' lending strategy and objectives. Credit culture must match with and be built upon proven principles and high standards and must also be sufficiently flexible to compensate for change

(Mueller, 1993). Morsman (1985) and Swarens (1990) on their study on managing risks and defending the loan portfolio pointed out that credit culture has emerged as an important determinant of credit quality for all types of lending. Loan officers have to be responsible and professional in order to prevent from being bias when evaluating loan applications. Many commercial banks have enhanced effective credit culture by ensuring that the reward system compensates good ethical practices and penalizes unacceptable and flawed procedures.

2.6.3 Training of Credit Officers

Training and development of credit loan officers is also considered as another important area of credit risk management. Officers should have good knowledge of consumer protection laws and the ability to identify alternative solutions to problems. Swarens (1990) on a study to managing risks in consumer loan portfolio, pointed out that a fully trained loan officer should have superior presentation skills, good knowledge to master the fundamentals of loan administration. Loan officers should also have the ability to identify remedies to a problem to ensure that customer receive the best type of advice and service. A study by Morsman(1985) on defending the loan portfolio, concluded that bank managers must learn from past mistakes and must be equipped with skills and knowledge to master the fundamentals of loan administration. Farrissey (1993) on study to commercial credit training in a community bank suggested that a training program for community banks is vital to avoid the stormy seas of imprudent lending. Training of credit officers by commercial banks has been adopted as one of the most effective ways of mitigating Non-performing loans and their provisions as staff are trained on risk appraisal techniques.

2.6.4 Credit Control

The maintenance of asset quality is fundamental to sound operation of commercial banks. Top management team establishes policies and procedures which ensure well documented credit granting process, strong portfolio management, effective credit review, loan classification procedures and appropriate methodology for dealing with problem exposure (Market Intelligence Banking Survey, 2001).

Sound credit policy would help improve prudential oversight of asset quality, establish a set of minimum standards and to apply a common language and methodology for assessing risk, pricing, documentation, securities, authorization and

ethics for measurement and reporting of non-performing assets, loan classification and provisioning. The credit policy should set out the bank's lending philosophy and specific procedures and means of monitoring the lending policy (Simonson, 1986).

Commercial banks have been on the lookout of early warning signs of loans most likely to be bad debts. Information which leads a lender to suspect that a borrower is in financial difficulty can come from many sources but will usually arise from carrying out monitoring and control procedures (Rouse, 1989). Some of the signs of possible delinquency are:- late payment of principal and interest, unauthorized overdraft excess, significant changes in account turnover, hardcore balances, unpaid cheque (in and out), high gearing ratio, operating losses, abnormal delays in submitting periodic financial statements, unexplained change of borrower's attitude towards the bank among others. The information may be obtained from internal records, through interviews with the borrower, audited accounts and management accounts. Banks enhance credit control through analysis of; borrower's reputation, volatility of earnings, leverage or borrower's capital structure among other factors.

2.6.5 Risk Assessment

Banks gather adequate information about potential customers as a way of assessing the credit risk exposure. The information gathered guide banks in assessing the probability of borrower's default and pricing of the loan accordingly (Saunders, 2008). Much of this information is gathered during loan documentation. Banks even go beyond information provided by the borrower through seeking additional information from the third parties like the credit rating agencies and credit reference bureaus.

Rouse (1989) stated that applying "CAMPARI" technique during the initial assessment of borrower will help in determining whether a loan is good or bad, recoverable or not recoverable. CAMPARI is a technique by which the viability of proposal is assessed and evaluated. It is an acronym that stands for character, ability, Margin, purpose, amount, repayment and insurance (collateral).

2.7 Empirical Evidence on Credit Risk Management

Credit management crisis is a worldwide problem. In Kenya empirical studies have been carried out on credit management in various sectors of the economy. Matu (2001) conducted a study on the applicability of predictive banking failures in Kenya with a view of identifying the key macroeconomic variables in predicting bank failures. The study covered the period from 1984 to 1998, when a total of 37 banks failed in Kenya. The methodology used was a multivariate bank failure predictive model to test the significance of each of the macroeconomic (independent) variables in predicting bank failure. The annual average changes in the macroeconomic variables were regressed against the percentage of failed banks to the total banks per year as the dependent variable. He found that the theory of interest rates and business cycle theory in predicting banking failure is applicable in Kenya as they are the key macroeconomic variables in facilitating non-performance of loans.

Kabiru (2002) carried out a study on how banks in Kenya assess credit risk. His findings revealed that there is a common understanding of information that is shared between banks, regarding potential borrowers which assist in screening customer's credit worthiness. He also established that credit risk is the most critical factor that determines the banks' success and therefore the way it is managed can greatly affect the performance of a bank. His findings also revealed that all banks have credit manuals and out of these, 80 per cent revise them annually and 20 per cent take as long as four years. He noted that 75 per cent of banks had incidents of reckless lending, at a level between 0 to 30 per cent of approved lending cases. He also pointed out that cases of default go hand in hand with reckless lending with only 50 per cent of banks with low default rate of between 0 to 10 per cent and, lending limits are according to levels of authority.

Njiru (2003) did a study on credit risk management by coffee cooperatives in Embu District. The study found that, before a member was granted a credit, the following was scrutinized thoroughly; the previous year's harvest, reputation of the borrowers and the amount of credit due. The findings of the study pointed out three major procedures used to follow credit defaulters, namely; personal visit, use of letters and telephone calls and use of other cooperative societies within the neighborhoods where a member could have sold his or her coffee. Twenty societies which represented 83

per cent of the total number studied reported cases of reckless lending mainly due to related parties lending. There was lack of professionalism in some case of credit risk management by coffee cooperative societies, namely insider dealing, favoring related parties when lending, influence from outside forces, too much reliance on reputation and lack of adequate knowledge on credit management.

Onono (2006) carried out a study on credit management practices in the service industry; a case study of Telkom Kenya Limited. The study found out that slow and inefficient collection of debts was the major factor for Telkom's cash flow problems, with debtors' days stretching to more than one year. He also pointed out that, to improve on credit management, Telkom management had to develop ways of gathering information for vetting credit and techniques for monitoring accounts receivables. The study concluded that efficient system of debt collection is essential and a good system should involve customers paying promptly, following up disputed invoices speedily, issue statements and reminders at appropriate interval and generate management report such as an aged analysis of debtors and a clear policy must be devised for overdue accounts and followed up consistently with appropriate procedures such as disconnecting lines and sending signals to customers that Telkom was serious about the application of its credit and collection policies.

Obiero (2002) conducted a study on the banking sector regulatory framework in Kenya and found that out of the 39 banks which failed in the period 1984 and 2002, 37.8 per cent collapsed mainly due to poor quality on lending practices. The methodology used was factor analysis model. This model enabled the researcher to determine the variables related to the bank failures over the period under study. Hempel et al. (1994) also carried out a study of national banks that failed in the mid 1980s in the USA and found out that the consistent element in the failures was inadequacy of bank's management systems for controlling loan quality. These findings are in agreement with assertions of scholars such as Abedi (2002) who found that character is the most important criteria in risk assessment of commercial banks and other financial institutions in America, followed by capacity to repay the loan and the reasonableness of the cash from the intended investment.

2.8 Summary of Literature Review

A review of the literature provides results that reveal commercial banks derive income primarily from lending and loan constitute the largest portion of banks' asset that requires good management. Commercial banks need to establish policies and procedures that ensure well documented credit granting process, strong portfolio management, efficient credit review and loan classification. There is need to enact proactive measures to identify, control and minimize risks (Ardrey et al., 2009).

Studies from the literature review have revealed that commercial banks need to employ credit risk management techniques which involve implementation of credit criteria, credit culture, credit controls, training of credit officers and risk assessment methods. A review of the literature on the nature of the relationship between credit risk management practices and the level of non-performing loans provides results that support the existence of a negative relationship between these two variables.

Much of the literature reviewed has been from the developed world and there is need for study to be conducted in Kenya which is a developing country to assess whether what was found in the developed world applies in the developing countries like Kenya.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter describes the methods and procedures that were used to carry out the study. The purpose of this study was to examine the relationship between credit risk management practices and the level of non-performing loans for commercial banks in Kenya. The chapter looked at the research design, population, data collection methods, research procedures and the data analysis methods employed in the study.

3.2 Research Design

Causal research design was used for the study as the research carried out aimed at determining cause and effect relationships of the credit risk management and level of non-performing loans for commercial banks in Kenya.

3.3 Population

The population of this study consisted of all the 44 commercial banks registered and operating in Kenya under the banking Act. Since a census survey was done, no sampling was required.

3.4 Data Collection

The study involved the collection of primary and analysis of secondary data for the purpose of meeting its objective. Self-administered questionnaires were used to collect the data. This instrument allied each person to respond to the same set of questions in a predetermined order. The questionnaires were developed by the researcher and structured according to the objective of the study. Both closed and open-ended questions were used to obtain responses. Questionnaires were delivered to the credit officers of commercial banks under study. The researcher also used drop and pick method for questionnaires administration. This enabled the respondent to dedicate time conveniently to fill the questionnaire. The questionnaire had a self-declaring statement assuring the respondents on confidentiality of their responses and that the information they gave was used for academic purposes only. All the questionnaires were administered and collected within a period of two weeks.

3.5 Data Analysis

The study intended to establish the relationship between credit risk management and the level of non-performing loans and therefore linear regression analysis model was used to determine the nature of this relationship. The model is expressed as follows;

$$Y = a + bX$$

Where;

Y = Level of non-performing loans (the dependent variable)

X = Credit risk management practices adopted by commercial banks (the independent variable)

a = Constant term or intercept term

b = Coefficient to be estimated

The model implies that a variation in **Y** (level of non-performing loans) is dependent on variations in **X** (different credit risk management practices adopted by commercial banks).

Data were edited for uniformity, accuracy, consistency and completeness and then arranged to enable coding and tabulation before statistical analysis. Statistical package for social sciences (SPSS) was used to analyze the data. Graphs were essential for understanding the relationship between variables as they provided the means for visual inspection of data that a list of values from the variables would not. Test of significance was carried out using T-test to determine the extent of relationship among study variables. This formed the basis for conclusions to the study.

3.6 Data Reliability and Validity

Validity and reliability of a research is a key determinant of the true value of this research in the practical working life. While reliability is concerned with the result consistency (Proctor 2005, Saunders et al. 2009), validity is about the honest nature of the research conclusion and applicability (Ghauri and Gronhaug, 2010).

Test and control for reliability and validity was conducted as follows; on the side of the research participants, the respondents were allowed to dedicate time convenient for them to fill the questionnaire, that is, at the time when there were no customers. This allowed them to be more relaxed at answering the questions. Also, the researcher ensured that respondents were voluntarily willing to participate in the study so that the

participant bias was eliminated. On the researcher's side, the content and the analysis of the questionnaire's results were based closely on the issues presented in the research methodology part. This ensured that all the recorded findings were fair and truthful. The researcher ensured that other observers will have the same conclusions after conducting the research on this field.

Selection bias effects were minimised by ensuring that only credit officers responded to the questionnaire in the study. Negative impacts of the testing effect were minimized by the researcher in ensuring respondents that it was anonymous and secret information.

Uses of qualitative and quantitative methods reinforced the validity and reliability. Research analysis took into consideration findings from the primary data gathered and secondary data. Total non-performing loans and percentage changes in non-performing loans between year 2007 and year 2010, as secondary data, were officially published by a well-known source, that is, Central Bank of Kenya and could not be manipulated by the researcher or the respondents. This further reinforced the validity and reliability.

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

This chapter presents the research findings to establish out the relationship between credit risk management practices and the level of non-performing loans for commercial banks in Kenya. The study was conducted on 44 respondents from 44 commercial banks in Kenya who were served with a questionnaire; out of 44 targeted respondents, 35 respondents filled-in and returned the questionnaires which made a response rate of 79.54%. Both descriptive statistics and inferential statistics were used to analyze the data. In the descriptive statistics, relative frequencies were used in some questions and others were analyzed using mean scores with the help of Likert scale ratings in the analysis. In inferential statistics, linear regressions were used.

4.2 Data Analysis and Interpretation

Table 1: Frequency of reviewing credit policy

	Frequency	Percent
Quarterly	2	5.7
half yearly	21	60.0
Yearly	12	34.3
Total	35	100.0

Source: Research data

On how regularly commercial banks review their credit policy , the study found that majority of the respondent as shown by 60%, indicated that their banks review their credit policy half yearly, 34.3% of the respondent indicated that their bank review their credit policies yearly whereas 5.7% of the respondent indicated quarterly. This shows that commercial banks in Kenya review their credit policies yearly and half yearly.

Table 2: Ways through which employee are made aware of credit policies

	Percent
Regular meeting	31.4
Regular training	88.6
Using supervision	22.9
Credit manual	99.4

Source: Research data

The study sought to established the ways in which employee are made aware of credit policies. The study established this was done through credit manual as shown by 99.4%, regular training as shown by mean 88.6%, regular meeting as shown by mean 31.4% and using supervision as shown by mean of 22.9%. This shows that the most popular method of creating awareness of credit policies to employees were regular training and credit manual.

Table 3: Employee level of participation in credit-related staff training

	Frequency	Percent
under 3 months	3	8.6
over 3 months-6 months	26	74.3
over 6 months-1 year	5	14.3
over 1 year	1	2.9
Total	35	100.0

Source: Research data

From the findings on the employees level of participation in credit-related staff training, the study established that 74.3% of the respondent indicated over three months to six months , 14.3% of the respondent indicated over six months to one year, 8.6% of the respondent indicated under three months whereas 2.9% of the respondent indicated over 1 year . The study revealed that the employees of commercial bank are being involved in credit related training for over three months to six months.

Table 4: Use of credit risk scoring models in credit risk assessment

	Frequency	Percent
Yes	18	51.4
No	17	48.6
Total	35	100.0

Source: Research data

The study sought to establish whether commercial banks were using credit risk scoring models in their credit risk assessment. From the findings, the study revealed that majority of the respondent as shown by 51.4% indicated that they used credit risk scoring models in their credit risk assessment whereas 48.6% of the respondent indicated that they were not using credit risk scoring models in their credit risk assessment.

Table 5: Method used in credit assessment

	Percent
linear probability model	17.1
linear discriminant	0
Risk adjusted return on capital	34.3
neural network	0

Source: Research data

The study further revealed that methods used in credit risk assessment among commercial banks in Kenya were; risk adjusted return on capital as shown by 34.3% and linear probability model as shown by 17.1%. The study also revealed that commercial banks in Kenya don't use linear discriminant and neural network in their credit assessments.

Table 6: Assessment of the level of non-performing loans by bank

	Frequency	Percent
Moderate	31	88.6
Low	4	11.4
Total	35	100.0

Source: Research data

On the respondent opinion to assess the level of non-performing loans at their bank, from the findings the study established that majority of the respondent as shown by 88.6% indicated to moderate extent whereas 11.4% of the respondent indicated to low extent, this shows that there was a moderate level of assessing level of non-performing loans for commercial bank in Kenya.

Table 7: Person involved in credit risk assessment in the bank

	Not involved	Least involved	Less involved	Moderately involved	More involved	Most involved	Mean	Std deviation
Credit analyst	0	0	0	2	4	29	5.1857	.50709
Branch managers	0	3	0	22	9	1	4.8286	.38239
Credit officers	0	0	0	2	3	30	5.0000	.00000
Credit committee	1	0	0	1	2	31	5.6571	.48159

Source: Research data

On the person involved in credit risk assessments in the bank, the study revealed that majority of the respondent indicated the following persons were most involved; credit committee as shown by mean of 5.6571, credit analyst as shown by mean of 5.1857, credit officer as shown by mean of 5 and branch managers as shown by mean of 4.8286, this was supported by low standard deviation.

Table 8: Default rate at any given time

	Frequency	Percent
below 10 per cent of your loan portfolio	5	14.3
10 per cent of your loan portfolio	25	71.4
20 per cent of your loan portfolio	5	14.3
Total	35	100.0

Source: Research data

The study sought to establish the default rate for commercial banks at any given time. From the finding the study found that 71.4% of the respondent indicted 10 per cent of their loan portfolio, whereas below 10 per cent of their loan portfolio and 20 per cent of their loan portfolio was shown by 14.3% in each case, this shows that default rate in commercial banks in Kenya was 10 per cent of their loan portfolio.

Table 9: Aspects considered in credit scoring models before offering credit in case of personal loans

	Not considered	Least considered	Less considered	Moderately considered	More considered	Most considered	Mean	Std deviation
Age	0	9	16	7	0	3	3.2000	1.10613
Identification	0	0	5	0	4	26	5.4571	1.06668
Years of employment	0	0	0	11	18	6	4.8571	.69209
Income per annum	0	0	0	5	0	30	5.7143	.71007
Marital status	5	3	18	4	5	0	3.1714	1.44478
Debt ratio	0	0	0	0	5	30	5.7143	.71007
Source of income	0	0	0	0	0	35	6.0000	.00000
Existing credit facilities	0	0	0	2	1	32	5.8571	.49366
Repayment history	0	2	0	0	1	32	5.8000	.71948
Purpose of the loan	0	0	0	3	0	32	5.8286	.56806
Collateral	2	1	2	2	0	28	5.3143	1.49059

Source: Research data

On the various aspects which are considered in credit scoring model before offering credit in personal loan, from the findings the study established that majority of the respondent indicated that the following factors were mostly considered; Source of income as shown by mean of 6, Existing credit facilities as shown by mean of 5.8571, Purpose of the loan as shown by mean of 5.8286, Repayment history as shown by mean of 5.800 and income per annum and Debt ratio as shown by mean of 5.7143 in

each case. Those rated as more considered when offering credit in personal loan were; identification as shown by mean of 5.4571, collateral as shown by mean of 5.3143 and years of employment as shown by mean of 4.8571. Age and Marital status were less considered as shown by mean of 3.1714 and 3.20 respectively.

Table 10: Aspects considered in credit facilities in case of corporate customers

	Not considered	Least considered	Less considered	Moderately	More considered	Most considered	Mean	Std deviation
Past repayment experience	0	0	0	3	0	32	5.9143	.28403
Capital invested in business	0	0	0	1	0	34	5.9714	.16903
Projected cash earnings	0	0	1	0	0	34	5.9143	.50709
Business skills	0	0	1	2	2	30	5.7429	.70054
Assets ownership	0	0	0	3	2	30	5.7714	.59832
Size of security	0	0	0	0	2	33	5.9429	.23550
Cash flow from the business	0	0	2	1	0	32	5.7714	.77024
Interest prevailing in the economy	0	0	2	8	20	5	4.8000	.75926
Contribution margin from owners	0	0	0	2	5	28	5.7429	.56061
High credit discipline	0	0	0	1	2	32	5.8857	.40376

Source: Research data

On the various aspects considered in credit facilities in case of corporate customers, the study revealed that the following were mostly considered ; Capital invested in business as shown by mean of 5.9714, Size of security as shown by mean of 5.9429, Projected cash earnings and past repayment experience as shown by mean of 5.9143 in each case , High credit discipline as shown by mean of 5.8857 , Cash flow from the business and Assets ownership as shown by mean of 5.7714 in each case, Contribution margin from owners and business skills as shown by mean of 5.7429 in each case. Interest prevailing in the economy was moderately considered as shown by

mean of 4.8. In all cases, these were supported by low standard deviation, an indication that respondent didn't vary much in their opinion.

The study revealed that customers likely to generate bad debts were, the one who have many debts with credit institution , politically linked customers , customers who have maintained their accounts for less than one year, customers with their salaries passing in other banks , unsecured business loans, personal loans , small borrowers, personal accounts with insufficient credit, low income customers, individual customers, young customers, employee loans and both corporate and personal customers.

The study further revealed that there was a negative relationship between the level of non-performing loans and credit risk management practices in banks, where poor credit/weak credit risk management practice leads to high non-performing loans. Where loans are not mitigated properly they are likely to be non-performing loans, hence higher the risk control procedures, the lower the level of default. The study also revealed that the levels of non-performing loans are low due to good credit risk management practices, Weak credit management practices due to political influence lead to bad debts and where credit risk management is lax then there is bound to be a resurgence of non-performing account. The study further revealed that there were formal documents related to credit and credit risk management established by banks.

4.3 Regression analysis

Regression analysis relating to various credit management practices adopted by Commercial banks in Kenya were quantified using statistical package for social sciences (SPSS) and regressed against data on non-performing loans obtained from the banks' annual reports. The result from the regression analysis of non-performing loans in relation to various credit risk management adopted by commercial banks was presented in the table below;

Table 11: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.918 ^a	.847	.868	.46505

Adjusted R^2 is called the coefficient of determination and tell us how non-performing loans of commercial banks varied with credit risk management practices. From the data, the value of adjusted R^2 is 0.868. This implies that, there was a variation of 86.8% of non-performing loans of commercial banks varied with credit risk management practices. R is correlation coefficient and tells us the relationship between non-performing loans of commercial banks and credit risk management practices. From the finding there was strong relationship between non-performing loans of commercial banks and credit risk management practices.

Table 12: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.629	.528		4.977	.000
	Credit risk management practices	-.460	.247	-.308	-1.860	.072

$Y = a + bX$ is the regression model and the established regression equation was;

$$Y = 2.629 - 0.460 X_1$$

Where;

Y = Level of non-performing loans

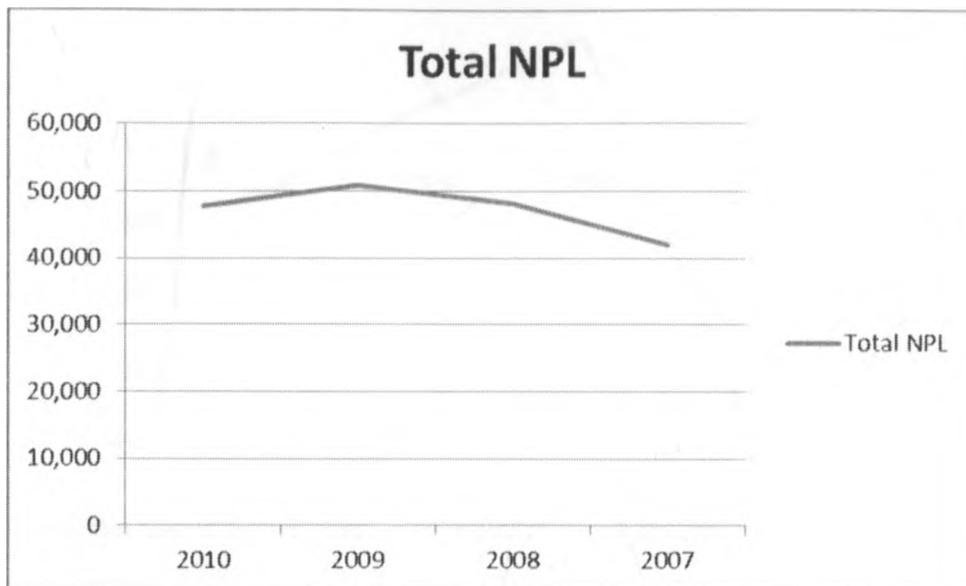
X = Credit risk management practices adopted by commercial banks.

From the above regression model, holding credit risk management practices to a constant zero; non-performing loans for commercial banks in Kenya would stand at 2.629. It's established that a unit increase in credit risk management practice would lead to decrease in non-performing loan by a factor of 0.460. This clearly shows that there is a negative relationship between non-performing loans for commercial banks and credit risk management practices.

The analysis of primary data gathered and secondary data from Central Bank of Kenya revealed that the total non-performing loans for commercial banks are inversely related to credit risk management practices. This corresponds to the results

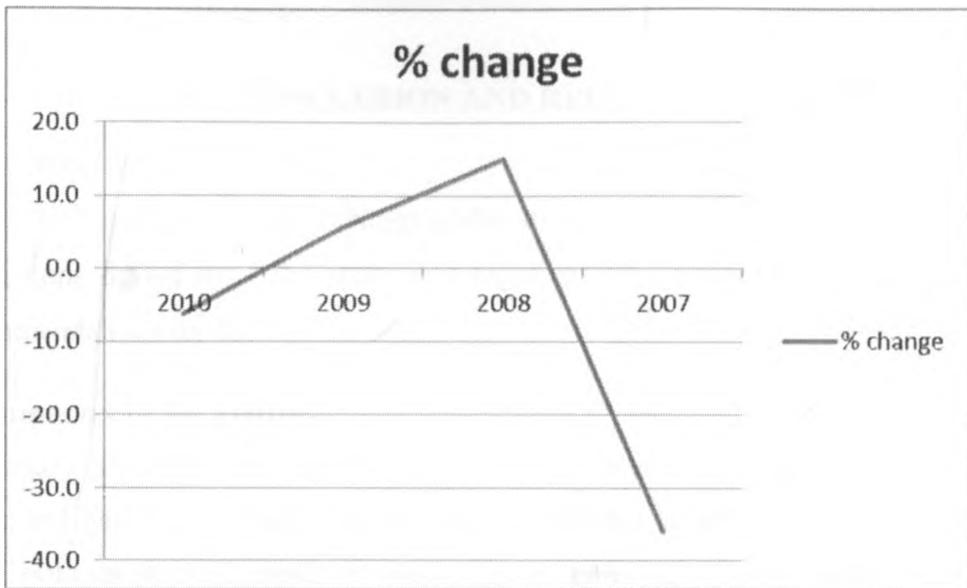
from the regression analysis relating to various credit management practices adopted by commercial banks in Kenya and the level of non-performing loans.

Figure 1: Total Non-Performing Loans



From the above figure, there was an increase in the level of total non-performing loans for all commercial banks in year between 2008 and year 2009. Credit appraisal monitoring standards were required to reverse the trend, hence high level of non-performing loans implied low usage of credit risk management practices and low level of non-performing loans implied high usage of credit risk management practices.

Figure 2: Percentage Changes in Level of Non- Performing Loans



From the above figure, there was an increase in the percentage change in level of non-performing loans in year between 2008 and year 2009. This was attributed to enhanced credit appraisal standards adopted by commercial banks in year 2009. The implication was also that there is a negative relationship between non-performing loans for commercial banks and credit risk management practices. The credit assessment methods applied by commercial bank could influence their level of total non-performing loans.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter summarises the findings of the study in relation to its objective. It gives conclusions drawn from the study and highlights the limitations of the study and recommendations for further research.

5.2 Summary of the Findings

The study revealed that majority of commercial banks reviews their credit policy yearly and half yearly. The study also established that employees are made aware of credit policies through credit manual, regular training, regular meeting and using supervision. The study further revealed that the most popular method of creating awareness of credit policies to employees was regular training and credit manual.

From the findings on the employees level of participation in credit-related staff training, the study established that 74.3% of the respondent indicated over 3 months to six months, 14.3% of the respondent indicated over six months to one year, 8.6% of the respondent indicated under three months whereas 2.9% of the respondent indicated over 1 year . The study further revealed that the employees of commercial banks are being involved in credit related training for over three months to six months.

The study sought to establish whether commercial banks were using credit risk scoring models in their credit risk assessment. From the findings, the study revealed that majority of the respondents as shown by 51.4% indicated that they use credit risk scoring models in their credit risk assessment. The study further revealed that methods used in credit risk assessment among commercial banks in Kenya were risk adjusted return on capital and linear probability model.

On the respondents' opinion to assess the level of non-performing loans at their bank, the study established that majority of the respondents indicated to moderate extent; this shows that there was a moderate level of assessing level of non-performing loans for commercial bank in Kenya. The study revealed that persons involved in credit risk

assessments in the bank are credit committee, credit analysts, credit officers and branch managers. The study established that the default rate in commercial banks at any given time, was 10 per cent of their loan portfolio, this shows that the default rate in commercial banks in Kenya was 10 per cent of their loan portfolio.

On the various aspects considered in credit scoring model for personal loans; Source of income, existing credit facilities, purpose of the loan, repayment history, income per annum and debt ratio, were mostly considered. Those rated as more considered when offering credit in personal loans were; identification, collateral and years of employment. Age and Marital status were less considered.

On the various aspects considered in credit facilities in case of corporate customers, the study revealed that the following were mostly considered; capital invested in business, size of security, projected cash earnings, past repayment experience, high credit discipline, cash flow from the business and assets ownership, contribution margin from owners and business skills. Interest prevailing in the economy was moderately considered.

The study revealed that customers likely to generate bad debts were; the one who have many debts with credit institutions, politically linked customers, customers who have maintained their accounts for less than one year, customers with their salaries passing in other banks, unsecured business loans, personal loans, small borrowers, personal accounts with insufficient credit, low income customers, young customers, employee loans and both corporate and personal customers.

The study further revealed that there was a negative relationship between the level of non-performing loans and credit risk management practices in banks, where poor credit/ weak credit risk management practice leads to high non-performing loans. Where loans are not monitored properly they are likely to be non-performing loans. The study established that; the higher the risk control procedures, the lower the level of default, meaning the level of non-performing loans is low due to good credit risk management practices. Where credit risk management is lax then there is bound to be a resurgence of non-performing accounts. The study also revealed that there were formal documents related to credit and credit risk management established by banks.

From the regression analysis, adjusted R^2 is called the coefficient of determination and tell us how non-performing loans of commercial banks varied credit risk management practices. From research data, the value of adjusted R^2 is 0.868. This implies that, there was a variation of 86.8% of non-performing loans for commercial banks that varied with credit risk management practices. R is correlation coefficient and tells us the relationship between non-performing loans for commercial banks and credit risk management practices. From the findings, there was strong relationship between non-performing loans for commercial banks and credit risk management practices. The established regression equation was, $Y = 2.629 - 0.460 X_1$.

From the above regression model, holding credit risk management practices to a constant zero; non-performing loans in commercial bank in Kenya would stand at 2.629. It's established that a unit increase in credit risk management practice would lead to decrease in non-performing loans by a factor of 0.460. This clearly shows that there is a negative relationship between non-performing loans for commercial banks and credit risk management practices.

5.3 Conclusions and Recommendations

The study revealed that commercial banks review their credit policy yearly and half yearly and that employees are made aware of credit policies through credit manual, regular training, regular meeting and using supervision. The most popular method of creating awareness of credit policies to banks were regular training and credit manual. The study further revealed that methods used in credit risk assessment among commercial banks in Kenya were; risk adjusted return on capital and linear probability model.

The study revealed that the various aspects considered in credit scoring model before offering credit in personal loan are; Source of income, existing credit facilities, purpose of the loan, repayment history , income per annum and debt ratio. Those rated as most considered when offering credit in personal loan were; identification, collateral and years of employment. Age and Marital status were less considered.

On the various aspects considered in credit facilities in case of corporate customers; the study revealed that; capital invested in business, size of security, projected cash earnings, past repayment experience, high credit discipline, cash flow from the business and assets ownership, contribution margin from owners and business skills, were most considered. Interest prevailing in the economy was moderately considered.

The study revealed that customers likely to generate bad debts were; the one who have many debts with credit institution, politically linked customers, customers who have maintained their accounts for less than one year, customer with their salaries passing in other banks, unsecured business loans, personal loans, small borrowers, personal accounts with insufficient credit, low income customers, young customers, employee loans and both corporate and personal customers. The study further revealed that there was a negative relationship between the level of non-performing loans and credit risk management practices in banks, where poor credit/ weak credit risk management practice leads to high non-performing loans.

The study recommends that commercial banks should adopt various credit risk management practices in order to reduce their level of non-performing loans and also keep up with the pace of expansion.

The study further recommends that commercial banks should strengthen their role of educating their customers about the importance of paying their credit on time. A sustainable and reliable credit database is also recommended for commercial banks. Besides relying on the central bank's credit information centre, banks must have their own credit database for immediate and quicker use when needed. This database input should be done in a timely basis (for example, weekly) so that banks can keep good record of all customers. Any changes in the customer's information or credit quality should be updated at once in the system.

5.4 Limitations of the Study

In attaining its objective, the study was limited to 44 commercial bank in Kenya from which, only one respondent was picked from each. The study was also limited to the degree of precision of the data obtained from the respective respondents.

This research focused on the credit risk management practices on the lending activity only while in reality; credit risk is exposed in other services like international payments through letter of credit or financing programs.

The research involved personal delivery of questionnaires to the credit officers in the wide spread banks and also making follow ups through telephone contacts, which were constrained by finance.

Some of the respondents had inadequate information hence gave out data which was not satisfactory. It was also not possible to ascertain from the data whether there were differences in the level of education and years of experience among credit officers and how it could be linked to the negative relationship between the level of non-performing loans and credit risk management practices.

5.5 Suggestions for Further Research

Further research on credit risk management in other services like international payments through letter of credit or financing programs will be extremely valuable to the banks rather than focusing on the lending activity only.

A study is recommended on the adoption of credit derivatives in managing credit risk. It would be great to see the analysis and applications of successful credit derivative cases, or the reasons behind the failures of other cases.

Research on the relationship between academic qualification, managerial skills on credit risk management and the level of non-performing loans for commercial banks in Kenya may be required.

The impact of competition, risk management practices and Government intervention through various regulatory mechanisms are important variables whose importance in non-performing loans reduction would be worthy studying.

A study is required to find out the effect of credit reference bureaus on bank lending and the risks involved in relationship to non-performing loans for commercial banks in Kenya.

Similar studies can be done on banks in other countries to determine the relationship between credit risk management practices and the level of non-performing loans.

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APPENDIX I
QUESTIONNAIRE

This questionnaire's content is confidential and serves the purpose of collecting data for the final research project. The researcher guarantees not to disclose the respondents' identities in the work.

Instruction: Please fill in the blank or tick your answers from the choices given and don't write your name on the questionnaire or any other form of identification.

1. Name of the bank.....

2. How regularly do you review your credit policy?

Quarterly ()

Half yearly ()

Yearly ()

3. In what ways are employees made aware of credit policy?

Regular meeting A ()

Regular training B ()

Using supervision C ()

Credit manual D ()

4. How often do you participate in credit-related staff training?

A. Under 3 months ()

B. Over 3 months – 6 months ()

C. Over 6 months – 1 year ()

D. Over 1 year' ()

5. (a) Do you use credit risk scoring models in your credit risk assessment?

Yes ()

No ()

(b) If yes, please indicate the method you use

Linear probability model ()

Linear discriminant ()

Risk adjusted return on capital ()

Neural Network ()

Other method, specify if any.....

.....

6. How do you assess the level of Non-performing loans for your bank?

High () Moderate () Low ()

7. Who are involved in credit risk assessment in the bank?

	Least involved			Most involved	
	1	2	3	4	5
Credit Analyst	()	()	()	()	()
Branch managers	()	()	()	()	()
Credit officers	()	()	()	()	()
Credit committee	()	()	()	()	()

8. What is the default rate at any given time?

10 Per cent of your loan portfolio ()

20 Per cent of your loan portfolio ()

30 Per cent of your loan portfolio ()

40 Per cent of your loan portfolio ()

50 Per cent of your loan portfolio ()

9. Which aspects among the following do you consider in your credit scoring models before offering credit in case of personal loans? Please tick where appropriate.

	Least considered			Most considered		
	1	2	3	4	5	6
Age	<input type="checkbox"/>					
Identification	<input type="checkbox"/>					
Years of employment	<input type="checkbox"/>					
Income per annum	<input type="checkbox"/>					
Marital status	<input type="checkbox"/>					
Debt ratio	<input type="checkbox"/>					
Source of income	<input type="checkbox"/>					
Existing credit facilities	<input type="checkbox"/>					
Repayment history	<input type="checkbox"/>					
Purpose of the loan	<input type="checkbox"/>					
Collateral	<input type="checkbox"/>					

10. Which aspects among the following do you consider in your credit facilities in case of corporate customers?

	Least considered			Most considered		
	1	2	3	4	5	6
Past repayment experience	<input type="checkbox"/>					
Capital invested in business	<input type="checkbox"/>					
Projected cash earnings	<input type="checkbox"/>					
Business skills	<input type="checkbox"/>					
Assets ownership	<input type="checkbox"/>					
Size of security	<input type="checkbox"/>					
Cash flow from the business	<input type="checkbox"/>					
Interest prevailing in the economy	<input type="checkbox"/>					

Contribution margin from owners () () () () () ()
High credit discipline () () () () () ()

11. What type of customers is most likely to generate bad debts?

.....
.....
.....
.....

12. Please comment if there is any relationship between the level of non-performing loans and credit risk management practices in your bank.

.....
.....
.....

13. Are there formal documents related to credit and credit risk management established by your bank?

.....
.....
.....

Thank you for your participation

APPENDIX II

Total Non-performing loans and % changes in non-performing loans between years 2007 to year 2010

year	Total NPL	% change
2010	47,730	-6.2
2009	50,902	5.7
2008	48,175	15.0
2007	41,899	-35.9

Source: Central Bank of Kenya

APPENDIX III

List of Commercial banks in Kenya

1. Standard Chartered Bank Kenya Limited	23. National Industrial Credit Bank
2. Barclays of Kenya Limited	24. Giro Bank Limited
3. Kenya Commercial Bank limited	25. Ecobank Kenya Limited
4. Co-operative Bank of Kenya Limited	26. Equatorial Commercial Bank Limited
5. Commercial Bank of Africa Limited	27. Paramount Bank Limited
6. National Bank of Kenya Limited	28. Fina Bank Limited
7. CFC Stanbic Bank Kenya Limited	29. Victoria Commercial Bank Limited
8. Bank of India	30. Guardian Bank Limited
9. Bank of Baroda (Kenya) Limited	31. Investments & Mortgages Bank Ltd
10. Habib Bank Limited	32. Development Bank of Kenya Limited
11. Prime Bank Limited	33. Fidelity Commercial Bank Limited
12. Oriental Commercial Bank Limited	34. Diamond Trust Bank Limited
13. Citibank N.A.	35. K-Rep Bank Limited
14. Habib Bank A.G. Zurich	36. Equity Bank Limited
15. Middle East Bank Kenya Limited	37. Family bank Limited
16. Bank of Africa Limited	38. Gulf African Bank Limited
17. Dubai Bank Kenya Limited	39. United Bank of Africa (UBA)
18. Consolidated Bank of Kenya Limited	40. First Community Bank Limited
19. Credit Bank limited	41. Prudential Bank
20. Trans-National Bank Limited	42. Imperial Bank Limited
21. Chase Bank (Kenya) Limited	43. Southern Credit Banking Corporation
22. Africa Banking Corporation	44 City Finance Bank