AN ASSESSMENT OF THE ROLE OF CREDIT REFERENCE BUREAUS IN
MITIGATING AGAINST CREDIT DEFAULT IN COMMERCIAL BANKS IN
KENYA

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A Thesis Report Presented to the Institute of Postgraduate Studies
of Kabarak University in Partial Fulfillment for the Requirements
for the Award of Degree of Doctor of Philosophy in Business
Administration (Finance Option).

KABARAK UNIVERSITY

NOVEMBER, 2017

# DECLARATION

The research thesis report is my own work and to the best of my knowledge, it has not been presented for any academic award certificate, diploma, degree, masters or Doctor of philosophy in any academic Institution.

Signed: _____Date:_____

Ruthwinnie Njeri Munene

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# RECOMMENDATION

To the Institute of Postgraduate Studies:

The research thesis entitled "**An Assessment of the Role of Credit Reference Bureaus in Mitigating against Credit Default in Commercial Banks in Kenya**" and written by **Ruthwinnie Njeri Munene** is presented to the Institute of Postgraduate Studies of Kabarak University. We have reviewed the research thesis and recommend it be accepted in partial fulfillment of the requirement for the award of the degree of Doctor of Philosophy in Business Administration (Finance Option).

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# DEDICATION

This thesis is dedicated to my husband James Muriithi. My husband James Muriithi, my daughters Lovinne Wanjiru and Lorinne Wanjiku. My mother Grace Wanjiku and my late dad David Munene for the unwavering support sacrifice and encouragement, I will forever be grateful. My colleagues for the love, prayers and unshakable faith in me. My classmates for enriching my knowledge and bringing a light touch to the serious task we were undertaking. Thank you and God bless you.

# ABSTRACT

The study assessed the role of Credit Reference Bureaus (CRB) in mitigating default risk among commercial banks in Kenya. The objectives of the study were to analyze risk identification as a CRB role in mitigating against credit default in commercial banks in Kenya. To assess customer repayment behavior as a CRB role in mitigating against credit default in commercial banks in Kenya. To investigate customer credit access as a CRB role in mitigating against credit default in commercial banks in Kenya. To examine reduction in the rate of moral hazard as a CRB role in mitigating against credit default in commercial banks in Kenya. The study was based on the Adverse Selection Theory, the Moral Hazard Theory, and Credit Rationing Theory. The study used a Causal-Comparative descriptive survey design in evaluating the role of CRB in mitigating against credit default in commercial banks in Kenya. This design was appropriate for this study because comparison allowed for the establishment of conclusive causality attributing observed changes in the role of Credit Reference bureau practices in mitigating against credit default. The researcher employed descriptive statistical analysis and methods of analyzing correlations and regressions between multiple variables. The target population of the study consisted of all the 43 licensed commercial banks in Kenya under the Banking Act. The researcher used census method for the research, which composed of all commercial bank headquarters credit managers. To collect primary data, the researcher used questionnaires. Besides, Secondary data required for this study were collected from loan books and CBK annual Bank supervisory reports. With the help of research assistants, the researcher visited the institutions and administered the questionnaires. To ensure validity, questionnaire was prepared in conjunction with literature review and based on the research objectives. Its content validity was pre-tested by a pilot study carried out in Diamond Trust Bank and Investment and Mortgage Commercial banks headquarters in Nairobi. The study yielded Cronbach's Alpha of 0.8 SPSS software was used to analyze the data and results presented using graphical systems, which included histograms pie charts and frequency distributions tables. The researcher used descriptive statistics, which included the mean, median standard deviation and range to show the default rate. The researcher conducted inferential statistical tests that comprised of correlation, ANOVA regression Chi-square analysis to test hypothesis. P -values yielded were less than 0.05, which indicates that the roles played by Credit Revenue Bureau have significant influences on the Credit Default Rate in commercial banks in Kenya. The conclusion was that CRB plays a significant role in risk identification, rate of credit repayment, credit access, and reduction of moral hazards and credit information evaluation in mitigating against credit default in commercial banks in Kenya. The study recommends that the CRB be extended to all non-banking sectors that handle credit transactions to reveal more credit histories of different borrowers. In addition, CRB firms in Kenya should link with other regional CRB firms in other countries as to have information on credit histories of those crossing the borders to promote more credit accessibility and reduce credit default.

Key words: Credit default, Risk Identification, Customer repayment behavior, Credit access, Moral Hazard, Credit Reference Bureau, Commercial Banks.

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# LIST OF ABBREVIATIONS & ACRONYMS

**ACPM**      : Active credit portfolio management

**ANOVA**      : Analysis of Variance

**CBK**      **:** Central Bank of Kenya

**CBS**      : Credit Bureau Scores

**CCR**      : Counterparty Credit Risk

**CE**      : Credit Exposure

**CRB**      **:** Credit Reference Bureau

**CIS**      : Credit Information Sharing

**CRIF**      **:** Center for Research in International Finance

**CVA**      **:** Credit valuation adjustment

**DPFB**      **:** Deposit Protection Fund Board

**EAD**      **:** Exposure at default

**EE**      **:** Expected Exposure

**EL**      **:** Expected loss

**FI**      : Financial Institutions

**FSD**      **:** Financial Sector Deepening

**LGD**      **:** Loss given default

**HELB**      **:** Higher Education Loans Board

**IAIS**      **:** International Association of Insurance Supervisors

**ICB**      **:** International Competitive Bidding

**KSHS**      **:** Kenyan Shillings.

**MFI**      **:** Micro Finance Institutions.

**NBFI**      **:** Non- bank financial institutions

**NACOSTI**      **:** National Commission for Science, Technology and Innovation

**NPA**      **:** Non-Performing Assets

**NPLs**      **:** Non- Performing Loans

**PAR**      **:** Portfolio at Risk

**PCR**      : Public Credit Registries

**PD**      : Probability of default

**PFE**      **:** Potential future exposure

| | | |
|---|---|---|
| **ROA** | **:** | Return on Assets |
| **SACCOS** | **:** | Saving and Credit Cooperative Societies. |
| **SMEs** | **:** | Small and Medium-Sized Enterprises. |
| **SPSS** | : | Statistical Package for Social Sciences |
| **TAT** | **:** | Turnaround Time. |
| **US$** | **:** | United States dollar. |
| **QCA** | **:** | Quantitative credit analysis |
| **VAR** | **:** | Value at Risk |

## OPERATIONAL DEFINITION OF TERMS

**Commercial Bank** : Type of financial institution that provides financial services to the public such as accepting deposits, issuing business loans, provides basic investment product to ensure social and economic stability (CBK, 2010).

**Cheque Kitting** : Fraudulent scheme in which cheques are issued against funds that a bank has credited into an account for deposited but uncleared cheques (CBK,2010).

**Credit** : An arrangement in which a lender gives money to a borrower and the borrower agrees to repay the money, usually along with interest, at some future point(s) in time (Barron, 2003).

**Credit Access** : Ability of individuals or enterprises to obtain financial credit (Kithinji, 2010).

**Credit default:** Default is failure to meet the legal obligations (or conditions) of a loan within a period of 90 days ( CBK, 2014)

**Credit Evaluation** : Evaluation of the borrower's ability and willingness to or honor financial obligations (Richard, 2011).

**Credit Reference Bureau** : A company that collects information from various sources and provides consumer credit information on individual consumers for a variety of uses (Kithinji, 2010).

**Credit Risk** : Prospective risk to earnings and capital arising from an obligor's failure to meet the terms of any contract with the bank or fails to perform as agreed (Gieseche, 2004).

**Credit Risk Identification** : It is the process of taking into account risks and vulnerabilities and raising awareness of these risks in

|  |  | the organization for effective management of financial institutions (Gieseche, 2004). |
| **Default Rate** | : | The rate of borrowers who fail to remain current on their loans (Bratanovic, 2003). |
| **Financial intermediaries** | : | Institutions that provide the market function of matching borrowers and lenders or traders (Hoque, 2004). |
| **Financial Institution** | : | This refers to commercial banks that lend money to clients and customers (Pagano, 2009). |
| **Financial Performance** | : | A subjective measure of how well a firm can use assets from its primary mode of business to generate revenues. It also means ability to make profit or return on investment and on capital (Kallberg, 2003). |
| **Interest Rate** | : | This is the rate at which interest is paid by a borrower for the use of money that they borrow from a lender (Thomas & Scherer, 2001). |
| **Loan Default** | : | Default occurs when a debtor has not met his or her legal obligations according to the debt contract, e.g. has not made a scheduled payment, or has violated a loan agreement of the debt contract (Kithinji, 2010). |
| **Loan Repayment** | : | Act of paying back money previously borrowed from a lender that usually takes the form of periodic payments that normally include part principal plus interest in each payment (Thomas & Scherer, 2001). |
| **Moral hazard** | : | Situation in which one party gets involved in a risky event knowing that it is protected against the risk and the other party will incur the cost. It arises when both the parties have incomplete information about each other (Richard, 2011). |

| | | |
|---|---|---|
| **Non-Performing Loan** | : | A Non-performing loan is a loan where the borrower has failed to make the agreed upon scheduled payments based on the loan agreement (Richard, 2011). |
| **Reputational risk** | : | Potential loss in reputational capital based on either real or perceived losses in reputational capital (Mcintosh & Bruce, 2005). |

## CHAPTER ONE

## INTRODUCTION

### 1.1 Introduction

Historically, the concept of credit reporting agencies was born in the 1860s in the US, when merchants needed to keep track of their clients, especially those of low credit risk. The first nations to establish Public Credit Registries (PCRs) were in Western Europe in Germany in 1934 followed by France in 1946. By the mid-1960s, three other European nations that are Italy, Spain and Belgium had also established PCRs (Wydick, 2001). Early adopters included the former French colonies in Western Africa that formed the West African Monetary Union in 1962 and immediately established public credit reporting following the example of French. In addition, several Middle Eastern and North African countries adopted PCRs in the 1950s and 1960s. Egypt, 1957; Tunisia, 1958; Morocco, 1966; Jordan, 1966; and Turkey, 1951). The PCRs in Brazil and Argentina were established in the 1990s in response to financial crises and with the primary goal of supporting commercial banks supervision. Over time, through these registries were transformed to also enhance the information in private financial institutions and credit lending institutions (Sinare, 2008).

In Africa, the concept of Credit Reference Bureau (CRB) has had its practice in few selected countries by multilateral companies and corporations through private credit bureaus such as Compuscan which operates in Botswana, Namibia, and Rwanda while Kutz Univar, operate in East Africa countries that is Tanzania, Kenya and Uganda (Gentgen, 2008). In Kenya, before the publication of the Banking Credit Reference Bureau regulations 2008 and the licensing of the first Kenya`s credit

bureau, Credit Reference Bureaus Africa Ltd in February 2010, Kutz Univar Bureau was operating in the nation (Thomas & Scherer, 2001). In Kenya, CRBs concept was given a statutory basis and legal recognition by the Banking (CRB) Regulations, 2008 published in July 2008 and came into operation on 2nd February 2009. According to the Banking CRB regulations, which provide for the licensing and supervision of CRBs by the Central Bank of Kenya CBK, a closed user group for credit information sharing for institutions licensed under the Banking Act was created. A closed user group refers to clientele financial institutions and commercial bamks licensed under the Banking Act, namely, commercial banks, mortgage finance companies and non-bank financial institutions (CBK, 2010). The Regulations outline the responsibilities of financial institutions especially commercial banks and CRB as well as provide for the oversight of CRB by CBK. The Regulations compel the sharing of information on both non-performing loans and credit as well as on performing loans. Currently, CBK has since licensed three Credit Reference Bureaus these are Credit Reference Bureau Africa Limited, Metropol Credit Reference Bureau Limited and Credit Reference Bureau Africa Limited that operates as TransUnion (CBK, 2015).

## 1.2 Background to the Study

The history of the commercial banks crisis in Kenya led to the establishment of the Deposit Protection Fund Board (DPFB) in 1985. After Kenya gained its independence in 1963, the post-independence period was characterized by deliberate Government policy to transfer economic activities into the hands of indigenous Kenyans to which the banking sector was no exception. Due to high levels of new entrants in the banking sector with low levels of expertise and experience, disaster was bound to happen. The first banking crisis struck in 1983 when several commercial banks

experienced liquidity problems. These resulted in closure of Rural-Urban Credit Finance Company the first Kenyan commercial finance institution to go under receivership due to unsecured loans non-performing loan in1984, in spite of efforts by Treasury and Central Bank of Kenya to bail out the ailing financial institutions (Nalukenge, 2004).

The crisis and failures exposed the inadequacy of the safety net and failure resolution mechanisms existing at the time, which lead to amendments to the Banking Act in 1985 to expand the safety net and improve commercial banks failure resolution mechanism. The banking amendments led to the establishment of the DPFB in 1985. This is a deposit insurance scheme to provide cover for depositors and act as liquidator of commercial banks that could not be rescued. It gave the Central Bank of Kenya (CBK) the responsibility of credit default risk minimization through enhanced prudential regulations, supervision and surveillance (Rukwaro, 2001). Ngetich (2011) the collapse of many commercial banks since 1986 has largely had been attributed to non-performing loans notwithstanding the measures brought by the amendments, two commercial banks collapsed in August 1986 and a third one in 1987. This was followed by another banking crisis in 1989 when seven other commercial banks under financial distress were rescued by a consolidation scheme that created the current Consolidated Bank, which assumed their assets and liabilities. Between 1990 and 2005, twenty-four (24) commercial banks were replaced under receivership out of which four collapsed. In 1998, Reliance Bank and Prudential Bank Collapsed (CBK, 2016).

This financial challenge of non- performing loans, that is still in existence, prompted CBK in its role of credit risk minimization through enhanced prudential regulation, supervision and surveillance, to move for the amendment of the Banking Act introducing Section 31 (3) (b) in 2006. The amendment was meant to allow the DPFB and financial institutions licensed under the Banking Act to share information regarding non-performing funds. Section 31(4) provides for the establishment and operation of Credit Reference Bureau (CRB) in 2008 to facilitate collection of prescribed credit information on clients of financial institutions and lending institutions licensed under the Act and sharing it among such financing institutions for use in the ordinary course of business subject to such conditions and limitations as may be prescribed (Richard, 2011). World Bank Survey (2004) indicated that about 60 countries had Public Credit Registries (PCRs). PCRs contain information on the financial performance of borrowers in financial systems and are administered and maintained by the central bank. The region with the highest coverage of public credit registries is Latin America, where 17 countries have established PCRs, including all the largest economies Argentina, Brazil, Chile, Mexico and Colombia among others (CBK, 2010).

According to Brown and Pagano (2009) CRBs are financial information sharing brokers, providing creditors with reliable, relevant and comprehensive data on the client repayment habits and current debt of their credit applicants. Under reciprocity agreements, credit bureaus references obtain client data from creditors and other financing sources, consolidate and package information into individual reports, and distribute it to creditors for a charge. Gentgen, (2008) indicates that most financial institutions and most lending instituions prefer hard collateral-based credit but would

extend cash flow-based credits if they can use a reliable and inexpensive system to exchange information on the character and ability to pay of clients. The need for establishment of CRB services in any financial system arises because of information asymmetry between lenders and borrowers when financial institutions and lending institutions compete with each other for customers, multiple borrowing and over-indebtedness increases credit default unless the financial institutions and commercial banks have access to databases that capture relevant aspects of clients' borrowing behavior. The CRB contributes significantly to reduction in the costs of screening loan fund applications by enabling the lender to sort out prospective borrowers and clients who have defaulted with other lenders (Mwisho, 2001).

The emergence of CRBs has significantly revolutionized lending and contributed to the improved financial performance of many financial institutions and commercial banks in Kenya. Before the introduction of CRB, many borrowers used to borrow from one lending institution to the other without being identified. This led to many financial institutions and commercial banks experiencing immense losses and defaults because of NPLs. (Berger & Frame, 2007). Through the use of CRB, the commercial banks are in a position to obtain detailed information on a person's credit history, including information on their identity, credit accounts and other borrowed funds, bankruptcies and late payments and recent inquiries. Other information shared include: proven frauds and forgeries, cheque kiting, false declarations and  false banks statements, receiverships, bankruptcies and liquidations, credit defaults and late payments, use of false securities and misapplication of borrowed amounts (CBK, 2015).

According to CBK (2010), there are 43 licensed commercial banks under the banking Act in Kenya as at December 2015.The Kenyan Banking (CRB) Regulations, 2008 states that the main role of CRB is to provide credit histories to financial institutions as to be able to make lending decisions in order to prevent credit risks. As a result, Epure and Lafuente (2012) argues that credit reference bureaus assist in making credit accessible to more people, and enable financial lenders and businesses reduce financial risks. Credit reference bureaus allow borrowers to take their credit histories from one financial institution to another, thereby making lending financial markets more competitive and in the end, mitigate credit default risks and make credit more affordable. Heffernan (2006) indicates that financial institutions and commercial banks are facing an enormous risk of NPLs noting that larger loaned funds have greater credit risk exposure, so the variable costs per-shilling is higher. If financial institutions do not take extra care, there could be more credit defaults. CRB enables commercial banks to determine credit worthiness of their borrowers and therefore reducing the credit default risk. In this respect CRB assists in first, sharing information on credit default among banks; secondly, eliminating corrupt clients and thirdly to provide commercial professional credit reference to prospective foreign investors; and also to identify credible borrowers and clients based on known credit history and character.

## 1.3 Statement of the Problem

Kenya's banking sector faced the major financial crisis in the 1980's and 1990's due to undercapitalization, high levels of non-performing loans and weaknesses in corporate governance. NBFI's were most affected, but the number of failing commercial banks increased in the 1990's. The financial crisis culminated in 1992

when Kenya formally suffered a systematic banking crisis (Weru, 2015 ). According to the banking survey by Central Bank of Kenya (2012), the high-interest regime witnessed in the first half of 2012 impacted negatively on the quality of loans and advances (CBK 2015). As a result, non-performing loans (NPLs) increased by 16.8 percent from Ksh.53.0 billion in December 2011 to ksh. 61.9 billion in December 2012. Similarly, the ratio of gross NPLs to gross loans increased by 2% percent in December 2012.According Ahmad (2007) however despite the rollout of CRB in Kenya and their facilitation of data sharing, there is still an increase in credit default risk. Kenyan banking sector was saddled with a momentous NPLs portfolio which is a critical source of economic distortion and stagnation in the country, which must not only be monitored but also controlled. This invariably led to the collapse of some commercial banks. CBK in the year 2015 placed Dubai Bank of Kenya owing to the deteriorating cash reserve ratio position and failure to honor financial obligations, including kshs 48 million due to Bank of Africa Kenya. Chase Bank in the same year had made a loss of kshs 742 million, despite making a profit of kshs 2.3 billion the previous year. The loss was attributed to bad and insider loans totaling to kshs 16.6 billion. National Bank of Kenya in the year 2015 reported kshs 1.2 billion loss compared with a profit of kshs 1.3 billion in the same period in 2014. The huge loss was blamed on the issued bad loans. Imperial Bank Ltd in 2016 under receivership for facing serious liquidity problems. One of the catalysts was "Serial defaulters" who borrowed from various commercial banks and other lending institutions with no intention of repaying the loans. (CBK 2016). In the Kenyan Milieu, few aspects relating to Credit Reference Bureau have been reviewed Al-Khouri (2011).

Weru, (2015) evaluated the effectiveness of CRB in Kenya in provision of credit in commercial banks in Kenya, Nganga (2011) investigated stakeholder perception of credit reference bureau services in the Kenyan credit financial market, Gaitho (2013) studied the role of credit reference bureau on credit access, and Mumi (2010) appraised the impact of credit reference bureau in financial institutions in Kenya; Therefore, this study aims to assess the role of CRBs in mitigating against credit default in Commercial banks in Kenya.

## 1.4 Purpose of the Study

The purpose of the study was to assess the role of credit reference bureau in mitigating against credit default in Commercial Banks in Kenya.

## 1.5 Objectives of the Study

The specific objectives of the study were:

i. To analyze risk identification as a CRB role in mitigating against credit default in commercial banks in Kenya.

ii. To assess customer credit repayment behavior as a CRB role in mitigating against credit default in commercial banks in Kenya.

iii. To investigate customer credit access as a CRB role in mitigating against credit default in commercial banks in Kenya.

iv. To examine the reduction in the rate of moral hazard as a CRB role in mitigating against credit default in commercial banks in Kenya.

## 1.6 Hypothesis

This study was guided by the following hypotheses:

$H0_1$: Risk identification as a CRB role does not play a statistically significant role in mitigating against credit default in commercial banks in Kenya.

$H0_2$: Customer credit repayment behavior as a CRB role does not play a statistically significant role in mitigating against credit default in commercial banks in Kenya.

$H0_3$: Customer credit access as a CRB role does not play a statistically significant role in mitigating against credit default in commercial banks in Kenya.

$H0_4$: Reduction in the rate of moral hazard as a CRB role does not play a statistically significant role in mitigating against credit default in commercial banks in Kenya.

## 1.7 Justification for the Study

The findings of this study would be useful to the Commercial Banks in Kenya as it will help the banks in formulating effective policies related to credit access in Kenya. The study will be of benefit to various stakeholders in the financial industry including the bank managers, credit reference bureaus management, investors, bank clients and the general public since it will provide insights on how credit reference practices are related to bank profitability. The study will contribute to the literature and form part of an empirical review and may inspire prospective researchers to explore more dimensions of credit reference bureaus management on commercial banks performance and would, therefore, form the basis for future research. The findings of the study may also be used by policymakers, to understand and control the impact of

increasing non-performing loans from the economy due to credit risk. This will be of benefit in ensuring that the general performance of commercial banks is improved. This study is aimed at making financial lenders, borrowers, policymakers and legislators appreciate the role of CRBs in increasing access to credit and loans, ensuring the stability of lenders and contributing to the growth and stability of the economy. It will therefore serve as an impetus for policymakers and legislators to come up with policies and a legal regime that will create a conducive environment that will attract investors to form CRBs or invest in the existing ones, encourage borrowers to embrace CRB to develop their reputation collateral and for lenders to rely on their data for credit risk evaluation and management.

## 1.8 Scope of the Study

The extent of this study was restricted to assessing the role of CRB in mitigating against credit default in commercial banks in Kenya. The study focused on the influence of CRB on risk identification, customer's credit access, a rate of loan repayment and on moral hazard reduction in mitigating against credit default in Commercial banks in Kenya. Commercial banks were chosen for this study due to the unique credit policy which relies mainly on borrowers CRB reports.

## 1.9 Limitations of the Study

The distribution and collection of the questionnaires were time-consuming and costly because the researcher collected them at the convenience of the respondents who operate on a busy schedule. The researcher also prearranged with the respondent on the date to collect the questionnaire to ensure the data was collected on time, In addition, the nature of data obtained from the study was considered sensitive. The researcher ensured that the necessary letter of authority from NCST and from the

research learning institution was available on time to enable collection of data from the respondents without hesitation. Credit reference bureaus have only been in existence for five years at the period of study and while most commercial banks have embraced them, the general public is yet to fully understand them and appreciate their stand to gain from their operations in the long term. Some lending institutions are also yet to fully embrace CRBs.

## 1.10 Assumptions of the study

The researcher assumed that the respondents will be cooperative and willingly provide accurate data and on time. The researcher assumed that the respondents will have update information relating to the study and the data collection method used was the best tool to collect the data required to achieve the objectives of the study.

# CHAPTER TWO

# LITERATURE REVIEW

## 2.1 Introduction

This chapter presents the review of information related to the topic of investigation. The literature review is important as it enables the researcher to examine and familiarize with the existing knowledge regarding the study and to form an entry point and framework within which to interpret and analyze the research findings. Therefore, this section presents an analysis of critical review on CRB in mitigating against default, empirical studies conducted by other researchers on the CRB on mitigating against default. It also presents a review of the major theoretical issues, conceptual framework, summary, and gap.

## 2.2 General overview of Literature Related to CRB and CDR

### 2.2.1 Credit Reference Bureau

Credit Reference Bureau provides detailed information on a person's credit history, including information on their identity, credit accounts and loans, bankruptcies and late payments and recent inquiries. Other information shared include proven frauds and forgeries, cheque kiting, false declarations and fraud bank statements, receiverships, bankruptcies and liquidations, credit default and late payments, use of false securities, and misapplication of borrowed funds. Prospective lenders access the information only when they have permissible reason as defined in law, to determine the client's creditworthiness (Yap & Husain, 2011). The individual information collected by CRB is made available on request to customers of the credit bureau for the purposes of credit risk assessment, credit scoring or for other purposes such as

employment consideration or leasing an apartment. Generally, CRB enables financial institutions and credit lending institutions to lend to more and less risky clients and to determine better the bad loans that they need to cover expected losses and risks of credit to good payers. Second, credit reference bureau reduce the borrowing cost by forcing creditors to be more competitive for good borrowers or clients. Those lower costs for good credit risks motivate those borrowers to be more careful with loan repayment. Third, credit bureaus reduce moral hazard by developing a credit culture where they operate as borrowers become aware that credit financial market becomes aware of their credit history and rewards or punishes the client accordingly (Leonard, 2005).

According to Kallberg and Udel (2003) CRBs are information financial brokers, providing creditors with reliable, relevant and comprehensive data on the customer repayment habits and current debt of their credit applicants. Under reciprocity agreements, credit reference bureaus obtain data from creditors and other lending sources, consolidate and package information into individual financial reports, and distribute it to creditors for a fee. Gentgen, (2008) argued that most financial institutions and most lenders prefer hard collateral-based loans and credit but would extend cash flow-based credits if they can use a reliable and inexpensive system to exchange financial information on the character and ability to pay off borrowers. The need for the establishment of CRB services in any financial system and lending institution arises because of information asymmetry between lenders and borrowers. When financial institutions and lending institutions compete with each other for customers, multiple borrowing and over-indebtedness increase credit default unless the financial and non-financial institutions have access to databases that capture

relevant aspects of clients' borrowing and repayment behavior. The CRB contributes significantly to a reduction in the costs of screening loan applications by enabling the financial lender to sort out prospective borrowers who have defaulted with other lenders in other lending institutions (Nganga, 2010).

**2.2.2 Information kept by Credit Reference Bureau**

According to Barth & Levine (2008), the credit reference agencies keep the following information. For example in United Kingdom, Wales and Northern Ireland it includes Debt Relief Orders and Administration Orders. A public record is also kept to record court judgments and bankruptcies of clients. In Scotland for example, it includes decrees, sequestration orders, Debt payment programmes and Trust Deeds. Account information shows how one has managed his or her existing accounts such as the commercial bank account and any another borrowing in a financial institution or lending institution. It shows financial lenders whether they have made payments on time. Home repossessions information from members of the council of mortgage financial lenders about homes that have been repossessed. Financial institutions and non-financial institutions show details of people one is financially connected to. For example, it includes people one has applied jointly for credit or loan with or who have a joint account with. Previous searches show details of companies and organizations and firms that have looked at information on your file in the last twelve months and linked addresses one is linked with.

According to Barth & Levine (2008), if there has been any fraud against a borrower or client, for example, if someone has used somebody else identity, there may be a marker against the name to protect the client. One is able to see this on the client or borrower credit file. Information about a client or borrower is usually held on the file

for a period of a maximum six years. Some client information may be held for longer period depending on various circumstances, for example, where a court has ordered that a bankruptcy restrictions order should last more than six years. If the information is held for longer than it is supposed to be, a client can ask for it to be removed. One can ask for a copy of the credit reference bureau file from any of the credit reference agencies. If one has been refused credit by a financial institution or lending, one can find out from the creditor which credit reference bureau agency they used to make their decision and the reasons. The client file shows the personal details such as the name, telephone contact postal address and email address, as well as the current credit commitments and client payment records.  A client has to pay a small fee to get credit reference file. The credit report is known as a statutory credit report and a credit reference agency must provide it to the client if he or she requests for it. Credit reference agencies may offer other services where one is sent a copy of the credit reference file on a regular basis where a client or customer makes a subscription.

### 2.2.3 Information  Sharing by  Credit Reference Bureau

The regulations governing licensing, operations and supervision of banking sector CRBs in Kenya, the Banking CRB regulations, 2008 hereafter referred to as "Regulations", was gazette in July 2008 and came into effect on 2nd February 2009. Since then, CBK has licensed three credit reference bureaus, CRB Africa limited which operates as Transunion which was licensed in February 2010. Metropol CRB licensed in April 2011 and Credit info Credit   Reference Bureau limited licensed in 29th April 2015. The regulations mandate all commercial banks, financial institutions and Deposit Protection Fund Board (DPFB) to share negative information on their customers through CRBs (Al-Khouri, 2011 ).

According to Duffie and Singleton (2012) a survey conducted by FSD Kenya on the progress made in credit information sharing in Kenya, between 2008 and 2011, made two important findings. First, nearly 5 million consumers have credit agreements with formal sector financial institutions with accounts distributed as follows: Commercial banks and SACCOs have 2,000,000 (42 %) and 1,875,000 (40 %) accounts respectively, whilst deposit-taking microfinance financial institutions have 650,000 (14 %) accounts. Other financial institutions are said to have 200,000 (4 %) accounts or more.

The second finding of the survey was that; credit information is currently being shared by only approximately 200,000 consumers with non-performing accounts and loans. The above statistics imply that CRBs are sharing negative credit information on about 4.3 % of borrowers or clients with formal sector credit agreements. The limited number of accounts that the sharing by commercial banks nets coupled with the fact that the nature of information shared is largely negative illustrates the limited value of CRBs in credit risk management, assessment of the borrowers' or clients level of debt commitment and building of credit histories for use as collateral. Secondly, the regime mandates all commercial banks to share negative information (CBK, 2010).

Since the rollout of CRB in Kenya in July 2010 commercial banks submitted credit information to the licensed credit reference bureau in August 2010, commendable progress has been made so far in the banking sector. Commercial banks have also started accessing credit reports from the licensed credit bureau for credit appraisal purposes. Since August 2010 to July 2014, commercial banks have accessed 1,306,439 reports from licensed credit reference bureau in Kenya. Information on

nonperforming loans and any adverse credit information. This is ideally sharing negative credit information about loaned clients. The major flaw of sharing negative information only is its failure to depict accurately an individual's or clients entire credit history since reporting is contingent on the occurrence of a negative event, such as a delinquency or a late credit payment. In the circumstances, there is a high probability of classifying high credit risk borrowers as low credit risk ones in cases where they have accumulated significant debt exposure but have yet to default on any. On the face of it, such borrowers may appear to be low credit risk when they are in fact high credit risk in the sense that a slight tinker on their revenue or fortunes will lead to simultaneous defaults on all the loans held. This is due to asymmetric information and moral hazard. Stringent formation and operational costs are the third legal requirement that has constrained CRBs growth in Kenya (CBK, 2015).

The initial cost of putting in place a secure infrastructure for credit information exchange, initial and annual renewal licensing fee and operational expenses may hinder investors to venture into CRBs business. A license application processing fee of Kshs 10,000 is payable to CBK, there is the initial and annual licensing fee of Kshs 100,000 and a commercial bank guarantee of Kshs 1 million. These expenses and costs may discourage investors to venture into CRBs business or expand existing CRB business, considering that it takes up to five years or more for a credit reference bureau to stabilize and be fully operational. Other than the constraints highlighted above, there are other factors that may have contributed or hindered to the slow growth of CRBs in Kenya. For example, financial lenders may be under a misapprehension of the principle of credit information sharing. Some may fear that credit bureaus will make it possible for competitors to access vital information which

they can use to cherry-pick their good clients whilst others may be under the fear that sharing credit information with CRBs will expose them to liability for breach of confidentiality obligation (CBK, 2010).

Armstrong (2008) indicated that it is difficult to have accurate information on the financial ability of prospective borrowers or client and even more difficult to have accurate information on their credit history. This makes it extremely difficult for the financial lenders to assess the creditworthiness of potential borrowers and their ability to pay the loans or credit. For many years, financial institutions and non-financial institutions in Kenya have had to contend with having incomplete information about borrowers that in turn translate to higher risk premiums on interest rates. Perennial credit defaulters had been the cause of high lending rates (Rukwaro, 2001). Currently, credit information sharing is a mechanism introduced by Central Bank requiring all commercial banks to share data on the credit history of their customers. This information is shared by commercial banks through credit reference bureaus when they want to establish the creditworthiness of a customer seeking a loan or credit. Commercial banks and other credit providers use credit reports obtained from CRBs as part of the financial lending decision process. Auronen (2003) warns that having only one-half of the pictures negative credit information runs the risk of it becoming the only deciding factor. CRBs enable financial lenders to lend to more and better risk clients and to determine better the bad loan spread that they need to cover expected risks of credit to good payers. Those lower costs for good credit risks motivate those borrowers to be more careful with loan repayment.

According to Fulton (2004), the credit or loan approval decision was made using a purely judgmental approach by merely inspecting the application form details of the applicant or client and commonly focused on the values of the 5 Cs of a customer. These 5Cs are character, capacity, condition, collateral, and capacity. Character measures the customer's character and integrity including virtues like reputation and honesty. Capacity measures the customers' ability to pay for example job status, a source of income and finally conditions is where the members borrowing circumstances are evaluated for example existing market conditions, competitive pressure, and seasonal character. Collateral is where in the event a borrower or client is not able to repay a debt with its cash flow, a financial lender must rely on the quality and sale ability of borrower collateral to repay the funds. More capital represents the client's ability to withstand volatility. It also demonstrates the commitment an owner of a borrowing entity maintains. A strong capital position reassures a financial lender of repayment capacity in a borrower to the commercial lender.

## 2.2.4 CRBs on Non Performing Loans of Commercial Banks.

Financial performance is a subjective measure of how well a firm can use assets from its primary mode of business to generate revenues and income (Waweru and Kalani, 2009). This term is also used as a general measure of a firm's overall financial health over a given period of time and can be used to compare similar firms or businesses across the same industry or to compare industries or sectors in the economy. There are many different ways of measuring financial performance, but all measures are taken in total. Line items such as revenue or inflows from operations, operating income or fund flow from operations, as well as total unit sales, can be used in measuring the

financial performance of a firm or business. The emergence of CRBs has significantly revolutionized financial lending and contributed to the improved financial performance of many financial institutions and credit lending institutions in Kenya. Before the introduction of CRB, many borrowers used to borrow from one lending financial institution to the other without being identified. This led to many financial institutions and credit lending institutions experiencing immense losses as a result of NPLs. Through the use of CRB, the commercial banks are in a position to obtain detailed information on a person's credit history, including information on their identity, credit accounts and loans, bankruptcies and late payments and recent inquiries made by the client (Richard, 2011).

According to Mumi (2010) financial institutions and credit lending institutions are facing an enormous risk of NPLs noting that larger loans have greater credit risk exposure, so the variable costs per-shilling is higher. If lenders don't take extra care, there could be more loan defaults. CRB enables commercial banks to determine the creditworthiness of their borrowers and therefore reducing the credit default risk. In this respect CRB assists in first, sharing information on credit default among commercial banks and other credit lending institutions; secondly, eliminating corrupt borrowers and clients , and thirdly, to provide commercial professional credit reference to prospective foreign investors and local investors; and also to identify credible borrowers based on known history and character. CRB has the following benefits to the credit lenders which include identification of serial credit defaulters, who borrow from various commercial banks with no intention of repaying the loans. Resolving the "information asymmetry" problem, which arises because of the environment of lack of a credit information sharing mechanism among financial credit

lenders. Reduces borrowing costs and credit delinquencies to a significant extent; enhances effective credit risk identification and monitoring and credit extension. This ensures that credit flows to deserving clients and is reduced to those less deserving and maintaining sound financial stability in an economy (Atkinson & Stiglitz (2015).

CRB benefits financial lenders in the following ways; first, it expands the client's base with better access to more consumers, including those with good credit history records. Second, there is a better understanding of the relationship customers have with other financial credit lenders. Third, increasing application quality and profitability of the financial institution. Commercial lenders can offer targeted pricing to clients based on the level of credit risk involved with extending loans. Positioning and designing better marketing strategies for financial lenders. Unlike, negative data, which can be used only for the approval process, positive data may be used to derive policy setting, modeling and customer or client segmentation (Epure and Lafuente, 2012).

Credit Reference Bureau encourages clients to maintain good credit history records. Rewards consumers who maintain good credit payment histories. Positive data reporting provides a more comprehensive picture of customer financial behavior. A disproportionate number of consumers with a good credit track record can be unfairly penalized by negative data reporting. Citizens should understand that the introduction of Credit Reference Bureaus inculcates a culture of observing credit terms and respecting credit contracts terms and conditions. SMEs and individual borrowers and clients stand to benefit greatly from the introduction of Credit Reference Bureaus since they are able to use their credit histories as collateral unlike in the past when

they were constrained from accessing credit due to lack of physical collateral. It is therefore for the various stakeholders to support this noble cause by the monetary authorities which will bring order and stability into the financial market system and allow the circulation of resources without them being unnecessarily blocked by willful loan or credit defaulters (Ngetich, 2011).

## 2.3 CRBs Role in Risk Identification in Mitigating against Credit Default

According to Kargi ( 2011), the creation of credit reference bureau is one of the most effective means of reducing non-performing loans in the economy especially in the financial institutions . The introduction of CRB in the financial landscape is an effort to encourage sharing of information by financial institutions and credit lending institutions so as to reduce the incidence of serial credit defaults by commercial bank customers as well as minimize the incidences of nonperforming loans.  The introduction of CRB help players in the banking sector to start building their capacity to borrow from sector since the credit information sharing allows the commercial banks and credit lending institutions to distinguish between good and bad borrowers. The CRB is meant to complement the central role played by commercial banks and other financial institutions in extending financial services within an economy. Risk identification is vital for effective credit risk management. With the presence of a CRB, there is a strong motivation for clients to repay their loans or credit leading to improved financial performance (Atkinson, & Stiglitz (2015).

CRBs help makes faster and accurate credit lending decisions. They collect, manage and disseminate customer information to financial lenders within a regulatory framework. Credit histories not only provide necessary input for credit underwriting but also allow borrowers to take their credit history from one financial institution to

other thereby making credit and financial lending markets more competitive and in the end more affordable. CRB assists in making credit access to more people and enabling financial lenders and business reduce credit risk and fraud. These credit risks typically increase the price of credit and loan in the economy. Sharing information between financial institutions and credit lending institutions in respect to customer credit behavior, therefore, has a positive economic impact. Commercial banks play a central role in extending financial services within an economy. In support of this role, credit reference bureau helps financial lenders make faster and more accurate credit decisions ( Jappeli, 2002).

The Credit Reference Bureaus are meant to deal with moral hazard and adverse selection problem through monitoring the behavior of clients. The operations of credit reference bureau should be underpinned by the strong legal framework so as to be better able to deal with adverse selection and moral hazard problems to reduce default risk and fraud (Armstrong, 2008). Adverse selection is the problem created by asymmetric information before a transaction occurs, whilst adverse selection in the financial market occurs when those potential buyers or client who are most likely to produce an undesirable outcome the bad credit risk are the ones actively seek out credit are the most likely to be selected. The moral hazard created by asymmetric information after a transaction occurs. Moral hazard in the financial market occurs when the financial lender has subjected to the hazard that the borrower has incentives to engage in activities that are undesirable from the financial lender's point of view because those activities make it less likely that the loan will be repaid back thus leading to loan or credit default. (Bruce, 2007).

**2.3.1 CRBs Credit Reports to the Commercial Banks**

According to Ferretti (2006), the need for the establishment of CRB credit report services in any financial market system arises because of information asymmetry between financial lenders and borrowers which provide the following information to the financial sectors. First, there is timely and accurate information. This is achieved by providing timely and accurate information on borrowers' or clients debt profile and credit repayment history. Experience has revealed that when financial institutions and credit lending institutions compete with each other for customers, multiple borrowing and over-indebtedness increases loan or credit default unless the financial institutions have access to databases that capture relevant aspects of clients' borrowing behavior. CRB contributes significantly to a reduction in the costs of screening credit applications by enabling the financial lender to sort out prospective borrowers who have defaulted with other financial lenders. A CRB, therefore, improves lenders' ability to predict loan or credit default.

Second, availing an improved pool of   borrowing clients where more and more unbanked consumers will be eligible for financial services. Recent research based on information from several  nations across the globe including Singapore, Iraq, China, Romania, Vietnam, Cambodia, Brazil and Hong Kong among others, shows that the existence of credit registries is associated with increased  financial lending volume, growth of consumer lending, improved access to financing and a more stable commercial banking sector leading to stable economic growth (Greuning, 2003). Third, CRB reduces credit default rates as clients seek to protect their reputation collateral by meeting their financial obligations in a timely manner. With the presence of a CRB, there is the strong motivation for clients to repay their loans or credit on

time. Credit reports that include both positive and negative information help build reputation collateral in much the same way as a pledge of physical collateral, which may improve credit access for the poorest borrowers or client. In the long run, a bigger credit financial market and lower credit default rates lead to lower interest rates, improved profitability and increased bank competitiveness (Kagi,2011).

According to Anderson (2007), a credit report is a very important compilation of information about the borrower or client. It lists a number of personal identifiers, such as Social Security number, date of birth, current and past postal and email addresses, telephone contacts and even the current employer. It also reveals present and past loans, credit cards, mortgages and any other reported debts or financial obligations. It discloses the financial status of those accounts, whether they're up-to-date, overdue, paid in full or in collections. Any public information, such liens, judgments, bankruptcies, even criminal convictions against the borrower or client is also recorded. Credit file registers the severity of overdue accounts, whether they are 30, 60, 90 or more days past due, or if they were charged off by the financial lender. Whenever one applies for a loan or other type of credit, the credit record is ordered and examined by the potential creditor or financial lender. The credit report rates the financial status and the creditor uses it to help decide the likelihood of repaying the borrowed funds by the potential borrower.

According to McIntosh & Bruce (2005), credit score rating is a number between approximately 150 and 900 that summarizes the creditworthiness of the potential borrower or client. The credit reporting agencies use a complex formula which compiles all of the information in the credit file to determine the credit score, which is

used as a snapshot of credit health of the potential borrower or client. The formula takes into account payment history, the number and age of open credit lines the client has, how long the client had a credit history, the types of credit accounts the client has, the total credit or funds available and how much of it has been used, and the number of inquiries in the credit report. The credit score has a direct impact on future borrowing ability of the client. A low credit score may disqualify one from receiving a loan or credit. Or, the client may be required to pay a higher rate of interest because the score portrays a greater credit risk to the lender. The items listed in the credit file can have a positive, negative or neutral credit rating. Items which are negative, such as overdue or charged-off accounts, may remain on the credit report for seven years or more. Bankruptcies can continue to be recorded in the clients file for up to ten years. However, many consumers or clients are not aware of the fact that if one applies for a job that pays $75,000 or more, or applies for loan or life insurance in the amount of $150,000 or more, any negative items on the credit report that's used in conjunction with that job or credit application can be older than the limits listed above.

According to Kagi (2011) with the proliferation of identity theft, and the fact that errors in credit report files are quite common, it's advisable to check credit report periodically. The simplest way to obtain the credit report is to order a softcopy online. It's best to get one from each of the three major credit reporting agencies since the information contained in their credit reports can vary to some extent. Also, if one has been denied credit or loan, employment, rental housing, or insurance based on the credit report, one has the right to obtain a free credit report from the credit agency that supplied the information within sixty days of the denial. A credit report shows the entire financial status on paper. Creditors, employers, insurance companies, utility

provider companies and child support agencies can obtain the credit report file. It, therefore, makes sense to ensure that the credit report file contains accurate information and portrays one in as positive as light as possible.

According to Daniels (2004) although each credit reporting agency formats and reports this information differently, all credit reports contain basically the same categories of information which includes; Identification information like social security number, postal and email address and telephone contact, date of birth and employment information. Updates to this information come from information supplied to financial lenders. Financial lenders report on each account established with them. They report the type of account whether bankcard, credit card, auto loan or mortgage. The date the account was opened, credit limit or loan amount, the account balance and customer payment history. Credit inquiries on when one applied for a loan or credit. The financial lender is authorized to request a copy of credit report. The inquiries section contains a list of everyone who accessed the credit report within the last two years. The credit report lists both voluntary inquiries, spurred by own requests for credit and involuntary inquiries, such as when financial lenders order the report so as to make a pre-approved credit offer in the mail. Credit reporting agencies also collect public record information from state and county courts, and information on overdue debt from credit collection agencies. Public record information includes bankruptcies, foreclosures, lawsuits, wage attachments, liens and court judgments (Hoque, 2004).

## 2.4 CRBs on Customer Repayment Behaviour in Mitigating against Credit Default

According to Hoque (2004), managing financial resources by way of lending and borrowing is a key operational function of any financial market system. Therefore, loan or credit repayment is very important. A loan or credit is considered as performing if the principal and interest are being paid in accordance with the agreed contractual terms of repayment. Failure to pay loans or credit promptly may limit credit access. According to Thomas & Scherer (2001) inadequate access to credit limits potential borrowers from a fair share of resources in society, depriving them of basic needs and opportunities in life. Universally, financial institutions and credit lending institutions are facing problems of non-repayment of loans. This problem can be overcome through monitoring the behavior of borrowers or clients. Thus, the idea of establishing CRB is appropriate in managing potential loan and credit default. Studies show that CRBs allows for credit information sharing among the financial institutions especially commercial banks.

According to Leonard (2005), previously many clients who made a lot of effort to repay their loans were not rewarded for it because their good credit repayment history was not available to the commercial banks they approached for new loans. On the other hand, whenever borrowers failed to repay their loans commercial banks were forced to pass on the cost of credit defaults to other customers through increased interest rates and other fees. Simply meaning good borrowers or clients were paying for bad. This has come to an end with the adoption of CRB. With CRB, a credit report is generated containing detailed information on a person's credit history, including information on their identity, their contacts, credit accounts and loans, bankruptcies

and late credit payments, and recent inquiries. It can be obtained by prospective financial lenders only when they have the permissible reason as defined in law, to determine his or her creditworthiness. Credit reporting allows commercial banks to better distinguish between good and bad borrowers. Someone who has failed to pay their loan in one commercial bank will not simply be able to walk to another commercial bank to get another loan without the commercial banks and credit lending institutions knowing about it. Over time better information on potential borrowers should mean that it will be both cheaper and easier to obtain loans or credit and make prompt repayments.

According to FSD (2009), a customer with sound past financial dealings with a commercial bank has a higher chance of getting a loan and vice versa. The purpose for which the borrowed funds will be used, financially yielding projects and investments are considered more by commercial bank managers in order to make sure that the loan will be used for projects that will yield profit so that it will enable the borrower or client to repay the loan. The collateral security offered: These collateral securities, which are non-current assets, must be the things the commercial bank can sell easily and more than the value of the loan given. The period of loan repayment of such loan is very important because the commercial bank would not want its loan to be tied down for a very long time in spite of the fact that it charges interest on the loan. The customer's referee must be one who is well known to the commercial bank and who will guarantee that in case the borrower defaults or becomes insolvent, that he or she will repay the loan. The earning power of the customer against the amount borrowed to be given out as a loan is some of the determining factors in granting and issuing loans. The sources of repayment, the commercial bank managers will also like

to know the possible sources the customer intending to borrow funds has for repaying the loan. The present government policy on commercial bank lending where a customer is expected to fulfill all the lending conditions. Nevertheless, if government policy on lending is the credit squeeze, the commercial bank will not grant the fund and vice versa (Koch and Macdonald, 2014).

## 2.4.1 Credit Reports on Customer Repayment Behaviour

According to Derban and Mullineux (2005), credit reports provide a credit score that is unique to a customer's or borrower's character. This credit score is a measure of credit risk calculated from a credit report using a standardized formula. A positive score is characterized by frequently paid utility bills, lack of credit defaults on outstanding balances and maintaining steady employment. On the other hand, a negative credit score is characterized by late credit payments, bankruptcy, fraud charges, foreclosures and loss of employment or closure of business. It is worth noting that sharing of negative credit information does not amount to blacklisting of the customer by CRB. However, such CRB negative credit information is expected to be taken into account by commercial banks while assessing applications for loans and other commercial bank facilities (Greuning, 2003). Kargi (2011) acknowledges that CRB ensures that only those with repayment capacity get access to loans or credit. Derban (2005) points out that financial institutions and credit lending institutions that have embraced CRB are can lend at a reasonable interest rate because there are fewer provisions of bad debts and credit default.

According to Djankov and Scleifer (2007), credit default occurs when a borrower has made no payments on a loan for at least 270 days. When a borrower violates the loan

agreement, and the financial lender or servicer can request immediate payment in full. The credit file is one of the most valuable assets; which needs to be protected by the lender. An adverse credit rating by receiving a credit default can impact applications for credit for 5 years or more. Most clients don't realize the impact of receiving a credit default until it's too late. A credit default can impact applications for any credit or loan such as obtaining phone or internet accounts or even utilities like electricity and water, or even various others home or business services. A credit default is something that can be avoided by simply understanding why clients have issues, and how they can be avoided. By being more informed about clients who deal with a credit default, one can help to make sure that he or she does not find himself or herself in the same situation.

According to Thomas & Scherer (2001), if a person is trying to improve the odds of getting a business loan, they suggested the review of the following business practices. Pay off or delay paying a debt, If possible paying off existing debt or refinancing the debt for a longer maturity with lower credit payments. For other debts trying to renegotiate loan payment lengths. Normally some credit lending institutions allow some delinquencies as long as some money is coming in. In some situations, one may simply have to prioritize those creditors who must be paid because they provide necessities such as utilities like water, internet and electricity, certain suppliers, and payroll. Delaying credit payments to creditors who are less likely to halt business like the secondary suppliers. Receivables on overdue should be collected quickly as revenues are lost when a firm's collection policies are not aggressive. The longer customers balance remains unpaid, the less likely of receiving full payment.

Tightening credit terms without losing good customers can increase available funds on hand and reduce the bad debt expense and encouraging cash sales through cash discounting and pricing policies. In addition, trying to reduce the float time on customer credit payment checks. This can be done by undertaking prompt processing of cheques as they are being received through commercial bank lockbox arrangement, in which a fee is paid to the commercial bank to collect and process all incoming payments. Increasing revenues is the main goal of every business or firm. In reviewing ways to increase fund flow through increased sales, it is necessary to guard against allowing too many credit purchases. Extending credit increases the accounts receivable, not the cash inflow. Reducing inventory or stock can reduce the amount of inventory one maintains and cash outflow decreases (IAIS, 2003). An FSD (2009) reviewing tax strategy that may help increase funds flow is also important. For example, a tax credit may be available for job opportunities created for disadvantaged employees, research and development costs or the expenses of property renovation or rehabilitation of certain buildings and investments. In addition, accelerated depreciation on certain fixed assets may be available to increase the short-term tax deductions thus increasing cash flows in the firm.

According to Gieseche (2004), consumer credit agencies are required to remove any negative or positive information from the credit report that cannot be verified or has been shown to be inaccurate. However, before one submits a letter disputing any debt to the credit reporting agency; it's often a good idea to contact the relevant creditor directly. If an error was made, the client can often clear up the dispute more quickly if one takes the initiative. If the dispute is not resolved and the negative credit report is not adjusted, one has the right to file a statement or explanation regarding the alleged

debt with the credit report. If the credit report does have some negative information on it, one might consider requesting that any creditors with whom one has had a good credit history, but who did not report the transactions, be added to the credit report. For a minimal fee, most CRBs will add additional creditor information (Gaitho, 2013). Assessing the character of a potential business borrower or client. The weight given to a financial lender's assessment of a borrower's character can vary tremendously between financial lending institutions and between individual credit officers. Many small businesses have found more success selling their reputation and good character to smaller community commercial banks that may be more directly affected by the economic health of the surrounding society. Improving the character in front of financial lenders is important. Generally, the following traits are considered the most important when a commercial bank considers character; successful prior business experience, an existing or past relationship with the financial lender, for example, a prior creditor depositor relationship. Referrals by respected members of the society, references from professionals like accountants, lawyers, and business advisers who have reviewed the business and project proposals. Community involvement and evidence of care and effort in the business or project planning process (Barron & Staten, 2003).

## 2.4.2 Causes of Credit Default by Customers

According to Daniels (2004), there are three major causes of loan or credit default. First, unknown missed loan payments where many people only realize they have a credit default when they are declined for some form of credit. There has been a credit default listed on their credit report and it has resulted in the decline. They may not even have any had any financial issues but may have only mismanaged a utility bill

or a service or phone contract. One may think the utility bill has been taken care of by closing the account; but if a contract is canceled one may still have cancellation fees to be paid. It is quite common for the fees to cancel a telephone or email contract to be anywhere for example from $2000 to $3000. The phone contract sometimes includes the cost of the mobile handset, which can run into thousands of dollars or shillings. Other instances where a credit default is listed can be where a person has moved house, and there is an outstanding amount owing from a phone or utility bill like water and electricity.

According to Felix & Claudine, (2008) the second cause of loan or credit default is known missed payments, where some clients, however, are completely aware they are facing credit defaults, but they are facing financial hardship and struggling to make their commitments. People do not simply decide to not pay their utility bills; it is a result of some other circumstance that puts them into this financial situation. The various situations that may put you at financial risk are divorce, sickness or inability to work, loss of a job and failed business. In these situations, there is usually a loss of an income, but in the case of divorce, there is an emotionally devastating event that affects how a person operates in their everyday life. There may be a change in living standards for both parties with a breakdown in communication, a ripe situation to cause a credit default.

The third cause of loan or credit default is overcommitted by high-interest debts. Over the last few years, many people have applied for and received loans or credit they could barely afford. As first home buyers, they may need to spend money on buying furniture and other house assets to get their house in order and hence get themselves

into large amounts of unsecured, high-interest debt. A combination of credit cards, personal loans or credits and a loss of an income can be devastating for a dual income family. The loss of an income in these circumstances can be from the birth of a baby or a sickness, or loss of a job, closure of business and other natural calamities .Being informed and knowing about the causes of credit defaults can help to keep a person from receiving a credit default (Collins & Wanjau, 2011).

## 2.5 CRBs Role in Credit Assess in Mitigating against Credit Default

According to Felix and Claudine (2008), credit risk is the prospective financial risk to earnings and capital arising from an obligor's failure to meet the terms of any contract with the commercial bank or fails to perform as agreed. The largest source of credit risk is non-performing loans. However, credit risk exists throughout the other financial transactions. An effective and sound credit risk management is critical to the stability of an institution. Institutions use various techniques of mitigating credit risk. The most common are collateral, guarantees and netting off of loans against deposits of the same counter-party. While the use of these techniques will reduce or transfer credit risk, other risks may arise which include legal, operational, liquidity and market risks. Therefore, there is a need for a commercial bank and credit lending institutions to have stringent procedures and processes to control these risks and have them well documented in the policies. At present, the common mitigation technique used as collateral. One of the factors that commercial banks consider when deciding on a loan application is the estimated chances of recovery. To arrive at this, information is needed on how well the applicant has paid past loans. This information is vital because there is usually a definite relationship between past and future performance in loan repayment (CBK, 2010). Luoto and Wydick, (2007) argue that CRB can be used

to control losses from the refusal or inability of customers to pay what is owed in full and on time. In this way, CRB maximizes commercial bank's risk-adjusted rate of return by maintaining credit risk exposure within the acceptable limit in order to provide the framework for understanding the impact of credit risk management on commercial banks' profitability.

Duffie (2012) noted that the use of CRB as a credit risk management is in two-fold which includes, the realization that after losses or risks have occurred, the losses becomes unbearable and the developments in the field of financing commercial, securitization, and other non-bank competition which pushed commercial banks to find viable loan borrowers. A lender advancing credit looks forward to loan repayment of the principal amount plus interest. To mitigate the credit risk of default, lenders call for security which they can seize and realize as a last resort to recover full or partial payment of the advanced amount. Unsecured creditors, therefore, pose a relatively high credit risk compared to secured creditors. According to Diamond (2001) for a lender to reduce credit risks associated with lending, the most important qualification for successful lending is the ability to judge the character and credit-worthiness of borrowers or clients. CRB is a company that collects information from various lending sources and provides consumer credit information on individual consumers for a variety of reasons. It provides detailed information on a person's credit history, including information on their identity, emails and physical address and contacts credit accounts and loans, bankruptcies and late loan payments and recent inquiries made. Prospective financial lenders access the information only when they have a permissible reason as defined in law, to determine the borrower's or customer's creditworthiness.

## 2.5.1 Information Collected by CRB to Assess Credit Risk

The individual information collected by CRB is made available on request to customers of the credit bureau for the purposes of credit risk assessment, credit scoring or for other purposes such as employment consideration or leasing an asset. Generally, CRB enables financial institutions and credit lending institutions to lend to more and better risky clients and to determine the bad loans that they need to cover expected losses and risks of credit to good payers. Second, CRBs reduce the borrowing cost by forcing creditors to be more competitive for good borrowers or clients. Those lower costs for good credit risks motivate those borrowers to be more careful with loan repayment. Third, CRBs reduce moral hazard by developing a credit culture where they operate as borrowers and clients become aware that credit market becomes aware of their credit history and rewards or punishes them accordingly (Derban, 2005).

All over the world, financial institutions and credit lending institutions face enormous risks of (NPLs). To overcome this challenge, financial institution is required to monitor the behavior of borrowers or clients. Thus, the idea of establishing (CRB) was conceived in order to enable financial institutions to determine the credit worthiness of their borrowers and to reduce the credit or loan default risk. In this respect, CRB assists in sharing information on credit default among commercial banks and eliminating those borrowers and clients who may have the aim of borrowing from different financial institutions with the aim of defaulting (Diamond, 2001). CRB allows for credit information sharing among financial institutions and credit lending institutions. Credit information sharing undoubtedly plays a pivotal role in reducing the information asymmetry that exists between commercial banks and

borrowers. Thus CRB reports help commercial banks stem out malpractices in the banking sector since customers whose credit reports indicate as having been involved in malpractices are subjected to stringent terms and conditions. This is also expected to help commercial banks suppress the levels of NPLs while increasing their loan books. To commercial bank customers, credit information sharing is expected to minimize the problem of information asymmetry in the financial sector (Barth & Levine, 2008). Information asymmetry between commercial banks and borrowers is one of the main contributors to the high cost of credit. To this end, commercial banks tend to load a risk premium to borrowers because of lack of customer information. This, in turn, increases the cost of borrowing, meaning repayment of loans goes up which translates to a high level of credit default. The Credit Information Sharing (CIS) mechanism is therefore expected to facilitate the development of information capital to increase information symmetry and allow the cost of credit or loan to decline substantially (Jappelli & Pagano, 2003).

CRBs complement the central role played by commercial banks and other financial institutions in extending financial services within an economy. CRBs help financial lenders make faster and more accurate credit decisions. They collect, manage and disseminate customer information to financial lenders within a provided regulatory framework in Kenya, the Banking CRB regulations, 2008 which was operationalized effective 2nd February 2009. Credit histories not only provide necessary input for credit underwriting, but also allow borrowers or clients to take their credit history from one financial institution to another, thereby making financial lending markets more competitive and, in the end, more affordable. Credit bureaus assist in making credit accessible to more people and enabling financial lenders and businesses reduce

credit risk and fraud. Sharing of information between financial institutions and credit lending institutions in respect of customer credit behavior, therefore, has a positive economic impact (CBK, 2010).

Table 2.1 shows loans and advances between 2012 and 2013 and their risk classification.

**Table 2. 1: Loans and Advances Risk Classification (Ksh. Millions)**

|  | 2012 | % of Total | 2013 | % of Total |
|---|---|---|---|---|
| Normal | 1,192,833 | 89.7% | 1,385,663 | 87.7% |
| Watch | 76,789 | 5.8% | 111,794 | 7.1% |
| Substandard | 16,370 | 1.2% | 24,841 | 1.6% |
| Doubtful | 29,798 | 2.2% | 37,525 | 2.4% |
| Loss | 14,575 | 1.1% | 18,945 | 1.2% |
| **Total** | **1,330,365** | **100.0%** | **1,578,768** | **100.0%** |

**Source:** Adopted from CBK Annual Reports and Bank Supervision Annual Reports (2014).

The loans and advances in normal risk category increased by 16.2 percent from Ksh. 1,192.8 billion in December 2012 to Ksh. 1,385.7 billion in December 2013 as shown in Table 2.1. The increase was occasioned by the increased demand for credit from various economic sectors during the year. However, the proportion of loans in normal, watch, and substandard doubtful and loss categories increased in 2013 compared with

the year 2012.

Table 2.2 shows loans and advances and NPL between 2003 and 2008 before the establishment of CRB and between 2009 and 2012 after the establishment of CRB.

**Table 2. 2: Loans, Advances, and Non-performing loans. (Ksh in billions)**

| Period | Loans and Advances | % | Non-Performing Loans | % |
|--------|--------------------|------|----------------------|-------|
| 2012 | 1,296,452 billion | 11.63 | 61.9 billion | 5.80 |
| 2011 | 1,152,011 billion | 12.54 | 58.3 billion | 6.17 |
| 2010 | 786,591 billion | 46.45 | 61.5 billion | 10.61 |
| 2009 | 668580 billion | 17.65 | 68.8 billion | 10.61 |
| 2008 | 555,062 billion | 20.45 | 58.3 billion | 18.01 |
| 2007 | 518,917 billion | 6.97 | 56.1 billion | 3.92 |
| 2006 | 396,149 billion | 17.06 | 65.4 billion | 4.66 |
| 2005 | 338,399 billion | 11.48 | 68.6 billion | 3.20 |
| 2004 | 382,290 billion | 21.24 | 70.8 billion | 4.11 |
| 2003 | 315,321 billion | | 73.9 billion | |

Adopted from CBK Annual Reports and Bank Supervision Annual Reports (2013).

The table 2.2 shows that there is an increase in percentage in nonperforming loans after the introduction of CRB as compared to percentages before the introduction of CRB.

The table 2.3 shows the sectoral distribution of NPLs between June 2011 and June 2013.

**Table 2. 3 :Sectoral distribution of NPLs loans (ksh in billions)**

| Sectors | June 2012 | June 2011% | Change |
|---|---|---|---|
| Personal/Household | 19.7 | 18.8 | 4.80% |
| Trade | 12.3 | 11.7 | 5.10% |
| Manufacturing | 5 .7 | -28 | 60% |
| Real Estate | 6.5 | 6.7 | -3.00% |
| Transport and Communication | 3.7 | 3.7 | 0.00% |
| Agriculture | 4.1 | 4.9 | -16.30% |
| Financial Services | 1.4 | 1.6 | -12.50% |
| Building and Construction | 2.3 | 1.7 | 35.30% |
| Energy and Water | 0.3 | 0.2 | 50.00% |
| Tourism, Restaurant and Hotels | 2.1 | 1.8 | 16.70% |
| Mining and Quarrying | 0.1 | 0.2 | -50.00% |
| **Gross/Total** | **57.5** | **58.3** | **-1.40%** |

Time series adopted from CBK Annual Reports and Bank Supervision Annual Reports (2012).

Majority of the NPLs are in personal and or household sector than any other sector and this reflects the Kenyan NPLs are spread. The above information is important to the commercial banks in making decisions on loan issuance depending on the performances by the various sectors of the economy. According to Kithinji (2010), CBK may insure financial institutions against limited institutional capacity, inappropriate credit policies, volatile interest rates, and poor management. CBK also supervises inappropriate laws, low capital, and liquidity levels. It also overseas directs

lending, massive licensing of commercial banks, poor loan underwriting, and laxity in credit assessment, poor lending practices, and political interference. However, managing financial resources by way of lending and borrowing is a key operational function of any financial market system ( Waweru & Kalani, 2009).

According to Heffernan (2006), he argued that commercial banks play an important and effective role in attracting investors with surplus wealth and divert these resources towards those having a scarcity of financial resources. Consequently, compensation is expected by resource owners for the deferred expenditure of their savings. This is the cost ultimately born by the borrowers willing to repay additional sums on the borrowed funds. In the case of micro-credit financial institutions, a common problem has been to ensure that the delivery of financial services is done cost-effectively. Small loans made to a large number of people physically spread over a wider area or region than in urban areas, means upward pressure on transaction costs. Thus such financial lenders must design systems that keep the transaction cost of outreach relatively low, to a greater or lesser extent. The higher the cost of providing these financial services, the higher will the interest rates be to generate the revenues to cover costs. This again emphasizes the need for innovative thinking in designing financial services for borrowers or clients (Berger & Frame, 2007).

## 2.5.2 Methods of Mitigating Credit Risks by Commercial Banks.

According to Berger and Frame (2007), commercial banks have their own methods of mitigating credit risks. Commercial banks may also write stipulations on the borrower, called loan covenants, which are included in the loan agreements. The covenants include requirements for borrowers or clients to periodically report their

financial conditions, refrain from paying dividends, repurchasing shares, borrowing further, or other specific, voluntary actions that negatively affect the company's or firms financial position or may require the financial lender to repay the loan in full, at the lender's request, especially in certain events such as changes in the borrower's debt-to-equity financial ratio or interest coverage ratio. Atkinson & Stiglitz (2015) adds that financial lenders and bondholders may hedge their credit risk by purchasing credit insurance or credit derivatives. These contracts transfer the credit risk from the lender to the seller the insurer in exchange for payment. Financial lenders can also reduce credit risk by reducing the amount of credit extended, either in total or to certain borrowers. Borrowers face a high degree of unsystematic credit risk called concentration risk. Financial lenders can reduce this risk by diversifying the borrower pool.

According to IAIS (2003), many governments establish deposit insurance to guarantee commercial bank deposits of insolvent banks. Such protection discourages consumers from withdrawing money when a commercial bank becoming insolvent to avoid a bank run and encourages consumers to hold their savings in the banking system instead of in cash. Commercial banks generally charge a higher interest rate to borrowers who are more likely to default; a practice they call risk-based pricing. This is because they consider factors relating to the loan such as loan purpose, credit rating, and loan-to-value financial ratio (Collins & Wanjau, 2011).

Credit reference bureaus assist in making credit accessible to more people and enabling lenders and businesses reduce credit risk and fraud. These credit risks typically increase the price of credit in an economy. Sharing of information between

financial institutions in respect of customer credit behavior, therefore, has a positive economic impact. Commercial banks play a central role in extending financial services within an economy. In support of this role, credit reference bureaus help financial lenders make faster and more accurate credit decisions ( De Servigny, 2004).

### 2.5.3 Credit Reference Bureau on Customer Credit Access

The high financial cost of borrowing generally reduces the borrower's repayment capacity which results in credit default risk. If the credit risk can be controlled, it can lead to increased access to credit. This implies that credit default risk is a critical source of economic distortion and stagnation which must not only be monitored but also controlled. Maintaining credit accessibility is crucial to the achievement of positive economic results and stability in the economy. While commercial banks continue to extend credit facilities, the problem of credit default risk becomes a complicated issue requiring continued in-depth research to avoid economically distresses to financial institutions. The prerequisites of an effective credit access include efficient, effective systems and procedures for credit risk management (Leonard, 2005).

Generally, commercial banks may encounter difficulty in meeting financial obligations from its financial liabilities if they do not maintain appropriate liquidity levels. In the case of commercial banks, the approach to managing liquidity is to ensure, as far as possible, that it will always have sufficient liquidity to meet its financial liabilities when due, under both normal and stressed conditions, without incurring unacceptable losses or risking damage to the commercial bank's reputation. The commercial bank's treasury maintains a portfolio of short-term liquid assets, largely made up of short-term liquid investment securities, loans and advances to

commercial banks and other inter-bank facilities, to ensure that sufficient liquidity is maintained within the commercial bank as a whole. The daily liquidity position is monitored and regular liquidity stress testing is conducted under a variety of scenarios covering both normal and more severe market conditions. The key measure used by commercial banks for managing liquidity risk is the ratio of net liquid assets to deposits from clients (Auronen, 2003).

Other researchers have recently reviewed the influence of CRB on credit access. For instance, Nganga (2011) investigated the role of CRB in accessing loans in commercial banks in Kenya. His study revealed that CRBs play an important role in preventing serial loan defaulters from accessing credits from other financial institutions thus cushioning financial institutions against unforeseen credit risks. Similar sentiments are also shared by others researchers (Mumi, 2010; Gaitho, 2013 ;). Credit reference bureaus are meant to complement the central role played by commercial banks and other financial institutions in extending financial services within an economy. CRBs help financial lenders make faster and more accurate credit decisions. They collect, manage and disseminate customer information to financial lenders within a provided regulatory framework. Credit histories not only provide necessary input for credit underwriting, but also allow borrowers to take their credit history from one financial institution to another, thereby making financial lending markets more competitive and, in the end, more affordable (Nakulenge, 2003).

## 2.5. 4 Loan Application Review to Assess Credit

According to Carter (2007), there are five keys of loan or credit applications. The most fundamental characteristics most prospective lenders will concentrate on include, credit history, funds flow history and projections for the business or project, collateral available to secure the loan or credit , character and myriad pieces of loan documentation. This includes business and personal financial statements which includes balance sheet and income statement, income tax returns, a business plan and that essentially sums up and provides evidence for the first four items listed. In assessing whether to finance a small business,  Financial lenders are often willing to consider the following.  Financial Lenders will want to review both the credit history of the business if the business is not a startup and, because a guarantee often required for a small business loan or credit, personal credit history is reviewed. It is recommended to obtain a credit report on the business owner and the business before one applies for credit or loan. If any inaccuracies or an error  is discovered it can be corrected before, any damage to the loan or credit application occurs. If one can find out which credit reporting company, the prospective  financial lender uses one can request a report from that company or organization.

According to Felix & Claudine, (2008), before one applies for commercial credit, one should review the business credit report if the business or firm  has been in existence for a while. Credit reporting agency allows one to voluntarily obtain a listing by providing them with some basic information about the business or firm. Most conventional  financial lenders expect a minimum of four or five trade experiences listed on a business report before they consider the business creditworthiness. If one

has been operating business without credit or loan , or with personal assets, one should consider making some trade credit purchases in order to establish a credit history for the business or firm.

According to Rukwaro (2001) when it comes to obtaining a secured loan or credit, providing collateral is necessary. To a  commercial bank, collateral is simply defined as property that secures a loan or other debt; so that the lender may be, seize that property if you fail to make proper payments on the loan or credit . It is important to understand collateral options. When lenders demand collateral for a secured loan or credit, they are seeking to minimize the credit  risks of extending credit. In order to ensure that the particular collateral provides appropriate security, the lender will want to match the type of collateral with the loan or credit being made. The useful life of the collateral will typically have to exceed, or at least meet, the term of the loan or credit. Otherwise, the  financial lender's secured interest would be jeopardized.

Short-term assets such as receivables and inventory or stock  will not be accepted as security for a long-term loan, but they are appropriate for short-term financing such as a line of credit. In addition, many  financial lenders will require that their claim to the collateral be a first secured interest, meaning that no prior or superior liens exist, or may be subsequently created, against the collateral. By being a priority lien holder, the financial  lender ensures its share of any foreclosure proceeds before any other claimant is entitled to any loan or credit. Properly recorded security interests in real estate or personal assets  are matters of public record. Because a creditor wants to have a priority claim against the collateral being offered to secure the loan or credit, the creditor will search the public records to make sure that prior claims have not been

filed against the collateral. If the collateral is real estate for example, a title insurance company often does the search of public records (Japelli and Pagano, 2007).

According to Armstrong (2008), the company prepares a title report that reveals any pre-existing recorded secured interests or other title defects. If the loan or credit is secured by personal property, the creditor typically runs a search of the public records to reveal any pre-existing claims. The costs of a title search are often passed on to the prospective borrower as part of the loan or credit closing costs. In startup businesses, a commonly used source of collateral is the equity value of real estate. The borrower may simply take out a new, or second, a mortgage on his or her residence. In some countries, the lender can protect a security interest in real estate by retaining title to the property until the mortgage is fully paid.

According to Barth & Levine (2008) to further limit their credit risks, financial lenders usually discount the value of the collateral so that they are not extending 100 percent of the collateral's highest market value. This relationship between the amounts of money the commercial bank lends to the value of the collateral is called the loan-to- financial value ratio. The type of collateral used to secure the loan will affect the commercial bank's acceptable loan to value the financial ratio. For example, unimproved real estate will yield a lower ratio than improved, occupied real estate. These financial ratios can vary between lenders and the ratio may be influenced by lending criteria other than the value of the collateral. Healthy cash flow may allow for more leeway in the loan or credit to financial value ratio. A representative listing of a loan to value financial ratios for different collateral at a small community commercial bank is; Real estate, if the real estate is occupied, the financial lender

might provide up to 75 percent of the appraised value. If the property is improved, but not occupied, such as a planned new residential subdivision with sewer and water but no homes yet, up to 50 percent. For vacant and unimproved property, 30 percent. Inventory, a  financial lender may advance up to 60 percent to 80 percent of value for ready to go retail inventory. A manufacturer's inventory, consisting of component parts and other unfinished materials, might be only 30 percent. The key factor is the merchantability of the inventory how quickly and for how much money or cash  could the inventory be sold (Holf & Joseph, 2008).

Freixas (2009) argued that for accounts receivable or debtors, one may get up to 75 percent on accounts that are less than 30 days old. The borrower typically age's accounts receivable or debtors before a value is assigned to them. The older the account, the less value it holds. Some  financial lenders do not pay attention to the age of the accounts until they are outstanding for over 90 days, and then they may refuse to finance them. Other financial lenders apply a graduated scale to value the accounts so that, for instance, accounts that are from 31 to 60 days old may have a loan-to-value ratio of only 60 percent, and accounts from 61 to 90 days old are only 30 percent. Delinquencies in the accounts and the overall creditworthiness of the account debtors may also affect the loan to  financial value ratio.

Fulton (2004) argued that if the equipment is new, the bank might agree to lend 75 percent of the purchase price; if the equipment is used, then a lesser percentage of the appraised liquidation value might be advanced. However, some lenders apply a reverse approach to discounting of equipment. They assume that new equipment is significantly devalued as soon as it goes out the seller's door, for example, a new car

is worth much less after it is driven off the lot. If the collateral's value is significantly depreciated, loaning 75 percent of the purchase price may be an overvaluation of the equipment. Instead, these lenders would use a higher percentage loan-to-value ratio for used goods because a recent appraisal value would give a relatively accurate assessment of the current market value of that property. For example, if a three-year-old vehicle is appraised at $15,000 that is probably very close to its immediate liquidation value. Securities are marketable stocks and bonds can be used as collateral to obtain up to 75 percent of their market value. Loan proceeds cannot be used to purchase additional stock (Richard, 2011)

According to Hoque (2004) the funds  flow from the business's operations and the cycle of cash flow from the collection of accounts receivables or debtors, are the most important factor for obtaining short-term debt financing. A  financial lender's primary concern is whether daily operations will generate enough cash to repay the loan. Cash flow shows how major cash expenditures relate to major cash sources. This information may give a  financial lender insight into business's market demand, management competence, business cycles, and any significant changes in the business over time. While a variety of factors may affect cash flow and a particular  financial lender's evaluation of business's cash flow numbers, a small  commercial bank might consider an acceptable working cash flow ratio. Amount of available cash at any one time in relation to debt payments should be at least 1.15:1.  Most  financial lenders are aware, cash flow also presents the most troubling problem for small businesses, and they typically require both historic and projected cash flow statements. In preparing funds flow projections for newer businesses, one may want to refer to any one of several sources that publish sales expense   financial ratios for specific firms. The

financial ratio helps to compute realistic sales revenues and the proportion of expenses typically necessary, in that industry, to generate the projected sales revenue (Jappelli, 2000).

A business's cash flow usually include not only the money or cash that goes in and out of the business from its operations but also any cash flow from investments or financial activities for example payments and receipts of interest and dividends, long-term contracts, insurance, sales or purchase of machinery, capital changes and leases. However, the most important component to a financial lender is simply whether the business's ongoing sales and collections represent a sufficient and regular source of cash for repayment on a loan (Luoto & Bruce, 2007).According to Sinare (2008), many commercial banks consider the amount of investment the owners themselves commit to the business as evidence of a borrower's character. In addition, many commercial lenders want the owner to finance between 25 percent to 50 percent of the projected cost of a startup business. If the investment is considered insignificant, a commercial lender may consider it as lack of owner confidence and dedication to the business. Some bankers rely upon reaching a personal comfort level with a borrower before making a loan or credit. This comfort level is based upon the degree of trust or confidence that the banker has in the accuracy of the information and documentation presented to him or her. Bankers observed that in the zeal to sell on the profitability of business; small business borrowers sometimes talked out of this comfort level by disclosing that their tax returns underreport income and overstate expenses. Such disclosures cast doubt upon the credibility of the loan applicant, and impair any sort of trust or confidence between the banker and the prospective borrower. The process of applying for a loan or credit involves the collection and submission of a large

amount of documentation about the business and the owner. The documents required usually depend upon the purpose of the loan, and whether the business is a startup or an already existing business (Diamond, 2001).

Commercial Bank typically request at a minimum, the following documentation for a startup business; a personal financial statement and personal income tax returns from the last one to three years. Projected estimates and projected balance sheets and income statements for at least two years. Projected cash for at least the first twelve months and evidence of ownership interests in assets, such as leases and contracts, and collateral. A business plan that includes a narrative explaining the specific use of the requested cash, how the funds will assist the business and how the borrowed funds will be repaid, repayment sources and duration of the repayment period, including identifying any assumptions used in developing the projected financial statements. A personal resume or at least a written explanation of the owners relevant past business experience. Letters of reference recommending the owner as a reputable and reliable businessperson may also help the chances for a loan or credit approval(Wydick, 2001).

Some commercial lenders want one to submit a breakeven analysis in form of a financial statement or a graph. A breakeven analysis shows the point at which the firms expenses will match the sales or service volume. The breakeven point can be expressed in terms of shillings or units sold. The business tools contain a simple statement that is typical of the kind of documentation one need to complete as part of the loan application package. The commercial lenders also provide Excel spreadsheet templates that allow one to create own balance sheets, income statements, and cash

flow budgets and statements. Because these files or records are in template form, one can customize them and use them repeatedly. (Derban & Mullineux, 2005).

According to Moreno (2003) for an existing business or firm, one can anticipate a request to produce income statements and business balance sheets for the past three years. Projected balance sheets and income statements for two years or more. Projected cash flow statements for at least the next twelve months, personal, the business, and the purpose for the borrowed funds. Depending upon the specific type of borrowed fund one is seeking, one should also address certain issues germane to that loan type. For example, if fund is requested for working capital documentation include; the fund that will be used for accounts payable, along with accounts receivable aging report to disclose the current amounts overdue 30 to 60 days or older. The funds that will be used for inventory and an increase in the number of days that inventory on hand will be held.

The amount the cash balances that will be increased is a contingency amount or fund that is equal to at least 10 percent but preferably 25 percent. If fund is needed for machinery or equipment, information included addresses whether the assets will be immediately available or if a delay is anticipated, the price or value of the assets and how the installation will be performed whether the installation will interfere with current production and the cost of any interruptions. Documentation for an acquisition of land financing should include real estate's cost, location and size, intended use of the land, and whether any of the lands is for future expansion (Epure & Lafuente, 2012).

According to Thomas & Scherer (2001), there are steps followed in the  financial lending process, which are; Finding prospective loan customers where most loans to individuals arise from a direct request from a customer who approaches a member of the lender's staff and asks to fill out a loan application form. On the other hand, business loan request often arises from contacts the loan officers and sales representatives make as they solicit new accounts form firms operating in the financial lender's market area. Evaluating a prospective customer's character and sincerity of purpose. Once a customer or client decides to request a loan, an interview with a loan officer usually follows, giving the customer the opportunity to explain his or her credit needs. That interview is particularly important because it provides an opportunity for the loan officer to assess the customer's character and sincerity of purpose for  the funds.

Grabel (2008) argued that if the customer appears to lack sincerity in acknowledging the need to adhere to the terms of a loan, this must be recorded as a strong factor weighing against approval to the loan request. If a business or mortgage loan is applied for, a loan officer often makes a site visit to assess the customer's location and the condition of the property and to ask clarifying questions. The loan officer may contact other creditors who have previously loaned money to this customer to see what their experience has been. Whether the customer fully adhered to previous loan agreements and, where required, keeps satisfactory deposit balances.

According to McIntosh and Bruce (2005) previous payment record often reveals much about the customer's character, the sincerity of purpose, and sense of responsibility in making use of credit extended by a lending institution. If all is

favorable to this point, the customer submits several crucial documents the lender needs in order to fully evaluate the loan request, including complete financial statements and, in the case of a corporation, board of directors' resolutions authorizing the negotiation of a loan with the lender. Once all documents are on credit file, the lender's credit analysis department conducts a thorough financial analysis of the applicant, aimed at determining whether the customer has sufficient cash flow and backup assets to repay the loan. The credit analysis department then prepares a brief summary and recommendation, which goes to the appropriate loan committee for approval. On large loans, members of the credit analysis department may give an oral presentation and discussion between staff analysts and the loan committee over the strong and weak points of the loan or credit request.

According to Rukwaro ( 2001) assessing possible loan or credit collateral and signing the loan agreement is done if the loan committee approves the customer's request. The loan or credit officer or the credit committee usually check on the property or other assets to be pledged as collateral in order to ensure that the lending institution has immediate access to the collateral or can acquire title to the property involved if the loan agreement defaults. Once the loan officer and the loan committee are satisfied that both the loan and the proposed collateral are sound, the note and other documents that make up a loan agreement are prepared and signed by all parties to the agreement. There is a need to monitor compliance with the loan agreement and other customer service needs. The new loan agreement must be monitored continuously to ensure that the terms of the loan are being followed and that all required payments of principal and interest being made as promised, for larger commercial credits, the loan officer visits the customer's business periodically to check on the firm's or business

progress and see what other services the customer may need. Usually, a loan officer or other credit staff member enters information about a new loan customer in a computer file known as customer profile. This credit file shows what services the customer is currently using and contains other information required by management to monitor a customer's progress and financial service needs (Gentgen, 2008).

When commercial banks and other financial institutions evaluate borrowers, many of them use the "5Cs of Credit" to assess whether or not to extend a loan or credit to the borrower. The 5Cs are not an official rule that is strictly applied, just a good general framework used to evaluate borrowers. Keeping in mind that different financial lenders place more value on certain attributes. The 5c's are; Character where the commercial lender's overall subjective opinion of a borrower's general trustworthiness, credibility, and overall character. Commercial banks want to lend to people of strong character, who are responsible and overall "good people. Credentials, references, reputation, interactions with commercial lenders subjective and often a "gut-feeling" are assessed. Capacity or funds flow that is the ability to repay the loan or credit (Leonard, 2005).

According to Thomas & Scherer (2001), a business must generate sufficient funds to repay the loan. Loans and credits are not equity or angel investments they must be repaid in full. Financial metrics and benchmarks like debt and liquidity financial ratios, funds flow statements, credit score, borrowing and customer repayment history. A loan application typically contains details on how and when borrowers plan to repay the loan or credit is considered. Capital is the amount of fund invested personally by the owner or management team in the business or firm. A measure of

financial commitment of the borrower. Commercial banks are more willing to lend to someone who has invested some of their own money into the venture and most financial lenders are not willing to take on 100% of the financial risk. Whether the business is well capitalized and if the borrower or management team has invested their own money or cash .

Conditions are economic, industry, and environmental conditions. Conditions also refer to the how loan or credit proceeds will be used either to purchase fixed assets or working capital. Commercial banks want to loan to businesses operating under favorable conditions to ensure they are repaid. They want to identify and mitigate default risks accordingly. Assessment of the competitive landscape, supplier, and customer relationships, macroeconomic, and industry-specific issues to ensure credit risks are identified and mitigated before lending. Collateral are non-current assets owned that can be pledged as security. Collateral acts as a backup source if a borrower cannot repay a loan or credit . Collateral represents what commercial banks can take from borrowers if they default. Hard or fixed assets such as real estate and equipment. Working capital includes accounts receivable or debtors and inventory or stock and a borrower's home can sometimes be counted as collateral (Anderson, 2007).

According to Epure and Lafuente (2012), a loan agreement is a document in which a lender usually a commercial bank or other financial institution sets out the terms and conditions under which it is prepared to make a loan available to a borrower. Loan or credit contracts contain provisions addressing, but not necessarily limited to the following matters; Description of the purpose of the funds borrowed. Specification of

the interest to be charged on the loan or credit , including the method for determining the interest rate if it is not fixed for the entire term of the loan. Specification of the method for repaying the loan principal, including the final maturity of the loan or credit. The conditions under which the loan or credit  may be prepaid before its maturity date, including but not limited to requirements regarding the prepayment of loans made concurrently and another secured  commercial lender. The method for making scheduled payments on the loan or credit . Accounting principles and system of accounts, and authority to approve the accountant used by the borrower or client .

According to Heffernan (2006) the method and time period for advancing loan funds and the conditions precedent to the advance of funds. Representations and warranties by the borrower as a condition of obtaining the loan or credit, including but not limited to the legal authority of the borrower to enter into the loan fund  contract and operate its system. The loan  fund documents will be a legal, valid and binding obligation of the borrower enforceable according to their  financial lender terms. Compliance of the borrower in all material respects with all local laws, regulations, codes, and  court orders. The existence of any pending or threatened legal actions that could have a material adverse effect on the borrower's ability to perform its  financial and legal obligations under the  lending documents. The accuracy and completeness of all information provided by the borrower in the loan application and with respect to the loan  fund contract. The existence of any material adverse change since the information was provided. The existence of any material defaults under other agreements of the borrower or client.

Representations, warranties, and covenants with respect to environmental matters. Reports and notices required to be submitted including but not limited to annual financial statements; notice of credit defaults; notice of litigation; notice of orders or other directives received by the commercial borrower from regulatory authorities. Notice of any matter that has resulted in or may result in a material adverse change in the condition or operations of the borrower; and such other information regarding the condition or operations of the commercial borrower. Annual written certification that the borrower is in compliance with its loan fund contract, note, mortgage, and any other agreement, or if there has been a credit default in the fulfillment of any financial obligation under said agreements, specifying each such credit default and nature and status Renault & Sevigny 2004 ). The requirement that the borrower or client design and implement rates for utility services to meet certain minimum coverage of interest expense or debt service obligations. The requirement that the financial borrower maintains and preserve its mortgaged property in compliance with prudent utility practice and all applicable laws, which may include certain specific actions and certifications set forth in the financial borrower's loan contract or mortgage. The requirement that the borrower plan, design and construct its electric system according to standards and other requirements established, and if directed by the administrator or credit officer (Sinare, 2008).

According to Ferretti (2006), the financial borrowers follow planning, design and construction standards and requirements for other utility systems constructed by the borrower. Limitations include; first on extensions and additions to the financial borrower's electric system without approval. Second, on contracts and contract amendments that the financial borrower may enter into without approval. Third, on

the transfer of mortgaged property by the financial borrower. Fourth on dividends, patronage refunds, and cash distributions paid by the financial borrower. Fifth, on investments, loans, and guarantees made by the borrower. Authority to approve a new general manager and to require that an existing general manager is replaced if the financial borrower is in default under its mortgage, loan contract, or any other agreements. Description of events of credit default under the loan fund contract and the remedies available. Applicability of state and local laws. Severability of the individual provisions of the loan documents. Matters relating to the assignment of the loan fund contract. Requirements relating to state or country laws and regulations, including but not limited to the following matters: area coverage for electric service; civil rights and equal employment opportunity; access to buildings and other matters relating to the handicapped; design and construction standards relating to earthquakes. The National Environmental Policy Act and other environmental laws and regulations; flood hazard insurance; debarment and suspension from state assistance programs; and delinquency on debt. Special requirements applicable to individual loans fund and such other provisions as may be required to ensure loan fund repayment and an adequate loan security (Ferretti, 2006).

### 2.5.5 Credit Risks by Commercial Banks

According to Collins and Wanjau (2011), there are various risks encountered by commercial banks, which include credit risk, market risk, liquidity risk, operational, and compliance risks. Credit default risk is the chance that businesses or individuals will be unable to the required payments on their debt obligations. Commercial lenders and investors are exposed to default risk in virtually all forms of credit extensions. To mitigate the impact of default risk, commercial lenders often charge

rates of return that correspond the debtor's level of credit default risk. A higher level of risk leads to a higher required return. Standard measurement tools to gauge default credit risk include FICO scores for consumer credit and credit ratings for corporate and government debt issues. Credit ratings for debt issues are provided by nationally recognized statistical rating organizations (NRSROs), such as standard credit default, risk can change because of broader economic changes or changes in a company's financial situation. An Economic recession can affect the revenues and earnings of many businesses, influencing their ability to make interest payments on debt and, ultimately, repay the debt itself. Businesses face factors such as increased competition and lower pricing power, resulting in a similar financial impact. Business entities need to generate sufficient net income and cash flow to mitigate default risk. In the event of a default, investors may lose out on periodic interest payments and their investment in the bond. A credit default could result in a 100% loss on investment (Anderson 2007).

Commercial lenders generally examine a company's financial statements and employ several financial ratios to determine the likelihood of debt repayment. Free cash flow is the fund that is generated after the company reinvests in itself and is calculated by subtracting capital expenditures from operating cash flow. Free cash flow is used for things such as debt and dividend payments. A free cash flow figure that is near 0 or negative indicates that the company may be having trouble generating the cash necessary to deliver on promised payments. This could indicate higher default credit risk. The interest coverage ratio is calculated by dividing a company's earnings before interest and taxes (EBIT) by its periodic debt interest payments. A higher financial

ratio suggests that there is enough income generated to cover interest payments. This could indicate lower default risk (Moreno, 2003).

According to Kithinji, (2010) key issue for credit risk management is controlling risk. The traditional approach to managing credit risk, as discussed earlier, is to evaluate the risk by assessing the borrower's ability to repay the borrowed funds. This involved examining historical financial statements of the counterparty and projecting future ability to pay. The core issue is whether the credit officer in the commercial bank or financial institution believes the counterparty can reasonably expect to meet their repayments in full and on time. The credit risk can be controlled in various ways. Credit risk differs from other types of risk being managed in that it is an event risk. An obligor either will be good or will be in credit default on its obligations. There are variations on this in some cases; the credit risk management decision also includes the possibility of credit downgrades. For example, a bond may only be eligible to invest in investment grade securities. Any bonds that fall below this category would have to be sold and proceeds reinvested in eligible bonds. Therefore, such a loan fund is not just subject to default credit risk but is also exposed to changes in the credit standing of its investments. Any factors that can influence the financial value of the counterparty and affect the value of the transaction go by the generic name of credit triggers or credit events.

According to Duffie and Singleton (2012) managing the credit risk means managing the amount of loss if a credit default should take place, known as the loss given default (LGD). There are a number of different ways in which firms can do this. One method is through the use of collateral and collateralization. With this approach, the

party taking credit provides a security against credit default. In the event of credit default, the commercial lender has a claim on a specific asset of the borrower. The benefit for the lender from using collateral is that in the event of credit default the lender is spared the expense of the default process and dealing with the borrower, assuming that the collateral pledged sufficiently covers the fund amount. For example, it is a requirement in futures markets for all market participants to provide margin. In addition, interestingly enough sometimes called a performance bond when entering into transactions. This deposit covers potential future losses and hence means that there is no performance risk to other parties in the futures markets. As well as collateral, a lender should be interested in the total level of a borrower's capital. The reason is that an adequate supply of capital provides a cushion against bankruptcy or insolvency, should the credit experience temporary losses (Nakulenge, 2003).

According to Al-Khouri (2011) where a particular credit is unacceptable due to its high risk of non-performance, it is possible in some cases to obtain a credit guarantee. This third-party insurance in effect underwrites the risk of default. Such guarantees are requested when borrowing is undertaken by a subsidiary of a company that is thinly capitalized that is, the subsidiary is mostly financed via debt and the parent company is required to guarantee the transaction. Another approach, common in derivatives transactions between major commercial banks and other financial institutions, is to reduce the exposure via netting agreements. In such an agreement, only the net proceeds rather than gross proceeds are due to the other party.

In a swap contract, one party is due to pay cash to the other, conditional on receiving in return the contracted payment by the other party. With a netting agreement, only

the difference is paid across. Hence, where there are a large number of positions between the two parties this may be because both are active market makers only the net cash of the long and short positions in the swap contracts with the counterparty is paid. When some of these contracts have a positive value, for example, an asset while others will have a negative value that is the liability. By using netting agreements, asset positions, which carry credit risk on the other party, can be offset against liability positions where the position is reversed. Since 1993, when the first credit derivative contract was transacted, there has been a growing  financial market in off-balance sheet transactions that transfer the credit risk from one party that is the protection borrower to another that is the protection lender so that all the credit risk of the particular reference asset is transferred to the protection lender (Drehman,2008).

According to Rukwaro (2001), the credit analyst or manager is required to understand the ways in which bad debts or credit default arise and to devise methods for identifying these. This then requires that due consideration is given to how these are effectively managed. A key issue is credit control, which involves constantly managing the credit granting process. This can be seen as a policy that includes procedures, guidelines, and processes for managing the credit process. Diversification can play an important role in reducing exposure to unexpected and catastrophic losses and risks. However, spreading risks will be effective only if the principles of efficient portfolio construction are followed. There is a danger when the portfolio is ill diversified, leading to unexpected losses and risks. As with all risk management processes, the exposure to credit risks has to be kept under constant review and action taken as required. Credit risk management is a dynamic process that responds to new information. Finding the links between a firm's financial condition, behavior and

credit default is the key skill required in the management of credit or counterparty risk.

According Waweru and Kalani (2009) credit risk are most likely caused by loans, acceptances, interbank transactions, trade financing, foreign exchange transactions, financial futures, swaps, bonds, equities, options, and in the extension of commitments and guarantees, and the settlement of transactions. For example, if person A borrows loan from a commercial bank and is not able to repay the loan because of inadequate income, loss in business, death, unwillingness or any other reasons, the commercial bank faces credit default risk. Similarly, if one does not pay his or her credit card bill, the commercial bank faces a credit risk. Hence, to minimize the credit risk on the bank's end, the rate of interest will be higher for borrowers if they are associated with high credit risk. Factors like unsteady income, low credit score, loss of employment, collateral assets and others determine the credit risk associated with a borrower.

Credit risk can be associated with interbank transactions, foreign transactions and other types of transactions happening outside the commercial bank. If the transaction at one end is successful but unsuccessful at the other end, loss occurs. If the transaction at one end is settled but there are delays in a settlement at the other end, there might be lost investment opportunities. While some credit risk is a result of macro forces affecting the economy or specific markets or even specific individuals, there is another important risk that can be classified under credit risk. This is the risk of deliberate fraud that is usually borne by the commercial banks who issue credit

products such as credit cards. The financial risk of loss that arises if customers and counterparties cannot meet their payment obligations (Stiglitz, 2015).

According to Wydick (2001), the goal of credit risk management is to maximize a commercial bank's risk-adjusted a rate of return by maintaining credit risk exposure within acceptable parameters. Commercial banks need to manage the credit risk inherent in the entire portfolio as well as the risk in individual credits or transactions. Commercial 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 Institution. For most commercial banks, loans are the largest and most obvious source of credit risk; however, other sources of credit risk exist throughout the activities of a commercial bank, including in the banking book and in the trading book, and both on and off the balance sheet.

According to Thomas & Scherer (2001) commercial banks are increasingly facing credit risk or counterparty risk in various financial instruments other than loans, including acceptances, interbank transactions, trade financing, foreign exchange transactions, financial futures, swaps, bonds, equities, options, and in the extension of commitments and guarantees, and the settlement of transactions. Since exposure to credit risk continues to be the leading source of problems in commercial banks worldwide, commercial banks and their supervisors should be able to draw useful lessons from experiences. Commercial 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 and that they are adequately compensated for risks incurred.

According to Gentgen, (2008) the Basel committee issued a document in order to encourage banking supervisors globally to promote sound practices for managing credit default risk. Although the principles contained in this paper are most clearly applicable to the business of lending, they should be applied to all activities where credit default risk is present. The sound practices set out in this document specifically address the following areas. One, establishing an appropriate credit risk environment. Second, operating under a sound credit-granting process. Third, maintaining an appropriate credit administration, measurement, and monitoring process. Fourth, ensuring adequate controls over credit default risk, although specific credit risk management practices may differ among commercial banks depending upon the nature and complexity of their credit activities. A comprehensive credit default risk management program addresses the four areas. These practices should also 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 default risk, all of which have been addressed in other recent Basel Committee documents.

According to Richard (2011), the exact approach chosen by individual supervisors will depend on a host of factors, including their on-site and off-site supervisory techniques and the degree to which external auditors are also used in the supervisory function. A further particular instance of credit default risk relates to the process of settling financial transactions. If one side of a transaction is settled but the other fails, a loss or risk may be incurred that is equal to the principal amount of the transaction.

Even if one party is simply late in settling, then the other party may incur a loss or risk relating to missed investment opportunities. Settlement risk that is the risk that the completion or settlement of a financial transaction will fail to take place as expected thus includes elements of liquidity, market, operational and reputational risk as well as credit default risk. The level of credit risk is determined by the particular arrangements for settlement. Factors in such arrangements that have a bearing on credit default risks include the timing of the exchange of value; payment or settlement finality; and the role of intermediaries and clearing houses.

According to Drehman (2008), credit default risk is the risk of default on a debt that may arise from a borrower failing to make required payments. In the first resort, the risk is that of the lender and includes lost principal and interest, disruption to fund flows, and increased collection costs. The loss or risk may be complete or partial. In an efficient market, higher levels of credit default risk will be associated with higher borrowing costs. Because of this, measures of borrowing costs such as yield spreads can be used to infer credit risk levels based on assessments by market participants. Credit risk can arise in a number of circumstances for example; a client may fail to make a payment due on a mortgage loan, credit card, line of credit, or another loan. A firm may be unable to repay asset-secured fixed or charge debt. A business or consumer may fail to pay a trade invoice when due. A business may fail to pay an employee's earned wages when due. A business firm or government bond issuer may not make a payment on a coupon or principal payment when due. An insolvent insurance company may not pay a policy obligation. An insolvent commercial bank won't return funds to a depositor. A government grants bankruptcy protection to an insolvent consumer or business firm.

According to Epure and Lafuente (2012) to reduce the commercial lender's credit risk, the commercial lender may perform a credit check on the prospective borrower, may require the borrower to take out appropriate insurance, such as mortgage insurance, or seek security over some assets of the borrower or a guarantee from a third party. The commercial lender can also take out insurance against the risk or on-sell the debt to another company. In general, the higher the credit risk, the higher will be the interest rate that the debtor is asked to pay the debt. Credit default risk mainly arises when borrowers unable to pay due willingly or unwillingly.

A credit risk can be of the following types; first, Credit default risk which is a loss arising from a debtor being unlikely to pay its loan obligations in full or the debtor is more than 90 days past due on any material credit obligation; default risk may impact all credit-sensitive transactions, including loans, securities, and derivatives. Second, concentration risk which is a risk associated with any single exposure or group of exposures with the potential to produce large enough losses or risks to threaten a bank's core operations. It may arise in the form of single name concentration or industry concentration. Third, a country risk associated with loss arising from sovereign state or country freezing foreign currency payments transfer or conversion risk or when it defaults on its obligations sovereign risk; this type of risk is prominently associated with the country's macroeconomic performance and its political stability (Ngugi, 2001).

According to Ngetich (2011) lenders mitigate credit risk in a number of ways including; risk-based pricing where lenders may charge a higher interest rate to borrowers who are more likely to default credit, a practice called risk-based pricing.

Commercial lenders consider factors relating to the loan such as loan purpose, credit rating, and loan-to-value ratio and estimate the effect on yield or spread. Covenants are where commercial lenders may write stipulations on the borrower into loan agreements, such periodically report its financial condition. Refraining from paying dividends, repurchasing shares, borrowing further, or other specific, voluntary actions that negatively affect the firm's financial position. Repaying the loan in full at the lender's request, in certain events such as changes in the borrower's debt-to-equity financial ratio.

Credit insurance and credit derivatives are where commercial lenders and bondholders may hedge their credit risk by purchasing credit insurance or credit derivatives. These contracts transfer the credit risk from the lender to the seller who is the insurer in exchange for payment. The most common credit derivative is the swap. Tightening is when commercial lenders reduce credit risk by reducing the amount of credit extended, either in total or to certain borrowers. For example, a distributor selling its products to a troubled retailer may attempt to lessen credit risk by reducing payment terms from net 30 to net 20. Other methods used to mitigate risk are diversification where commercial lenders lend to a small number of borrowers or different kinds of a borrower who faces a high degree of unsystematic credit risk, called concentration risk. Commercial lenders reduce this credit risk by diversifying the borrower pool. Deposit insurance established by the government to guarantee bank deposits in the event of insolvency and to encourage clients to hold their savings in the banking system instead of in cash (Wydick, 2001).

According to Kargi (2011) market risk involves losses or risks in the commercial bank's trading book due to changes in equity prices, interest rates, credit spreads, foreign exchange rates, commodity prices, and other indicators whose values are set in a public financial market. Market risk also includes the risk of losses in on- or off-balance sheet positions that arise from movement in market prices. Market risk is prevalent mostly amongst commercial banks that are into investment banking since they are active in capital markets. Market risk can be divided into four types depending on the potential cause of the credit risk. Interest rate risk, which is a potential loss due to fluctuations in an interest rate. Equity risk due to fluctuations in stock price. Currency credit risks due to international currency exchange rates closely associated with settlement risk. Commodity financial risk due to fluctuations in prices of agricultural, industrial and energy commodities like wheat, copper and natural gas respectively.

According to Mumi (2010) operational credit risk is defined as the risk of loss resulting from inadequate or failed internal processes, people, and systems or from external events. This includes legal risk but excludes strategic and reputation credit risk. Operational risk can widely occur in commercial banks due to human errors or mistakes. Examples of operational credit risk may be an incorrect information filled in during clearing a check or confidential information leaked due to system failure. Operational risk can be categorized in the following ways. Human credit risk due to a human error, done willingly or unconsciously. System credit risk due to system failures and programming errors and processes risk: due to improper information processing, leaking or hacking of information and inaccuracy of data processing. Operational credit risk may not sound as bad but it is. Operational risk caused the

decline of Britain's oldest commercial banks. Since commercial banks are becoming more and digital and shifting towards information technology to automate their processes, operational risk is an important risk to be taken into consideration by the commercial banks. Security breaches in which data is compromised could be classified as an operational credit risk, and recent instances in this area have underlined the need for constant technology investments to mitigate the exposure to such attacks.

Liquidity risk is the risk or losses that the group cannot meet its obligations when they fall due without incurring substantial costs in the form of expensive refinancing or the need to sell assets. The liquidity risk may disable a commercial bank from carrying out day-to-day cash transactions. The liquidity risk that a person going to a commercial bank to withdraw money and the bank says that it does not have cash temporarily. This is the liquidity risk a commercial bank has to save itself from incurring (Leonard, 2005).

The Federal Reserve Board in the US perceives reputational credit risk as the potential loss in reputational capital based on either real or perceived loss in reputational capital. Just like any other institution or brand, a commercial bank faces a reputational risk that may be triggered by bank's activities, rumors about the commercial bank, willing or unconscious non-compliance with regulations, data manipulation, bad customer service, bad customer experience inside commercial bank branches and decisions taken by banks during critical situations. Its customers, investors, opinion leaders and other stakeholders who mold a commercial bank's brand image judge every step taken by a bank (Mcintosh & Bruce, 2005)

Business risk is the possibility that a company or firm will have lower than anticipated profits, or that it will experience a loss rather than a profit. In the context of a bank, business risk is the risk associated with the failure of a commercial bank's long-term strategy, estimated forecasts of revenue and number of other things related to profitability. To be avoided, business risk demands flexibility and adaptability to market conditions. Long-term strategies are good for banks but they should be subject to change. The entire banking industry is unpredictable. Long-term strategies must have backup plans to avoid business risks. During the 2007 to 2008 global crisis, many commercial banks collapsed while many made the way out it (Kallberg, 2003).

Systemic risk is the risk that does not affect a single commercial bank or financial institution but it affects the whole industry. Systemic risks are associated with cascading failures where the failure of a big firm can cause the failure of all the others in the industry. The global crisis of 2008 is the best example of a loss to all the financial institutions that occurred due to systemic risk (Kithinji, 2010).Moral hazard is any situation in which one person makes the decision about how much risk or losses to take, while someone else bears the cost if things go badly. Moral hazard is a risk that occurs when a big commercial bank or large financial institution takes risks, knowing that someone else will have to face the burden of those risks (Ferretti, 2006).

Legal and compliance risks are the most serious threat to the smooth operation of a global business. Since the banking and finance crisis, commercial banks and other financial institutions have paid more than USD 230 billion in terms of fines to a number of governments, an amount that equals the regulatory capital of four to five large global commercial banks. The financial industry often dominates the public

debate but breathtaking legal hits are by no means an exclusivity of the commercial banks. Compliance risk is the risk or loss of breaching legal enactments, statutory regulations, other relevant official provisions and internal regulations that involve the threat of official sanctions, financial loss, and loss of reputation. Others include environmental risk, technological risk, social risk, political risk, reputational risk (Kaynak & Harcar, 2001).

According to Alary and Goller (2001), risk scenario analysis focuses on identifying potential scenarios caused by existing and emerging risks, risk consequences, and risk plans. The scenarios should be plausible, relevant, and challenging combinations of potential risks in terms of such things as events and trends. The goal of the risk scenario analysis process is to better understand stakeholder or owner activities and communication before, during, and after a risk or loss, an issue occurs. Risk scenario analysis typically is incorporated into more mature and more programs that are sophisticated as such programs evolve and then seek to generate deeper insight and greater value for management. In risk analysis, the process of considering different, possible outcomes of a decision.

Scenario analysis may take a number of forms; for example, a firm may consider the various potential returns on an investment and how each will affect the firm is another business. Scenario analysis can also be used in policymaking. The chief executive officer can weight potential effects of a tax increase when deciding whether it would be beneficial to do so. Scenario analysis is the process of calculating and predicting the value of an investment, or group of investments, under a variety of different circumstances, situations or scenarios. These scenarios can range from very likely to

implausible, but still possible. For each scenario, the investor or analyst considers historical data and the chain of events that will cause the factors in that scenario to influence the investment. (Barron & Staten, 2003).

Scenario analysis has several purposes, for example, investors can perform scenario analysis to determine how much risk they are taking before purchasing an investment product or asset. This is why many scenario analyses account for worst-case scenarios, along with more positive and optimistic scenarios. If a scenario analysis shows that the risk or loss is too great, the investment might not be a good one for you. Scenario analysis also predicts what will happen to an investment given natural changes in the global economy, allowing investors to be better informed about how these changes will affect them. Each scenario that a scenario analysis addresses is defined by one or more factors. The factors in a scenario analysis can be almost anything, from interest rates and inflation to unemployment percentages and commodities costs and production costs (Richard, 2011).

### 2.5.6 Credit Risk Management by Commercial banks.

Credit risk is a serious threat to the performance of commercial banks; therefore, various researchers have examined the impact of credit risk management on banks in varying dimensions. Kargi (2011), evaluated the impact of credit risk on the profitability of commercial banks. Financial ratios as measures of bank performance and credit risk were collected from the annual reports and accounts of sampled commercial banks from 2004 to 2008 analyzed using descriptive, correlation and regression techniques. The findings revealed that the use of CRB and other credit risk management has a significant impact on the profitability of commercial banks. Laeven (2003) concluded that commercial bank's profitability is inversely influenced

by the levels of loans and advances, non-performing loans and deposits thereby exposing them to great risk of illiquidity and distress.

According to Al-Khouri (2011) the presence of credit default risk for Costa-Rican banking industry during 1998 to 2007 showed that performance improvements follow regulatory changes. Risk explains differences in commercial banks and non-performing loans negatively affect efficiency and return on assets while the capital adequacy financial ratio has a positive impact on the net interest margin. Kithinji (2010) assessed the effect of credit risk management on the profitability of commercial banks in Kenya. Data on the amount of credit, level of non-performing loans and profits were collected for the period 2004 to 2008. The findings revealed that the bulk of the profits of commercial banks are not influenced by the amount of credit and non-performing loans, therefore suggesting that other variables other than credit and non-performing loans impact on profits and financial performance. Felix and Claudine (2008) investigated the relationship between commercial bank performance and credit risk management. It could be inferred from their findings that return on equity (ROE) and return on assets (ROA) both measuring profitability were inversely related to the ratio of non-performing loan to total loan of financial institutions and commercial banks thereby leading to a decline in profitability.

Ahmad and Ariff (2007) examined the key determinants of credit risk of commercial banks on emerging economy banking systems compared with the developed economies. The study found that regulation is important for banking systems that offer multiproduct and service. Management quality is critical in the cases of loan dominant commercial banks in emerging economies. An increase in loan loss

provision is also considered to be a significant determinant of potential credit risk. The study further highlighted that credit risk in emerging economy commercial banks is higher than that in developed economies. Al-Khouri (2011) assessed the impact of commercial bank's specific risk characteristics, and the overall banking environment on the performance of forty three commercial banks operating in six of the Gulf Cooperation Council countries over the period 1998 to 2008. Using fixed effect regression analysis, results showed that in circumstances that credit risks, management were evident, commercial bank performance was generally high.

According to Koch and Macdonald (2014) in attempt to examine the influence of commercial bank regulations, concentration, financial and institutional development on commercial banks' margin and profitability in Middle East and North Africa countries from 1989 to 2005 found that commercial bank capitalization and credit risk management have positive and significant impact on banks' net interest margin, cost efficiency and profitability. Laeven (2003) in their study found that loan loss provision has a significant positive influence on non-performing loans. Therefore, an increase in loan loss provision indicates an increase in credit risk and deterioration in the quality of loans consequently affecting commercial bank performance adversely.

## 2.6  CRB  Role in Moral Hazard  in Mitigating  against  Credit Default

 According to Brown and Pagano (2009) credit default risk is the risk that the promised cash flows from loans and securities held by financial institution may not be paid in full. This means that borrowers may default in interest and principal payment, hence causing financial loss to the financial institutions or the credit lending institution. Kallberg & Udell (2003) argued that data needed to screen credit applications and to monitor borrowers are not freely available to commercial banks.

When a commercial bank does not have such information, it faces "adverse selection" or "moral hazard" problems in its lending activity. Adverse selection arises when some information about the borrowers' characteristics remain hidden to the commercial lender that is hidden information, and can lead to an inefficient allocation of credit, Moral hazard arises instead from the lender's inability to observe borrower's actions that affect the probability of repayment. This creates the danger of opportunistic behavior or moral hazard by the borrower and informational disadvantage by the commercial bank leading to inefficient allocation of credit. Kargi (2011) suggest that mitigation of credit risks is the core business in the banking business.

According to Greuning and Bratanovic (2003) there is need to have appropriate credit risks management mitigation strategy in order to reduce risk of credit default because a financial institutions' viability is weakened by the loss of principal and interest. Ahmad and Ariff (2007) adds that if mitigation of credit risk is not addressed, the credit lending institution incur financial losses, incur costs taken to recover the capital at risk and fail in its social role of providing loans to members of society to improve their living standards.

## 2.6.1 Credit Reference Bureau Information sharing on Moral Hazard

According to Sinare (2008) credit reporting agencies gather information on the experiences of individuals or clients with credit, leases, non-credit, related bills. Monetary, related public records, and enquiries and compile a credit record. Credit reporting agencies attempt to collect comprehensive information on all lending to individuals or firms in the country in which they operate. Credit account information records contain a wide range of details about each account. This information generally

falls into five broad categories: account identification, account dates, account balances, account description, and payment performance. Each credit account record includes an account number, a unique identifier for each credit provider, and account ownership status in particular, single or joint account or authorized user. Pertinent date information includes the date the account was established; the date it was closed or transferred to collection or other major change in status; the date the account balance was paid down to zero; and the date when information was last reported to the credit reporting agency. Njuguna (2010) the account records also provide current balance information, the largest amount ever owed on the account, the size of any credit limit applicable to the account and any amount past due.

According to Richard (2011) credit account records include a variety of account descriptive information, including identification of the type of account for example a closed end loan mortgage or installment or open end loan revolving, non-revolving, or cheque credit and the nature or purpose of the account for example credit card, charge account, asset loan, automobile loan, or student loan. Finally, the credit account record provides information on the extent of current and historical payment delinquencies extending back months as well as information on other account derogatory. Payment delinquency information is recorded in four classes of increasing severity 30 to 59 days, 60 to 89 days, 90 to 119 days, and 120 or more days past due. Other derogatories refer to accounts that have been charged off or are in collection, or those associated with a judgment, bankruptcy, foreclosure or repossession. Typically, accounts that are 120 or more days past due and accounts with other derogatory are grouped together and termed as major derogatory or seriously delinquent. Accounts with less severe delinquencies are typically termed as minor delinquencies addition to

personal characteristics and credit account information, credit reporting agency data include information derived from monetary related public records and reports from credit collection agencies (Kaynak, 2001).

Credit evaluators typically consider public records and collection agency actions to be adverse information on a par with credit account major derogatory when assessing the credit quality of individuals or clients. The importance of these items is significant. Many individuals have at least one major derogatory either historical or current and do not have any credit account major derogatory; the only major derogatory items are agency actions or adverse public records. Public record information includes records of bankruptcy filings, liens, judgments, and some foreclosures and lawsuits about individuals or firms (Jappelli, 2000).

Glennon (2008) unlike credit account data, the public record data do not provide a classification code for the type of creditor or plaintiff. Although public records include some details about the action, such as the date filed, the information available is much narrower in scope than that available on credit accounts. Credit reporting agency records also include information on non-credit related bills in collection that are reported by collection agencies. In some cases, collections on credit related accounts also are reported by collection agencies rather than by the original creditor. In this case, the information is grouped with the collection actions on non-credit-related bills rather than with the credit account information. The most common types of collection actions reported involved unpaid bills for medical or utility services like electricity. Collection agency records include limited details about the action, including the date acquired by the collection agency, the original collection balance,

and an indicator of whether the collection has been paid in full. There is no code indicating the type of original creditor (Anderson, 2007).

**2.6.2 Factors Considered when issuing Loans to Reduce Moral Hazard**

Commercial bank lending policy refers to the policy and guidelines adopted by a bank in order to make its lending process systematic and methodical (Epure & Lafuente, 2012). Grabel ( (2008)  commercial banks deal with other people's money and lend the funds which they themselves borrow from the depositors. Unless these deposits are prudently utilized commercial banks are destined to incur losses. Commercial banks cannot effort to either keep the deposits idle in the vaults or lend the deposits and not recollect. Hence, it is essential that a proper lending policy is in place. The Commercial bank must carefully analyze following factors at the time and before sanctioning loans to the applicants. When a commercial bank receives a loan request from a small business, it considers a range of factors, some of which might not be apparent to the business owner. There is no single criterion for approval of a loan request. The commercial bank will probably review its overall relationship with the company, including deposits, investments, and other services. Credit analysts will review financial statements and obtain reports from outside credit agencies and other credit lending sources. If the resulting information is positive and meets the commercial bank's credit standards, the bank will be inclined to approve the request (Nakulenge, 2003).

According to Kargi (2011) commercial bank considers the following when issuing loans; Credit Rating where the commercial bank will obtain a commercial credit report on the company from an agency such as Dun and Bradstreet. Agency reports include information on public filings, payment histories and credit scores of the client.

If any negative information, such as outstanding tax liens or past-due payments, appears on the reports, the commercial bank officer might ask the company for an explanation. Sometimes these credit reports are not up to date, but they can still provide useful information to prospective lenders.

The commercial bank will normally require the company to provide its latest annual statement and, for comparison purposes, the statement for the previous year, plus an interim statement for the most recent month. These include a balance sheet statement of assets, liabilities and net worth, an income statement showing financial performance over a specified period and a fund flow statement giving cash inflows and outflows. Financial statement analysis can reveal a firms financial strengths and weaknesses and how easily the company can service make payments of principal and interest of the proposed loan. The commercial bank will usually require the annual statements to be prepared by a public accounting firm Wydick, 2001).

According to IFC (2006) in most cases, the commercial bank will require collateral as security for the loan if the borrower defaults on the loan, the secured commercial lender can be repaid by seizing the collateral and selling it. If the company is seeking a loan for the purpose of buying equipment for the business, it might be able to pledge title to the equipment as collateral for the loan. Not all assets are suitable for use as loan collateral. For example, highly specialized equipment might not be readily salable to another party in case of default on the loan or credit. In such a case, the borrower would have to produce other assets that would be acceptable to the commercial bank.

According to Anderson (2007) commercial bank will probably require personal guarantees from each owner of the company, assuming that it is a closely held business with only several owners. Usually, each owner completes a personal financial statement on a form provided by the commercial bank. The standard procedure is for the commercial bank to review the personal statements and then, when the loan or credit is approved, have each owner execute a guarantee. In addition to providing additional security, the personal guarantees assure the commercial bank that the owners will probably remain with the business while the loan is in force. When a business customer applies for a loan, the commercial bank normally reviews the company's overall relationship. Loan committees are the final approval authorities in most commercial banks, and will be impressed by a business customer or client that has been a depository for several years before applying for credit. Also, if a company has been using fee-based services such as investments that would also be a plus. Community commercial bank executives might be pleased to learn about business customers being involved in civic affairs (Kargi, 2011).

There are many factors that may influence the granting of loans by most commercial bank managers that are; the type of account the customer operates, although non-account owners get loans or credit, loans are normally given to current account owners more than those who operate savings accounts. The amount involved, if it is a large sum of the loan, the commercial bank manager will consider whether if such an amount is removed, it will not affect the financial standing of the commercial bank. The past financial dealing of the customer with the bank (Waweru and Kalani, 2009). The commercial bank also considers liquidity, which implies the ability to produce cash on demand. A commercial bank mainly utilizes its deposits for granting

advances. These deposits are repayable on demand or on the expiry of a specified agreed period. To meet the demand of the depositors in time, commercial banks should keep their funds in the liquid state. Funds locked up in long-term loans cannot be received back in time and so are less liquid. A commercial bank should confine its lending to short-term loans only (Derban, 2005). Like all other financial institutions, commercial banks are run for profit. Even government-owned banks are no exception to this. Banks earn profit to pay interest to depositors, declare the dividend to shareholders, meet establishment charges and other expenses, provide for reserve and for bad and doubtful debts, depreciation, maintenance and improvements of property owned by the bank and sufficient resources to meet contingent loss. So profit is an essential consideration. A banker should employ his or her funds in such a way that they will bring him/her adequate return. However, a banker should never provide undue importance to profitability (Diamond & Rajan, 2001).

The banker should ensure that the borrower has the ability and the willingness to repay the advances as par agreement. Closely allied to this point is that before granting a secured advance. The banker should carefully consider the margin of safety offered by the security and possibilities of fluctuations in value. If it is an unsecured advance, its repayment depends on the creditworthiness of the borrower or client, and that of the guarantor. As such, the cardinal principles which the banker should consider in case of unsecured advances are the character, capacity, and capital popularly known as the 3 C's or reliability, responsibility, and resources popularly known as the 3 Rs of the borrower and the guarantor (Daniel, 2004). The banker has to carefully examine the purpose for which the advance has been applied. In case the advance is intended for productive purposes, it could be reasonably anticipated that

cash flows arising from productive activities will result in prompt repayment. Of course, the banker has to be careful to monitor the exact purpose for which the funds is actually utilized (Berger and Frame, 2007).

According to Drehman (2008) before giving financial accommodation, a banker should consider the source of which repayment is promised. In some instances, debentures, which are to be redeemed in few months' time, or a life insurance policy, which is to mature in near future, may be offered as security. Loans against such security give no trouble. Sometimes customers may apply for loans for additional working capital for their business and undertake to repay out of the profits over an agreed period. In such cases, the rate at which the customer or client can reasonably hope to repay should be ascertained. Barth & Levine (2008) the security consciousness of a banker and the integrity of the borrower are not adequate factors to keep the banker on the safe side. What is also important is the diversification of credit risk. This means the banker should not lend a major portion of his or her loan-able fund to any single borrower or to an industry or to one particular area. Otherwise, an adverse change in the economy may affect the entire business or industry. In such as a case, repayment will be highly difficult and the survival of the commercial bank becomes questionable. Therefore, a commercial bank should follow the wise policy of "do not put all the eggs in a single basket." The commercial bank must issue loan moderate sums to a large number of customers spread over a wide area and belonging to different industries.

According to Laeven (2003), while admitting that commercial banks are essentially commercial ventures, a commercial bank should not forget the fact that it is not

enough that only people of means are given bank finance. Through productive effort, commercial bank finance should make people creditworthy, and turn them into people of means. Technical competence of the borrower, operational flexibility, and economic viability of the project, rather than the security which the borrower can offer, should be considered in evaluating a loan proposal. The identification of priority sectors for extending commercial bank credit should be considered as a positive development in the banking system, aimed at effectively discharging its responsibility towards society.

## 2.7 Theoretical Framework

This section introduces theories that are relevant to understanding the role of CRB in mitigating against credit default in Commercial banks in Kenya. The study was based on the Moral Hazard Theory, the Adverse Selection Theory, and Credit Rationing Theory.

### 2.7.1 The Moral Hazard Theory

According to Pagano and Japelli (2003) moral hazard refers to the risk in which a party to a transaction provides misleading information about its assets, liabilities or credit capacity, or has an incentive to take unusual risks in a desperate attempt to earn a profit before the contract settles Usually a party to a financial transaction may not enter into the contract in good faith, thus providing misleading information about its assets, liabilities or credit capacity. Problems of moral hazard in financial institutions and commercial banks are evident at many stages of the recent financial crises. This theory is considered relevant in this study since borrowers and lenders tend to conceal crucial information pertaining to the lending and borrowing agreement. Yet in modern macroeconomic theory, economic growth rate depends, crucially, on the efficiency of

financial institutions. The financial systems themselves depend on accurate information about borrowers and the project the funds are used for. According to Heffernan (2006) the moral hazard problem implies that a borrower has the incentive to default unless there are consequences for his future applications for credit. This result from the difficulty lenders have in assessing the level of wealth borrowers will have accumulated by the date on which the debt must be repaid, and not at the moment of application. If commercial lenders cannot assess the borrowers' wealth, the latter will be tempted to default on the borrowing. Forestalling this, lenders will increase rates, leading eventually to the breakdown of the market

According to Alary and Goller (2001) credit bureaus improve commercial banks knowledge about applicant's characteristics and permit more accurate prediction of repayment probability. This allows commercial lenders to target and price their loans better, easing adverse selection problems. In this respect, the benefit of establishing a credit bureau is greatest where a large number of customers or clients on which it has no previous information that is where borrowers are very mobile confront each commercial bank. Credit bureaus reduce the informational rents that commercial banks could otherwise extract from their customers. They tend to level the informational playing field within the credit market and force lenders to price loans more competitively. Lower interest rates increase borrower's net return and augment their incentive to perform. Credit bureaus work as a borrower discipline device where every borrower knows that if he defaults his reputation with all other potential financial lenders is ruined, cutting him off from credit or making it much more expensive. This mechanism also heightens borrower's incentive to repay, reducing moral hazard.

In the moral hazard model developed by information, sharing improves the pool of borrowers, decreases credit defaults and reduces interest rates. It can also lead to an expansion of lending. When commercial banks are local monopolists, however, in some cases lending diminishes, because the exchange of information increases the commercial banks possibility of price discrimination between safe and risky borrowers and the increase in lending to safe borrowers does not fully compensate for the reduction in that too risky types. Moral hazard models also imply that information sharing should reduce default rates and interest rates and increase lending, either because credit bureaus foster competition by reducing informational rents (Pagano & Jappelli, 2002).

In extreme cases, information exchange may make lending feasible in financial markets where no credit would be extended otherwise. In these models, whenever commercial banks choose to communicate they bring about a Pareto improvement by raising customers" welfare along with their own profits. Point out that the disciplinary effect of credit bureaus arises only from the exchange of black information. Information about past defaults generates fear of social stigma. Sharing white information, i.e. data on borrowers" characteristics, while attenuating adverse selection effects, may actually reduce the disciplinary effect of information sharing. Therefore, the comparative benefit of sharing black and white information depends on the relative importance of moral hazard and adverse selection problems in the financial market. One way to check these predictions is to relate total lending or credit default rates to measure of the development of credit bureaus, such as their presence, the quality of information, the population covered, the number of credit reports issued and the number of years they have been in operation (Glennon, 2008).

The moral hazard problem is thus created by asymmetric information after a transaction has occurred. Moral hazard in financial markets occurs when the commercial lender is subjected to the hazard that the borrower has incentives to engage in activities that are undesirable and immoral from the lenders point of view, because those activities make it less likely that the loan will be repaid back. In this case, a high quality borrower knows that anyway his high quality will be disclosed to commercial lenders, regardless of whether his credit history is good or bad or because they discipline borrowers (Freixas, 2009).

**2.7.2 Adverse Selection Theory**

According to Stiglitz & (2015) originated the concept of adverse selection. The theory rests on two main assumptions, which lenders cannot distinguish between borrowers of different degrees of credit risk, and that loan contacts are limited. This analysis is restricted to involuntary credit default, that it assumes that borrowers repay loans when they have the means to do so. In a world with simple debt contacts between risk-neutral borrowers and commercial lenders, the presence of limited liability of borrowers imparts a preference for credit risk among borrowers, and a corresponding aversion to credit risk among lenders. This is because limited liability of borrowers implies that lenders bear all the downside risk. On the other hand, all returns above the loan repayment obligation accrue to borrowers. Raising interest rates would affect the profitability of low credit risk borrowers disproportionately, causing them to drop out of the application pool. However, excess demand in the credit financial market may persist even in the face of competition and flexible interest rates.

In the adverse selection theory, the interest rate may not raise enough to guarantee that all loan applicants secure credit, in times when loanable funds are limited. In

general, borrowers who have greater wealth to put as collateral obtain cheaper credit and have incentives to work harder, and earn more income as a result. Existing asset inequalities within the borrowing class are projected and possibly magnified into the future by operation of the credit financial market, a phenomenon that may cause the persistence of poverty. By exchange information about their customers, commercial banks can improve their knowledge of applicants' characteristics and behavior. In principle, this reduction of informational asymmetries can reduce adverse selection problems in the lending, as well as change borrowers' incentives to repay.

According to Brown and Zehnder, (2010) they argued that information sharing reduces adverse selection by improving commercial banks information on credit applicants. The theory of asymmetric information explains that it may be difficult to distinguish good borrowers from bad borrowers, which may result into adverse selection and moral hazards problems. The theory explains that in the financial market, the party that possesses more information on a specific item to be transacted in this case the commercial borrower is in a position to negotiate optimal terms for the transaction than the other party in this case, the lender. The party that knows less about the same specific item to be transacted is therefore in a position of making either right or wrong decision concerning the transaction. Adverse selection and moral hazards have led to significant accumulation of non-performing loans in commercial banks.

Through sharing of the credit information, the commercial lender is able to distinguish bad borrowers from good borrowers in the financial market. Better access to information helps lenders measure borrower risk more accurately and to set loan

terms and conditions accordingly. Good borrowers with low credit risk would be given more attractive prices, stimulating credit demand, and fewer higher- credit risk borrowers would be rationed out of the market because of lenders inability to offer these borrowers accommodating rates (Barron & Staten, 2003).

According to Berger and Frame (2007) CRB is expected to improve the financial performance of the financial sector and stimulate economic development by making lending and borrowing easier faster and ultimately cheaper. Borrowers can use their positive credit history as collateral to access loans at better rates and seek more competitive terms from different credit lending institutions. By addressing the problem of information asymmetries, the CRB supports an increasing level of trust between commercial lenders and borrowers resulting in an increased volume of credit in the economy. This trust also will increase transparency and competition between commercial lenders. Timely and accurate information on borrowers' debt profiles and repayment history enables Participating institutions to make more informed lending decisions. As the data on the system is built up, the information available enables loan processing to become simpler and faster, collateral requirements to be streamlined, default rates are reduced and, ultimately believing loans and credit shall become cheaper. Participating Institutions (PIs) will, therefore, be able to offer new products and offer competitive interest rates due to availability of information on customers or clients credit risk profiles.

According to Mumi (2010) the creation of credit reference system is one of the effective means to reducing the amount of NPLs in the financial institutions. The introduction of Credit Reference Bureaus in financial landscape is an effort to

encourage sharing of information by financial institutions to reduce the incidences of serial credit defaults by commercial bank customers as well as minimize the incidences of non-performing loans. The recent study by the Bankers Association of Kenya showed that there is appetite for commercial bank loans by the informal sector players who are presumed not to qualify for commercial bank credit given that they don't have any credit records. The introduction of the credit reference bureaus help players in the sector to start building their capacity to borrow from the sector since the credit information sharing allow commercial banks to distinguish between good and bad borrowers. The moral hazard problem is created by asymmetric information after a transaction has occurred. Moral hazard in financial markets occurs when the commercial lender is subjected to the hazard that the borrower has incentives to engage in activities that are undesirable and immoral from the lenders point of view, because those activities make it less likely that the loan will be repaid back (Richard, 2011).

## 2.7.3 Credit Rationing Theory

This theory was introduced by Freimer and Gordon (1965) and comprehensively applied by Stiglitz and Atkison (2015). Stiglitz and Atkison (2015) asymmetric information leads to credit rationing, as commercial lenders cannot distinguish between high quality and low quality borrowers. However, De Reza & Webb (1987) showed that asymmetric information in credit financial markets can lead to the inverse result, which is an excess of credit or over lending. For commercial banks to exist they have to screen and monitor borrowers more efficiently than other investors (Allen & Santomero, 2001). CRBs are specialized in gathering private information about potential loan applicants. In managing money and deposit accounts, commercial

banks own strategic information on firms' receipts and expenditures. Nevertheless, commercial banks may suffer from informational asymmetries such that evolution of prices cannot clear the credit market (Diamond & Rajan,2001).

According to Stiglitz and Atkison (2015), credit rationing occurs if commercial banks charge the same interest rate to all borrowers, because they cannot distinguish between borrowers and screening borrowers perfectly is too expensive. Commercial banks are usually able to distinguish their borrowers up to a certain degree. Commercial banks usually charge more than just one interest rate to all customers. High- credit risk borrowers pay a higher interest rate and credit rationing is less likely. Since financial institutions and credit lending institutions cannot distinguish borrowers perfectly and screening them perfectly is impossible, credit rationing may occur.

## 2.7.4 A Model of Credit Information Sharing

The large literature on the asymmetric information problem in credit financial markets has taken several different approaches to modeling hidden actions and hidden information. The most well-known of this work is that of Stiglitz and Atkison (2015), who revealed the incentive by commercial borrowers to undertake risky investments which increase a borrower's expected payoff under limited liability, but simultaneously reduce the expected payoff to the lender. Higher interest rates draw an increasingly larger proportion of risky investments into the pool of commercial borrowers, creating conditions for a credit-rationing equilibrium. Subsequent work highlighted other forms of ex-ante moral hazard, such as underinvestment in borrower activity complementary to credit borrower negligence and partial diversion of a funds from productive investment to present consumption. Moral hazard may also occur ex-

post to project outcome if a borrower simply reneges on a promise to repay. This kind of strategic credit default underlies the models of Renault & Servigny 2004 ).

According to Jappelli and Pagano (2000) the form of moral hazard that characterizes Credit Information Sharing model is multiple loan contracting, in which commercial borrowers may obtain more advantageous credit terms through taking hidden loans from different lenders, with each commercial lender possessing information over only his own contract with a borrower. Hidden loan contracts impose a negative externality because the unseen debt increases the probability of credit default on each loan. The analysis was built of credit information systems around this type of moral hazard because credit defaults associated with over-indebtedness are an increasingly grave phenomenon in parts of the developing world that have experienced a proliferation in sources of credit. The growing problem of multiple loan and credit contracting has been well documented, for example, in Turkey (Kaynak & Harcar, 2001), South Africa (Daniels, 2004), and Central America (McIntosh and Wydick, 2005).

According to Diamond & Rajan (2001) to conceptualize the effects of information sharing in credit financial markets. A model was developed that is both a simplification and extension of McIntosh and Wydick (2005). It was considered the case of an oligopolistic industry of commercial lenders engaging in Bertrand competition over a finite but large pool of borrowers. Commercial lenders offer loan contracts to borrowers at a fixed administrative cost whereas contract is defined over the size of the loan and interest rate. Upon receiving fund, a borrower's project either succeeds or fails in returning a yield higher than the interest rate. More borrowing

increases the payoff if a project is successful, but also increases the probability that the borrower will be unable to repay the entire borrowed fund.

According to Gieseche (2004) total borrowing is equal to existing debt and the size of the proposed borrowed fund. The borrower knows existing debt, but in the absence of credit, information sharing is hidden from the commercial lender who is therefore forced to form expectations over the extent of existing indebtedness. While the benefits of negative information sharing have been well developed, the model considers the added advantage of commercial lenders sharing positive information about borrowers when there exists the possibility of hidden indebtedness. In contrast to negative information, which primarily concerns records of credit defaults, positive information may provide data on outstanding debt, borrower characteristics, positive records of repayment, and loan histories.

Lenders are typically willing to share negative information because the threat of being put on the list of credit defaulters promotes borrower discipline. Nevertheless, Commercial lenders may be less willing to share positive information because it exposes them to competition from other lenders over high-quality borrowers for whom they may enjoy informational rents. However, with both positive and negative information sharing, borrowers may be punished not only by credit defaults, but also by evidence of hidden debt. Ironically, while negative information reveals only past defaults, which may have been unavoidable, in the model it is positive information sharing that actually provides direct evidence of ex-ante borrower credit risk (McIntosh & Wydick (2005).

According to Laeven (2003) positive and negative information sharing in creates

three types of borrowers. First, the exposed commercial borrowers who are screened from multiple loan contracting and as a result possess single loan contracts that are inferior to their perfect-information contract. Second, the credit defaulting borrowers, those who have defaulted on a previous loan and third clean borrowers with clean credit records. Greater positive information sharing allows lenders to screen applicants with hidden debt more effectively so that credit default becomes a weaker signal of hidden indebtedness. This makes the expected level of hidden debt among credit defaulting borrowers as well as clean borrowers lower, allowing access to better credit terms.

Credit information systems that facilitate positive and negative information sharing between lenders yield three distinct effects screening effect, an incentive effect, and a credit expansion effect. The overall effect of information sharing will be a reduction in credit default rates. Credit default is strictly a function of outstanding debt, although the credit expansion effect results in larger loan sizes, even after credit expansion, borrowers in the portfolio have lower expected default rates (Jappelli and Pagano, 2000).

### 2. 7.5 Empirical Review: A natural experiment and a field experiment.

Empirical section presents results from an unusual pair of experiments with a credit information system in Guatemala that provide direct empirical tests of our three propositions. More detailed results from the natural experiment are given in Glennon et al., 2008) while detailed results from the field experiment can be found in McIntosh (2007). The natural experiment utilized involved the staggered rollout of a new credit bureau in Guatemala. In contrast to public credit registries, which are established by the state and where lender participation is typically mandatory, credit

bureaus are private networks where commercial lenders voluntarily share information.

By the late 1990s the burgeoning growth in the number of microfinance institutions (MFIs) in Guatemala had exacerbated problems of multiple loan contracting and hidden debt to an extent that the country's major MFIs joined to establish CREDIREF, a credit bureau allowing for positive and negative information sharing between participating commercial lenders. By 2003, the bureau held data on over 120,000 borrowers from six major MFIs, with more financial institutions being incorporated into the system each year. The branches of Genesis Impresario, a major microfinance lender, received the hardware and software necessary for the credit bureau in ten different waves between August 2001 and January 2003. This natural experiment to measure the changes in loan contracts and credit default rates among its borrowers (McIntosh, 2005).

A preliminary field survey was conducted in the summer of 2003 with 184 borrowers in six branch offices of Genesis', finding that commercial borrowers were remarkably poorly informed as to the presence of the credit reference bureau. According to the survey, not a single borrower in the survey knew the name of the credit bureau or had any detailed knowledge of whether Genesis shared information with others. The field experiment involved a randomized training, carried out between June and November 2004, in which commercial borrowers were informed about the credit reference bureau and how it worked. The randomized training occurred among 240 solidarity groups consisting of 2 to 5 jointly liable borrowers in seven Genesis branch offices. Because of lack of

awareness of the credit reference bureau at the time of its implementation, the natural experiment inherent in the credit reference bureau rollout allowed to identify the screening effect of the bureau, while the randomized field experiment allowed identifying incentive effects on commercial borrower behavior (Leonard, 2005).

According to Japelli and Marco (2000) financial borrowers who pass the screening test presented by a credit bureau received more favorable credit contracts and larger loans at lower interest rates. Since loan size is increased for those deemed good credit risks. The randomized training experiment uncovered evidence for the incentive effects of the credit reference bureau on repayment performance. Empirical results suggested a screening effect that drives a 3.9 percentage point reduction in delinquency and 1.5 percentage point reduction in credit default. The borrower incentive effect, as identified by the randomized training experiment, reduces delinquency by 7-10 percentage points and generates a transient decrease in credit default that appears to dissipate over time. It was identified that a credit expansion effect among ongoing financial borrowers resulting from a 30% increase in average loan size, which produced a short-term increase in delinquency of 4 percentage points for these borrowers in the month after the credit reference bureau is implemented.

This increase in delinquency from credit expansion to ongoing financial borrowers, however, only partially counteracts the positive effects of the credit reference bureau, which accrue from new information that is able to identify and cull risky financial borrowers in the current portfolio, and the ability to screen for new low-

risk borrowers with clean credit records (Epure, 2015).

According to Kallberg and Udell (2003) the private sector credit relative to GDP is positively correlated with information sharing in their study of credit financial market performance and institutional arrangements in 129 countries for the period 1978 to 2003. Firm-level data suggest that information sharing may indeed have a differential impact on credit availability for different firm types. Leonard (2005) combines cross sectional firm level data from the 1999 World Business Environment Survey with aggregate data on private and public registries collected. They found that private credit reference bureaus are associated with lower perceived financing constraints and a higher share of commercial bank financing while public credit registries are not, and that these correlations are particularly strong for small and young firms ( Sinare, 2008).

To remain competitive, CRB worldwide must not stand on their laurels; they must introduce innovative services to meet the evolving needs of their customers. For example, Compuscan Credit Reference Bureau in Uganda is currently introducing a Credit Scoring System, which is intended to facilitate quicker and better decision making by the participating financial institutions and credit lending institutions the impact of credit rating or scoring agencies on financial markets has become one of the most important policy concerns facing the international financial architecture. Ratings indicate a relative credit risk and serve as an important metric by which many investors and regulations measure credit default risk (Djankov et al., 2007).

According to Brown and Pagano (2009) found empirical evidence that the financial lending market would collapse due to credit risk in the absence of information sharing

institution and reputational banking. However, their study showed that establishing credit reference bureaus encouraged borrowers to repay their loans by allowing financial lenders to identify borrowers with a good payment history. The study showed that an information sharing institution positively affected the credit financial market in the following ways. First, without credit reference bureaus, financial a borrowers had a tendency to repay loans only when they planned to maintain their current lending relationship. However, in economies with a credit information institution, financial borrowers had a higher chance of repaying their loans regardless of whether they were planning to continue their current lending relationship or not. Thus, it can be implied that credit-sharing institutions, by documenting financial borrower behavior, can positively influence borrower repayment and reduce NPLs. Secondly; financial institutions facilitate mobilization of savings, diversification and pooling of risks and allocation of resources. However, since the receipts for deposits and loans are not harmonized, intermediaries like commercial banks incur certain costs (Anderson, 2007).

According to Allen (2001) commercial banks charge a price for the intermediation services offered under uncertainty and set the interest rate levels for deposits and loans. The disparity between the gross costs of borrowing and the net return on lending defines the intermediary costs that include information costs, transaction costs, administration, credit default costs and operational costs. Interest rate spread is well defined by financial market microstructure characteristics of the banking sector and the policy environment.

According to Waweru and Kalani (2009) they indicated that commercial banks are facing an enormous risk of nonperforming Loans (NPLs) noting that larger loans have greater risk exposure, so the variable costs per-shilling is higher. If commercial lenders do not take extra care, there could be more loan defaults. To overcome the challenge of NPLs, commercial banks are required to monitor the behavior of borrowers. Thus, the idea of establishing CRB was conceived in order to enable commercial banks to determine credit worthiness of their borrowers whether individuals, groups and enterprises; and therefore reduce the loan default risk. In this respect CRB assists in first, sharing information on default among commercial banks; secondly, eliminating corrupt borrowers those with the aim of borrowing from different financial institutions with the aim of credit defaulting; thirdly, to provide commercial professional credit reference to say prospective foreign investors; and also to identify honest and credible borrowers based on known history and character. High delinquency makes financial sustainability impossible for an institution. Portfolio at risk rates measure the outstanding balance of loans that are not being paid on time against the outstanding balance of total borrowed funds (Thomas & Scherer, 2001).

According to Richard (2011) he concluded that credit information systems first create a screening effect that improves risk assessment of loan applicants, thereby raising portfolio quality, which in turn reduces rates of arrears. The international standard for measuring bank loan delinquency is PAR. Both the numerator and the denominator of the ratio are outstanding loan balances. The numerator is the unpaid balance of loans with late payments, while the denominator is the unpaid balance on all loans. The PAR uses the same kind of denominator as an arrears rate, but its numerator captures

all the fund that are placed at increased credit risk by the delinquency. A PAR can be pegged to any degree of lateness. PAR is a common measure among commercial banks, captures the outstanding balance of all loans with a payment more than 90 days late.

Nakulenge (2003) observed that, the current global financial crisis, which began in the United States, is attributed to the August 2007 collapse of the sub-prime mortgage markets and that commercial banks with greater credit risk appetite and that are more willing to make loans with a higher probability of credit default, tend to record higher losses. Further, that the level of NPLs in the United States started to increase substantially in early 2006 in all sectors. NPLs reflect credit risk for commercial banks arising either from external factors such as depressed economic conditions, or internal factors such as poor lending decisions or both. The ratio of NPLs to assets is an indicator of a commercial bank's asset quality and financial soundness. In the case of the current financial turmoil, a high ratio may indicate that commercial banks are not healthy since they have significant exposure to the origins of the problem (Jappelli & Pagano, 2002).

According to Ng'etich (2011) controlling NPLs is very important for both the performance of an individual commercial bank and the economy's financial environment. Kallberg and Udell (2003) found that historical information collected by a credit bureau had powerful default predictive power and a study by Barron and Staten (2003) showed that financial lenders could significantly reduce their credit default rate by including more comprehensive borrower information in their credit default prediction models. An analogous study done specifically to Brazil and

Argentina found similar credit default rate decreases when more information was available on borrowers. Credit markets present asymmetric information problems. Commercial lenders know neither the past behavior and the characteristics nor the intentions of credit applicants. This creates a moral hazard problem that causes commercial lenders to make credit decisions based on the average characteristics of borrowers rather than on individual characteristics. Nganga (2011) carried out a study on stakeholder perception of credit reference bureau service in Kenya credit market. The study revealed that many of the borrowers do not want to be listed in CRBs and would try as much as possible to service their credit facilities to protect their reputation.

According to Jappelli and Pagano (2000) provided evidence that information sharing reduces credit constraints at firm level. Examining balance sheet data of large companies in 23 countries they found a positive relation between credit access and an index of information sharing. Evidence supports the theory that information sharing reduces moral hazard. Kargi (2011) found that if commercial lenders enter credit information sharing institution, their borrowers improve their repayment performance. One of the main tasks of commercial banks is to offer loans, and their main source of risk is credit default risk, that is, the uncertainty associated with borrowers' repayment of these loans.

According to Gaitho (2013) the Banking Credit Reference Bureau Regulations, 2008 became effective in February 2009. The Regulations require all licensed commercial banks to share information on Non-Performing Loans (NPLs) through a CRB licensed by CBK. The role of licensed CRBs is to collect, collate and process data received

from approved sources of information and generate credit reports to be used by financial lenders. Research by Armstrong (2008) based on information from several countries across the globe show that the existence of credit registries is associated with increased lending volume, growth of consumer lending, improved access to financing and a more stable banking sector. Thomas & Scherer, (2001), highlighted that many borrowers make a lot of effort to repay their loans but are not rewarded for it because this good repayment history is not available to the bank that they approach for new loans. Whenever borrowers fail to repay their loans, commercial banks are forced to pass on the cost of credit defaults to other customers through increased interest rates and other fees. Good borrowers pay for bad. Credit reporting allows banks to better distinguish between good and bad borrowers. Recent theoretical research suggests a threefold effect of lenders exchanging information on the credit history of borrowers.

According to Padilla & Pagano (2000). First, credit bureaus improve commercial banks knowledge about applicant's characteristics and permit more accurate prediction of repayment probability. This allows financial lenders to target and price their loans better, easing adverse selection problems. In this respect, the benefit of establishing a credit bureau is greatest where a large number of customers on which it has no previous information that is where borrowers are very mobile confront each bank. Second, credit reference bureaus reduce the informational rents that commercial banks could otherwise extract from their customers. They tend to level the informational playing field within the credit market and force financial lenders to price loans more competitively. Third, credit reference bureaus work as a borrower discipline device. Every commercial borrower knows that if he defaults his reputation

with other potential lenders is ruined, cutting him off from credit or making it much more expensive. This mechanism also heightens borrowers' incentive to repay, reducing moral hazard.

According to Jappelli and Pagano (2002) observed that the use of credit risk information systems has become a topic of analysis and promotion within international organizations and national governments. He stated that one of the factors limiting the access to credit for microenterprises is the lack of information on the credit risk that they represent to the financial intermediaries. As a result, commercial banks need to make a bigger effort to complete the information they require in order to make decisions over the credit requests they receive, incrementing their operational costs, which are generally transferred to the clients directly or indirectly. Anderson (2007) stated that information problems have long been at the fore of analyses of credit markets. Indeed, one rationale for commercial banks as institutions is to gather information and establish relationships with borrowers in an effort to surmount these problems. A striking feature of commercial banks is the amount of services that they offer and the economies of scope between them.

## 2.8 Conceptual Framework

The conceptual framework as shown in Figure 1 illustrates the hypothesized relationship between the independent variable (role of credit reference bureaus) and the dependent variable (mitigating credit default risk). The independent variable is relative advantage. The study was be guided by the following conceptual framework.

**Independent Variables-Role of CRBs**

```
┌─────────────────────────────────────┐
│ Credit Risk Identification           │
│   • Credit history                   │
│   • Techniques of management risk    │
├─────────────────────────────────────┤
│ Customer credit Repayment behavior   │
│   • Customer credit-worthiness       │
│   • Credit score                     │
│   • Frequency of Non-performing      │
│     loans                            │
└─────────────────────────────────────┘

┌─────────────────────────────────────┐
│ Moral Hazard                         │
│   • Material information             │
│                                      │
└─────────────────────────────────────┘

┌─────────────────────────────────────┐
│ Credit Access                        │
│   • Financial cost                   │
│   • Borrowers income credit history  │
└─────────────────────────────────────┘
```

**Dependent Variable**

```
┌──────────────────────┐
│ Credit Default       │
│                      │
│   • Rate of default  │
│                      │
└──────────────────────┘
```

```
┌──────────────────────┐
│   • Inflation        │
│   • Lending Policies  │
│   • Banking Act      │
└──────────────────────┘
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**Intervening Variables**

**Figure 2. 1 Conceptual Framework**

**Source: Researcher (2016)**

The conceptual framework shows the assessment of the role of CRBs in mitigating against credit default through credit risk management, customer repayment behavior and credit accessibility and reduction of moral hazard and credit evaluation process in commercial banks in Kenya. This may, in turn, lead to the improved financial performance of commercial banks due to a reduction of credit default.

## 2.8 Summary of literature

The purpose of this literature review was to investigate the assessment of the role of credit reference bureaus on the mitigating credit default risk in commercial banks in Kenya. The literature on CRB on risk identification, a rate of customer credit repayment, reduction on moral hazard and credit evaluation practices in commercial banks in Kenya was reviewed. The study was based on the Adverse Selection Theory, the Moral Hazard Theory, Credit Rationing Theory and the Financial Sustainability Model. The theories made research findings more meaningful and generalizable. The knowledge of this literature was used in data collection to meet the objective of the study. It also established orderly connections between observations and facts and stimulate research. The evidence adduced from the literature review showed that the higher the credit risk, the lower the willingness of banks to extend credit facilities to those in need. This lowers the demand for loans. The literature also provided a general framework for data analysis. Summaries were based on reviews of studies done elsewhere and therefore do not reflect the relationship between the role of CRB in mitigating against default among commercial banks in Kenya.

## 2.9 Research Gap

Few aspects relating to Credit Reference Bureau have been reviewed. Weru, (2015) evaluated the effectiveness of CRB in provision of credit in commercial banks in Kenya, Nganga (2011) investigated stakeholder perception of credit reference bureau services in the Kenyan credit market, Gaitho (2013) studied the role of credit reference bureau on credit access, and Mumi (2010) appraised the impact of credit

reference bureau in financial institutions in Kenya. Further research should be done to determine whether intervening variables have an effect in mitigating against credit default in commercial banks in Kenya and further research on how effective CRB regulations have been adopted by most banks to reduce default rates and inside trading to improve the performance of commercial banks and other financial institutions. Research on linking CRB firms in Kenya with other regional CRB firms and financial institutions should be carried out in other countries to have information on credit histories of those crossing the borders to promote more credit accessibility and reduce credit default.

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# CHAPTER THREE

## RESEARCH DESIGN AND METHODOLOGY

### 3.1 Introduction

This chapter outlines research approaches into the research design, location of the study, target population, sampling procedures and sample size, research instruments, data collection procedures, data analysis and ethical considerations.

### 3.2 Research Design

The study used a Causal-Comparative descriptive survey design in assessing the role of CRB on mitigating credit default risk in commercial banks in Kenya. This was used because it gives a systematic collection and analysis of data in order to answer questions concerning the current status of CRB the way it is without changing the environment Mugenda & Mugenda (2003). This method does not offer the researcher control over the data collected in terms of manipulation of the variables of the study. A quantitative approach was applied. Description emerges following creative exploration, and served to organize the findings in order to fit them with explanations, and then test or validate those explanations (Nachmias & Nachmias (2006). The researcher described and examined the main variables to measure and organizes findings before validating them. The fundamental impact study question is what would have happened to commercial banks receiving the intervention of CRB they had not in fact received it. Causal-comparative studies attempt to identify cause-effect relationships, involve comparison, and attempts to make inferences without direct intervention. This design was appropriate for this study because comparison allowed for the establishment of conclusive causality attributing observed changes in the

effectiveness of CRB practices. The researcher employed descriptive statistic analysis and methods of analyzing correlations and regressions between multiple variables.

## 3.3 Location of the Study

The study was carried out at the commercial bank headquarters and credit reference bureau headquarters in Nairobi County.

## 3.4 Population of the Study

The population of the study consisted all the licensed commercial banks in Kenya and the CRBs under the Banking Act. According to the CBK, there were 43 licensed banks in Kenya as at 31st March 2015 CBK (2015). All these banks were studied since a conclusive and completely representative analysis was to be arrived at in the end.

## 3.5 Sampling Procedures and Sample size
## 3.5.1 Sampling Procedure

The researcher used judgment that is purposive sampling technique that is a non-probability method. The selected sample was based on judgment.

## 3.5.6 Sample Size

The researcher drew the entire population using census approach. The researcher was confident that the chosen sample was truly representative of the entire population. All the 43 credit commercial bank managers at the headquarters were used for the study.

**Table 3. 1: Respondent's Categories Sample Size**

| Respondent's Categories | Respondents Size |
|---|---|
| Bank Credit  managers | 41 |
| **Total** | **41** |

Source (Researcher 2016)

## 3.6 Instrumentation

In formulating research instruments, the researcher considered the objectives of the study and the hypothesis. To collect primary data, the researcher used questionnaires. Questionnaires gave the respondents room for airing well-thought information adequate to base good judgment. Besides secondary data required for this study were collected from CBK loan book, CBK annual Bank supervisory reports. The data required was collected for a period five years, before the introduction of CRB and five years after to show the trend of loan defaults before and after the introduction of CRBs. Other sources of secondary data included annual publications, newspapers, journals, monthly publication, and library books were used to form the backbone of a literature review.

## 3.6.1 Pilot Study

According Mugenda & Mugenda (2003). Orodho, 2003), a pilot study is necessary for testing the reliability of data collection instruments. Cooper and Schindler (2001), explained reliability of research as determining how consistent the results are. A pilot study is thus conducted to detect weakness in design and instrumentation and to provide accurate data for selection of a sample (Young, 2009). Using a panel of "experts" familiar with the construct is a way in which this type of validity can be

assessed; the experts can examine the items and decide what that specific item is intended to measure (Mugenda, 2003). The experts were required to assess if the questionnaires address the role of credit reference bureau in mitigating against loan default in Commercial Banks in Kenya. The Cronbach's coefficient of the data gathered from the pilot study was computed with the assistance of Statistical Package for Social Sciences (SPSS). Cronbach's values obtained indicated a coefficient of

approximately 0.881 and which was considered acceptable. Piloting testing was carried out to ensure validity and reliability of the instrument. Its content was pre-tested by a pilot study carried out at two Commercial banks that is Diamond Trust Bank and I & M banks headquarters in Nairobi. These banks were selected on the bases that they had the lowest credit default between 2010-2015 according to banking sector report (2015).

### 3.6.2 Validity of the Instrument

Validity is concerned with the question of whether an instrument measures what it intends to measure (Nachmias & Nachmias, 2006). To ensure validity, a questionnaire was prepared in conjunction with literature review and based on the research objectives and questions. The questionnaire was discussed with the supervisor, colleagues, experienced researchers and professional bankers. Completed questionnaires were collected directly from respondents that enabled any clarification of any issues.

### 3.6.3 Reliability of the Instrument

Reliability is the degree to which an instrument measures accurately what it claims to measure. According to Powell, (2004) reliability is always contingent on the degree of uniformity of the given characteristics in the population. This implies that the more heterogeneous the population is concerning the variable in question, the more reliable the instrument is likely to be. In assessing the reliability of the data, internal consistency method using Cronbach's alpha was used.

## 3.7 Data Collection Procedures

With the help of research assistants, the researcher visited the commercial banks and administered the questionnaires. Arrangements were made with the assistance of public relations officers to administer questionnaires to the credit managers at the headquarters. The researcher acquired a research permit from National Commission for Science, Technology, and Innovation (NACOSTI). The researcher also had an introduction letter from Kabarak University. The researcher then administered the questionnaires to the respondents. The researcher to keep the date for the study used an electronic spreadsheet. The researcher sent an email to the respondents in advance explaining the purpose of the study. The questionnaires were delivered to the target respondent by the researcher and research assistant to allow familiarity with the respondent in building the confidence between the researcher and the respondent on the intention of carrying out the study. The questionnaires were picked after two weeks from the date of issuance when a prearranged date was confirmed for collection. The researcher ensured that the research assistant had the necessary expertise skills to collect the data.

## 3.8 Data Analysis

On completion of data collection, the researcher organized the data received, coded, edited and tabulated to check accuracy, completeness and storing it inappropriate form. The data was stored in electronic form and paper form for the purpose of data analysis. Data analysis ensured that the findings were clearly shown and research gaps for further research were pointed out. The data was analyzed using the spreadsheet as it has versatile analysis and storage combination tools. Spreadsheet incorporated elements of exploratory data analysis and relevant information from the spreadsheet

were copied directly across to a report. The data was presented using graphical systems, which included histograms and pie charts, frequency distributions tables and numerical methods. Regression analysis, Pearson Correlation and chi square test was analyzed in order to make deductions and inferences and also to test the hypothesis. The exploratory method was used to analyze qualitative research and confirmatory method was used to analyze quantitative research. Statistical techniques were also used to analyze the data, which measured measures of central tendency that is the mean, the median, and the mode. Measures of dispersion were also calculated which included standard deviation. Statistical computing was done using Excel and Statistical Package for Social Sciences (SPSS). The study examined the relationship between the variables stated using regression model Y = f(RI, RB, CA, MH). Where Y was the dependent variable ( Credit Default) and RI, RB, CA and RMH are the independent variables

Therefore, an analytical model of linear multiple regression equations of the form shown below was developed.

Where:

$Y = \alpha + \beta 1 \ R1 + \beta 2 RB + \beta 3 CA + \beta 4 RMH + \ \varepsilon$

Y= Credit Default

$\alpha$ = Autonomous factors

$\beta 1$ = Coefficient for Credit Risk identification

RI= Credit Risk identification

$\beta 2$ = Coefficient for Customer Credit Repayment Behaviour

RB= Customer Repayment Behaviour

β3= Coefficient for Credit Access

CA= Credit Access

β4= Coefficient for Moral Hazard

MH= Moral Hazard

ε = Error term captures all relevant variables not included in the model because they were not observed in the dataset. This regression relationship showed the extent to which each independent variable as influenced the dependent variable. This was shown by the coefficient of the independent variable in each case. A correlation analysis was also performed to find how the variables are related to each other in the model. The researcher maintained integrity in the application of the statistical skills without concern for a favored outcome.

## 3.9 Ethical Considerations

The researcher justified the research via an analysis of the balance of cost that there have to benefit from the study that outweighs the cost. The researcher maintained confidentiality at all times, was responsible for the work and for the contribution to the whole study. The researcher obtained informed consent from any subject used in the study and ensured that all subjects participated voluntarily. The researcher was open and honest in dealing with the respondents and fully explained the research in advance and debriefed respondents afterward.

# CHAPTER FOUR

## DATA ANALYSIS, PRESENTATION AND DISCUSSION

### 4.1 Introduction

This chapter presents the findings, interpretations and discussion according to the objectives, and hypotheses. It contains information on the pilot study, reliability test, background, role of CRB as credit risk identifier, rate of credit repayment, credit access, credit default rate and the relationship between role of CRB and Credit Default Rate in commercial Banks.

### 4.2 General and Demographic Information

### 4.2.1 General Information

The researcher conducted a pilot study in two banks that are homogeneous in terms of composition and operations with the targeted banks to establish the reliability of the research tools. The results are presented in Table 4.1.

**Table 4.1: Reliability Analysis**

| Reliability Statistics | Cronbach's Alpha value |
|---|---|
| Credit risk identification | 0.865 |
| Rate of credit repayment | 0.836 |
| Credit access | 0.861 |
| Rate of reduction on moral hazard | 0.664 |

Source (Researcher, 2016)

A coefficient of above 0.7 was obtained and this indicated that the data collection instruments were valid (Nachmias & Nachmias, 2006). Data validity played an important role towards the generalization of the gathered data to reflect the true

characteristics of the study problem. An alpha coefficient higher than 0.8 indicates that the gathered data has a relatively high internal consistency and could be generalized to reflect opinions of all respondents in the target population (Nachmias & Nachmias, 2006). The validity of the questionnaires was determined using construct validity method. Construct validity is the degree to which test measures an intended hypothetical construct (Mugenda, 2003). The instruments were reviewed to improve their validity as well as reliability.

The research success in gathering the required information from the targeted institutions is displayed in Table 4.2.

**Table 4. 2 Response Rate**

| Response Category | Frequency | Response Frequency | Non-Response |
|---|---|---|---|
| Unit response | 35 | 1.39 | 8 | 18.61 |

Source (Researcher, 2016)

Table 4.2 reveals that out of all the 43 data collection tools issued to the respondents, the researcher recovered 35 yielding a unit response rate of 81.39%. This study was considered to be a success as data was found to be sufficient for analysis since the overall response rate was 81.83% according to Babbie (1995) who considers 70% response rate and above to be very good.

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### 4.2.2. Demographic Data

**Table 4. 3**:  Distribution of Respondents by Department

| Department | Frequency | Percent |
|---|---|---|
| Operation | 14 | 40.00 |
| Credit | 20 | 57.14 |
| Risk | 1 | 2.86 |
| **Total** | **35** | **100** |

The study findings showed that majority of the respondents 57.14% were in credit department, 40 % in operation with minority 2.86% in risk management.
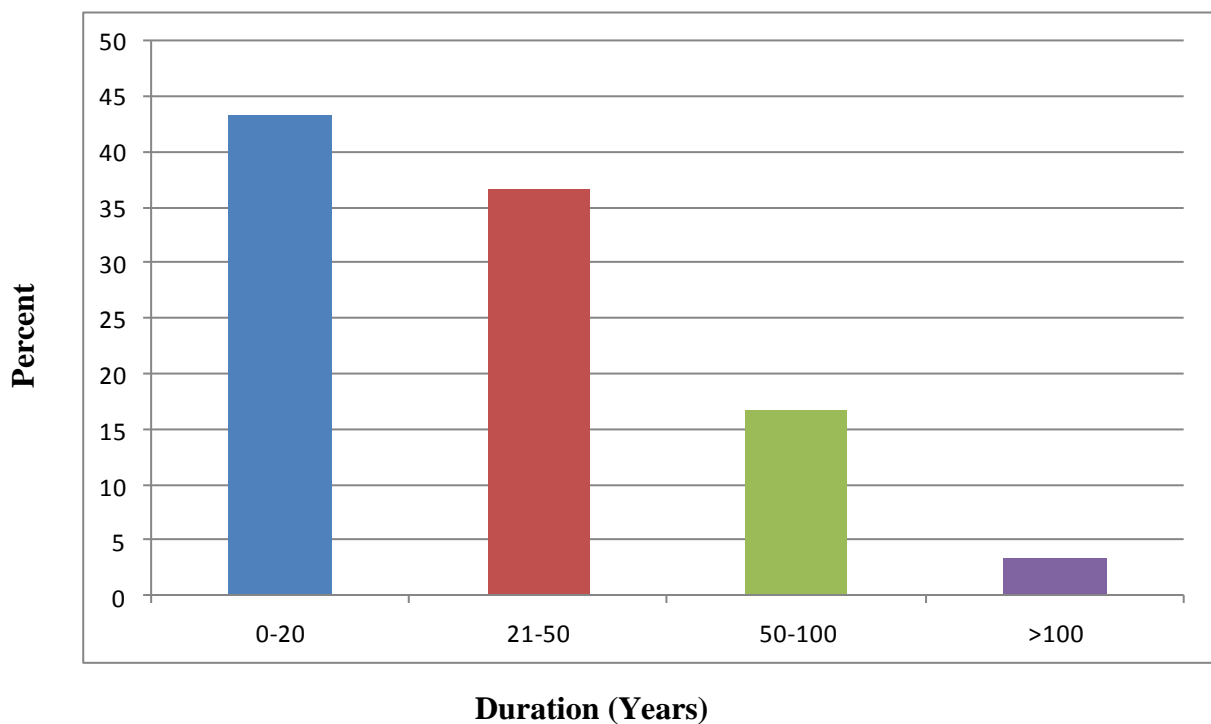


**Duration (Years)**

**Figure 4. 1 Bank Operation Duration**

The study findings indicate that most of the banks (79.98%) were established not more than 50 years ago in Kenya. Few exceptional banks (20.0%) have been in operation for more than 50 years.

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**Table 4. 4: Customer's Credit Information Report Forwarded to CRB**

| CRB Name | Frequency | Percent |
|---|---|---|
| Credit Reference Bureau Africa Limited | 12 | 35.3 |
| Metropol Credit Reference Bureau Limited | 2 | 5.9 |
| Credit info Credit Reference Bureau Limited | 3 | 8.8 |
| All | 18 | 50 |
| **Total** | **35** | **100** |

Source (Researcher, 2016)

The study found out that majority (35.3%) of the targeted banks forward credit information reports of their customers to Credit Reference Bureau Africa Limited (TransUnion) with a few 8.8% and 5.9% reporting to Credit Information Reference Bureau Limited and Metropol Credit Reference Bureau Limited respectively. It was also established that 51.4 % of the banks report to all the above three mentioned CRBs.
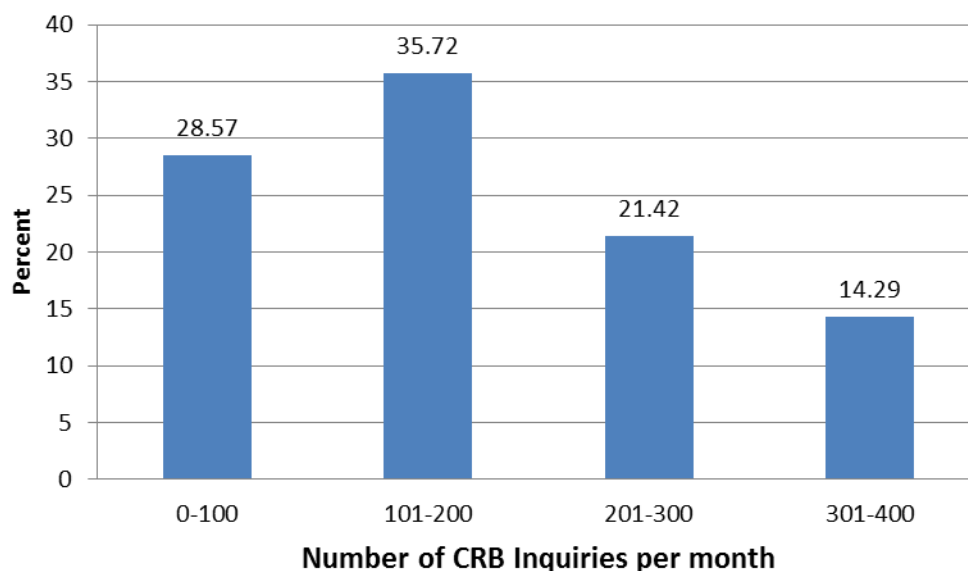


**Figure 4. 2: Number of CRB inquiries per month**

## 4.3 Role of CRB as a Credit Risk Identifier

The study established that the targeted banks were active in making inquiries from the CRB with a majority of the banks (71.43%) making more than 100 inquiries per month. With the possibility of loan default, it is important for lenders to assess the qualification for successful lending by focusing on the ability to judge the character and credit-worthiness of borrowers Gentgen, (2008). The study is in agreement with Luoto and wydick (2007) who postulates that prospective lenders access the information to determine the borrower's creditworthiness which entails their credit history, including information on their identity, credit accounts and loans, bankruptcies and late payments and recent inquiries from CRBs who collect information from various sources and provides consumer credit information on individual consumers for a variety of uses. The study found out that majority (35.3%) of the targeted banks forward credit information reports of their customers to Credit Reference Bureau Africa Limited (TransUnion) with a few 8.8% and 5.9% reporting to Credit Information Reference Bureau Limited and Metropol Credit Reference Bureau Limited respectively. It was also established that 51.4 % of the banks report to all the above three mentioned CRBs.

## 4.3.1 Bank Customers Report for CRB

The study sought to establish whether the targeted banks forward negative reports on their customers' history to CRB. The response is displayed in figure 4.3
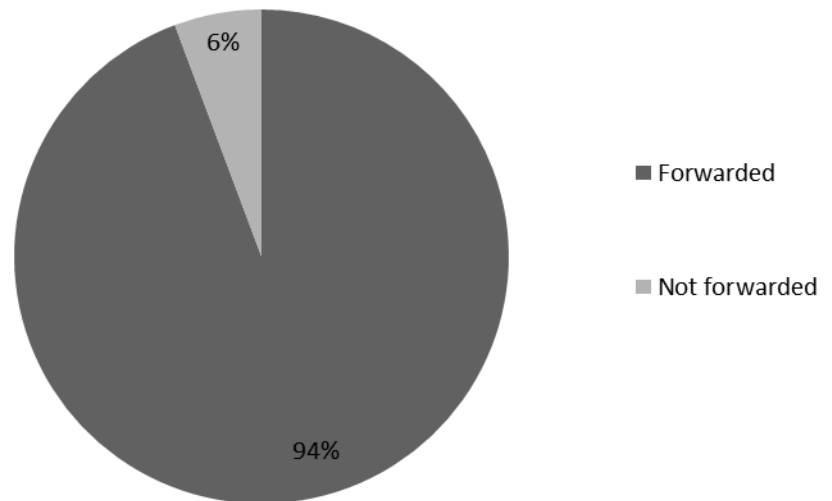


**Figure 4. 3: Forwarded negative Credit Histories of Bank Customers to CRB**

The study established that majority of commercial banks in Kenya (94.3%) forward negative credit histories of their customers to CRB with only 5.7 % stating otherwise. This is consistent to Berger (2007) who considers the disclosure to be a market discipline designed to make the market have a better picture of the bank's risk position to alert their counterparts.

The researcher sought to establish the reports forwarded to the CRB by the banks by asking an open-ended question to the respondents that gathered qualitative data. The results were analyzed using content analysis and results discussed as follows. The

disclosure of general reports of the loan facilities issued by the commercial banks constitutes of 24.21%, which comprises of amounts of loans and advances issued, customers' loan details, collateral register among other credit reports that the bank is obliged to disclose before issuing credit (Luoto, 2007). The information that the commercial banks forward to CRB comprises of both positive and negative information concerning performance and non-performance status was found according to a majority (30.3%) of the respondents. The positive information constituted a very small proportion of (9.09%) comprising of diligent reports, outstanding running facilities among others. The negative reports were found to constitute 33.3% of the forwarded report, which was found to comprise of a negative list of customers, delinquent report, and loan defaulters report and loan overdue reports. This in agreement with CBK (2010) that recommends sharing of information among financial institutions in respect of customer credit behavior since it has a positive economic impact.

## 4.3.2 Approval of Loans Applied

The study sought to establish the application of CRB reports in approving loans applied for by their customers. The respondents were to answer a set of questions, both closed-ended and open-ended questions whose findings are presented in Figure 4.4 and discussed, respectively as follows.
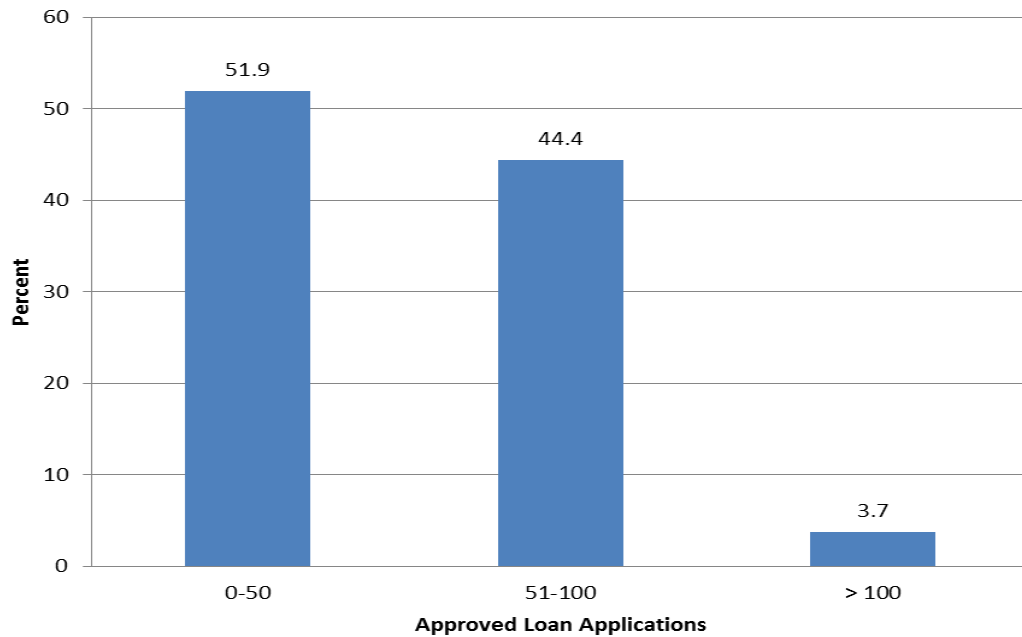
**Figure 4. 4: Loan Applications Approved by Banks Based on CRB Report**

The results in Figure 4.4 state that majority of banks (51.9%) approves less than 50 loans and between 51-100 loans, and according to 44.4% with only 1% approving more than 100 loans per day. This is inconsistent with the findings in Figure 4.2 that showed that (71.43%) of the banks under investigation make more than 100 inquiries per month. This showed that the banks were not putting enough emphasis on the CRB reports they inquire about the borrowers. This was in line with the findings of Epure and Lafuente (2012) who considers the information inquired from the CRB to be vital since it creates a better understanding and relationship between their customers with other lenders. This enables lenders to approve loan applications as well as offering targeted pricing to customers based on the level of risk involved while extending loans.

**Table 4. 5**: Customer failure to meet the terms of contract with the bank.

| Response | Frequency | Percent |
|---|---|---|
| Yes | 33 | 94.3 |
| No | 2 | 5.7 |
| **Total** | **35** | **100** |

Source (Researcher, 2016)

The study sought to establish whether the customers sometimes failed to meet the terms of any contract with the bank. The study established that majority of customers failed to meet the terms of any contract with the commercial banks in Kenya (94.3%) with only 5.7 % stating otherwise. Further interrogation revealed that all the banks investigated upon (100%) were found to reject loans applied by the borrowers based on their qualifications as per the CRB reports. Further investigations revealed that the disqualification of applicants is done based on reports that disclose the applicants' ability to repay the loan, negative CRB listing and delayed payments as indicated by 27.24% of the opinions given by the respondents.

According to 36.36%, loan application rejection could be due to change of the applicants' financial status as a result of one or several unforeseen events that includes business failure, loss of employment, illness, death or over-commitment of their sources of income among other factors manifested with the recent economic hardships. The study revealed that among the reasons (36.4%) considered to have led to a disapproval of some loan applications are constraints stipulated by banks in response to the economic environment established by regulators and other lenders. This was attributed to the establishments of stringent requirements by the lenders,

which borrowers cannot meet, change in interest rates as well as tangible security requirements. This finding is agreement with Epure and Lafuente (2012), who postulate that the CRB reports help banks suppress the levels of NPLs while increasing their loan books minimizing the problem of information asymmetry in the financial sector. This also agrees with Anderson (2007, who considers the five Cs of loan application approval. That is the credit history, cash flow history, and projections, collateral available to secure the loan, character, and conditions.

### 4.3.3 Credit Risk Management by Banks

The research sought to establish the strategies put in place by banks in managing risks associated with loan issuance. The results on the use of collateral, guarantees and netting off of loans as the measure of managing financial risk by the targeted banks are displayed in Tables 4.6, 4.7 and 4.8 respectively.

**Table 4. 6: Use of Collateral to Manage Credit Risk**

| Loans | Frequency | Percent |
|-------|-----------|---------|
| Used | 32 | 91.4 |
| Not used | 3 | 8.6 |
| **Total** | **35** | **100** |

Source (Researcher, 2016)

The study revealed that 91.4% of the banks used collateral as the common credit risk mitigation technique. This is in agreement with Berger and Frame (2007) who postulate that risk management entails use of included collateral, loan securitization and covenants by banks especially in developing economies.

**Table 4. 7: Use of Guarantees to Manage Credit Risk**

| Loans | Frequency | Percent |
|---|---|---|
| Used | 23 | 65.7 |
| Not used | 12 | 34.3 |
| **Total** | **35** | **100** |

Source (Researcher 2016)

The inference is that the majority of debtors used guarantees as for their collateral because of lack of stable sources of income according to 65.7% of the respondents. The findings were consistent with a study by Gieseche, (2004) who alleged that the banking sector has come of age in most countries, but nonetheless, these banks are not devoid of their customary problems. For instance, the banks can be faulted on not creating sufficient awareness to loan borrowers.

**Table 4. 8: Use of Netting off of Loans to Manage Credit**

| Loans | Frequency | Percent |
|---|---|---|
| Used | 32 | 91.4 |
| Not used | 3 | 8.6 |
| **Total** | **35** | **100** |

Source (Researcher, 2016)

The credit officers accessed in the study stated that netting off loans is commonly used by commercial banks in Kenya to manage credit according to majority (91.4%) with only 8.6% in dispute.

## 4.3.4 Financial Risks Encountered by Banks

**Table 4. 9 : Occurrence of Legal Risks**

| Loans | Frequency | Percent |
|---|---|---|
| Encountered | 31 | 89.5 |
| Not encountered | 4 | 10.5 |
| **Total** | **35** | **100** |

Source (Researcher 2016)
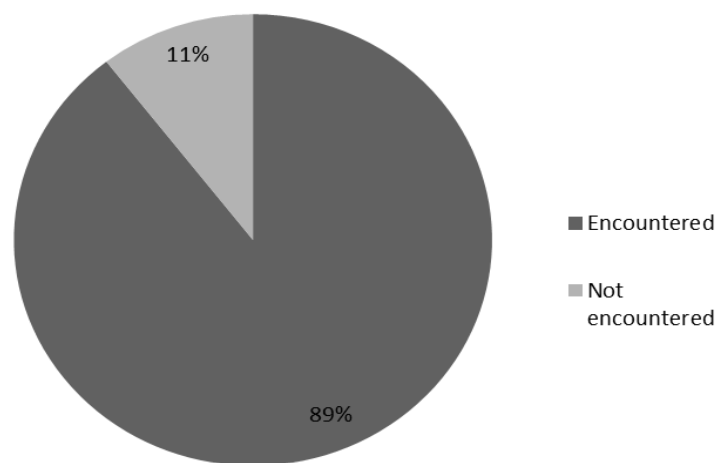


**Figure 4. 5: Occurrence of Legal Risks**

The study revealed that most of the banks (89.5%) have encountered legal risks in relation to issuance of loan with only 10.5% stating that they have not encountered the risks. This is a clear indication that banks risks litigations as they issue or fail to issue loans. The pressure could be from disputing customers, competitors or banking regulators.

**Table 4. 10: Occurrence of Operational Risks**

| Loans | Frequency | Percent |
|---|---|---|
| Encountered | 35 | 100 |
| Not encountered | 0 | 0 |
| **Total** | **35** | **100** |

Source (Researcher 2016)

All the respondents (100%) unanimously confirmed that banks encounter operational risks because of providing for credit to their customers. This is in line with Stiglitz and Atkison (2015), who argue that lenders cannot distinguish between high quality and low-quality borrowers because of asymmetric information leads to credit rationing.

**Table 4. 11 : Occurrence of Liquidity Risks**

| Loans | Frequency | Percent |
|---|---|---|
| Encountered | 33 | 95.0 |
| Not encountered | 2 | 5.0 |
| **Total** | **35** | **100** |

Source (Researcher 2016)

The study established that 95.0 % of the respondents encountered liquidity risks with only 5.0 % stating that they have not encountered the risks. This is in agreement with (2005) who expounds on the how financial institutions especially commercial banks generally encounter difficulty in meeting obligations from its financial liabilities if they do not maintain appropriate liquidity levels. This makes it necessary for an effective credit access include an efficient system and procedures for credit risk management. According to Kargi (2011), lenders should be more careful as they issue

loans since financial institutions are facing an enormous risk of nonperforming Loans (NPLs) emphasizing that larger loans have greater risk exposure

**Table 4. 12**: **Occurrence of Market Risks**

| Loans | Frequency | Percent |
|---|---|---|
| Encountered | 35 | 100 |
| Not encountered | 0 | 0 |
| **Total** | **35** | **100** |

Source (Researcher 2016)

The researcher found out that all the 35 respondents (100%) unanimously agreed that market risks are commonly encountered credit risks by commercial banks. This is in line with the findings of Collins and Wanjau (2011) who considers market risks to be common encounters for commercial banks. They are manifested inform of interest rate risk which entails potential losses due to fluctuations in interest rate, equity risk inform of potential losses due to fluctuations in stock price, currency risks which are potential losses due to international currency exchange rates and are closely associated with settlement risk as well as commodity risk inform of potential losses due to fluctuations in prices of agricultural, industrial and energy commodities like wheat, copper and natural gas respectively.

**4.5.5 Perceived Effectiveness of CRB in Risk Management**

The study as displayed in Table 4.14 and 4.15 indicated the respondents' perceptions on CRB effectiveness in reducing credit risks and instilling the culture of financial discipline respectively.

**Table 4. 13: Perceived Credit Risks Reduction**

| Credit risks status | Frequency | Percent |
|---|---|---|
| Reduced | 34 | 97.1 |
| Not reduced | 1 | 2.9 |
| **Total** | **35** | **100** |

Source (Researcher, 2016)

According to a majority of the respondents (97.1%), CRBs were perceived to be effective in reducing credit risks for the targeted banks while only 2.9.1% were of the opinion that CRBs were not effective in reducing credit risk. This result confirms those of Rukwaro (2001) who considers CRB to enable commercial banks to reduce credit risks by lending more to better and not risky clients as well as determining better the bad loans that they need to cover expected losses of credit to good payers. In addition to that, they also argue that CRBs reduce the borrowing cost by forcing creditors to be more competitive for good borrowers. The study also confirms Kithinji (2010) who considers CRB to ensure financial institutions against limited institutional capacity, inappropriate credit policies, volatile interest rates, poor management, inappropriate laws, low capital and liquidity levels, direct lending, massive licensing of banks, poor loan underwriting, laxity in credit assessment, poor lending practices, government interference and inadequate supervision by the central bank.

The researcher sought to investigate respondent's opinions on the perceived credit risk reduction because of the role of CRB on risks identification by asking an open-ended question. After analysis, a proportion (48.28%) of the respondents state that CRB avails credit information of the borrowers. This makes the borrowers fulfill their

credit responsibilities to maintain a good borrower reputation. This makes them avoid being listed negatively by the CRB which could lead to their application for loan facility being disqualified on basis of initial loan defaulting as it was suggested by 51.72% of the respondents.

**Table 4. 14: Identification of risk by financial Institutions**

| Risk Identification | Frequency | Percent |
|---------------------|-----------|---------|
| Scenario analysis | 1 | 2.9 |
| Risk Mapping | 2 | 5.7 |
| Both | 32 | 91.4 |
| **Total** | **35** | **100** |

Source (Researcher 2016)

The researcher found out that majority (91.4 %) of the respondents identifies risk through scenario analysis and risk mapping. While only 5.7 % of the respondents identified through risk mapping and only 2.9% identified through scenario analysis.

**Table 4. 15: Perceived Culture of Financial Discipline among Customers**

| Financial Discipline | Frequency | Percent |
|----------------------|-----------|---------|
| Instilled | 33 | 94.3 |
| Not instilled | 2 | 5.7 |
| **Total** | **35** | **100** |

Source (Researcher 2016)

The research found out that majority (94.3%) of the respondents considered the CRB to have instilled some financial disciplines to targeted banks customers. This is results confirms those of Padilla and Pagano (2000) who postulate that moral hazard entails the risk in which a party to a transaction provides misleading information about its assets, liabilities or credit capacity, or has an incentive to take unusual risks in a

desperate attempt to earn a profit before the contract settles. This could be solved through the accessing and reference to CRB reports that are considered to have accurate information that financial systems themselves can depend on to understand the borrowers and the project the funds are used for as indicated by Heffernan (2006).4.6 Role of CRB on Rate of Credit Repayment

**4.6 Perceived Effectiveness of CRB on Credit Repayment**

**Table 4. 16: Status of Non-Performing Loans since the Inception of CRB**

| NPL status | Frequency | Percent |
|---|---|---|
| Reduced | 31 | 88.6 |
| Not reduced | 4 | 11.4 |
| **Total** | **35** | **100** |

Source (Researcher 2016)

From the study as indicated in Table 4.16 depicts that since the inception of CRB, Non-Performing Loans have reduced significantly according to the majority (88.6%) of the respondents. According to Hoque (2004), this could be attributed to reduced borrowing costs and loan delinquencies to a significant extent, which enhances effective risk identification and monitoring, as well as credit extension, which ensures that credit flows to deserving borrowers and is reduced to those less deserving and maintaining financial stability in an economy.
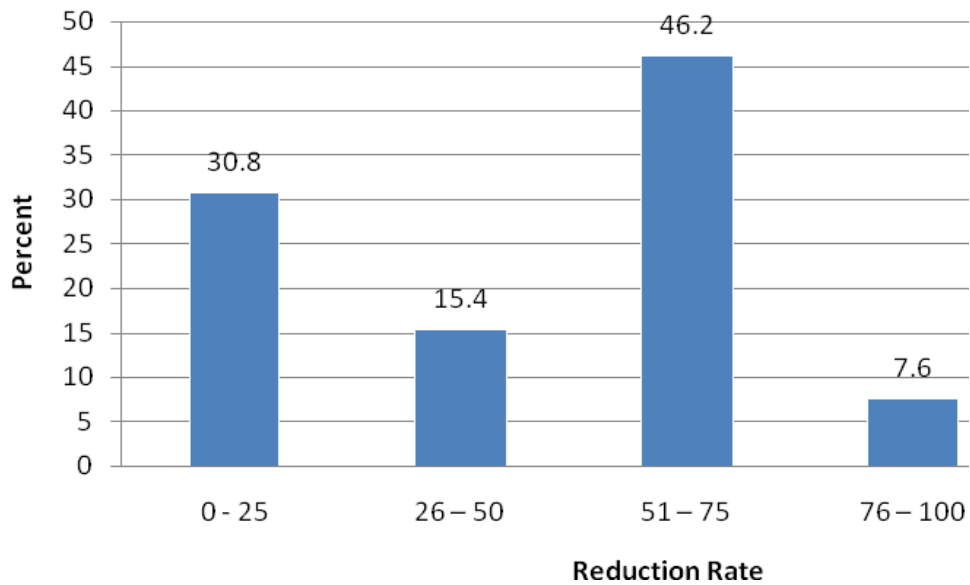
**Figure 4. 6: Perceived Reduction Rate of NPL since CRB Inception**

The study revealed that most of the banks (46.2%) records 51-75% reduction of NPLs, 0-25% reduction according to 30.8%, 26-50% reduction as stated by 15.4 with only 7.6% of the respondents recording having a reduction of 76-100%. This is evidence that reduction of nonperforming loans is a persistent problem facing financial institutions. This is agreement with the Bank Supervision Annual Report (2009) by the Central Bank that states that 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. Even the best banks with good lending policies and procedures do become victims of non-performing loans in one way or another.

**Table 4. 17: Perceived Appropriateness of CRB in Managing Potential Loan Defaults.**

| Opinion | Frequency | Percent |
|---|---|---|
| Appropriate | 32 | 91.4 |
| Inappropriate | 3 | 8.6 |
| **Total** | **35** | **100** |

Source (Researcher 2016)

From the study, it was clear that CRB plays an important role in managing potential loan default according to a majority (91.4%) of the respondents with only 8.6% considering its role as inappropriate. This is in harmony with Sinare (2008) who considers CRBs to be information brokers, providing creditors with reliable, relevant and comprehensive data on the repayment habits and current debt of their credit applicants. He argues that under reciprocity agreements, credit bureaus obtain data from creditors and other sources, consolidate and package information into individual reports, and distribute it to creditors for a fee.

The researcher sought to establish why the respondents perceived that appropriateness of CRB in managing potential loan defaults. The response was gathered inform of qualitative data which after analysis yielded several opinions. Loan applicants are required to maintain a positive record with CRB by ensuring that they pay their loans fully and on time to avoid blacklisting as suggested by 32.26% of the registered opinions. According to 41.93% of the opinions, financial institution refers to the CRB when approving loans applied for by their customers thus detecting potential defaulters. This agrees with Thomas & Scherer, (2001) who postulates that CRB

contributes significantly to a reduction in the costs of screening loan applications by enabling the lender to sort out prospective borrowers who have defaulted with other lenders. However, despite a majority of respondents (91.4%) of the respondents have indicated that CRBs are appropriate in addressing loan defaults, further interrogations revealed that there is an existence of some credit-related challenges, for instance, high interest rates, scarce and outdated CRB reports according to 25.8% of the respondents.

### 4.6.1 Customer Creditworthiness Determination

The researcher sought to establish ways used by financial institutions in determining the creditworthiness of borrowers apart from the CRB reports. The Results are displayed in Tables 4.18.

**Table 4. 18: Creditworthiness Determinants**

| Indicators | Percent | |
| --- | --- | --- |
| | Determinant | Not a determinant |
| Character | 100 | 0 |
| Capacity | 100 | 0 |
| Condition | 100 | 0 |
| Source of income | 100 | 0 |
| Collateral | 100 | 0 |

Source (Researcher 2016)

The researcher found out that all the respondents (100%) unanimously confirmed that they value the creditworthiness of a loan applicant by checking their character. This in agreement with the findings of Gentgen, (2008), who argued that the character of borrowers is the most important determinant of their credit-worthiness. CRB is a

company that collects information from various sources and provides consumer credit information on individual consumers for a variety of uses. It provides detailed information on a person's credit history, including information on their identity, credit accounts and loans, bankruptcies and late payments and recent inquiries. Since it is difficult to establish the character of the applicants, it is prudent for the lender to refer to their background information, probably from the CRB. Such like information could be used as proxies to measure virtues like integrity, honesty, and trustworthiness that could be interpreted to be the borrower's commitment to the loan payment.

It was evident that the capacity of the borrowers to pay loans was considered to be an important indicator by all the respondents unilaterally (100%).The lenders through evaluation of the accessed reports concerning the borrowers are able to establish whether they have been repaying their previous loans. This is in harmony with the findings of Daniels (2004) who considers the efforts to establish the capacity of loan borrowers very important despite the difficulties encountered in having an accurate information on the financial ability of prospective borrowers and even more difficult to have accurate information on their credit history. This makes it extremely difficult for the lenders to assess the creditworthiness of potential borrowers and their ability to pay the loans.

The financial condition of the borrower was also considered by all the respondents (100%) to be a critical determinant of their creditworthiness. According to all the respondents (100%), the source of income is the clear indicator of the creditworthiness of the loan borrower. The value of the collateral asked for when a loan is applied for was considered by a 100% of the respondents to be a good

indicator of the borrower's creditworthiness. This is agreement with Gentgen, (2008) who argued that most financial institutions and most creditors prefer hard collateral-based credit but would extend cash flow-based credits if they can use a reliable and inexpensive system to exchange information on the character and ability to pay off borrowers.

The above findings in Table 4.18 is in agreement with those of Fulton (2004), who postulates that the credit approval decision is made using a purely judgmental approach by merely inspecting the application form details of the applicant and commonly focused on the values of the 5 Cs of a customer that includes their Character which measures integrity and virtues like reputation and honesty, Capacity which measures the borrower's ability to pay for example job status, source of income and finally Conditions where the members' borrowing circumstances are evaluated for example market conditions, competitive pressure, and seasonal character, Collateral in the event a borrower is not able to repay debt with its cash flow, a lender must rely on the quality and saleability of borrower collateral to repay the loan, more capital represents the borrower's ability to withstand volatility.

### 4.4.2 Credit Reports Perceived Effectiveness in Credit Repayment

The researcher sought to investigate whether financial institutions use credit reports to determine customer repayment behaviors. The response is presented in Table 4.19.

**Table 4. 19: Credit Reports as an Indicator of Repayment Behavior**

| Opinion | Frequency | Percent |
|---|---|---|
| Indicator | 32 | 95.1 |
| Not an indicator | 2 | 4.9 |
| **Total** | **34** | **100** |

Source (Researcher 2016)

According to a big proportion of the respondents (95.1%), credit reports are a good indicator of loan repayment behavior of the borrowers. The researcher delved deeper by asking why the majority of the respondents considered CRB reports as good indicators of loan repayment behavior of borrowers. The respondents stated that the reports review the previous behaviors on the default, repayment time, credit-worthiness, credit scores and the ability to pay for a client as registered by a majority (70.2%) of the opinions registered. This is harmony with the findings of Derban (2005), who argues that CRB reports provide a credit score that is unique to a customer's character. In accordance to Kargi (2011), the information is expected to be taken into account by banks while assessing applications for loans and other bank facilities. He acknowledges that CRB endures that only those with repayment capacity get access to loans.

**Table 4. 20: Indicators of Negative Credit Score**

| Negative credit score | Indicator % | Not an indicator % |
|---|---|---|
| Late payments | 100 | 0 |
| Bankruptcy | 100 | 0 |
| Fraud charges | 100 | 0 |
| Foreclosures | 100 | 0 |
| Loss of employment | 100 | 0 |

Source (Researcher 2016)

The study established that all the respondents (100%) unanimously agreed that details on late repayments of loans previously issued to the borrowers as indicated by information in the reports obtained from the CRB is a good indicator of a negative

credit score. It is only logical to make an assumption that if some owner has manifested incidences of late repayment of loans issued initially to the extent of being listed by the CRB which normally follows a series of persuasions to pay as well as alerts and warnings, there are high chances of them delaying in paying or totally failing to pay thus exposing the bank to credit risks associated with NPLs.

The findings were in agreement with those of Gentgen, (2008), who argued that the CRB reports provide detailed information on a person's credit history, including information on their identity, credit accounts, and loans, late payments, bankruptcy, fraud charges, foreclosures and loss of employment considered to be the most important qualification for successful lending is the ability to judge the character and credit-worthiness of borrowers.

### 4.4.3 Credit Reports Perceived Effectiveness in Interest Rate Establishment

The researcher sought to establish whether the respondents consider CRB reports to play an effective role in establishing the interest rates of the loan facilities rendered in the financial institutions. The response is presented in Table 4.21.

**Table 4. 21: Usage of CRB Reports in Establishing Loan Interests**

| Usage | Frequency | Percent |
|---|---|---|
| Used | 27 | 79.4 |
| Not used | 7 | 20.6 |
| **Total** | **34** | **100** |

Source (Researcher 2016)

The study established that majority of the respondents (79.4%) were of the opinion that CRB reports are used to determine interests of the loan facility requested by the borrower. According to Anderson (2007), the availability of CRB reports that

contains the data on the system is built up, the information available enables loan processing to become simpler and faster, collateral requirements to be streamlined, default rates to be reduced and, ultimately we believe loans shall become cheaper. Participating Institutions (PIs) will, therefore, be able to offer new products and offer competitive interest rates due to the availability of information on customers' credit risk profiles.

As for the reasons why the respondents considered that use of CRB reports is effective in determining the loan interests, the researcher asked them an open-ended question that yielded qualitative information based on opinions. Some of the respondents stated that CRB report provides the client repayment history hence repayment behavior with a good history resulting in the granting loans. According to the respondents, this makes customers repay the acquired loans promptly to avoid being listed from the CRB. This according to Barron and Staten (2003) is expected to improve the performance of the financial sector and stimulate economic development by making lending and borrowing easier faster and ultimately cheaper. Borrowers can use their positive credit history as collateral to access loans at better rates and seek more competitive terms from different lending institutions.

## 4.5 The Role of CRB on Credit Access
### 4.5.1 Credit Access for Financial Institutions

The study involved an investigation on the credit accessibility of financial institutions by gathering the respondents' perception. The feedback is indicated in Table 4.22

**Table 4. 22: Change in Credit Accessibility**

| Credit Facility | Frequency | Percent |
|---|---|---|
| More accessible | 25 | 75.8 |
| Not accessible | 8 | 24.2 |
| **Total** | **33** | **100** |

Source (Researcher, 2016)

As per the perceptions of 75% of the respondents, CRB is perceived to make credit accessible to borrowers. These findings are in agreement with Barron and Staten (2003) who in their work confirms that through sharing of the credit information, the lenders are able to distinguish bad borrowers from good borrowers in the market. This access to information helps lenders measure borrower risk more accurately and to set loan terms and conditions accordingly. After evaluating the reports, good borrowers with low risk are given more attractive prices, stimulating credit demand, and fewer higher-risk borrowers would be rationed out of the market because of lenders inability to offer these borrowers accommodating rates.

### 4.5.2 Borrowers Repayment Capacity

The researcher sought to establish the borrowers' repayment capacity because of financial cost increment by gathering the respondents' perception. The feedback is indicated in Table 4.23.

**Table 4. 23: Perceived Change in Repayment Capacity with Increased Financial Cost.**

| Borrowers repayment Capacity | Frequency | Percent |
|---|---|---|
| Repayment Capability | 7 | 20 |
| No repayment capability | 28 | 80 |
| **Total** | **35** | **100** |

Source (Researcher 2016)

As highlighted by a majority of 80 % of the respondents, the inception of CRB has some perceived increment on the borrowers' repayment capability. This is in agreement with the findings of Atkinson & Stiglitz (2015) who argues that the presence of a CRB is a strong motivation for clients to repay their loans may lead to improved financial performance. This is attributed to the strong capital position that reassures a lender of repayment capacity in a borrower. Risk identification is vital for effective risk management. Since the borrower is aware of the presence of CRB and the consequences of not repaying or delayed repayment that leads to being negatively listed by the CRB, they commit themselves to the repayment of the loans issued to them. This is not only healthy for them but also secure for the commercial banks and to other borrowers as well as to the entire economy.

Upon further investigation, the respondents confirmed that the capacity of the borrowers to repay is faced with numerous challenges that include irregular change in interest due to adjustments of the Central Bank rates, too high and scaring interest rates, longer repayment period and possibility of default rates, overstretching the borrowers capability, stringent requirement by financial institution that is difficult for the borrowers to abide with as well as reducing the borrowers savings and hence economic advancement. This is agreement with the recommendations by Jappelli and

Pagano (2000) who emphasize the importance of credit information systems that facilitate positive and negative information sharing between lenders with the aim of yielding three distinct effects screening effect, an incentive effect, and a credit expansion effect that is vital in solving the challenges experienced by the borrowers in terms of repayment capacity. The overall effect of information sharing will be a

reduction in default rates. The default is strictly a function of outstanding debt, although the credit expansion effect results in larger loan sizes, even after credit expansion, borrowers in the portfolio have lower expected default rates.

### 4.5.3 Perceived Effects of CRB on Credit Access

The researcher went ahead to establish the respondent's opinion on the CRB effects on credit access by financial institutions through a series of a 5 Likert -Scale questions whose response was categorized into Strongly Agree, Agree, Neutral, Disagree and Strongly Disagree. The results are presented in Table 4.24.

**Table 4. 24: Respondents Opinions on Effects of CRB on Credit Access**

| Opinions | SA f(%) | A f(%) | N f(%) | D f(%) | SD f(%) | $\chi^2$ | Sign. |
|---|---|---|---|---|---|---|---|
| Preventing credit access by serial loan defaulters | 18(51.4) | 14(40) | 3(8.6) | 0 | 0 | 10.343 | 0.006 |
| Accessibility reliable and inexpensive information on the character and ability to pay of borrowers | 27(77.1) | 7(20) | 1(2.9) | 0 | 0 | 31.771 | 0.000 |
| Reduction of cases of multiple borrowing. | 17(48.6) | 12(34.) | 6(17.1) | 0 | 0 | 5.200 | 0.074 |
| Accessibility of databases that capture relevant aspects of clients' borrowing | 9(25.7) | 22(62.9) | 4(11.4) | 0 | 0 | 14.800 | 0.001 |

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behavior

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Accessibility of relevant, complete, accurate and recent credit reports | 22(62.9) | 9(25.7) | 3(8.6) | 1(2.9) | 0 | 30.714 | 0.000 |
| Incorporation of credit investigation and background checks | 7(20) | 14(40) | 11(31.4) | 3(8.6) | 0 | 7.857 | 0.049 |
| Reduction on cases of NPLs | 8(22.9) | 19(54.3) | 8(22.9) | 0 | 0 | 6.914 | 0.032 |
| Accessibility of borrower's income information | 0 | 0 | 8(22.9) | 18(51.4) | 9(25) | 5.200 | 0.074 |
| Accessibility of borrower's living costs information | 0 | 2(5.7) | 2(5.7) | 17(48.6) | 14(40) | 21.343 | 0.000 |
| Accessibility of borrower's existing loan repayments information | 8(22.9) | 21(60) | 6(17.1) | 0 | 0 | 11.371 | 0.003 |
| Reduced on cases of over–indebtness | 18(51.4) | 13(37.1) | 4(11.4) | 0 | 0 | 8.869 | 0.013 |

Source (Researcher 2016)

The study findings establish that majority of the respondents (91.4%) were of the opinion that CRB prevents serial loan defaulters from accessing credits from other financial institutions. The study shares the same remark as that of Sinare (2008) who investigated CRB in Tanzania and a better environment for lenders and borrowers and revealed that CRBs play an important role in preventing serial loan defaulters from

accessing credits from other financial institutions thus cushioning financial institutions against unforeseen credit risks. The chi-square was ($\chi2 = 10.343$, p=0.006 <0.05) meaning the statement that CRB prevents serial loan defaulters from accessing credits from other financial institutions was statistically significant meaning credit reference listing helps to prevent serial loan defaulters from accessing loans from other institutions.

It is also evident from the study that a majority of 97.1% of the respondents pointed out that CRB provides a reliable and inexpensive system to exchange information on the character and ability to pay off borrowers. This is harmony with (2003) who postulates that CRBs help lenders make faster and more accurate credit decisions making lending markets more competitive and, in the end, more affordable. This is facilitated by their role in collecting, managing and disseminating customer information to lenders within a provided regulatory framework. Credit histories not only provide necessary input for credit underwriting but also allow borrowers to take their credit history from one financial institution to another. Additionally, the chi-square was ($\chi2 = 31.771$, p=0.000 <0.05) implying that the statement that CRB provides a reliable and inexpensive system to exchange information on the character and ability to pay off borrowers was statistically significant.

CRB was considered by a proportion of 82.9% of the respondents to have reduced cases of multiple borrowing. This is agreement with the findings of several scholars, Jappelli and Pagano (2000) as well as Laeven (2003), that stipulated clearly that multiple loan contracting, in which borrowers may obtain more advantageous credit terms through taking hidden loans from different lenders, with each lender possessing

information over only his own contract with a borrower . Hidden loan contracts impose a negative externality because the unseen debt increases the probability of default on each loan. The same remarks on growing problem of multiple loans contracting have been well documented, for example, in Turkey (Kaynak and Harcar, 2001), South Africa (Daniels, 2004), and Central America (McIntosh and Wydick, 2005). Through the CRB report, lenders are in a position to identify the financial burdens or responsibilities of their borrowers as well as their commitment and capability to fulfilling them. The chi-square was ($\chi 2 = 5.200$, $p=0.074<0.05$) implying that the statement that CRB has reduced cases of multiple borrowing was not statistically significant meaning that even with CRB reports, there are still cases multi borrowing which could be explained by collusion with banks staff to falsify credit standing of borrowers.

CRB was considered to offer financial institutions access to databases that capture relevant aspects of clients' borrowing behavior by a majority (88.6%) of the respondents. The chi-square was ($\chi 2 = 14.800$, $p=0.001<0.05$) implying that the statement that CRB was considered to offer financial institutions access to databases that capture relevant aspects of clients' borrowing behavior was statistically significant meaning that CRB provided commercial banks with the relevant database to rely on when making creditworthiness decisions. The information according to a majority of the respondents (88.6%) CRB was found to provide credit reports with information that is relevant, complete, accurate and recent. Additionally, the chi-square was ($\chi 2 = 30.714$, $p=0.000<0.05$).This implies that the statement that CRB provide credit reports with information that is relevant, complete, accurate and recent was statistically significant meaning the reports provided by CRB about clients are

reliable for use in credit request analysis. This conquers with Nganga (2011) who consider Credit Reference Bureau as a company that collects information from various sources and provides consumer credit information on individual consumers for a variety of uses that entails detailed information on a person's credit history, including information on their identity, credit accounts and loans, bankruptcies and late payments and recent inquiries. Other information shared include proven frauds and forgeries, cheque kiting, false declarations and statements, receiverships, bankruptcies and liquidations, credit default and late payments, use of false securities, and misapplication of borrowed funds. Prospective lenders access the information only when they have permissible reason as defined in law, to determine the borrower's creditworthiness

The study as indicated by 60.0% of the respondents sums up that CRB incorporates credit investigation and background. The chi-square was ($\chi 2 = 7.857$, $p=0.049<0.05$) meaning that the statement that CRB incorporate credit investigation and a background check was statistically significant implying that CRB does the job of investigation and checking on the background of prospective borrowers. This is considered important according to Brown and Pagano (2009) who found empirical evidence that the lending market would collapse without CRB due to credit risk in the absence of information sharing institution and reputational banking. Their study also showed that establishing credit reference bureaus encouraged borrowers to repay their loans by allowing lenders to identify borrowers with a good payment history.

The study revealed that CRBs provision of up to date borrower credit information has significantly reduced cases of nonperforming loans according to 77.1% of the

respondents. The chi-square was ($\chi2$ = 6.914, p=0.032<0.05) implying that the statement that CRBs provision of up to date borrower credit information, has significantly reduced cases of nonperforming loans was statistically significant. This is in line with Anderson (2007) who implied that credit sharing institutions, by documenting borrower behavior, positively impact borrower repayment and reduces NPLs. Financial institutions facilitate mobilization of savings, diversification, and pooling of risks and allocation of resources. Information sharing institution positively influences the credit market in the following ways: Without credit reference bureaus, borrowers had a tendency to repay loans only when they planned to maintain their current lending relationship. However, in economies with a credit information institution, borrowers had a higher chance of repaying their loans regardless of whether they were planning to continue their current lending relationship or not.

The statement that through the CRB reports, the financial institutions are in a position to access critical information on the borrower's income background was not supported by any respondent who had a contrary opinion about the statement. The chi-square was ($\chi2$ = 5.200, p=0.074<0.05).This implies that the statement that through the CRB reports, the financial institutions are in a position to access critical information on the borrower's income background was not statistically significant meaning CRB does not show borrowers income background. This is in agreement with the findings of Kallberg and (2003) who argues that most of the loan applicants have applied for and received loans they could barely afford. For instance, homebuyers need to spend money on buying furniture and getting their house in order and hence get themselves into large amounts of unsecured, high-interest debt. According to their study, a combination of credit cards, personal loans and a loss of

an income can be devastating for a dual income family, information considered very difficultly to document as indicated by a big proportion of the respondents stating that even CRB is not able to provide information about borrower's living costs. This is confirmed by the loss of an income in these circumstances can be from the birth of a baby or a sickness, or loss of a job. Being informed and knowing about the causes of credit defaults can help you to keep yourself from receiving a credit default.

The statement that CRB enables accessibility of borrower's living costs information was only supported by 5.7% with the remaining majority of respondents (94.3%) disagreeing with the statement meaning CRB does not provide information about living standard of a prospective borrower. The chi-square was ($\chi 2$ = 21.343, p=0.000<0.05). Thus the statement that CRB does not provide information about living standard of a prospective borrower is statistically significant

As far as the historic credit background information of the borrowers, only 82.9% of the respondents agreed that CRB provides information about borrower's existing loan repayments. The chi-square was ($\chi 2$ = 11.371, p=0.003<0.05).This implies that the statement that CRB provides information about borrower's existing loan repayments was statistically significant. This is in agreement with Thomas & Scherer, (2001) who highlighted that whenever borrowers fail to repay their loans, banks are forced to pass on the cost of defaults to other customers through increased interest rates and other fees. Put simply good borrowers are paying for bad. Credit reporting allows banks to better distinguish between good and bad borrowers.

The statement that CRB prevents cases of over-indebtedness according to 88.5% of the respondents. The chi-square was ($\chi 2$ = 8.69, p=0.013<0.05), thus the statement

that CRB prevents cases of over-indebtedness was statistically significant. This is in agreement with Nganga (2011) points out that among the benefit of the establishment of CRB services in any financial system prevents over-indebtedness of the borrowers that increases loan default unless the financial institutions have access to databases that capture relevant aspects of clients' borrowing behavior. This study successfully confirms his remarks that consider CRB to have contributed significantly to a reduction in the costs of screening loan applications by enabling the lender to sort out prospective borrowers who have defaulted with other lenders.

**4.6 The Role of CRB on Reduction on Moral Hazard**

**4.6.1 Perceived Effects of CRB Moral Concept on the Bank**

**Table 4. 25: Respondents Opinions on Moral Concept Effects on Banks**

| Opinion | Frequency | Percent |
|---------|-----------|---------|
| Effective | 28 | 80.0 |
| Not Effective | 7 | 20.0 |
| **Total** | **35** | **100** |

Source (Researcher 2016)

The study revealed that CRBs play an effective role in influencing moral concepts by borrowers according to 80 % of the respondents. This is in line with Jappelli and Marco (2002) who postulate that credit bureaus reduce moral hazard by developing a credit culture where they operate as borrowers become aware that credit market becomes aware of their credit history and rewards or punishes them accordingly.

From a further inquiry that was to establish some of the views concerning the perceived effectiveness of CRB moral concept on commercial banks, the respondents stated that CRB reflects the character of the borrowers concerning forgery, over credit

that could lead to commercial banks' lending to the wrong borrowers. On the other hand, banks among other clients refuse to disclose critical credit information for borrowers' financial liabilities. This is against the recommendations by Padilla & Pagano (2000) who stipulates that moral hazard refers to the risk in which a party to a transaction provides misleading information about its assets, liabilities or credit capacity, or has an incentive to take unusual risks in a desperate attempt to earn a profit before the contract settles. Usually, a party to a transaction may not enter into the contract in good faith, thus providing misleading information about its assets, liabilities or credit capacity. Problems of moral hazard in financial institutions are evident at many stages of the recent financial crises. The study also emphasizes that information sharing improves the pool of borrowers, decreases defaults and reduces interest rates. It can also lead to an expansion of lending.

The respondents opinions confirms that of Alary & Goller (2001) who considers moral hazard in financial markets to be an occurrence brought about when the lender is subjected to the hazard that the borrower has incentives to engage in activities that are undesirable and immoral from the lenders point of view, because those activities make it less likely that the loan will be repaid back. In this case, a high-quality borrower knows that anyway his high quality will be disclosed to lenders, regardless of whether his credit history is good or bad. 4.26 Perceived Influence of CRB on Borrowers Morals.

**Table 4. 26: Respondents on CRB Influence on Borrowers Morals**

| Opinion | Frequency | Percent |
|---|---|---|
| Influential | 21 | 60 |
| Non-influential | 14 | 40 |
| **Total** | **35** | **100** |

Source (Researcher 2016)

As indicated by a majority of the respondents (60%), CRB has a perceived influence on the borrowers' morals. Further inquiry revealed that the respondents had the perceptions that CRB influences the borrowers' morals both positively and negatively. According to 57.9% of the opinions, CRB influences borrowers' morals positively by highlighting all loan defaulters by gathering credit reports from different financial institutions. This leads to reduced number of defaulters since the borrowers fear being listed by CRB. This is in agreement with Japelli and Pagano (2000) who explain that CRB influences the borrowers' morals and discipline that results in reduced default rates and interest rates and increased lending because credit bureaus foster competition by reducing informational rents.

On the other hand, 33.2% considers CRB to have a negative influence on the borrowers' morals since some borrowers' gives false information in fear of being listed by the CRB. According to 8.9% of the opinions registered, CRB is considered to have negative influence since their reports do not maintain a lot of personal background information and some borrowers are not aware of CRB influence on moral hazard. This is in agreement with CBK (2010) that states, lenders may be under a misapprehension of the principle of credit information sharing. Some may fear that bureaus will make it possible for competitors to access vital information which they

can use to cherry-pick their good customers whilst others may be under the fear that sharing credit information with CRBs will expose them to liability for breach of a confidentiality obligation.

### 4.6.2 Content of Loan Contract

The researcher sought to identify the awareness levels of the workers, especially the credit officers concerning the information that is enclosed in a loan contract. The respondents stated that the loan contract contains the agreed principal amount, interest rate, repayment amount, collateral, repayment period as well as borrower's background information and identification. This is in line with Epure and Lafuente (2012) whose work reveals that the loan contract is considered to be a loan agreement is the document in which a lender usually a bank or other financial institution sets out the terms and conditions under which it is prepared to make a loan available to a borrower. According to them, it should contain; purpose of the loan, interest and method of calculating it, method for repaying the loan principal, including the final maturity of the loan, accounting principles and system of accounts, and authority to approve the accountant used by the borrower among others depending on individual financial institution or type of loan facility applied for.

### 4.6.3 Moral Reports forwarded by Banks to CRB and their Perceived Effects

The researcher sought to establish the role of moral report forwarded to commercial banks and their perceived influence in credit default rate. The statement was presented in Likert scale in table 4.27

**Table 4. 27: Reports Forwarded to CRB by Banks on Borrowers Morals**

| | SA f(%) | A f(%) | N f(%) | D f(%) | SD f(%) | $\chi^2$ | Sign. |
|---|---|---|---|---|---|---|---|
| Your organisation forwards list of credit defaulters(negative information) only to CRB | 13(37.1) | 4(11.4) | 2(5.7) | 9(25.5) | 7(20) | 10.571 | 0.032 |
| Your organisation forwards list of data from past credit history to CRB | 23(65.7) | 9(25.7) | 1(2.9) | 2(5.7) | 0 | 35.286 | 0.000 |
| High default rate would result to lending to borrowers based solely on only the absence of default(negative)information from CRB | 22(62.9) | 10(28.6) | 3(8.6) | 0 | 0 | 15.829 | 0.000 |
| Positive information would increase credit approval by commercial banks | 29(82.9) | 5(14.3) | 1(2.9) | 0 | 0 | 39.314 | 0.000 |
| Credit history from other credit suppliers(positive information) would increase credit approval by commercial banks | 23(65.7) | 12(34.3) | 0 | 0 | 0 | 3.457 | 0.063 |
| In your opinion, have credit-reporting bureaus changed the way lending in your organization | 25(71.4) | 10(28.6) | 0 | 0 | 0 | 6.429 | 0.011 |
| Your organization forward list of overall loan exposure | 21(60) | 11(31.4) | 1(2.9) | 2(5.7) | 0 | 29.800 | 0.000 |
| Your organization | 31(88.6) | 4(11.4) | 0 | 0 | 0 | 20.829 | 0.000 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| forwards list of guarantees | | | | | | | |
| Your organization forwards list of credit defaulters data from past credit history to credit reference bureau | 27(77.1) | 7(20) | 1(2.9) | 0 | 0 | 31.771 | 0.000 |

Source; researcher (2016)

A few respondents (48.5%) indicated that their organization forwards the list of credit defaulters (negative information) only to credit reference bureau. The chi-square was ($\chi$2 = 10.371, p=0.032<0.05). Implying that statement the organization forwards list of credit defaulters (negative information) only to credit reference bureau was statistically significant. This conquers with the Ferretti (2006) who warns that having only one half of the picture negative information runs the risk of it becoming the only deciding factor. Credit bureaus enable lenders to lend to more and better risk clients and to determine better the bad loan spread that they need to cover expected losses of credit to good payers.

According to 91.4% of the respondents, their organization forwards the list of data from past credit history to credit reference bureau. The chi-square was ($\chi$2 = 35.286, p=0.000<0.05) .This means that the statement their organization forwards the list of data from past credit history to credit reference bureau was statistically significant. This agrees with CBK (2010) whose article stated that using CRB, the banks are in a position to obtain detailed information on a person's credit history, including information on their identity, credit accounts and loans, bankruptcies and late payments and recent inquiries.

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The statement that high default rate would result to lending to borrowers based solely on only the absence of default(negative)information from CRB was supported by 91.5% of respondents. The chi-square was ($\chi2 = 15.829$, p=0.000<0.05), implying that the statement that high default rate would result to lending to borrowers based solely on only the absence of default(negative)information from CRB was statistically significant

The statement that Positive information would increase credit approval by commercial banks was supported by almost all respondents (97.2%). The chi-square was ($\chi2 = 39.829$, p=0.000<0.05) meaning that the statement that Positive information would increase credit approval by commercial banks was statistically significant. All the respondents (100%) supported the statement that Credit history from other credit suppliers (positive information) would increase credit approval by commercial banks. The chi-square was ($\chi2 = 3.457$, p=0.063 <0.05) meaning that the statement that Credit history from other credit suppliers (positive information) would increase credit approval by commercial banks was not statistically at 95% confidence level. This could mean that information from other credit suppliers are not significant enough compared to information provided by commercial banks.

All the respondents (100%) supported the statement that in their opinion, the credit-reporting bureaus had changed the way lending in their organizations. The value of chi-square was ($\chi2 = 6.429$, p=0.011 <0.05) implying that the statement that CRB has changed the way of lending in an organization was statistically significant. The study established that financial institutions forward list of overall loan exposure as it was indicated by 91.4 % of the respondents. The chi-square was ($\chi2 = 29.800$, p=0.000

<0.05).The statement that financial institutions forward list of overall loan exposure was statistically significant. This is in line with Gentgen,(2008), he argued that CRB is a company that collects information from various sources and provides consumer credit information on individual consumers for a variety of uses. It is the most important qualification for successful lending is the ability to judge the character and credit-worthiness of borrowers.

As it was stated by 100 % the respondents, commercial banks forward a list of guarantees for the loans facilities defaulted. The chi-square was ($\chi2$ = 20.829, p=0.000 <0.05), implying that the statement commercial banks forward a list of guarantees for the loans facilities defaulted was statistically significant. Financial Institutions were considered too forward information of credit defaulters data from past credit history to credit reference bureau by the majority of respondents (97.1%). The chi-square was ($\chi2$ = 31.771, p=0.000 <0.05), Financial Institutions have considered too forward information of credit defaulters data from past credit history to credit reference bureau was statistically significant. This is also in agreement with (CBK, 2010), the credit histories not only provide necessary input for credit underwriting, but also allow borrowers to take their credit history from one financial institution to another, thereby making lending markets more competitive and, in the end, more affordable.

## 4.7 Credit Default in Commercial Banks in Kenya

The researcher analyzed secondary data gathered from the internet on financial reports disclosed by the targeted banks and results are displayed in Table 4.29. The use of descriptive statistics to explain the default rate was preferred to ensure that confidence levels are maintained since no commercial bank name is mentioned in

these particular results to avoid negative implications as far as their image is concerned.

**Table 4. 28: Reports Forwarded to CRB by Banks on Borrowers Morals**

|  | N | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|---|
| Credit Default Rate | 35 | 1.00 | 4.67 | 3.5590 | .69214 |
| Valid N (listwise) | 35 |  |  |  |  |

From the descriptive statistics obtained from the banks financial reports, it was found out that the average loan default rate for commercial banks in Kenya is 3.55%. The maximum default rate was 4.67 % that was observed in a commercial bank where the Government of Kenya is the majority shareholder. The minimum default rate recorded was 1.00 %. This variation is further explained by a standard deviation of 0.69214, which is relatively closer to the median, and mean which means that there are higher variations in the loan default rate for different commercial banks in Kenya. This could be attributed to dynamics in operations for different banks.

**4.8 Roles of CRB and Credit Default in Commercial Banks in Kenya**

The researcher conducted inferential statistical tests that comprised of correlation, regression and Chi-square analysis in an attempt to prove or disapprove the following set of hypotheses that were formulated from the study objectives;

**H0$_1$:** Risk identification as a CRB role does not play a statistically significant role in mitigating against credit default in commercial banks in Kenya.

**H0$_2$:** Customer repayment behavior as a CRB role does not play a statistically significant role in mitigating against credit default in commercial banks in Kenya.

**H0₃:** Customer credit access as a CRB role does not play a statistically significant role in mitigating against credit default in commercial banks in Kenya.

**H0₄:** Reduction in the rate of moral hazard as a CRB role does not play a statistically significant role in mitigating against credit default in commercial banks in Kenya.

## 4.9 Karl Pearson Correlation Analysis

The researcher used Karl Pearson Correlation analysis to test the relationships between the following dependent variable namely Credit Default Rate (CDR) and the roles of CRB which includes; Risk Identification (RI), Credit Repayment (CR), Credit Access (CA), Reduction of Moral Hazard (RMH) and Credit Information Evaluation (CIE). The nature of the relationship was determined by the coefficient of correlation while the significance of the relationship at 5% levels of significance is explained by the p-value as presented in Table 4.29.

**Table 4. 29: Karl Pearson Correlation Matrix**

|  |  | RI | CA | RB | MH | CDR |
|---|---|---|---|---|---|---|
| **RI** | Pearson Correlation | 1 | .683** | .563** | .391* | .764** |
|  | Sig. (1-tailed) |  | .000 | .000 | .010 | .000 |
|  | N | 35 | 35 | 35 | 35 | 35 |
| **CA** | Pearson Correlation | .683** | 1 | .567** | .592** | .796** |
|  | Sig. (1-tailed) | .000 |  | .000 | .000 | .000 |
|  | N | 35 | 35 | 35 | 35 | 35 |
| **RB** | Pearson Correlation | .563** | .567** | 1 | .366* | .724** |
|  | Sig. (1-tailed) | .000 | .000 |  | .015 | .000 |
|  | N | 35 | 35 | 35 | 35 | 35 |
| **MH** | Pearson Correlation | .391* | .592** | .366* | 1 | .526** |
|  | Sig. (1-tailed) | .010 | .000 | .015 |  | .001 |
|  | N | 35 | 35 | 35 | 35 | 35 |
| **CDR** | Pearson Correlation | .764** | .796** | .724** | .526** | 1 |
|  | Sig. (1-tailed) | .000 | .000 | .000 | .001 |  |
|  | N | 35 | 35 | 35 | 35 | 35 |

**. Correlation is significant at the 0.01 level (1-tailed). *. Correlation is significant at the 0.05 level (1-tailed).

The results as indicated in Table 4.29 above, the relationship between the Credit Default Rate and Risk Identification, the coefficient of correlation was $r(35)= 0.764$, p-value= $0.000 < 0.05$. This implies that the variable has a strong positive relationship that is significant at 5% levels of significance. Therefore reject the null hypothesis that Risk identification as a CRB role does not play a statistically significant role in mitigating against credit default in commercial banks in Kenya.

As for Customer repayment behavior and Credit Default Rate, the coefficient of correlation was $r(35)= 0.724$, $p= 0.000 < 0.05$. This implies that the variables have a positive relationship that is significant at 5% levels of significance. Therefore reject the null hypothesis that Customer repayment behavior as a CRB role does not play a statistically significant role in mitigating against credit default in commercial banks in Kenya.

As for Credit Access and Credit Default Rate, the coefficient of correlation was $r(35) = 0.796$, $p=0.000 < 0.05$. This implies that the variables have a positive relationship that is significant at 5% levels of significance. Therefore reject the null hypothesis Customer credit access as a CRB role does not play a statistically significant role in mitigating against credit default in commercial banks in Kenya.

As for Reduction of Moral Hazard and Credit Default Rate, the coefficient of correlation was $r(35) = 0.526$, $p=0.001 < 0.05$. This implies that the variables have a positive relationship that is significant at 5% levels of significance. Therefore reject the null hypothesis that Reduction in the rate of moral hazard as a CRB role does not play a statistically significant role in mitigating against credit default in commercial banks in Kenya.

### 4.9.1 Regression Analysis of Credit Default Rate

The researcher conducted a further inferential statistical test using regression analysis so as explain the influence of Risk Identification (RI), Credit Repayment (CR), Credit Access (SIS), Reduction of Moral Hazard (RMH), and Credit Information Evaluation (CIE) on Credit Default Rate (CDR). First, the data was tested to determine its suitability for regression analysis as explained by the ANOVA in Table 4.31. Model summary in Table 4.30 explains the combined influence of the determining variables on the dependent. Then the regression coefficients in Table 4.31 were used to construct the multiple regression models as well as displaying the p-values for testing the significance of the variables influence at 95% levels of confidence.

**Table 4. 30: Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .891[a] | .793 | .766 | .33489 |

a. Predictors: (Constant), Moral Hazard, Customer Repayment Behaviour, Risk Identification, Credit Access

According to table 4.30, the coefficient of determination ($R^2$) was 0.793 which implies 79.3% of the variation in credit default rate is explained by the variation in Risk Identification (RI), Credit Repayment (CR), Credit Access (CA) and Reduction of Moral Hazard (RMH).While 20.1% of the variation in Credit Default Rate (CDR) is explained by other variables not included in the model.

**Table 4. 31: ANOVA**

| Model | | Sum of Squares | Df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| | Regression | 12.923 | 4 | 3.231 | 28.809 | .000[b] |
| 1 | Residual | 3.364 | 30 | .112 | | |
| | Total | 16.288 | 34 | | | |

a. Dependent Variable: Credit Default Rate

b. Predictors: (Constant), Moral Hazard, Customer Repayment Behaviour, Risk Identification, Credit Access

According to table 4.31, the overall significance of model 1 was 0.000 with an F value of 28.809. The level of significance was lower than 0.05 and this means that the influence of combined effect of Risk Identification (RI), Credit Repayment (CR), Credit Access (CA) and Reduction of Moral Hazard (RMH) practices shows statistically significant influence on credit default rate.

**Table 4. 32: Regression Coefficients**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | T | Sig. | Collinearity Statistics | |
|---|---|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | | Tolerance | VIF |
| 1 | (Constant) | -.833 | .473 | | -1.761 | .088 | | |
| | RI | .333 | .128 | .310 | 2.607 | .014 | .488 | 2.051 |
| | CA | .498 | .185 | .360 | 2.688 | .012 | .385 | 2.599 |
| | RB | .364 | .120 | .319 | 3.022 | .005 | .619 | 1.615 |
| | MH | .105 | .145 | .075 | .730 | .471 | .647 | 1.545 |

a. Dependent Variable: Credit Default Rate

The regression coefficients as displayed in Table 4.32 above were used to construct the regression model below. The Valuation Inflation Factor (VIF) for all the four independent variables was less than 10 implying that there is no presence of multicollinearity. From the model below, the constant value was found to be -0.833

**CDR = -1.341 + 0.333 RI + 0.364 RB +0.498 CA + 0.105 MH**

The Risk Identification and Credit Default Rate recorded a coefficient of regression of 0.333, p-value= $0.014 < 0.05$. This implies that the variables have a positive relationship that is significant at 5% levels of significance. Therefore reject the null

hypothesis that Risk identification as a CRB role does not play a statistically significant role in mitigating against credit default in commercial banks in Kenya.

As for Credit Repayment behavior and Credit Default Rate, the coefficient of regression was 0.364, p= 0.005 < 0.05. This implies that the variables have a positive relationship that is not significant at 5% levels of significance. Therefore accept the null hypothesis that Customer repayment behavior as a CRB role does not play a statistically significant role in mitigating against credit default in commercial banks in Kenya.

As for Credit Access and Credit Default Rate, the coefficient of regression was 0.498, p= 0.012< 0.05. This implies that the variables have a positive relationship that is significant at 5% levels of significance. Therefore reject the null hypothesis that Customer credit access as a CRB role does not play a statistically significant role in mitigating against credit default in commercial banks in Kenya.

As for Reduction of Moral Hazard and Credit Default Rate, the coefficient of regression was 0.105, p= 0.471 > 0.05. This implies that the variables have a positive relationship that is not significant at 5% levels of significance. Therefore accept the null hypothesis that Reduction in the rate of moral hazard as a CRB role does not play a statistically significant role in militating against credit default in commercial banks in Kenya.

**4.9.2 Chi-Square Analysis on the Influence of CRB on Credit Default Rates**

Further tests were conducted for confirmatory purposes using Chi-Square analysis. The results of the Pearson Chi-Square Values, degrees of freedom and p-value at 95% levels of confidence are presented in Table 4.33.

**Table 4. 33: Chi-Square Analysis.**

| Determinants | Pearson square | Chi- degree of freedom | p-value |
|---|---|---|---|
| **RI** | 46.141 | 12 | 0.000 |
| **RB** | 67.886 | 12 | 0.000 |
| **CA** | 38.386 | 8 | 0.000 |
| **MH** | 16.498 | 12 | 0.169 |

Source: researcher (2016)

As indicated in Table 4.33 above, As indicated in Table 4.34 above, the influence of Risk Identification on Credit Default Rates yielded a $\chi^2$ (12, N = 35) = 46.141, p=0.000<0.05. This implies that its influence is a significant at 5% levels of significance.

The influence of Credit Repayment on Credit Default Rates yielded a $\chi^2$ (12, N = 35) = 67.886, p=0.00< 0.05. This implies that its influence is significant at 5% levels of significance.

The influence of Credit Access on Credit Default Rates yielded a $\chi^2$ (8, N = 35) = 38.386, p=0.000 < 0.05. This implies that its influence is significant at 5% levels of significance.

The influence of Reduction of Moral Hazard on Credit Default Rates yielded a $\chi^2$ (12, N = 35) = 16.498, p=0.169 < 0.05. This implies that its influence is insignificant at 5% levels of significance.

# CHAPTER FIVE

## SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

### 5.1 Introduction

This chapter comprises of the summary of the study findings, the conclusion, recommendations and recommendations.

### 5.2 Summary

### 5.2.1 The role of CRB in risk identification in credit default mitigation

Most of commercial banks (91.4 %) use both risk analysis and risk mapping strategies to identify risks. The use of a combination of different strategies for the commercial banks risk is because risk identification is a process that entails measurement and analyzing, controlling and financing, evaluation and cost calculations. In terms of credit risk management by banks, most of financial institutions (91.4%) use collateral as the common credit risk mitigation technique. It is also clear that the majority of debtors (65.7%) use guarantees as their collateral because of lack of stable sources of income.

The researcher established that commercial banks in Kenya forward credit reports and histories to CRB according to (94.3%). The forwarded credit information according to 24.21% of the opinions raised are general reports of the loan facilities issued by the commercial banks which consists of amounts of loans and advances issued, customers' loan  details, collateral register among other credit reports that the bank is obliged to disclose .

As for the approval of loans applied for, majority of banks (51.9%) approves less than 50 loans and 51-100 loans according to 44.4% with only 1% approving more than 100 loans. This is inconsistent with the findings in Table 4.5 that shows that (71.43%) of the banks under investigation make more than 100 inquiries per month. All banks investigated upon (100%) were found to reject loans applied by the borrowers based on their qualifications as per the CRB reports. Disqualification of applicants is done based on reports that discloses the applicants' ability to repay the loan, negative CRB listing and delayed payments as indicated by 27.24% of the opinions given by the respondents. Loan application rejection could be due to change of the applicants' financial status as a result of one or several unforeseen events that includes business failure, loss of employment, illness, death or over commitment of their sources of income among other factors manifested with the recent economic hardships according to 36.36%.

Several financial risks are encountered by the commercial banks according to the study. Most of the commercial banks (89.5%) have encountered legal risks implying that banks risks litigations as they issue or fail to issue loans which could be attributed to pressure could be from disputing customers, competitors or banking regulators. Operational risks are common occurrence according to all the respondents which could be attributed to the failure of lender to distinguish between high quality and low quality borrowers as a result of asymmetric information leads to credit rationing. Liquidity risks are also common to commercial banks with a prevalence of 95.0 % since commercial banks generally encounter difficulty in meeting obligations from its financial liabilities if they do not maintain appropriate liquidity levels. Market risks were found to be a common occurrence by all the respondents which is manifested

inform of interest rate risk which entails potential losses due to fluctuations in interest rate, equity risk inform of potential losses due to fluctuations in stock price, currency risks which are potential losses due to international currency exchange rates and are closely associated with settlement risk.

It is perceived that majority of commercial banks majority (96.9%), have experienced reduction of credit risks as a result of the inception of CRBs. CRB to enable commercial banks reduce credit risks by lending more to better and not risky clients as well as determining better the bad loans that they need to cover expected losses of credit to good payer. They also reduce the borrowing cost by forcing creditors to be more competitive for good borrowers. CRB is perceived to have instilled some financial disciplines to targeted banks customers who postulates that moral hazard entails the risk in which a party to a transaction provides misleading information about its assets, liabilities or credit capacity, or has an incentive to take unusual risks in a desperate attempt to earn a profit before the contract settles.

In the test for the significance of the relationship between the Credit Default Rate and Risk Identification, the coefficient of correlation was r (35)= 0.764, p-value= 0.000 < 0.05. The regression analysis yielded a coefficient of 0.333, p-value= 0.014 < 0.05. Chi-Squre test Analysis  yielded a $\chi^2$ (12, N = 35) = 46.141, p=0.000<0.05. This implies that the variable have a strong positive relationship that is significant at 5% levels of significance. Therefore reject the null hypothesis that Risk identification as a CRB role does not play statistically significant role   in mitigating against credit default in commercial banks in Kenya.

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## 5.2.2 The influence of CRB on customer credit repayment in credit default mitigation

Non-Performing Loans have reduced significantly as noted by majority (88.6%) of the respondents, which could be attributed to reduced borrowing costs and loan delinquencies to a significant extent. This enhances effective risk identification and monitoring as well as credit extension, which ensures that credit, flows to deserving borrowers and is reduced to those less deserving and maintaining financial stability in an economy. The reduction of non-performing loans rates at an average 35.68%, which is relatively low thus calling for more intervention to ensure that borrowers increase the tendency of repaying loans taken. The level of non-performing loans has been increasing steadily. Even the best banks with good lending policies and procedures do become victims of non-performing loans in one way or another.

CRB plays an important role in managing potential loan default for 91.4% financial institutions by obtaining data from creditors and other sources, consolidate and package information into individual reports, and distribute it to creditors for a fee. They provide creditors with reliable, relevant and comprehensive data on the repayment habits and current debt of their credit applicants. Applicants are required to maintain a positive record with CRB by ensuring that they pay their loans fully and on time to avoid blacklisting. Financial institution refers to the CRB when approving loans applied for by their customers thus detecting potential defaulters. The reduction in the costs of screening loan applications enables the lender to sort out prospective borrowers who have defaulted with other lenders. Lenders are able to identify the borrowers' creditworthiness through the consideration of various determinants. The loan applicant's creditworthiness can be established by focusing on their character.

CRB provides detailed information on a person's credit history, including information on their identity, credit accounts and loans, bankruptcies and late payments and recent inquiries are the most important determinants of their credit-worthiness. Since it is difficult to establish the character of the applicants, it is prudent for the lender to refer to their background information, probably from the CRB. The capacity of the borrowers to pay loans is considered to be an important indicator, which is achieved through evaluation of the accessed reports concerning the borrowers, is able to establish whether they have been repaying their previous loans. Equally important is the reliance of the source of income and financial condition of the borrower. Most financial institutions and most creditors prefer hard collateral-based credit but would extend cash flow-based credits if they can use a reliable and inexpensive system to exchange information on the character and ability to pay off borrowers.

As for indicators of credit repayment, CRB reports are good were found to be determine the loan repayment behaviour of the borrowers for 95.1% of the commercial banks. The researcher delved deeper by asking why majority of the respondents considered CRB reports as good indicators of loan repayment behaviour of borrowers. CRB reports reviews the previous behaviors' on the default, repayment time, credit-worthiness, credit scores and the ability to pay by a client. Negative credit scores indicators is contained in the information in the reports obtained from the CRBs which consists the borrower's credit history that includes repayments of loans previously issued as well as incidences of late repayment.

In addition, the CRB reports contains the borrowers financial background with details comprising of bankruptcy, fraud charges, foreclosures and loss of employment

considered to be the most important qualification for successful lending is the ability to judge the character and credit-worthiness of borrowers. CRB reports contains the data on the system is built up, the information available that enables loan processing to become simpler and faster, collateral requirements to be streamlined, default rates to be reduced and, ultimately we believe loans shall become cheaper. Participating Institutions (PIs) will, therefore, be able to offer new products and offer competitive interest rates due to availability of information on customers' credit risk profiles.

CRB report provides the client repayment history hence repayment behaviour with a good history resulting to the granting loans. This makes customers repay the acquired loans promptly to avoid being listed from the CRB. This is expected to improve the performance of the financial sector and stimulate economic development by making lending and borrowing easier faster and ultimately cheaper. Borrowers can use their positive credit history as "collateral" to access loans at better rates and seek more competitive terms from different lending institutions. The inferential statistics tests of the relationship between rate of customer credit repayment and credit default rate mitigation yielded, coefficient of correlation was r (35)= 0.724, p= 0.000 < 0.05. The regression analysis yielded a coefficient of 0.364, p= 0.005 < 0.05. Chie-Square test Analysis yielded a $\chi^2$ (12, N = 35) = 67.886, p=0.00< 0.05.This implies that the variable have a strong positive relationship that is significant at 5% levels of significance. Therefore reject the null hypothesis that customer credit repayment as a CRB role does not play statistically significant role in mitigating against credit default in commercial banks in Kenya.

**5.2.3 The influence of CRB on credit access in credit default mitigation**

CRB are perceived to make credit accessible to borrowers for 75% of commercial banks in Kenya. Sharing of the credit information, the lenders are able to distinguish bad borrowers from good borrowers in the market. This access to information helps lenders measure borrower risk more accurately and to set loan terms and conditions accordingly. After evaluating the reports, good borrowers with low risk are given more attractive prices, stimulating credit demand, and fewer higher-risk borrowers would be rationed out of the market because of lenders inability to offer these borrowers accommodating rates. The inception of CRB is perceived to lead to increment on the borrowers' repayment capability for about 84.8% of commercial banks. Presence of a CRB is a strong motivation for clients to repay their loans may lead to improved financial performance. This is attributed to strong capital position that reassures a lender of repayment capacity in a borrower. The borrower is aware of the presence of CRB and the consequences of not repaying or delayed repayment that leads to being negatively listed by the CRB; they commit themselves to the repayment of the loans issued to them. The borrowers' capacity to repay is faced with numerous challenges that includes irregular change in interest due to adjustments of the Central Bank rates, too high and scaring interest rates, longer repayment period and possibility of default rates, overstretching the borrowers capability, stringent requirement by financial institution that are difficult for the borrowers to abide with as well as reducing the borrowers savings and hence economic advancement. The overall effect of information sharing will be a reduction in default rates.

CRB prevent serial loan defaulters from accessing credits from other financial institutions by playing an important role in preventing serial loan defaulters from

accessing credits from other financial institutions thus cushioning financial institutions against unforeseen credit risks. CRB provides reliable and inexpensive system to exchange information on the character and ability to pay of borrowers by helping lenders make faster and more accurate credit decisions making lending markets more competitive and, in the end, more affordable. This is facilitated by their role in collecting, managing and disseminating customer information to lenders within a provided regulatory framework. CRB is perceived to reduce reduced cases of multiple borrowing for 74.3% commercial banks. Through the CRB report, lenders are in a position to identify the financial burdens or responsibilities of their borrowers as well as their commitment and capability of fulfilling them.

CRB offer financial institutions access to databases that capture relevant aspects of clients' borrowing behavior. The credit reports have information that is relevant, complete, accurate and recent. Credit Reference Bureau as a company that collects information from various sources and provides consumer credit information on individual consumers for a variety of uses that entails detailed information on a person's credit history, including information on their identity, credit accounts and loans, bankruptcies and late payments and recent inquiries. Other information shared include: proven frauds and forgeries, cheque kiting, false declarations and statements, receiverships, bankruptcies and liquidations, credit default and late payments, use of false securities, and misapplication of borrowed funds.

CRBs provision of up to date borrower credit information, has significantly reduced cases of nonperforming loans by documenting borrower behavior, positively impact borrower repayment. Information sharing institution positively influences the credit

market in the following ways: Without credit reference bureaus, borrowers had a tendency to repay loans only when they planned to maintain their current lending relationship. Through the CRB reports, the financial institutions are in a position to access critical information on the borrower's income background. Being informed and knowing about the causes of credit defaults can help you to keep yourself from receiving a credit default. The disclosure of credit reports through the CRB ensures that there is reduction in cases of multiple borrowing by facilitating the sharing of multiple borrowing and over-indebtedness of the borrowers that increases loan default unless the financial institutions have access to databases that capture relevant aspects of clients' borrowing behavior. The inferential statistics tests of the relationship between rate of credit access and credit default rate mitigation yielded a coefficient correlation of r (35) = 0.796, p= 0.000 < 0.05. The regression analysis yielded a coefficient of 0.498, p= 0.012 < 0.05. Chie-Square test Analysis yielded a $\chi^2$ (12, N = 35) = 67.886, p=0.00< 0.05.The role of CRB influencing credit access on credit default rate was therefore significant.

## 5.2.4 The role of CRB in reduction on moral hazard in credit default mitigation

CRBs play an effective role in influencing moral concepts by borrowers for 78.1% financial institutions by developing a credit culture where they operate as borrowers become aware that credit market becomes aware of their credit history and rewards or punishes them accordingly. The perceived effectiveness of CRB moral concept on commercial banks, the respondents stated that CRB reflect the character of the borrowers concerning forgery, over crediting that could lead to commercial banks lending to the wrong borrowers. Banks among other clients refuse to disclose critical

credit information for borrowers' financial liabilities with others providing misleading information about its assets, liabilities or credit capacity, or has an incentive to take unusual risks in a desperate attempt to earn a profit before the contract settles. Moral hazard in financial markets occurs when the lender is subjected to the hazard that the borrower has incentives to engage in activities that are undesirable (immoral) from the lenders point of view, because those activities make it less likely that the loan will be repaid back.

CRB has a perceived influence on the borrowers' morals for 61.3% of commercial banks, both positively (57.9%) and negatively (42.1%). Highlighting all loan defaulters by gathering credit reports from different financial institutions influences the borrowers' morals and discipline, which results to reduced default rates and interest rates and increased lending, because credit bureaus foster competition by reducing informational rents leading to reduced number of defaulters since the borrowers fear being listed by CRB. The negative influence on the borrowers' morals occurs since some borrowers gives falseful information in fear of being listed by the CRB. Lenders may be under a misapprehension of the principle of credit information sharing. Some may fear that bureaus will make it possible for competitors to access vital information which they can use to cherry-pick their good customers whilst others may be under the fear that sharing credit information with CRBs will expose them to liability for breach of confidentiality obligation.

The loan contract for commercial banks in Kenya contains the agreed principal amount, interest rate, repayment amount, collateral, repayment period as well as borrower's background information and identification. According to Epure and

Lafuente (2012), the loan contract should contain; purpose of the loan, interest and method of calculating it, method for repaying the loan principal, including the final maturity of the loan, accounting principles and system of accounts, and authority to approve the accountant used by the borrower among others depending on individual financial institution or type of lean facility applied for. List of credit defaulters (negative information) is forwarded by 58.4% commercial banks to the credit reference bureau thus enabling lenders to lend to more and better risk clients and to determine better the bad loan spread that they need to cover expected losses of credit to good payers.

Commercial banks (73.5%) forward a list of data from past credit history to credit reference bureau enabling banks obtain detailed information on a person's credit history, including information on their identity, credit accounts and loans, bankruptcies and late payments and recent inquiries. Financial institutions (54.6%) forward list of overall loan exposure consumer credit information on individual consumers for a variety of uses, it is the most important qualification for successful lending is the ability to judge the character and credit-worthiness of borrowers. Commercial banks (53.0%) forward a list of guarantees for the loans facilities defaulted.

High default rate would result to lending to 41.2% of the borrowers based solely on only the absence of default (negative) information from credit reference bureau exposing them to enormous risk of NPLs noting that larger loans have greater risk exposure, so the variable costs per-dollar is higher. Credit-reporting bureaus changed the way lending is done in 82.3% of commercial banks. CRB information is vital

because there is usually a definite relationship between past and future performance in loan repayment (CBK, 2010). Credit history from other credit suppliers increases obtained from CRB facilitates credit approval for 70.6% of commercial banks by enabling determine credit worthiness of their borrowers and to reduce the loan default risk. CRB changes lending for 73.6% of commercial banks by sharing information on default among banks and eliminating those borrowers who may have the aim of borrowing from different financial institutions with the aim of defaulting.

The inferential statistics tests of the relationship between reduction on moral hazard and credit default rate mitigation yielded a coefficient correlation of 0.526, p=0.001 <0.05. The regression analysis yielded a coefficient of 0.105, p= 0.471 > 0.05. finally, chi-square yielded a $\chi^2$ (12, N = 35) = 16.498, p=0.169 < 0.055.2.5 The role of CRB in mitigating Credit Default CRBs collect a wide variety of information from commercial banks that consist of borrowers' identification data, credit history, income, nationality, employment data, defaulted loans, arrears, total loan exposure and line of business. It provides detailed information on a person's credit history, including information on their identity, credit accounts and loans, bankruptcies and late payments and recent inquiries. Other information shared include: proven frauds and forgeries,  cheque kiting, false declarations and statements, receiverships, bankruptcies and liquidations, credit default and late payments, use of false securities, and misapplication of borrowed funds.  The implementation of CRB reports by commercial banks results to the reduction of financial risks since it provides information about customer's creditworthiness. CRBs may also be used by borrowers

to develop evidence of their good repayment history or reputation collateral which they may use to access credit.

Credit Reference Bureau the following benefits to lenders; expanding the customer base with better access to more consumers, including those with good credit records. Better understanding the relationship customers have with other lenders. Increasing application quality and profitability. The CRB reports play a very important role in protecting customers become financially over indebted by preventing them from obtaining more advantageous credit terms through taking hidden loans from different lenders, with each lender possessing information over only his own contract with a borrower. The CRB reports were considered are important in reducing the default rate of loans issued financial system arises because of information asymmetry between lenders and borrowers when financial institutions compete with each other for customers, multiple borrowing and over-indebtedness increases loan default unless the financial institutions have access to databases that capture relevant aspects of clients' borrowing behavior. CRBs reports address the problem of non-performing loans by reducing the extent of asymmetric information between borrowers and lenders by making borrowers credit histories available to lenders who use it to screen loan applicant's to avoid advancing credit to high-risk individuals. It is important ensure that all lenders including Micro Finance and SACCOs adhere to the Banking Act. The current Banking Act only affects the commercial banks posing a challenge of unequal opportunities in the eyes of borrowers.

## 5.3 Conclusions

To facilitate conclusions, the researcher conducted inferential statistical tests to verify the acceptance or rejection of the study hypotheses. The inferential statistics test that were conducted to test the influence of risk identification on credit default in commercial banks in Kenya that yielded a coefficient of correlation of In the test for the significance of the relationship between the Credit Default Rate and Risk Identification, the coefficient of correlation was r (35)= 0.764, p-value= 0.000 < 0.05. The regression analysis yielded a coefficient of 0.333, p-value= 0.014 < 0.05. Chi-Square test Analysis yielded a $\chi^2$ (12, N = 35) = 46.141, p=0.000<0.05. This implies that the null hypothesis as stated; CRB does not play a significant role in risk identification in mitigating against credit default in commercial banks in Kenya. This facilitates the conclusion that CRB plays a significant role in risk identification in mitigating against credit default in commercial banks in Kenya at 5% levels of significance.

The study involved tests of the relationship between rate of credit repayment and credit default rate mitigation that yielded a coefficient correlation of r(35)= 0.724, p= 0.000 < 0.05. The regression analysis yielded a coefficient of 0.364, p= 0.005 < 0.05. Chu-Square test Analysis yielded a $\chi^2$ (12, N = 35) = 67.886, p=0.00< 0.05. All the tests were done at 5% levels of significance. This informs the rejection of the null hypothesis; CRB does not have a significant influence on risk identification in mitigating against credit default in commercial banks in Kenya. Therefore, the researcher rejected null hypothesis that states; CRB has no significant influence on risk identification in mitigating against credit default in commercial banks in Kenya.

This facilitates the conclusion that CRB plays a significant role in risk identification in mitigating against credit default in commercial banks in Kenya.

The relationship between rate of credit access and credit default rate mitigation for commercial banks in Kenya yielded a coefficient correlation of r(35)= 0.796, p=0.000 <0.05. The regression analysis yielded a coefficient value 0.498, p= 0.012<0.05. And chi-square yielded $\chi^2$ (8, N = 35) = 38.386, p=0.000 < 0.05. All the tests were done at 5% levels of significance. This led to the rejection of the null hypothesis that states; CRB does not have a significant influence on credit access in mitigating against credit default in commercial banks in Kenya. The researcher therefore concluded that the CRB plays a significant role in credit access in mitigating against default rate in commercial banks in Kenya at 5% levels of significance.

CRB role in reduction of moral hazard in mitigating credit default was determined by conducting inferential statistics tests yielded a coefficient correlation of 0.526, p=0.001 <0.05. The regression analysis yielded a coefficient of 0.105, p= 0.471>0.05. Finally, chi-square yielded a $\chi^2$ (12, N = 35) = 16.498, p=0.169 < 0.055.2.5. All the tests were done at 5% levels of significance. This informed the acceptance of the null hypothesis; that CRB does not have a significant influence on the rate of reduction on moral hazard in mitigating against credit default in commercial banks in Kenya. This facilitated the conclusion that CRB plays a significant role in the reduction of moral hazards in mitigating against credit default for commercial banks in Kenya at 5% levels of significance. Risk identification and customer repayment behavior have the highest effect in mitigating against credit default. Credit access and reduction of moral hazard have the least effect in mitigating against credit default.

## 5.4 Recommendations

## 5.4. 1 Policy Recommendations

### i. Scope of CRB

The study recommends that the CRB be extended to all non-banking sectors that handle credit transactions since this will reveal more credit histories of different borrowers. In addition, the study recommends that CRB firms in Kenya should link with other regional CRB firms in other countries as to have information on credit histories of those crossing the borders.

### ii. Credit Information Dissemination

The study recommends that an open system needs to be enhanced to allow financial institutions as well as non-bank entities; retailers, wholesalers, telecom and utility companies access to credit history of borrowers to know which clients to serve and what differential price to charge to cover risks. To facilitate financial performance of commercial banks even more effectively, information access should be available at low or no cost. The regulator of the financial institutions that is the central bank should enact policies that guide the use of the credit reference bureau information by banks as well as the consumers. There also needs to be an elaborate effort to educate the public on the importance of paying debts, the impact that bad information has on one's financial status as well as the effect of good information. The stakeholders like institute of bankers should amount awareness campaigns to sensitize the public and companies that offer credit transactions on the importance of Credit Reference Bureaus on the prevention of credit risks.

### iii.  Customer Awareness

For consumer credit when lending to individuals there is not the same ready explanation of default risk. In consumer credit applications, factors such as home ownership which may be considered a proxy for asset values and lifestyle which includes married, single, children, and length of time in job may be seen as indicative of asset risk and leverage. However, while these partly explain default probability, there is no good underlying theoretical rationale. In the case of consumer credit analysis, analysts use variables that have been good indicators of credit risk in the past to predict future credit behavior to make clients appreciate the credit policies and recovery procedures banks need to educate their customers on the importance of meeting their credit obligations to avoid being listed in the credit reference bureaus. On the other hand, to avoid inaccuracies in credit reporting banks and regulators should device a way of verifying credit scores since at the moment the banks are using unverified data from the bureaus to either grant or deny a customer any credit facility. This has led to a rising number of litigations in court by customers against their bankers for wrongful listings in CRB.

### iv.  Credit Evaluation Process

A firm's external opportunities and threats can be accounted for, recognizing the firm's and the industry's product life cycle and future prospects. An analysis of political, economic, social and technological aspects known as a PEST analysis can be undertaken to give a full picture of industry developments. It is also very important to analyse the strategy a potential credit is planning to follow for example, whether the firm intends to be a low-cost producer or use a differentiated or focused business strategy and to examine the quality of its management team perhaps one of the most

important aspects of creditworthiness, its brand, and other intangible factors that can determine the difference between success and failure of a business.

### v. Credit Scoring Models policy

There is need to develop a more systemic and formal level, rating systems develop in to the third category of credit assessment method, known as credit scoring models. These scoring models provide a rating system that is formalized into a mathematical or statistical model, and all credits are assessed using the same data and methodology. As such, they are more rigorous and transparent in their approach than rating systems that still depend on judgment, although they are designed to provide the same level of decision support.

### vi. Government policies

Based on the findings, the study the recommends that the Government of Kenya needs to publish the credit-reference regulations and create awareness for the same so that lenders can submit credit information of their borrowers. All lenders to report positive and negative information on repayment performance with the credit bureaus. The CRB officers stated that it is important ensure that all lenders including Micro Finance and SACCOs adhere to the Banking Act. The current Banking Act only affects the commercial banks posing a challenge of unequal opportunities in the eyes of borrowers.

### 5.4. 2 Recommendations for further research

The researcher suggest the need for an intensive study to be conducted to assess the awareness levels, attitudes, benefits and challenges encountered by borrowers with regard to the of application of CRB reports as far as loan facilitation is concerned.

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## APPENDICES

## APPENDIX I: QUESTIONNAIRE TO THE RESPONDENTS

I am a student at Kabarak University. I am carrying out a research on **Assessment of the Role of Credit Reference Bureaus in Mitigating Against Credit Default in commercial banks in Kenya.** Kindly answer all the questions as truthfully as possible.

**Filling in instructions**

Please complete the following questionnaire with specific regard to the above enquiry, by placing a (cross) in the box. Please write any further comments in the spaces provided.

## A) BIOGRAPHICAL INFORMATION

1. Name of the organization (Optional)………………………

2. In which department do you work………………..

3. For how long has this bank been in operation in Kenya ……………..Years.

4. To which CRB does your bank forward its customer's credit information.

| | | |
|---|---|---|
| a | Credit Reference Bureau Africa Limited t/a TransUnion | ☐ |
| b | Metropol Credit Reference Bureau Limited | ☐ |
| c | Credit info Credit Reference Bureau Limited | ☐ |
| d | All | ☐ |

5. How many CRB inquiries do you make per month ……………………………………

## B) CRB AS A CREDIT RISK IDENTIFIER

1.  Does your banks forward negative credit histories of its customers to CRB?

Yes            ☐

No            ☐

If yes which report do you forward

……………………………………………………………………………………

……………………………………………………………………………………

7. How many loan applications are approved based on CRB report in your

organization? …………………………………………………………………….

8. Do your customers sometimes fail to meet the terms of any contract with your

bank?

Yes            ☐

No            ☐

If yes why…………………………………………………………… ……….

If No why……………………………………………………………..……

9. Which techniques are used for managing credit risk in your bank?

     a          Collateral          ☐

     b          Guarantees          ☐

     c          Netting off of loans          ☐

10. Which risk have you encountered in your bank? (Can tick more than one)

     a          Legal          ☐

     b          Operational          ☐

     c          Liquidity          ☐

     c          Market risks          ☐

11. Does CRB report help in reducing credit risk rates?

Yes            ☐

No            ☐

If yes how………………………………………………………………………………

…………………………………………………………………………………………

If no how…………………………………………………………………………………..

12. How does your Commercial Bank identify risk?

a　　　　　　　　Scenario analysis　　　　☐

b　　　　　　　　Risk mapping　　　　　　☐

c　　　　　　　　Both　　　　　　　　　　☐

13. Has CRB has helped instill culture of financial discipline since consumers know

that they are monitored.

Yes　　　　　　　　☐

No　　　　　　　　　☐

If yes how………………………………………………………………………

…………………………………………………………………………………………………

If no how………………………………………………………………………………….

…………………………………………………………………………………………

## C) CRB ON CUSTOMER REPAYMENT BEHAVIOUR

14. Has your bank experienced decrease in non-performing loans since the inception of

CRB?

Yes　　　　　　　☐

No　　　　　　　　☐

If Yes by which percentage…………………………………………………………….

If No by which percentage……………………… . …………………………..

15. Is CRB report appropriate in managing potential loan default.

Yes　　　　　　　☐

No　　　　　　　　☐

If Yes how………………………………………………………………………………….

If No how………………………………………………………………………………...

16. Apart from CRB report which other ways does your financial institution determine customer Creditworthiness. (Can tick more than one)

| | | |
|---|---|---|
| a | Character | ☐ |
| b | Capacity | ☐ |
| c | Condition | ☐ |
| b | Source of income | ☐ |
| e | Collateral | ☐ |

17. Do you use a credit reports to establish customers repayment behavior.

Yes ☐

No ☐

If Yes how……………………………………………………………………………….

If No how…………………………………………….…………………….................

18. Which one of the following indicators of negative credit score do you use in your bank?

| Indicators of negative credit score | Tick |
|---|---|
| Late payments | |
| Bankruptcy | |
| Fraud charges | |
| Foreclosures | |
| Loss of employment | |

(D)  CRB ON CREDIT ACCESS

19. Does CRB report  lead to increased access to credit in your Bank?

Yes ☐

No ☐

If Yes why………………………………………………………………………………

If No why……………………………………………………………..……………......

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20. ( a) Does high financial cost of borrowing reduce the borrowers repayment capacity in your bank?

Yes ☐

No ☐

(b) If Yes how…………………………………………………………………………

If No how…………………………….........................................................................

21. Respond with 1= strongly disagree, 2= Disagree 3= Neutral, 4= Agree and 5= strongly agree to indicate your assessment of the effects of CRB on credit access. Cross where appropriate ( x )

| | SA | A | N | SD | D |
|---|---|---|---|---|---|
| CRB prevent serial loan defaulters from accessing credits from other financial institutions. | | | | | |
| CRB provides reliable and inexpensive system to exchange information on the character and ability to pay of borrowers. | | | | | |
| CRB has reduced cases of multiple borrowing. | | | | | |
| CRB offers financial institutions access to databases that capture relevant aspects of clients' borrowing behavior | | | | | |
| CRB strive to provide credit reports with information that is relevant, complete, accurate and recent. | | | | | |
| CRB incorporate credit investigation and background checks. | | | | | |
| CRB provision of up to date | | | | | |

borrower credit information, has significantly reduced cases of nonperforming loans.

CRB provides information about borrower's income

CRB provides information about borrower's living costs

CRB provides information about borrower's existing loan repayments

CRB has reduced cases of multiple borrowing

CRB has reduced cases of over – indebtness

## ( E ) CRB ON MORAL HAZARD

22. Does the concept of moral hazard affect your bank?

Yes ☐

No ☐

If Yes how……………………………………………………………………..………….

If No how……………………………………………………………….……………….... . .

23. Does CRB influence the rate of moral hazard among borrowers?

Yes ☐

No ☐

(b) If Yes how……………………………………………………….…………………………

If No how…….…………………………………………………………….....................

24. What kind of material information is enclosed in loan contract.

………………………………………………………………………………………

………………………………………………………………………………………

25 . To what extent do you agree with the following statements?

1= strongly disagree, 2= Disagree 3= Neutral, 4= Agree and 5= strongly agree

| | Strongly agree | Agree | Neutral | Disagree | Strongly disagree |
|---|---|---|---|---|---|
| Your organization forwards list of credit defaulters(negative information) only to credit reference bureau | | | | | |
| Your organization forwards list of data from past credit history to credit reference bureau | | | | | |
| High default rate would result to lending to borrowers based solely on only the absence of default (negative) information from credit reference bureau. | | | | | |
| positive information would increase credit approval by commercial banks. | | | | | |
| Credit history from other credit suppliers (positive information) would increase credit approval by commercial banks. | | | | | |
| In your opinion, have credit-reporting bureaus changed the way lending in your organization? | | | | | |
| Your organization forward list of overall loan exposure | | | | | |
| Your organization forwards list of guarantees | | | | | |
| Your organization forwards list of credit defaulters data from past credit history to credit reference bureau | | | | | |

**CREDIT DEFAULT RATE OF BANKS IN KENYA (2010-2015)**

| Years | Credit Default Rate (%) |
|---|---|
| 2010 | 6.6 |
| 2011 | 4.6 |
| 2012 | 4.8 |
| 2013 | 5.2 |
| 2014 | 5.6 |
| 2015 | 5.7 |
| 2016 | 8 |

Source; Cytonn's Banking Sector Report (2015)

**SUMMARY OF CREDIT DEFAULT RATE OF BANKS IN KENYA (2010-2015)**

| | Bank | Credit Default Rate (%) |
|---|---|---|
| 1 | Kenya Commercial Bank | 2.33 |
| 2 | Standard Chartered | 3.00 |
| 3 | Equity | 3.89 |
| 4 | Trans-National Bank Ltd | 4.22 |
| 5 | Consolidated Bank Of Kenya | 3.44 |
| 6 | Gulf African Bank Ltd | 4.00 |
| 7 | Barclays Bank of Kenya Ltd | 3.44 |
| 8 | Cooperative | 2.78 |
| 9 | NIC | 3.89 |
| 10 | Barclays | 3.22 |
| 11 | CFC Stanbic Bank Ltd | 3.67 |
| 12 | Diamond Trust Bank | 3.33 |
| 13 | National Bank of Kenya | 4.11 |
| 14 | Housing Finance | 3.44 |
| 15 | Diamond Trust Bank Ltd | 2.88 |
| 16 | Development Bank of Kenya Ltd | 3.56 |
| 17 | Commercial Bank of Africa Ltd | 4.00 |
| 18 | K-Rep Bank Ltd | 3.67 |
| 19 | Habib A.G. Zurich | 4.11 |

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| 20 | First Community Bank Ltd | 4.56 |
|---|---|---|
| 21 | Baroda Bank Ltd | 3.67 |
| 22 | Paramount Universal Bank Ltd | 4.11 |
| 23 | Chase Bank Ltd | 1.00 |
| 24 | Habib Bank Ltd | 3.89 |
| 25 | Bank of Africa Ltd | 3.44 |
| 26 | Oriental Commercial Bank Ltd | 3.89 |
| 27 | Prime Bank Ltd | 2.44 |
| 28 | Credit Bank Ltd | 4.00 |
| 29 | Imperial Bank Ltd | 3.56 |
| 30 | Jamii Bora Bank Ltd | 3.56 |
| 31 | Family Bank Ltd | 4.00 |
| 32 | Middle East Bank (K) Ltd Bank of India | 3.00 |
| 33 | African Banking Corporation Ltd | 4.67 |
| 34 | Ecobank Kenya Ltd | 4.00 |
| 35 | Dubai Bank Ltd | 3.80 |

**Source; Cytonn's Banking Sector Report (2015)**

## APPENDIX I1I: LIST OF LICENSED COMMERCIAL BANKS IN KENYA

1. Kenya Commercial Bank Ltd
2. Consolidated Bank of Kenya Ltd
3. Equity Bank Ltd 24
4. Gulf African Bank Ltd
5. Cooperative Bank Ltd
6. Giro Commercial Bank Ltd
7. Standard Chartered Bank (K) Ltd
8. Equatorial Commercial Bank Ltd
9. Barclays Bank of Kenya Ltd
10. Fidelity Bank Ltd
11. CFC Stanbic Bank Ltd
12. Guardian Bank Ltd
13. NIC Bank Ltd 29
14. Victoria Commercial Bank Ltd
15. Diamond Trust Bank Ltd
16. Development Bank of Kenya Ltd
17. Commercial Bank of Africa Ltd
18. Habib A.G. Zurich
19. I&M Bank Ltd
20. K-Rep Bank Ltd
21. Citibank N.A.
22. Trans-National Bank Ltd
23. National Bank of Kenya Ltd
24. First Community Bank Ltd
25. Baroda Bank Ltd
26. Paramount Universal Bank Ltd
27. Chase Bank Ltd
28. Habib Bank Ltd
29. Bank of Africa Ltd

30. Oriental Commercial Bank Ltd

31. Prime Bank Ltd

32. Credit Bank Ltd

33. Imperial Bank Ltd

34. Jamii Bora Bank Ltd

35. Family Bank Ltd

36. Middle East Bank (K) Ltd

37. Bank of India

38. UBA Bank Kenya Ltd

39. Ecobank Kenya Ltd

40. Dubai Bank Ltd

41. African Banking Corporation Ltd

42. Charterhouse Bank Ltd

43. Fina Bank Ltd

Source, (CBK 2015)

# APPENDIX IV: LETTER OF INTRODUCTION
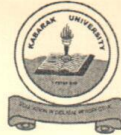
## INSTITUTE OF POST GRADUATE STUDIES AND RESEARCH

Private Bag - 20157
KABARAK, KENYA
E-mail: directorpostgraduate@kabarak.ac.ke

Tel: 0773265999
Fax: 254-51-343012
www.kabarak.ac.ke

25th July, 2016

Ministry of Education, Science and Technology,
National Commission for Science, Technology and Innovation,
9th Floor, Utalii House,
P.O. Box 30623 – 00100,
**NAIROBI.**

Dear Sir/Madam,

**RE: RESEARCH BY GDB/M/0984/9/10– RUTHWINNIE NJERI MUNENE**

The above named is a Doctoral student at Kabarak University in the School of Business. She is carrying out research entitled "The Role of Credit Reference Bureau in Mitigating Against Credit Default in Commercial Banks in Kenya"

The information obtained in the course of this research will be used for academic purposes only and will be treated with utmost confidentiality.

Please provide the necessary assistance.

Thank you.

Yours faithfully,

**Dr. Moses Thiga**
**AG. DIRECTOR POST GRADUATE STUDIES & RESEARCH**

Kabarak University Moral Code
*As members of Kabarak University family, we purpose at all times and in all places, to set apart in one's heart, Jesus as Lord. (1 Peter 3:15)*

# APPENDIX V: LETTER OF AUTHORIZATION



## NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

Telephone: +254-20-2213471,
2241349,3310571,2219420
Fax: +254-20-318245,318249
Email: dg@nacosti.go.ke
Website: www.nacosti.go.ke
when replying please quote

9th Floor, Utalii House
Uhuru Highway
P.O. Box 30623-00100
NAIROBI-KENYA

Ref. No                                                          Date:

### NACOSTI/P/16/79453/12858

2nd August, 2016

Ruthwinnie Njeri Munene
Kabarak University
Private Bag - 20157
KABARAK.

## RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on "*The role of Credit Reference Bureau in mitigating against credit default in commercial banks in Kenya,*" I am pleased to inform you that you have been authorized to undertake research in **Nairobi County** for the period ending **2nd August, 2017.**

You are advised to report to **the Chief Executive Officers of selected Commercial Banks, the County Commissioner and the County Director of Education, Nairobi County** before embarking on the research project.

On completion of the research, you are expected to submit **two hard copies and one soft copy in pdf** of the research report/thesis to our office.

BONIFACE WANYAMA
FOR: DIRECTOR-GENERAL/CEO

Copy to:

The Chief Executive Officers
Selected Commercial Banks.

The County Commissioner
Nairobi County.

The County Director of Education
Nairobi County.

National Commission for Science, Technology and Innovation is ISO 9001: 2008 Certified

THIS IS TO CERTIFY THAT:
**MS. RUTHWINNIE NJERI MUNENE**
of KABARAK UNIVERSITY, 17273-20100
NAKURU,has been permitted to conduct
research in *Nairobi County*

on the topic: *THE ROLE OF CREDIT
REFERENCE BUREAU IN MITIGATING
AGAINST CREDIT DEFAULT IN
COMMERCIAL BANKS IN KENYA*

for the period ending:
*2nd August,2017*

...................................
**Applicant's
Signature**

Permit No : NACOSTI/P/16/79453/12858
Date Of Issue : 2nd August,2016
Fee Recieved :ksh 2000

*Director General*
**National Commission for Science,
Technology & Innovation**

# APPENDIX VI: PUBLICATIONS

# An Assessment of the Role of Credit Reference Bureau in Influencing Risk Identification in Mitigating Credit Default in Commercial Banks in Kenya

Ruthwinnie Njeri Munene [#1], Prof. Tom Nyamache [#2], Dr. Paul Muoki Nzioki [#3]

P.O BOX Private Bag Kabarak

## ABSTRACT

The study examined the role of Credit Reference Bureau (CRB) in influencing risk identification in militating against credit default in commercial banks in Kenya. The study used a Causal-Comparative descriptive survey design in evaluating the role of CRB in influencing risk identification in mitigating against credit default in commercial banks in Kenya. The target population of the study consisted of all the 43 licensed commercial banks in Kenya and the three licensed credit reference bureaus in Kenya under the Banking Act. The researcher used census method commercial bank headquarters bank managers and the three headquarters credit reference bureau managers. Primary data was collected using questionnaires. Secondary data were collected from CBK loan books and CBK annual Bank supervisory reports. Data was analyzed using SPSS and results presented using graphs. The researcher used descriptive statistics and inferential statistics. Inferential statistical tests used comprised of correlation, ANOVA regression and Chi-square analysis to test hypothesis. P -value yielded was less than 0.05, which indicated that the roles played by CRB in influencing risk identification have significant influences on the Credit Default Rate in commercial banks in Kenya. The conclusion was that CRB plays a significant role in risk identification.

Key words: Credit Reference Bureau, credit default, risk identification and commercial banks

Corresponding Author: Ruthwinnie Njeri Munene

## INTRODUCTION

The emergence of CRBs has significantly revolutionized lending and contributed to the improved financial performance of many financial institutions in Kenya, Before the introduction of CRB, many borrowers used to borrow from one institution to the other without being identified. This led to many financial institutions experiencing immense losses because of NPLs.(Berger & Frame,2005). Through the use of CRB, the banks are in a position to obtain detailed information on a person's credit history, including information on their identity, credit accounts and loans, bankruptcies and late payments and recent inquiries. Other information shared include: proven frauds and forgeries, cheque kiting, false declarations and statements, receiverships, bankruptcies and liquidations, credit default and late payments, use of false securities and misapplication of borrowed funds (CBK, 2009). According to Brown and Marco (2007) CRBs are information brokers, providing creditors with reliable, relevant and comprehensive data on the repayment habits and current debt of their credit applicants. Under

# Role of Credit Reference Bureau in Influencing Customer Repayment Behaviour in Mitigating against Credit Default among Commercial Banks in Kenya

Ruthwinnie Njeri Munene [1], Prof. Tom Nyamache [2], Dr.Muoki Nzioki [3], Dr. Joel Koima [4]

[1]PhD (Finance) Student, [2,3,4] Senior lecturers, [1,2,3,4] Kabarak University

*Abstract:* The study examined the role of Credit Reference Bureau (CRB) in influencing customer repayment behaviour in militating against credit default in commercial banks in Kenya. The study was based on the Information asymmetry theory Theory. The study used a Causal-Comparative descriptive survey design in evaluating the role of CRB in influencing customer repayment behaviour in mitigating against credit default in commercial banks in Kenya. The target population of the study consisted of all the 43 licensed commercial banks in Kenya under the Banking Act. The researcher used a census of all the 43 commercial banks in Kenya. Primary data was collected using questionnaires. Secondary data was obtained from CBK loan books and CBK annual Bank supervisory reports. Data was analysed using SPSS and results presented using graphs and tables .The researcher used descriptive statistics and inferential statistics. Inferential statistics comprised correlation, regression and Chi-square. The conclusion was that CRB plays a significant role in customer repayment behaviour in Mitigating against credit default in commercial banks in Kenya.

*Keywords:* Credit Reference Bureau, Customer Repayment Behaviour, Credit Default Rate.

## I. INTRODUCTION

Historically, the concept of credit reporting agencies was born in the 1860s in the US, when merchants needed to keep track of their customers, especially those of poor credit risk. The first countries to establish public credit registries were in Western Europe in Germany in 1934 followed by France in 1946. By the mid-1960s, three other European countries that is Italy, Spain and Belgium had also established PCRs (Wydick, 2001). Early adopters included the former French colonies in Western Africa that formed the West African Monetary Union in 1962 and immediately established public credit reporting following the French example. In addition, several Middle Eastern and North African nations adopted PCRs in the 1950s and 1960s. In Africa, the concept of CRB has had its practice in few selected countries by multilateral companies through private credit bureaus such as Compuscan which operates in Botswana, Namibia and Rwanda while Kutz Univar, operate in Tanzania, Kenya and Uganda( Holden,1985). In Kenya, before the publication of the Banking Credit Reference Bureau regulations 2008 and the licensing of the first Kenya's credit bureau, Credit Reference Bureaus Africa Ltd in February 2010, Kutz Univar Bureau was operating in the country ( Kevin, 2001). In Kenya, CRBs concept was given a statutory basis and legal recognition by the Banking (CRB) Regulations, 2008. published in July 2008 and came into operation on 2nd February 2009. According to the regulations, which provide for the licensing and supervision of CRBs by the CBK, a closed user group for credit information sharing for institutions licensed under the Banking Act was created. A closed user group refers to clientele institutions licensed under the Banking Act, namely, commercial banks, mortgage finance companies and non-bank financial institutions (CBK, 2010).

# An Assessment of the Role of Credit Reference Bureau in Influencing Customer Credit Access in Mitigating Against Credit Default in Commercial Banks in Kenya

Ruthwinnie Njeri Munene [#1], Dr. Paul Muoki Nzioki [#2], Prof.Tom Nyamache [#3]

P.O BOX Private Bag Kabarak

**ABSTRACT**

The study examined the role of Credit Reference Bureau (CRB) in influencing customer credit access in mitigating default risk among commercial banks in Kenya. The study was based on the theories of Adverse Selection and Hazard. The study used a Causal-Comparative descriptive survey design. The target population of the study consisted of all the 43 licensed commercial banks in Kenya and the three licensed credit reference bureaus in Kenya under the Banking Act. The researcher used a census of all commercial bank headquarters bank managers and the three headquarters credit reference bureau managers. To collect primary data, the researcher used questionnaires. Secondary data were collected from CBK loan books and CBK annual Bank supervisory reports. Data was analysed using SPSS and results presented using graphical systems. The researcher used descriptive statistics, which included the mean, median standard deviation and range to show the default rate. The inferential statistical tests comprised correlation, ANOVA regression and Chi-square analysis to test hypothesis. P -values yielded were less than 0.05, which indicated that the role played by Credit Revenue Bureau in influencing customer access to credit and mitigation of Credit Default Rate was significant among commercial banks in Kenya.

**Key words:** credit reference bureau, credit, credit access, credit default rate and commercial banks

**Corresponding Author:** Ruthwinnie Njeri Munene

## INTRODUCTION

Financial institutions are facing an enormous risk of NPLs noting that larger loans have greater risk exposure, so the variable costs per-dollar is higher. If lenders do not take extra care, there could be more loan defaults. CRB enables banks to determine credit worthiness of their borrowers and therefore reducing the loan default risk. In this respect CRB assists in first, sharing information on default among banks; secondly, eliminating corrupt borrowers and thirdly to provide commercial professional credit reference to prospective foreign investors; and also to identify credible borrowers based on known history and character (Bofondi and Gobbi , 2003)

Credit Reference Bureau provides detailed information on a person's credit history, including information on their identity, credit accounts and loans, bankruptcies and late payments and recent inquiries. Other information shared include: proven frauds and forgeries, cheque kiting, false declarations and statements, receiverships, bankruptcies and liquidations, credit default and

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