

# ***THE INTERNATIONAL JOURNAL OF BUSINESS & MANAGEMENT***

## **The Role of Credit Information Sharing on the Performance of Commercial Banks in Mombasa County, Kenya**

**Valentine Muyale Mululu**

Student, Jomo Kenyatta University of Agriculture and Technology, Mombasa, Kenya

### **Abstract:**

*The general objective of the study is to investigate the role of credit information sharing on the performance of Commercial Banks in Mombasa County. The specific objectives of the study are: i) to establish the role of knowledge of borrowers on the performance of Commercial Banks in Mombasa County; ii) to examine the role of informational rent on the performance of Commercial Banks in Mombasa County and; iii) to examine the role of customer discipline on the performance of Commercial Banks in Mombasa County. The type of research design to be employed is a survey where both qualitative and quantitative techniques will be used to collect data from a sample of 50 credit managers drawn from a total population of 36 commercial banks in Mombasa County. Questionnaires will then be issued to each these credit managers to gather primary data while secondary will be obtained from bank supervision report, bank financial reports and credit reports. The data gathered through the questionnaires will then be entered into the application software (SPSS) which will generate both descriptive and inferential statistics. Descriptive statistics will include mean, frequency, median and standard deviation. On the other hand, inferential statistics will include regression analysis where a multiple regression model will be generated to explain how much of the dependent variable (non-performing loans) is explained by the three independent variables of the study.*

## **1. Introduction**

### **1.1. Background of the Study**

The very endurance of bank in market place fatefully depends on its ability to collect and process information professionally in screening credit applicants and in monitoring their performance (Brown, Jappelli and Pagano, 2009). Lack of accurate information on the credit history and current financial ability of prospective borrowers makes it extremely difficult for lenders to assess their credit worthiness and likelihood to repay the loan. The demand for information in order to hedge and diversify credit risk by financial institutions, mainly banks led to emergence of credit referencing in Kenya. Collecting and collating credit financial data on borrowers including individuals, businesses, companies, sole proprietors and governments is the function of credit reference bureau (Brown, Jappelli and Pagano, 2009).

Asymmetric information between borrowers and lenders can prevent the efficient allocation of credit (Jappelli and Pagano, 1999). Lenders are often unable to observe the characteristics of borrowers, including the riskiness of their investment projects, and this induces adverse selection problems leading to high restrictions in the award of credit. Lenders may also be unable to control the actions that borrowers take after receiving a loan by relaxing their effort to prevent default or hide the proceeds of their investment to keep from having to repay their debts. This information gap on borrowers can be addressed through sharing information via credit reference bureaus.

Credit reference bureaus are information brokers operating on the principle of reciprocity, collecting, filing and distributing the information supplied voluntarily by their members. They allow its members easy access and ready use of such data for credit appraisals and extending of credit facilities to their customers. The timeliness and truthfulness of the data reported by lenders to credit bureaus is enforced invariably by threatening deviants that they will be excluded from access to the common data base (Padilla and Pagano, 2000).

#### **1.1.1. Credit Information Sharing**

Credit Information Sharing (CIS) is a process where banks and other credit providers submit information about their borrowers to a credit reference bureau so that it can be shared with other credit providers. It enables the banks to know how borrowers repay their loans. This is also known as Credit Reporting. Globally, the biggest problem commercial banks are facing is the non-repayment of loans. To overcome this problem, an institution is required to monitor the behavior of borrowers (Padilla and Pagano, 2000). Thus, the idea of establishing Credit Reference Bureau (CRDB) was conceived in order to enable banks to determine credit worthiness of their borrowers – individuals, groups and enterprises; and therefore reduce the loan default risk. In this respect CRBs assists in first sharing information on default among banks (Pagano, 2000). Secondly eliminating corrupt borrowers – those with the aim of borrowing from different financial institutions with the aim of defaulting; thirdly to provide commercial professional credit reference to say

prospective foreign investors; and also to identify honest/credible borrowers based on known history and character. Services of Credit Reference Bureaus (CRB) were first introduced in London and have now spread to other countries worldwide (Sacerdoti, 2005).

Credit Reference bureaus (CRB) complement the central role played by banks and other financial institutions in extending financial services within an economy. CRBs help lenders make faster and more accurate credit decisions. They collect, manage and disseminate customer information to lenders within a provided regulatory framework (Padilla and Pagano, 2000). 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. Credit bureaus assist in making credit accessible to more people, and enabling lenders and businesses reduce risk and fraud. Sharing of information between financial institutions in respect of customer credit behavior, therefore, has a positive economic impact (Rosenberg, 2009).

CRBs thrive in a good legal environment where there is data protection law, a fair credit reporting law, a data retention law, consumer protection and admissibility of electronic evidence and certification of electronic signatures; without which credit reporting become a shenanigan ((Sacerdoti, 2005). Banks and other credit providers submit information about their borrowers to a credit reference bureau so that it can be shared with other credit providers is known as credit information sharing (CIS) (Rosenberg, 2009).

### 1.1.2. Commercial Banks in Mombasa County

The role of commercial banks in economic development is widely acknowledged. Firstly, commercial banks play a critical role in linking savers to borrowers. That is to say without commercial banks savings and investment is not possible. Secondly, commercial banks contribute to economic development by providing jobs to a large number of Kenyans. Kenya has 44 commercial banks. Out these 44 banks, 36 banks have branches in Mombasa County (Kenya Finance Directory, 2014). This study aims to establish the effect of credit information sharing on the performance of these banks.

### *1.2. Statement of the Problem*

Adequately managing credit risk in financial institutions (FIs) is critical for the survival and growth of the financial sector of an economy. In the case of banks, the issue of credit risk is of even of greater concern because of the higher levels of perceived risks resulting from some of the characteristics of clients and business conditions that they find themselves in (Tenguh, 2008). Banks are in the business of safeguarding money and other valuables for their clients which requires them to maintain high levels of integrity to their customers. They also provide loans, credit and payment services such as checking accounts, money orders and cashier's checks. To effectively do this functions, banks need information about the applicant as regards his/her loan repayment background so as to determine the nature of risk they will be assuming by taking on the loan.

In their quest to manage their loan portfolios, commercial banks became stricter in their assessment following the increased default rate among loan applicants as they rode on information asymmetry. This forced banks to demand high levels of security in issuing loans so as to cushion themselves against bad loans. The resultant effects of this are the reduced chances of loan accessibility by many applicants on grounds of not having enough verifiable collateral. In its quest to increase accessibility to loans, the Government of Kenya, through Section 55(1) of the Banking Act, created credit reference bureaus (CRB). The creation of credit worthiness enables borrowers with no physical collateral to use their repayment history as collateral thus making credit markets more competitive and in the long run, more affordable.

Ndung'u (2010) says that one of the key hindrances to access to financial services and products by the vast majority of the Kenyan populace engaged in the informal/small and medium enterprise sectors has been the lack of a "credit track history". He adds that this information asymmetry problem has been a contributory factor to the high levels of non-performing loans in the Kenyan Banking Sector which facilitated the CBK to develop a credit information sharing mechanism. Kabiru (2002) did a study on the relationship between credit risk assessment practice and the level of nonperforming loans of Kenyan banks. Kabiru found that credit risk assessment affected the level of nonperforming loans of Kenyan banks. Adam (2003) did an analysis of the usefulness of annual financial statements to credit risk analysts in Kenyan commercial banks. He established that annual financial statements are important in determining the riskiness of organizations applying for loans and ultimately affects the level of loan performance. Mutwiri (2003) studied the use of 6 c's credit risk appraisal model and its relationship with the level of nonperforming loans of commercial banks in Kenya. The 6 c's included: character, capacity, collateral, capital, and condition and consumer relationship.

From the above discussion, it is evident that limited research has been done to assess the impact of information sharing on loan performance in Kenya. This was as result of outright hindrance by the Banking Act on sharing of client information. However, the Act has now been amended and credit referencing regulations established. This study therefore seeks to fill this research gap by investigating the impact of credit information sharing on the performance of Commercial Banks in Mombasa County.

### *1.3. Objectives of the Study*

#### 1.3.1. General Objective

The main objective of this study is to investigate the role of credit information sharing on the performance of commercial banks in Mombasa County.

#### 1.3.2. Specific Objectives

The specific objectives of this study were:

- i) To determine the role of knowledge of borrowers on the performance of Commercial Banks in Mombasa County.

- ii) To establish the role of informational rent on the performance of Commercial Banks in Mombasa County.
- iii) To determine the role of customer discipline on the performance of Commercial Banks in Mombasa County.

#### *1.4. Research Questions*

This study seeks to answers to the following research questions:

- i) What is the role of knowledge of borrowers on the performance of Commercial Banks in Mombasa County?
- ii) What is the role of informational rent on the performance of Commercial Banks in Mombasa County?
- iii) What is the role of customer discipline on the performance of Commercial Banks in Mombasa County?

#### *1.5. Justification of the Study*

Since there are few studies on the impact of credit information sharing on organization performance of commercial Bank in Mombasa county, it is hoped that the findings of this study contributed to new knowledge and form an appropriate framework upon which information sharing among other countries may be implemented.

This study is important to the policy makers in the banks, as they would be able to know for certain investigate the impact of credit information sharing on loan performance among commercial banks in Kenya. It also helped them in setting the benchmark scores for commercial banks intending to maximize interest income. Further, the study would be important to banks management as it would help them to understand the role of credit information sharing on loan performance among commercial banks in Kenya.

The study highlight other important relationships that require further research. The results of this study would also be invaluable to researchers and scholars, as it would form a basis for further research. The students and academics would use this study as a basis for discussions on information sharing and loan performance among commercial banks in Kenya. The study would be a source of reference material for future researchers on other related topics; it would also help other academics who undertake the same topic in their studies.

#### *1.6. Scope of the Study*

The study seeks to find out the effect of credit information sharing on the performance of commercial banks in Mombasa County. Its scope lies in obtaining information that would elicit all the information pertaining to the impact of credit information sharing on performance among commercial banks in Kenya with a specific focus on Kenya Commercial banks in Mombasa County. The study was conducted on some of the employees working in the sampled Banks.

#### *1.7. Limitations of the Study*

The researcher encountered various limitations that were likely to hinder access to information that the study looked for. The main limitation that the researcher hindered the study was its inability to include more banks in Kenya. This was a case focusing on the selected banks. The study could cover more banks across the country so as to provide a broader based analysis.

The researcher also encountered problems of time as the research was taken in a short period which limited time for doing a wider research. However, the researcher countered this limitation by carrying out the research across all the departments and management levels in the organization to enable a generalization of the study findings.

The respondents were reluctant in giving information fearing that the information asked might be used to intimidate them or print a negative image about them or the organization. The researcher handled this problem by carrying with her an introduction letter from the University and assured them that the information they gave was treated with confidence and it was to be used purely for academic purposes.

## **2. Literature Review**

### *2.1. Introduction*

This section draws on literature in the area of credit information sharing on loan performance in commercial banks. The chapter reviews literature from other scholars to build the foundation of this study. The material is of importance to this study as it forms a basis for observations which will be made during the study in line with the study objective.

### *2.2. Theoretical Review*

#### 2.2.1. Information Asymmetry Theory

In economics and contract theory, information asymmetry deals with the study of decisions in transactions where one party has more or better information than the other. This creates an imbalance of power in transactions which can sometimes cause the transactions to go awry, a kind of market failure in the worst case (Yun, 2009). Finance theory postulates that information asymmetry can constrain all types of external financing by either limiting availability or increasing costs. Consequently, information asymmetry should affect the acquisition and use of bank lines since short-term bank credit is a primary external source of firm liquidity. Other studies argue that the use of short-term bank credit mitigates capital market frictions through increased monitoring and reduced information asymmetry (Faulkender and Petersen, 2006). If line acquisition and use mitigate information asymmetry, then firms with line access should have reduced information asymmetry relative to firms without line access and more transparent firms would be expected to more actively use lines of credit for liquidity management. Existing empirical research suggests that information asymmetry can have

an important impact on bank lending and that limitations exist for certain firms in using bank lines as liquidity substitutes (Hardin and Hill, 2010).

On a direct basis, information asymmetry impacts a lender's willingness to lend. Additional risk comes with uncertainty in firm level performance and greater variability in investment opportunities. A large portion of related monitoring costs is likely transferred to borrowers in the form of higher interest rates and data collection costs, which may lead some borrowers to reduce their use of bank lines of credit. Moreover, if monitoring is imperfect and the lenders cannot eliminate information asymmetry, bank credit may be rationed for opaque firms. On an indirect basis, information asymmetry may also influence line of credit availability and use since some sources of repayment are based on access to public capital markets (Hardin and Hill, 2010). While banks typically use measures of operating cash flow to evaluate debt service and repayment capacity, in many cases access to public debt and equity markets is the primary repayment source for borrowings from bank lines of credit (Faulkender and Petersen, 2006). Firms facing greater information asymmetry are more likely to be constrained in the public capital markets and may have less ability to reduce or pay off their lines of credit drawn as expected. Since information asymmetry problems increase the monitoring costs and risks for lenders, less transparent firms are less likely to obtain and then use lines of credit as an alternative source of liquidity.

### 2.2.2. Portfolio Theory

Modern Portfolio Theory (MPT) proposes how rational investors should use diversification in order to optimize their portfolios. It also discusses how a risky asset should be priced. This does not mean that the early economists ignored financial markets. Fisher (1930a) had already outlined the basic functions of credit markets for economic activity, specifically as a way of allocating resources over time and had recognized the importance of risk in the process. In developing their theories of money, Keynes (1936), Hicks (1962) and Kaldor (1939) had already conceived of portfolio selection theory in which uncertainty played an important role.

However, for many economists during this early period, financial markets were still regarded as mere casinos rather than markets properly speaking. In their view, asset prices were determined largely by expectations and counter-expectations of capital gains and thus they were held up by their own bootstraps as it were. Keynes's beauty contest analogy is representative of this attitude. As such, a good amount of ink was spent on the topic of speculative activity (i.e. the purchase/temporary sale of goods or assets for later resale). For instance, in their pioneering work on futures markets, Keynes (1936) and Hicks (1962) argued that the price of a futures contract for delivery of a commodity will be generally below the expected spot price of that commodity (what Keynes called normal backwardation). This, Keynes and Hicks argued, was largely because hedgers shifted their price risk onto speculators in return for a risk premium. Kaldor (1939) went on to analyze the question of whether speculation was successful in stabilizing prices and, in so doing, expanded Keynes's theory of liquidity preference considerably.

Markowitz (1952) realized that as the fundamentalist notion relied on expectations of the future, then the element of risk must come into play and thus profitable use could be made of the newly developed expected utility theory of John von Neumann and Oskar Morgenstern (1944). Markowitz formulated the theory of optimal portfolio selection in the context of trade-offs between risk and return, focusing on the idea of portfolio diversification as a method of reducing risk and thus began what has become known as Modern Portfolio Theory or simply MPT.

As noted, the idea of an optimal portfolio allocation had already been considered by Keynes, Hicks and Kaldor in their theories of money, and thus it was a logical step for Tobin (1958) to add money to Markowitz's story and thus obtain the famous two-fund separation theorem. Effectively, Tobin argued that agents would diversify their savings between a risk-free asset (money) and a single portfolio of risky assets (which would be the same for everyone). Different attitudes towards risk, Tobin contended, would merely result in different combinations of money and that unique portfolio of risky assets.

### 2.2.3. Value-Based Portfolio Model

This model analyzes optimal portfolio choice and consumption with values management in the organization-supplier-customer triadic relationship. The value concept in the above relationship governs the customer portfolio decision in terms of formulation of recursive utility over time. It shows that the optimal portfolio demand for products under competition varies strongly with the values associated with the brand, industry attractiveness, knowledge management and ethical issues of the organization (Bodie and Rosansky, 1980). The extent of business values determines the relative risk aversion in terms of functional and logistical efficiency between the organization and supplier while the switching attitude may influence the customers if the organizational values are not strong and sustainable in the given competitive environment. The model assumes that a high functional value integrated with the triadic entities would raise the market power of the organization, sustain decisions of customer portfolios and develop long-run relationships thereof. The customer value concept is utilized to assess product performance and eventually to determine the competitive market structure and the product-market boundaries (Campbell and Viceira, 2002).

The value based portfolio model explains that the value based customer portfolios would enhance the customer value as the product efficiency viewed from the customers' perspective, i.e. as a ratio of outputs (like resale value, reliability, safety, comfort) that customers obtain from a product relative to inputs (price, running costs) that customers have to deliver in exchange. The derived efficiency value can be understood as the return on the customer's investment. Products offering a maximum customer value relative to all other alternatives in the market are characterized as efficient. Market partitioning is achieved endogenously by clustering products in one segment that are benchmarked by the same efficient peer(s) Turnbull and Zolkiewski (1997). This ensures that only products with a similar output-input structure are partitioned into the same sub-market. As a result, a sub-market consists of highly substitutable products.

### 2.3. Conceptual Framework

A conceptual framework is a basic structure that consists of certain abstract blocks which represent the observational, the experiential and the analytical/ synthetically aspects of a process or system being conceived. It is a set of broad ideas and principles taken from relevant fields of enquiry and used to structure a subsequent presentation. The interconnection of these blocks completes the framework for certain expected outcomes. A variable is a measurable characteristic that assumes different values among subjects.

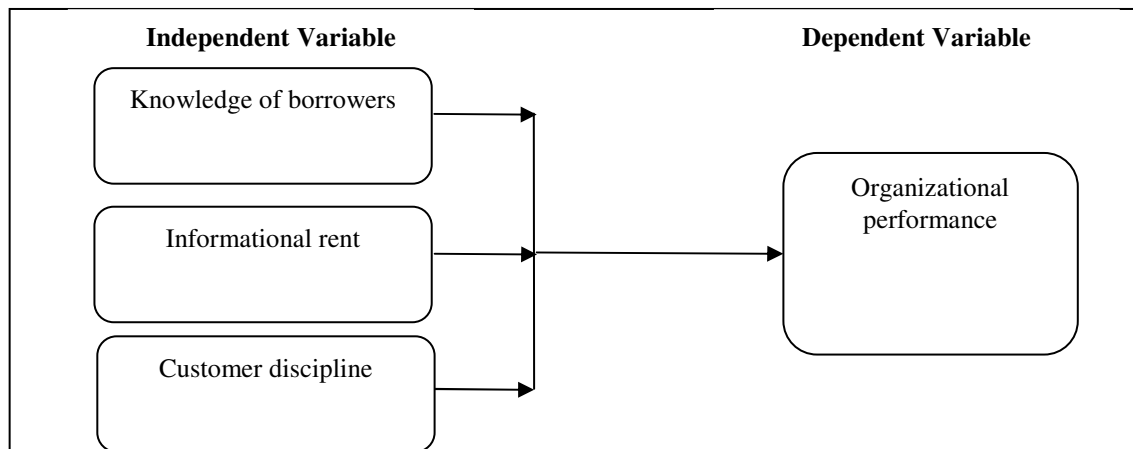


Figure 1: The impact of credit information sharing on loan performance

### 2.4. Review of Variables

This section reviews the independent variables of the study namely: knowledge of borrower, informational rent and customer discipline and one dependent variable that is non-performing loans.

#### 2.4.1. Knowledge of Borrowers

Information sharing reduces adverse selection by improving banks' information on credit applicants. In their mode of doing business, each banking institution has private information about local credit applicants but has no information about foreign applicants. If banks exchange information about their client's credit worth, they can assess also the quality of the foreign credit applicants and lend to them as carefully as they lend to local customers. By reducing information asymmetry between lenders and borrowers, credit registries allow loans to be extended to save borrowers who had previously been priced out of the market, resulting in higher aggregate lending (Pagano and Japelli, 1993). In their study on information sharing, lending and defaults, Japelli and Pagano (2002) found that bank lending to private sector is larger and default rates are lower in countries where information sharing is more solidly established and extensive. Kalberg and Udell (2003) also found that information exchange from multiple sources improves the precision of the signal about the quality of the credit seeker.

The adverse selection problem signals that when lenders cannot distinguish good from bad borrowers, all borrowers are charged at normal interest rate that reflects their pooled experience. If this rate higher than what borrowers deserve, it will push some good borrowers out of the borrowing market, forcing in turn to banks charging even higher rates to the remaining borrowers. Better access to information helps lenders measure borrower risk more accurately and to set loan terms and conditions accordingly. Good borrowers with low risk would be 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 ((Barron and Staton, 2008).

#### 2.4.2. Informational Rent

The exchange of information between banks may also reduce the informational rents that banks can extract from their clients within lending relationships (Padilla and Pagano, 1997). This informational advantage confers to banks some market power over their customers, and generates a hold-up problem: anticipating that banks will charge predatory rates in the future, borrowers exert low effort to perform resulting in high default and interest rates, and possibly market collapse. If they commit themselves to exchange information about borrowers' types however, banks restrain them on future ability to extract informational rents, leaving a higher portion of the surplus to entrepreneurs. As a result, these will invest greater effort in their project, resulting in a lower default probability, lower interest rates and greater lending relative to the regime without information sharing.

A number of studies have been conducted to provide empirical evidence that CRBs reduce the information monopoly of a lender on its borrowers, thus reducing the extra rents that lenders can charge their clients. In his study Getenga (2007) argues that banks deliberate when deciding on a loan credit is the estimated chances of recovery. To arrive at this, credit information is required on how well the applicant has honoured past loan obligations. This credit information is important because there is usually a definite relationship between past and future performance in loan repayment. Very often, this history is not within the bank's reach because the potential borrower's repayment records are scattered in the various archives of the other financial institutions where the customer has previously borrowed. When a borrower has credit information that the lender cannot access, this is officially referred to as information asymmetry.

### 2.4.3. Customer Discipline

A channel through a credit bureau can affect lending outcomes is by imposing discipline on borrowers. Lenders information sharing induces borrowers to exert effort because if they fail to honor their contractual obligations, their misconduct will be exposed to more lenders. Thus, information sharing mitigates borrower's moral hazard. However, according to Padilla and Pagano (2000), this effect weakens if lenders pool information on borrower's characteristics in addition to information of delinquencies. In this case a high quality borrower knows that anyway his high quality will be disclosed to lenders, regardless of whether his credit is good or bad. Empirical evidence has indicated that credit reference bureaus can instill discipline on borrowers. Brown and Zehnder (2007), for instance, found that information sharing can motivate borrowers to repay loan, when they would otherwise default. They further established that the lending market would collapse due to credit risk in the absence of CRBs institution and reputational banking. On the other hand, Doblaz-madrid and Minetti (2009) found that borrowers improve their repayment if a lender is members of credit information sharing institution.

### 2.4.4. Non-Performing Loans

According to Chowdhury and Adhikary (2002), a non-performing loan arises when a borrower cannot repay installment and /or interest on a loan after it has become due. It is known as non-performing because the loan ceases to perform or generate income for the bank. A distinction has been made between narrow definition of non-performing loans and a broad definition of the expression. The narrow approach equals to the criterion stated in the regulations of the new capital accord of Base II and understands NPLs as loans that are past due and unpaid for more than 90 days -usually equal to three dates of payment (Harmberger and Diehm, 2004). On the other hand, the broad definition of non-performing loans also includes the sub-performing loans. That loan type that is already defaulted but has not met the base II criterion. Kroll and Wyman (2005) add that the broad approach contains watch list loans which are still performing but have a certain probability of default in the near future and an international bank rating of B- and worse. Although theory is ambiguous on the impact that information sharing will have on the credit market and the level of nonperforming loans, empirical evidence has provided plenty of evidence supporting the claim that credit sharing institutions have a positive effect on lending to the private sector. For example, Dankwah (2012) conducted a study on the relevance of the credit reference bureau and its effect on financial industry in Ghana. The findings of the research established that consumers and lenders find the CRBs useful in the financial industry which lead to a bigger credit market, lower default and interest rate, improved profitability for the financial institutions, increased price competitiveness of credit facilities, instill good credit behavior among lenders, improved pull of borrowers, expansion of lending and help improve access to credit in Ghana. Jappelli and Pagano (2002) did a study on information sharing, lending and defaults and found that strong credit-sharing institutions are positively related to the size of the credit market. Other empirical studies, including Love and Mylenko (2003) and Galindo and Miller (2001) and have shown that credit is more abundant when borrowers and lenders benefit from credit-sharing institutions. Brown, Jappelli and Pagano (2002) find that credit sharing between lenders is associated with increased and cheaper credit in transition countries in Eastern Europe. In a theoretical model of information sharing, Jappelli and Pagano (1993) show that exchange of information on borrower type decreases default rates and reduces average interest rates. In a related paper Padilla and Pagano (1997) show that information sharing among borrowers would lead to lower interest rates and increased lending. Empirically testing these predictions Jappelli and Pagano (2001) find that credit information sharing is associated with higher lending, measured by private credit to GNP ratio, and lower defaults.

### 2.5. Research Gaps

Even though studies on the effect of CRBs on non-performing loans have been conducted globally, very few studies on the subject have been conducted in Kenya. Moreso, these studies do not clearly identify the important variables on the subject. For example, Kithinji (2010) studied the relationship between the credit risk management and profitability of commercial banks in Kenya. She identified credit risk management policies for commercial banks as conservative, stringent, lenient and customized and globally standardized credit risk management policies. Data on the amount of credit, level of nonperforming loans and profits were collected for the period 2004 to 2008. Amount of credit was measured by loan and advances to customers divided by total assets, nonperforming loans was measured using nonperforming loans/ total loans, and profits were measured using ROTA (Return on Total assets).

Kimasar and Kwasira (2012) conducted a study on the use of credit reference bureaus among selected commercial banks in Kenya, a survey of Nakuru County. The study established that CRB reports were being used for both secured and unsecured personal and business lending by all commercial banks. The study recommended the use of white CRB information as a basis of offering preferential credit rates to customers. The study also recommended the use of CRB listing in legal proceedings to enable faster paying times.

Alloyo (2013) examined the effect of credit reference bureaus on the financial performance of commercial banks in Kenya. He found that before initiation of CRBs the financial performance of banks was fairly constant. However, the financial performance increased slightly with commencement of CRBs. The findings also established that consumers and lenders find the CRBs useful in the financial industry in Kenya which lead to a bigger credit market, lower default and interest rates, improved profitability for the financial institutions, increased price competitiveness of the credit facilities, instill good credit behavior among lenders, improve pool of borrowers, expansion of lending and help increase access to credit in Kenya.

From the above discussion, it is evident that further research on the impact of information sharing on the performance of Kenyan banks would add value by studying the important variables influencing performance from the perspective of credit information sharing.

### *2.6. Summary*

This chapter covered literature on information sharing and loan performance. It first started by reviewing the theories on which the study was built including the information asymmetry theory which argues that not all the stakeholders have the same information about the market which may lead to different banks charging different interest rates and still get customers. The study also looked at portfolio theory which looks at both risk and return. It further reviewed the value based portfolio model to bring into focus the importance of building a value adding portfolio in minimizing risks and maximizing returns. The study then reviewed the dependent and the independent variables. The chapter then concluded by presenting the research gaps.

## **3. Research Methodology**

### *3.1. Introduction*

This chapter sets out various stages and phases that followed in completing the study. In this stage, most decisions were about how research was going to be executed and how respondents approached, as well as when, where and how the research was completed. The following subsections are included; research design, target population, data collection and data analysis.

### *3.2. Research Design*

This is a case study research design where both qualitative and quantitative methods of data collection will be used. According to Paton (1990) a case study seeks to describe a unit in detail, in context and holistically. A case becomes particularly useful when one can identify a case rich in information- rich in the sense that a great deal can be learnt from a few examples of the phenomenon under study. The qualitative technique employed a self-administered questionnaire which will provide a complete detailed description of opinions of the respondents and their unifying traditions. The quantitative technique will entail classification of features, measuring or counting them and constructing statistical models to explain what is observed. Data collected was in the form of numbers and statistics using a structured questionnaire. This mixed research design was employed to enable the research gather information exhaustively on the subject matter.

### *3.3. Target Population*

A population is an entire group of individuals, events or objects having a common observable characteristic, which a researcher is interested in (Kothari, 2004). The population of the study targeted 36 Commercial Banks in Mombasa County.

### *3.4. Sample Size and Sampling Technique*

Sampling is the process of selecting a number of individuals or objects from a population such that the selected group contains elements representative of the characteristics found in the entire population (Orodho, 2003). In this study the research used a sample of 10 commercial banks representing 30 percent of the total population. Simple random sampling was then used to pick 5 credit managers from each of the 10 commercial banks, giving a total of 50 credit managers.

### *3.5. Data Collection Methods*

The study used both primary and secondary data. Primary data was collected using self-administered questionnaires through drop and pick method to credit managers of the sampled branches of Kenya commercial bank limited, and cases where it is difficult to access the respondents due to distance; the research send questionnaires through electronic mail. In both cases the respondents were given a sufficient period of about one week to fill the questionnaires. On the other hand, secondary data were obtained from bank supervision reports, bank financial reports and credit reports.

### *3.6. Data Collection Procedure*

Secondary data was obtained directly from bank supervision reports, bank financial reports and credit reports. On the other hand, questionnaires were used to collect primary data. The questionnaires were hand delivered to the respondents and collected later where the respondents were located at far flung places, questionnaires were sent by use of electronic mail.

### *3.7. Pilot Testing*

Before the actual data collection, the researcher conducted a pilot test to test the validity and the reliability of the research instruments. The researcher issued 20 questionnaires representing 10% of the population size to the respondents who are not part of the sample. According to Mugenda and Mugenda (2003), a pretest sample should be at least 10 percent of the population and subjects in the sample should be included in the pretest sample. Any valuable insight captured during the pilot test was used to modify the research instrument accordingly. Specifically, the data collected was used to compute Cronbach alpha was used to test the reliability of the research instrument. According to Sekaran (2010), the research instrument would be adopted for actual data collection if the instrument gives an alpha coefficient of at least 0.7.

### 3.8. Data Analysis and Presentation

Data collected was checked for completeness. Data in the completed questionnaires was fed into the Statistical Package for Social Scientists (SPSS) both descriptive and inferential statistics generated. Descriptive statistics included frequency, mean, mode and standard deviation. On the other hand, inferential statistics included multiple regression analysis. This model (Multiple regression) showed the amount of the dependent variable (non-performing loans) explained by the independent variables. The model is as shown below;

$$y = \beta_0 + \beta_1x_1 + \beta_2x_2 + \beta_3x_3 + \varepsilon$$

Where: y= level of non-performing loans

$\beta_1$ - $\beta_4$ = regression coefficients

X<sub>1</sub>= knowledge of customers

X<sub>2</sub>= informational rent

X<sub>3</sub>= customer discipline

$\varepsilon$  = error term

## 4. Data Analysis, Results and Discussion

### 4.1. Introduction

This chapter presents analysis of the data on the effects of credit information sharing on performance of banks: a survey of commercial banks in Mombasa, Kenya. The chapter also provides the major findings and results of the study and discusses those findings and results against the literature reviewed and study objectives. The data is mainly presented in frequency tables, means and standard deviation.

### 4.2. Response Rate

The study targeted 50 credit managers of commercial banks in Mombasa County, Kenya. From the study, 41 out of the 50 sample respondents filled-in and returned the questionnaires making a response rate of 82% as per Table 1 below.

	Frequency	Percentage
Respondent	41	82
Non-respondent	9	18
<b>Total</b>	<b>50</b>	<b>100</b>

According to (Mugenda & Mugenda, 2008) a response rate of 50% is adequate for analysis and reporting; a rate of 60% is good and a response rate of 70% and over is excellent; therefore, this response rate was adequate for analysis and reporting.

Table 1: Questionnaire Return Rate

#### 4.2.1. Data Validity

The researcher asked experts, three academicians, to assess the scales' content validity. Accordingly, the researcher made changes on the first draft in terms of eliminating, adding or rewording some of the items included in that draft.

#### 4.2.2. Reliability Analysis

Prior to the actual study, the researcher carried out a pilot study to pre-test the validity and reliability of data collected using the questionnaire. The pilot study allowed for pre-testing of the research instrument. The results on reliability of the research instruments are presented in Table 2 below.

Scale	Cronbach's Alpha	Number of Items
Knowledge of Borrowers	0.824	4
Information Rent	0.746	5
Customer Discipline	0.723	6
Non-performing Loans	0.834	4

Table 2: Reliability Coefficients

The overall Cronbach's alpha for the three categories which is 0.752. The findings of the pilot study show that all the three scales were reliable as their reliability values exceeded the prescribed threshold of 0.7 (Mugenda & Mugenda, 2008).

### 4.3. Demographics Information

The background information was gathered based on the respondent's gender, age, level of education, designation and working experience.



**4.3.1. Gender**

The study sought to establish the gender of respondents. The results showed that 68.3% of the respondents were male and 31.7% were female with a mean score of 1.32 and a standard deviation of 31.7%. This shows that majority of the respondents who participated in the study were male as shown in Figure 2 below.

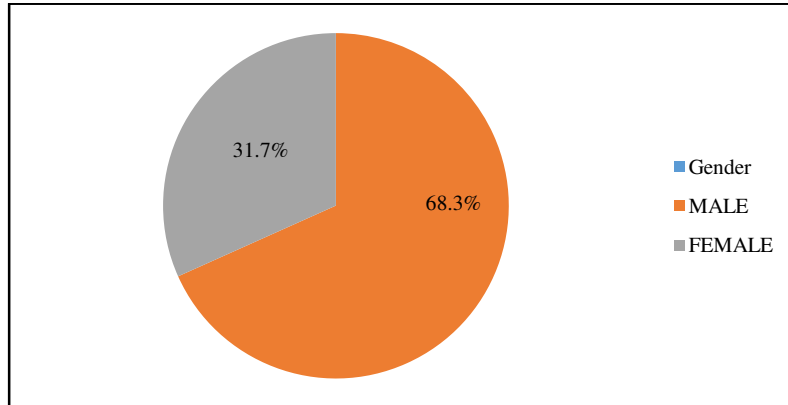


Figure 2: Gender of respondents

The study sought to establish the age of respondents. The study results showed that 36.6% of respondents were of between 25-34 years, 41.5% between 35-44 years, 19.5% between 45-54 years and 2.4% between 55-64 years with a mean score of 1.88 and a standard deviation of 0.812. These study shows that none of the respondents was of the ages of 65 years and above. The study further shows that majority of respondents who participated in the study were between 35-44 years as shown in Figure 3 below.

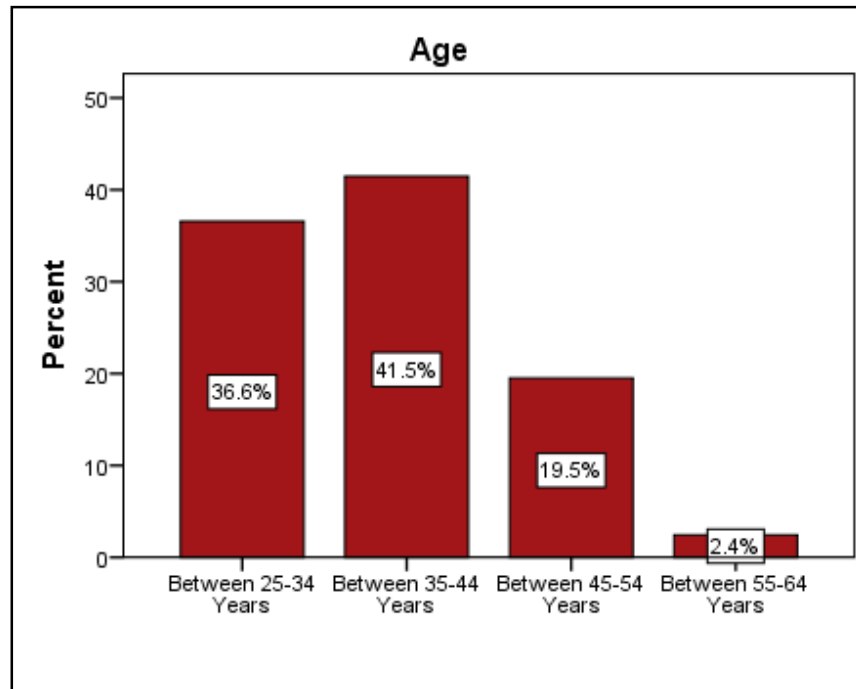


Figure 3: Age of respondents

**4.3.2. Level of Education**

The study sought to establish the highest level of education of respondents. The study results showed that 12.2% of respondents hold diplomas, 48.8% hold degrees, 26.8% hold master's degree and 12.2% hold other forms of educational certificates with a mean score of 2.39 and a standard deviation of 0.862. This shows that majority of the respondents hold bachelor's degree certificates as shown in Figure 4 below.

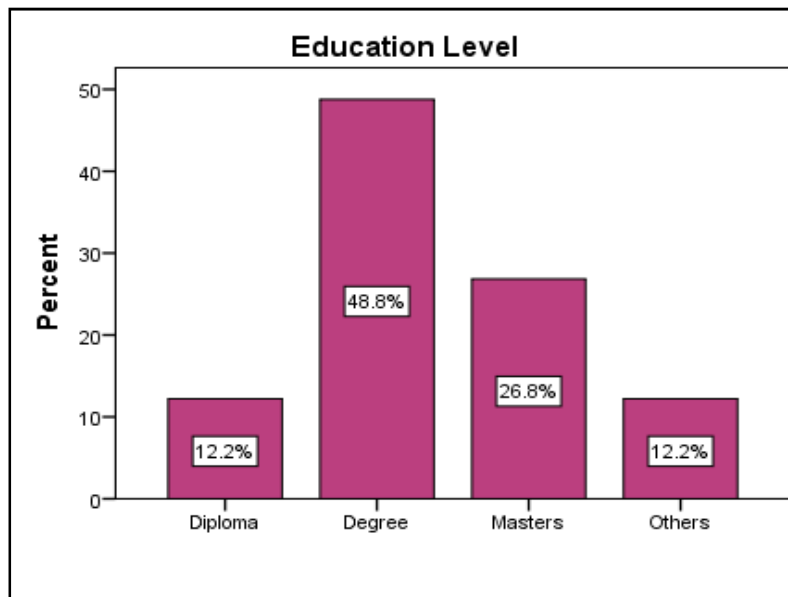


Figure 4: Education Level

**4.3.3. Current designation**

The study sought to establish the current designations respondents hold. The study results showed that 29.3% of the respondents were credit managers, 14.6% branch managers and respondents who hold other forms of designations were 56.1% with a mean score of 2.83 and a standard deviation of 1.377 as shown in Figure 5 below. This results show that the majority of respondents hold other forms of designation. The study further shows that none of the respondents held the position of managing director because the study was held in Mombasa and all managing directors are domiciled in Nairobi where all headquarters of banks are situated.

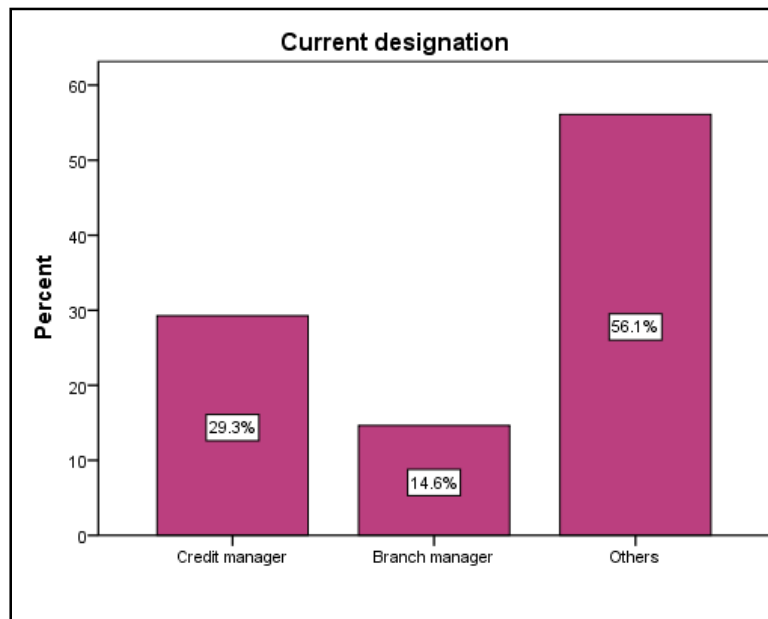


Figure 5: Current designation

**4.3.4. Working Experience**

The study sought to establish the working experience respondents had in the banking industry. The results showed that 34.1% have worked for between 1-5 years, 26.8% have worked for between 6-10 years and 11-15 years respectively, 12.2% have worked for between 16-20 years with a mean score of 2.17 and a standard deviation of 1.046. This shows that the majority of respondents have worked for between 1-5 years as shown in Figure 6 below.

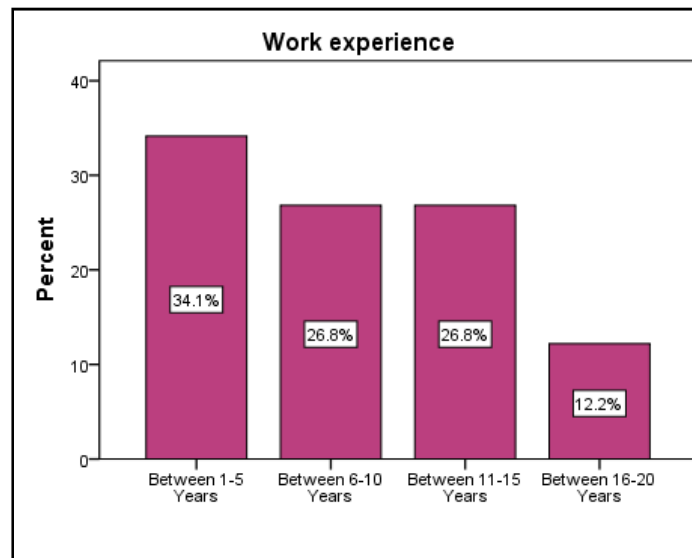


Figure 6: Work experience

4.4. Analysis of Objectives

In the research analysis the researcher used a tool rating scale of 1 to 5; where 1 was the highest and 5 the lowest. Opinions given by the respondents were rated as follows, 1 = Strongly Agree, 3 = Agree, 3 = Neutral, 4 = Disagree and 5 = Strongly Disagree. The analysis for mean, standard deviation and coefficient of variation were based on this rating scale.

4.4.1. Knowledge of Borrowers

Descriptive Statistics			
	N	Mean	Std. Deviation
CRB reduces adverse selection by improving bank's information of credit applicants	41	1.63	.994
CRB has enabled the bank to extend credit to safe borrowers only	41	1.76	1.090
CRB has led to higher aggregate lending since the bank can access information about credit applicants	41	2.32	1.293
The bank extends credit to low risk borrowers at lower interest rates than high risk borrowers	41	2.78	1.370
Valid N (listwise)	41		

Table 3: Knowledge of Borrowers

The first objective of the study was to establish the effect of knowledge of borrowers in banks organizational performance in Mombasa. Respondents were required to respond to set questions related to knowledge of borrowers and give their response. The opinion in strong agreement that CRB reduces adverse selection by improving bank’s information of credit applicants had a mean score of 1.63 and a standard deviation. The respondents strongly agreed that CRB has enabled the bank to extend credit to safe borrowers only had a mean score of 1.76 and a standard deviation of 1.090. The respondents agreed that CRB has led to higher aggregate lending since the bank can access information about credit applicants had a mean score of 2.32 and a standard deviation of 1.293. The respondents were neutral on the statement that the bank extends credit to low risk borrowers at lower interest rates than high risk borrowers had a mean score of 2.78 and a standard deviation of 1.370.

4.4.2. Informational Rent

Descriptive Statistics			
	N	Mean	Std. Deviation
CRB has contributed to efficiency in debt collection	41	2.22	1.255
CRB has led to reduction in information search costs	41	2.17	1.395
Fewer staff are involved in debt collection due to CRB	41	1.76	.830
Court litigation costs have reduced due to CRB	41	2.27	1.285
The cost of debt collection has reduced due CRB	41	2.22	1.151
Valid N (listwise)	41		

Table 4: Informational Rent

The first objective of the study was to establish the effect of informational rent in banks organizational performance in Mombasa. Respondents were required to respond to set questions related to informational rent and give their response. The opinion in strong agreement that fewer staff is involved in debt collection due to CRB had a mean score of 1.76 and a standard deviation of 0.830. The statement in agreement that CRB has contributed to efficiency in debt collection had a mean score of 2.22 and a standard deviation of 1.255. The statement that CRB has led to reduction in information search costs had a mean score of 2.17 and a standard deviation of 1.395. The opinion that court litigation costs have reduced due to CRB had a mean score of 2.27 and a standard deviation of 1.285 and the statement in agreement that the cost of debt collection has reduced due to CRB had a mean score of 2.22 and a standard deviation of 1.151.

#### 4.4.3. Customer Discipline

Descriptive Statistics			
	N	Mean	Std. Deviation
Borrowers exert more effort in payment to avoid being listed	41	1.17	.381
Customers proactively seek ways to honour their commitments to avoid being listed at the CRB	41	1.49	.711
customers are worried on the reputational damage of being listed at the CRB	41	1.37	.799
CRB has made loan recoveries easier for the defaulted loans	41	1.54	.674
CRB has led to lower default rates among borrowers	41	1.51	.779
CRB usage has led to recovery of written debts	41	1.68	.934
Valid N (listwise)	41		

Table 5: Customer Discipline

The third objective of the study was to establish the effect of customer discipline in banks organizational performance in Mombasa. Respondents were required to respond to set questions related to customer discipline and give their response. The opinion in strong agreement Borrowers exert more effort in payment to avoid being listed had a mean score of 1.17 and a standard deviation of 0.381. The opinion that customer proactively seek ways to honour their commitments to avoid being listed at the CRB had a mean score of 1.49 and a standard deviation of 0.711. The opinion in strong agreement that customers are worried on the reputational damage of being listed at the CRB had a mean score of 1.37 and a standard deviation of 0.799. The opinions in strong agreement that CRB has made loan recoveries easier for the defaulted loans had a mean score of 1.54 and a standard deviation of 0.674, the opinion that CRB has led to lower default rate among borrowers had a mean score of 1.51 and a standard deviation of 0.779 and the opinion that CRB usage has led to recovery of written debts had a mean score of 1.68 and a standard deviation of 0.934.

#### 4.4.4. Non-performing Loans

Descriptive Statistics			
	N	Mean	Std. Deviation
Level of non-performing loans is low in this bank	41	1.78	.936
Non-performing loans portfolio has reduced due to CRB	41	1.44	.709
CRB has reduced loan defaulters due efficient lending	41	1.46	.745
The bank limits on the loan it extends to borrowers	40	1.93	1.071
Valid N (listwise)	40		

Table 6: Non-performing Loans

The opinion that the level of non-performing loans is low in this bank had a mean score of 1.78 and a standard deviation of 0.936. The opinion that non-performing loans portfolio has reduced due to CRB had a mean score of 1.44 and a standard deviation of 0.709. The opinion that CRB has reduced loans defaulters due to efficient lending had a mean score of 1.46 and a standard deviation of 0.745.

The opinion that the banks limits on the loan it extended to borrowers had a mean score of 1.93 and a standard deviation of 1.071.

#### 4.5. Correlation Analysis

To establish the relationship between the independent variables and the dependent variable the study conducted correlation analysis which involved coefficient of correlation and coefficient of determination.

##### 4.5.1. Coefficient of Correlation

In trying to show the relationship between the study variables and their findings, the study used the Karl Pearson's coefficient of correlation ( $r$ ). This is as shown in Table 7 below. According to the findings, it was clear that there was a positive correlation between the independent variables, knowledge of borrowers, informational rent and customer discipline the dependent variable organizational performance. The analysis indicates the coefficient of correlation,  $r$  equal to 0.722, .495 and 0.687 for knowledge of borrowers, informational rent and customer discipline. This indicates positive relationship between the independent variable namely knowledge of borrowers, informational rent and customer discipline and the dependent variable organizational performance.

Correlations				
	Organizational Performance	Knowledge of Borrowers	Informational Rent	Customer Discipline
Organizational Performance	1			
Knowledge of Borrowers	.722**	1		
Informational Rent	.495**	.411**	1	
Customer Discipline	.687**	.671**	.677**	1

\*\* . Correlation is significant at the 0.01 level (2-tailed).

Table 7: Pearson Correlation

#### 4.5.2. Coefficient of Determination

Table 8 showed that the coefficient of determination was 0.601. Coefficient of determination explains the extent to which changes in the dependent variable can be explained by the change in the independent variables or the percentage of variation in the dependent variable (Organizational Performance) that is explained by all independent variables. From the findings this meant that 60.1% of organizational performance is attributed to combination of the three independent factors investigated in this study.

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.775 <sup>a</sup>	.601	.581	1.29720

a. Predictors: (Constant), Customer Discipline, Informational Rent, Knowledge of Customers

Table 8: Coefficient of determination ( $R^2$ )

This means that 60.1% of the relationship is explained by the identified three factors namely knowledge of borrowers, informational rent and customer discipline. The rest 39.9% is explained by other factors in the banking industry not studied in this research. In summary the three factors studied namely, knowledge of borrowers, informational rent and customer discipline or determine 60.1% of the relationship while the rest 39.9% is explained or determined by other factors.

#### 4.6. Regression Analysis

##### 4.6.1. Analysis of Variance (ANOVA)

The study used ANOVA to establish the significance of the regression model. In testing the significance level, the statistical significance was considered significant if the p-value was less or equal to 0.05. The significance of the regression model is as per Table 9 below with P-value of 0.00 which is less than 0.05. This indicates that the regression model is statistically significant in predicting effects of credit information sharing on performance of banks in Mombasa.

Basing the confidence level at 95% the analysis indicates high reliability of the results obtained. The overall Anova results indicates that the model was significant at  $F = 1.592$ ,  $p = 0.000$ .

ANOVA <sup>a</sup>						
	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	14.663	2	7.332	1.592	.000
	Residual	170.437	37	4.606		
	Total	185.100	39			

a. Dependent Variable: Organizational Performance  
b. Predictors: (Constant), Informational Rent, Knowledge of Borrowers

Table 9: ANOVA

##### 4.6.2. Multiple Regressions

The researcher conducted a multiple regression analysis as shown in Table 10 so as to determine the relationship between organizational performance and the three variables investigated in this study.

Coefficients <sup>a</sup>						
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	12.262	2.552		4.804	.000
	Knowledge of Borrowers	.285	.066	.483	4.340	.000
	Informational Rent	.101	.122	.093	.831	.010
	Customer Discipline	.096	.044	.300	2.179	.003
a. Dependent Variable: Organizational Performance						

Table 10: Multiple Regression Analysis

The regression equation was:

$$Y = 12.262 + 0.285X_1 + 0.101X_2 + 0.096X_3$$

Where;

Y = the dependent variable (Organizational Performance)

X<sub>1</sub> = Knowledge of Borrowers

X<sub>2</sub> = Informational Rent

X<sub>3</sub> = Customer Discipline

The regression equation above has established that taking all factors into account (Organizational Performance as a result of knowledge of borrowers, informational rent and customer discipline) constant at zero organizational performance among banks will be 12.262. The findings presented also shows that taking all other independent variables at zero, a unit increase in knowledge of borrowers will lead to a 0.285 increase in the scores of organizational performance among banks; a unit increase in informational rent will lead to a 0.101 increase in organizational performance among banks; a unit increase in customer discipline will lead to a 0.096 increase in the scores of organizational performance among banks. This therefore implies that all the three variables have a positive relationship with organizational performance with knowledge of borrowers contributing most to the dependent variable.

## 5. Summary, Conclusion and Recommendation

### 5.1. Introduction

This chapter summarizes the findings in line with the objectives, draws conclusions and makes the necessary recommendations. Areas of further study that may enrich the study are also suggested.

### 5.2. Summary of Findings

The main objective of the study was to investigate the role of credit information sharing on the performance of commercial banks in Mombasa County.

#### 5.2.1. Knowledge of Borrowers

Respondents were required to respond to set questions related to knowledge of borrowers and give their response. The opinion in strong agreement that CRB reduces adverse selection by improving bank's information of credit applicants had a mean score of 1.63 and a standard deviation. The respondents strongly agreed that CRB has enabled the bank to extend credit to safe borrowers only had a mean score of 1.76 and a standard deviation of 1.090. The respondents agreed that CRB has led to higher aggregate lending since the bank can access information about credit applicants had a mean score of 2.32 and a standard deviation of 1.293.

#### 5.2.2. Informational Rent

The opinion in strong agreement that fewer staff is involved in debt collection due to CRB had a mean score of 1.76 and a standard deviation of 0.830. The statement in agreement that CRB has contributed to efficiency in debt collection had a mean score of 2.22 and a standard deviation of 1.255. The statement that CRB has led to reduction in information search costs had a mean score of 2.17 and a standard deviation of 1.395. The opinion that court litigation costs have reduced due to CRB had a mean score of 2.27 and a standard deviation of 1.285 and the statement in agreement that the cost of debt collection has reduced due to CRB had a mean score of 2.22 and a standard deviation of 1.151.

#### 5.2.3. Customer Discipline

The opinion in strong agreement Borrowers exert more effort in payment to avoid being listed had a mean score of 1.17 and a standard deviation of 0.381. The opinion that customer proactively seek ways to honour their commitments to avoid being listed at the CRB had a mean score of 1.49 and a standard deviation of 0.711. The opinion in strong agreement that customers are worried on the reputational damage of being listed at the CRB had a mean score of 1.37 and a standard deviation of 0.799. The opinions in strong agreement that CRB has made loan recoveries easier for the defaulted loans had a mean score of 1.54 and a standard deviation of 0.674, the opinion that CRB has led to lower default rate among borrowers had a mean score of 1.51 and a standard deviation of 0.779 and the opinion that CRB usage has led to recovery of written debts had a mean score of 1.68 and a standard deviation of 0.934.

#### 5.2.4. Non Performing Loans

The opinion that the level of non-performing loans is low in this bank had a mean score of 1.78 and a standard deviation of 0.936. The opinion that non-performing loans portfolio has reduced due to CRB had a mean score of 1.44 and a standard deviation of 0.709. The opinion that CRB has reduced loans defaulters due to efficient lending had a mean score of 1.46 and a standard deviation of 0.745. The opinion that the banks limits on the loan it extended to borrowers had a mean score of 1.93 and a standard deviation of 1.071.

#### 5.3. Conclusions

From the study it was clear that there was a positive correlation between the independent variables, knowledge of borrowers, informational rent and customer discipline the dependent variable organizational performance.

In testing the significance level, the statistical significance was considered significant if the p-value was less or equal to 0.05. The significance of the regression model was as per Table 9 with P-value of 0.00 which is less than 0.05. This indicates that the regression model is statistically significant in predicting effects of credit information sharing on performance of banks in Mombasa.

The researcher conducted a multiple regression analysis so as to determine the relationship between organizational performance and the three variables investigated in this study. The results implied that all the three variables have a positive relationship with organizational performance with knowledge of borrowers contributing most to the dependent variable.

#### 5.4. Recommendations

The study recommended that:

1. The Management of the bank should put in place strategies to curb problems of customer discipline in terms of not servicing their loans.
2. The management should put in place strategies in place to ensure non performing loans customers are encouraged to pay their loans.
3. Banks should have attractive products and offer better services in order to attract more deposits than their competitors.

#### 5.6. Suggestion for further Studies

This study focused on the role of credit information sharing on the performance of commercial banks in Mombasa County. Since only 60.1% of results was explained by the independent variables in this study, it is recommended that a study be carried out on other factors that affect performance of commercial banks specifically, a study on relationship between customer discipline and performance of commercial from across the country should be carried out in order to pick out other variables not covered in this study. The research should also be done in other regions and the results compared so as to ascertain whether there is consistency on role of credit information sharing on the performance of commercial banks in Mombasa County.

#### 5.7. Acknowledgement

I wish to thank Almighty God as my source of all inspiration in allowing me to undertake this project that was too involving in terms of time and resources

I would also like to express my sincere thanks to the supervisor Dr. Kerongo for having agreed to supervise this research paper and his patience in reading the drafts and occasionally guiding me, without which the research would not have been a reality.

Lastly I would like to express my appreciation to my beloved family for their understanding and their invaluable material and emotional support to concentrate on this research

#### 5.8. List of Acronyms

- BSD Bank Supervision Department
- CIS Credit Information Sharing
- CRB Credit Reference bureaus
- CRB Credit Reference Bureau
- DTMs Deposit Taking Microfinance institutions
- FIs Financial Institutions
- MFC Mortgage finance company
- MPT Modern Portfolio Theory
- ROTA Return on Total asset

#### 5.9. Definition of Terms

- Credit information sharing- Is a process where banks and other credit providers submit about their borrowers to a credit reference bureau so that it can be shared with other credit providers (Padilla and Pagano, 2000)
- Credit reference bureau- Is a company that collects, manages and disseminates customer information to lenders within a provided regulatory framework
- Information asymmetry- A situation that arises where a person has more or better information than others (Yun, 2009)
- Non-performing loans- It is a loan that arises when a borrower cannot repay installment and/or interest on a loan after it has become due (Chowdhury and Adhikary, 2002)

## 6. References

- i. Alloyo, P.T.M. (2013). The effect of credit reference bureau on the financial performance of commercial banks in Kenya. Master Thesis. University of Nairobi, Kenya.
- ii. Adam B.M. (2003). An Analysis of the Usefulness of Annual Financial Statements to Credit Risk Analysts in Kenyan Commercial Banks. Unpublished MBA paper the University of Nairobi.
- iii. Bessis, J. (2002). Risk management in banking, Second edition, John Wiley & Sons Ltd
- iv. Brown, M., Jappelli, T., and Pagano, M., (2009). Information sharing and credit: Firm-level evidence from transition countries. *Journal of Financial Intermediation* 18, 151-172.
- v. Campbell, J., and Viceira, L. (2002). *Strategic Asset Allocation: Portfolio Choice for Long Term Investors*. New York: Oxford University Press
- vi. Central Bank of Kenya, (2006). Prudential guidelines for institutions licensed under the Banking Act. [Online] Central Bank of Kenya. pp. 27-48. Available: <http://www.centralbank.go.ke>
- vii. Central Bank of Kenya, (2011). Banking supervision Annual report 2011. [Online] Available: <http://www.centralbank.go.ke>.
- viii. Jappelli T., and Pagano M., (1999). Information Sharing, Lending and Defaults: Cross-Country Evidence. University of Salerno: CSEF Working Paper N° 22.
- ix. Conford A (2000), "The Basel Committee's Proposals for Revised Capital Standards: Rationale, Design and Possible Incidence, G-24 Discussion Paper Series", United Nations, No.3, May 2000.
- x. Coyle B. (2000), Framework for Credit Risk Management; Chartered Institute of Bankers, United Kingdom.
- xi. Doblas-Madrid, A., and Minetti, R., (2010). Sharing Information in the Credit Market: Contract Level Evidence from U.S. Firms. Working Paper, Michigan State University.
- xii. Faulkender, M., & Petersen, M. A. (2006). Does the source of capital affect capital structure? *Review of Financial Studies*, 19(1), 45-79.
- xiii. Faulkender, M., & Wang, R. (2006). Corporate financial policy and the value of cash. *Journal of Finance*, 61(4), 1957-1990.
- xiv. Financial Sector Deepening (FSD) and Central Bank of Kenya. (2009). *FinAccess National Survey 2009*
- xv. Financial Sector Deepening Kenya (2007). *Financial access in Kenya: Results of the 2006 National Survey*". FSD Kenya, Nairobi.
- xvi. Fisher, I. (1930a). *The theory of interest*. New York: The MacMillan
- xvii. Galindo, A. and Miller, M. J. (2001) Can Credit Registries Reduce Credit Constraints? Empirical Evidence on the Role of Credit Registries in Firm Investment Decisions, Paper prepared for the Annual Meetings of the InterAmerican Development Bank, Santiago Chile, March.
- xviii. Gastineau, G. L. (1992). *Dictionary of Financial Risk Management*, Swiss Bank Corporation, Chicago.
- xix. Guillermo, B. (2010). Manual for the on and off-site supervision of credit reference bureaus. Discussion paper prepared by the USAID, to the Central Bank of Kenya.
- xx. Hardin, W. G. III., & Hill, M. D. (2010). Credit line availability and utilization in REITs. *Journal of Real Estate Research*, In press
- xxi. Heffernan, S. (1996), *Modern banking in theory and practice*, John Wiley and Sons, Chichester
- xxii. Jappelli, T., Pagano, M. (2002). Information Sharing, lending and Defaults : Cross-Country Evidence. *Journal of Banking and Finance*, 26 (10), 2017-2045.
- xxiii. Jappelli, T. and Pagano, M. (2001). Information Sharing, Lending and Defaults: Cross-Country
- xxiv. Kabiru, J.M.G. (2002). The Relationship Between Credit Risk Assessment Practice And The Level Of Non Performing Loans Of Kenyan Banks; Unpublished MBA paper the University of Nairobi
- xxv. Keynes, J. M. (1936). *The General Theory of Employment, Interest, and Money*. New York: Harcourt, Brace.
- xxvi. Kimasar, F.J. and Kwasira, J. (2012). Use of credit reference bureau on loan recovery among selected commercial in Kenya, a survey Nakuru sub-county. *International Journal of Science and research*.
- xxvii. Kithinji, A. (2010). Credit risk management and profitability of commercial banks in Kenya, unpublished discussion paper presented to AIBUMA 2011
- xxviii. Kithinji, A. M. (2010). Credit risk management and profitability of commercial banks in Kenya. Unpublished research Paper presented to AIBUMA, school of business, university of Nairobi, Nairobi - Kenya.
- xxix. Klein, D. B. (1982). Promise Keeping in the Great Society: A Model of Credit Information Sharing, *Economics and Politics* 4, 117-36.
- xxx. Love, I. and Mylenko, N. (2003). Credit reporting and financing constraints. *World Bank Policy Research Working Paper* 3142, October 2003
- xxxi. Miller, M. J. (2003). Credit Reporting around the Globe, in M. J. Miller (ed.), *Credit Reporting Systems and the International Economy*. Cambridge: MIT Press.
- xxxii. Mutwiri, M.J. (2003). The Use Of 6 C's Credit Risk Appraisal Model And Its Relationship With The Level Of Non Performing Loans Of Commercial Banks In Kenya. Unpublished MBA paper the University of Nairobi.
- xxxiii. Ndung'u, N. (2010). Press briefing on the roll out of credit information Sharing. The central bank of Kenya.
- xxxiv. Orodho, A.J. (2003). *The essentials of education and social research methods*. Kenya: Masola Publishers.



- xxxv. Padilla, A. J., and Pagano, M., (2000). Sharing default information as a borrower discipline device. *European Economic Review* 44(10), 1951-1980.
- xxxvi. Padilla, A., and Pagano, M., (1997). Endogenous Communication Among Lenders and Entrepreneurial Incentives. *Review of Financial Studies* 10, 205-236
- xxxvii. Padilla, A.J., and Pagano, M., (1997). Endogenous communication among lenders and entrepreneurial incentives. *The Review of Financial Studies* 10 (1), 205-236.
- xxxviii. Pagano M. (2000) « Information Sharing, lending and Defaults : Cross-Country Evidence » CSEF Working Paper N°22, March
- xxxix. Pagano, M., and Jappelli, T., (1993). Information Sharing in Credit Markets. *Journal of Finance* 43 1693-1718.
- xl. Rosenberg, R, (2009) *Measuring Results of Microfinance Institutions Minimum Indicators That Donors and Investors Should Track*. Consultative Group to Assist the Poor, 818 H Street, N.W., Washington, DC 20433 USA
- xli. Sacerdoti, E. (2005). Access to bank credit in Sub-Saharan Africa: Key Issues and reform strategies. IMF Working Paper Series, No. WP/05/166.
- xlii. Singh, H. and Kumar, S. (2009) A general procedure of estimating the population mean in the presence of non-response under double sampling using auxiliary information. *SORT* 33 (1) January-June 2009, 71-84
- xliii. Tenguh, C. N. (2008) *Bank performance and Credit risk management*. Unpublished Master Degree Project, School of technology and Society, University of Skovde
- xliv. Turnbull P.W. and Zolkiewski J.M., (1997), *Profitability in Cusomter Portfolio Planning* in Ford, David (Ed) *Understanding Business Markets*, 2nd Edition, London, Dryden Press
- xlv. Vercammen, J. A. (1995), "Credit Bureau Policy and Sustainable Reputation Effects in Credit Markets," *Economica* 62, 461-78.
- xlvi. Yun, H. (2009). The choice of corporate liquidity and corporate governance. *Review of Financial Studies*, 22(4), 1447-1475.

**APPENDICES**

APPENDIX I: LETTER OF INTRODUCTION

1<sup>st</sup>January 2016

Dear/Madam,

RE: Request to Fill the Attached Questionnaire

I am a student at Jomo Kenyatta University of Agriculture and technology pursuing a master’s degree in business administration. I am required to write a project at the end of this course. The title of my project is “the effects of credit information sharing on performance of Banks: a survey of Commercial Banks in Mombasa”. The findings of the study, if well implemented are expected to improve loan performance in this bank. I am therefore requesting you to fill the attached questionnaire to enable me complete the project. Your honesty in filling this questionnaire will greatly contribute to the accuracy of the findings. The information you provide will be treated with utmost confidentiality and will be used for this study only. However, the finding of the study may be availed to you upon request.

Thank you

Yours Faithfully  
Valentine Mululu

APPENDIX II: QUESTIONNAIRE

1. Section A: Demographic Information

1. Gender:
  - Male  Female
2. Age bracket:
  - 25 – 34 years  35 – 44 years  45 – 54 years
  - 55 – 64 years  65 years and above
3. What is your highest qualification achieved?
  - Diploma  Degree
  - Masters  Others (please specify.....)
4. What is your current designation within the bank?
  - Credit Manager  Branch Manager
  - Managing Director  Others (please specify.....)
5. How many years have you been in the banking industry?
  - 1 – 5 years  6 – 10 years  11 – 15 years
  - 16 – 20 years  21 years and above

2. Section B: Questions on Knowledge of Borrowers

Please indicate your level of agreement with the following statements by ticking in the appropriate box (1= strongly agree 2= agree 3= neutral 4= disagree 5= strongly disagree)

<b>Knowledge of borrowers</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
6. CRB reduces adverse selection by improving bank’s information of credit applicants					
7. CRB has enabled the bank to extend credit to safe borrowers only					
8. CRB has led to higher aggregate lending since the bank can access information about credit applicants					
9. The bank extends credit to low risk borrowers at lower interest rates than high risk borrowers					

Table 1

Please indicate any way(s) in knowledge of customers helps improve loan performance

.....

.....

.....

.....

3. Section C: Questions on Informational Rent

Please indicate your level of agreement with the following statements by ticking in the appropriate box (1= strongly agree 2= agree 3= neutral 4= disagree 5= strongly disagree)

<b>Informational Rent</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
10. CRB has contributed to efficiency in debt collection					
11. CRB has led to reduction in information search costs					
12. Fewer staff are involved in debt collection due to CRB					
13. Court litigation costs have reduced due to CRB					
14. The cost of debt collection has reduced due CRB					

Table 2

Please indicate any other way (s) in which CRB has reduced credit administration cost

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

4. Section D: Questions on Customer Discipline

Please indicate your level of agreement with the following statements by ticking in the appropriate box (1= strongly agree 2= agree 3= neutral 4= disagree 5= strongly disagree)

<b>Customer Discipline</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
15. Borrowers exert more effort in payment to avoid being listed					
16. Customers proactively seek ways to honor their commitments to avoid being listed at the CRB					
17. Customers are worried on the reputational damage of being listed at the CRB					
18. CRB has made loan recoveries easier for the defaulted loans					
19. CRB has led to lower default rates among borrowers					
20. CRB usage has led to recovery of written of debts					

Table 3

Please indicate any other way (s) in which CRB has contributed to customer discipline

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

5. Section E: Questions on Non-Performing Loans

Please indicate your level of agreement with the following statements by ticking in the appropriate box (1= strongly agree 2= agree 3= neutral 4= disagree 5= strongly disagree)

<b>Performance</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
21. Level of non-performing loans is low in this bank					
22. Non -performing loans portfolio has reduced due to CRB					
23. CRB has reduced loan defaulters due efficient lending					
24. The bank limits on the loan it extends to borrowers					

Table 4

Apart from providing information on knowledge of borrowers, reduction in information costs and customer discipline please indicate any other way (if any) in which CRB contributes to loan performance

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

**THANK YOU FOR PARTICIPATION!!!**

APPENDIX II: WORK PLAN

The researcher intends to follow the following time Schedule:-

	<b>MAY-AUG 2015</b>	<b>OCT 2015</b>	<b>NOV 2015</b>	<b>DEC 2015</b>	<b>JAN 2016</b>	<b>FEB 2016</b>
Proposal development						
Proposal defense and amendments						
Data collection						
Data coding and entry						
Data analysis						
Compiling final report						
Submission of project						

*Table 5*

APPENDIX III: BUDGET

<b>ITEM</b>	<b>ESTIMATED COST</b>
Bus fare to the various KCB branches	10,000
Internet	20,000
Typing of research project	12,000
Printing and binding of final copies	18,000
<b>Total</b>	<b>60 ,000</b>

*Table 6*