CREDIT INFORMATION SHARING AND PERFORMANCE OF SELECTED COMMERCIAL BANKS IN KENYA

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JULY, 2018
DECLARATION

I declare that, this project is my own original work and has not been presented for award of any degree in any University.

Signed: ___________________________  ________________

Oira Sammy Machoka  
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This research project has been submitted for the course examination with my approval as the University supervisor.

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DEDICATION

I dedicate this project to my dear wife for her support, love and encouragement. I sincerely appreciate my family that had to bear with my busy schedule of class, job and family affairs. You played an important role that saw me through this project.

Thank you so much.

May God bless you all.
ACKNOWLEDGEMENT

I would like to thank the Almighty God for giving me the opportunity and strength to pursue my education. It is through His abundance grace that has brought this research work this far. Were it not for His grace, I would not have been able to complete this project. This project would have not been possible without my supervisor Dr Lucy Wamugo who guided me all along the process. I acknowledge her patience, support and thank her most sincerely for her tireless efforts. To you I am grateful. Lastly, I also appreciate my friends who shared this journey with me and encouraged me in the adventure of academics and have been my anchor. Some of these friends include my classmates who gave me hope to compile and come up with this project. It was through their encouragement that I was able to finish this project. Thank you so much.
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OPERATIONAL DEFINITION OF TERMS

Credit Information Sharing: Credit information sharing is a mechanism that lenders use to share information with their consumers through licensed credit reference bureaus in order to improve the way lending decisions are made.

Credit Reference Bureau: A credit reference Bureau is a firm that gathers individual consumer credit information from various sources and provides the information to financial institutions for a variety of uses.

Credit Scoring: An analytical assessing of the probability of a credit borrowers’ likelihood of defaulting in making repayments as done through tools like credit scorecards.

Information Asymmetry: Information Asymmetry is the condition where some information is known to some but not to all parties involved.

Non-Performing Loans: A non-performing loan is any loan in which interest and principal payments are more than 90 days overdue.

Performance: It is the state of yielding of financial gains and measured in terms of bank profitability assessed in terms of ROE and ROI.

Credit Referencing: It is the provision of past track record of credit of an individual.

Information Sharing: It is the exchange of credit information between a credit reference Bureau and a lending institution.

Information Gathering: It is the collection all information regarding the credit
history of customer.

**Information Accuracy:** It describes reliability of the credit information sought from either a credit reference bureau by a lending institution or customers to a lender institution.
### ABBREVIATIONS AND ACRONYMS

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ABSTRACT

Many banks in Kenya have been experiencing poor financial performance. Most of these financial problems arise from lack of credit information on the loan applicants which then affect their ability to recover both the principle and the interest. There have been efforts by the Central Bank of Kenya to advance credit information sharing on loan applicants among commercial banks so as to reduce the default rates among loan beneficiaries. This study aimed to establish the effect of credit information sharing on the performance of selected commercial banks in Kenya. The specific objectives were; to establish the effect of competitive information sharing, credit scoring, efficiency in the information gathering process and information accuracy on the performance of commercial banks in Kenya. This study employed a descriptive research design. The study was anchored on information asymmetry theory, moral hazard theory and financial intermediation theory.

The population of this study entailed all the 43 commercial banks licensed under the banking Act as at 31 December 2015 in Kenya. The study used primary and secondary data. Primary data was collected using closed ended questionnaires administered on drop and pick method while secondary data was collected from CBK annual supervision reports and the banks specific audited accounts. Data was analyzed using both descriptive and inferential statistics. The qualitative data collected was analyzed using descriptive statistics such as mean, standard deviation, frequencies and percentages while inferential statistics including multiple regression analysis was performed to estimate the changes in performance following changes in credit information sharing variables. The study adopted the following model: 

\[ P = \alpha_0 + \beta_1 \text{CIS} + \beta_2 \text{CS} + \beta_3 \text{EIG} + \beta_4 \text{IA} + \varepsilon_i \]

where \( P = \text{Bank Performance} \) which is measured by Return on Investment (ROI) and Return on Equity (ROE), \( \alpha_0 \) - intercept coefficient, \( \varepsilon_i \) - error term (extraneous variables), CIS - Competitive information sharing, CS – Credit Scoring, EIG – Efficiency in Information Gathering, IA – Information Accuracy and \( \beta_1, \beta_2, \beta_3 \) and \( \beta_4 \)=regression coefficients. Tables and charts were used to present the analyzed data. From the findings, competitive information sharing has significant effect on performance of Commercial banks. Credit scoring has significant effect on performance of Commercial banks. Efficiency in information gathering has no significant effect on performance of Commercial banks. Information accuracy has significant effect on performance of Commercial banks. The study recommends that the top management of all commercial banks in Kenya should strengthen their channels and systems of sharing information which shall significantly influence performance. The top management team of Credit Reference Bureau CRB in Kenya should improve on their credit monitoring role in the country to allow generate effective scores that commercial banks use for lending purposes. The top management of all commercial banks should pay little attention and emphasis efficiencies during the process of information collection. All financial institutions in Kenya need to safeguard the accuracy of their information sharing platforms for increased performance.
CHAPTER ONE
INTRODUCTION

1.1 Background of the Study

Back in the past decades loans were advanced to acquaintances only, in the 1960s obtaining a loan required a face-to-face application procedure with a bank employee in whom one had to explain the purpose of the loan and demonstrate one's credit worthiness; this was noted by Cavelaars and Passenier (2012). Over time, the development of credit bureaus and credit scoring models enabled banks to obtain information about individual consumer's credit records even though they had no prior relationship with them (Houston, Lin, Lin & Ma, 2010). Therefore, credit referencing not only helps lower transaction costs but also facilitate distant transactions such as, for instance, e-finance or internet transactions and banking (Houston, et al. 2010).

There has been dramatic increase in competition in traditional and non-traditional institutions in the financial services industry with a decline in consumer loyalty (Büyükkarabacak & Valev, 2012). Lending based on hard-information may outperform lending based on relationship-based soft-information, especially in long-distance situations (Cavelaars & Passenier, 2012). However, information sharing occasioned by credit reference bureaus has led to increased competition among banks (Houston, et al., 2010), resulting in a decline in monopoly rents for banks, to the benefit of the bank's customers and society as a whole. Lenders use credit reference databases in order to evaluate a consumer's credit application and his/her creditworthiness.

In the UK, as noted by D'hulster (2012) stated that the lenders need to access borrowers’ credit information as part of their assessment of the risks associated with lending. The sharing of credit data between lenders can reduce the problem of borrowers being better informed about their creditworthiness than lenders and support the ongoing monitoring of borrower risk-taking. In the USA, Büyükkarabacak and Valev (2012) in banking crises and invent of credit information sharing has been used to mitigate the problem of adverse selection, whereby lenders are unable to differentiate between borrowers of different risk. Access to credit data for monitoring purposes can also assist lenders in countering the
effects of moral hazard, whereby borrowers may change their risk-taking behavior once in receipt of a loan.

According to Adu-AsareIdun and Aboagye (2014) in a Ghanaian study recommends encouraging a more competitive banking system with more innovative products tailored toward mobilization of savings and investment to growth induced sectors of the economy. Thus, as the credit reference practices get firm foothold in the financial industry, credit data can be used for various ends. Brown et al. (2011) noted that importantly, such data have been considered to promote transparency and reduce the information advantage that a lender has over its existing clients, which in turn could lead both to lower prices offered to consumers and greater access to credit. Since information is very vital for the efficient functioning of the credit markets Dierkes et al. (2013) existence of asymmetric information between borrowers and lenders poses problems of bad debts, moral hazard and adverse selection.

The role of banks is to safeguard and help grow clients’ resources while extending credit for their economic benefit. Therefore, banks in the year 2007 supported the change in regulation which formalized Credit Information Sharing (CIS) and introduced the country’s first Credit Reference Bureaus (CRBs). Not to be mistaken as ‘blacklisting’, CIS allows credit providers (including banks, utility and telecommunications companies) to share data that is collected by licensed CRBs. This sharing of vital information helps creditors draw a distinction between high and low risk borrowers. Previously, credit providers penalized good borrowers by spreading the risk (and costs of credit) across their portfolio. With this new system, good borrowers are better positioned to negotiate interest rates. Ultimately, CIS enhances efficiency in the credit system and lowers costs making it easier for banks to lend on basis of their clients’ individual credit track record (Kenya Credit Information Sharing Initiative, 2011)

Kenya’s banks work together with the regulatory and interest groups to increase access to credit through formal banking services. The idea underlying information sharing is, “The best future predictor behavior is past behavior” (Dierkes, et al. 2013). In practice, it is an arrangement by which lenders contribute information about their customers to a common
pool which is accessible to all lenders that contribute. This is the work of credit bureaus (Dierkes, et al. 2013). Consumer credit bureaus emerged in the United States in the late 19th century. Other early adopters include; Austria, Sweden, Finland, Canada, Germany and Australia (Brown et al., 2011).

Competitive information sharing is about getting information that helps an organization make decisions and the impact of those decisions give it a competitive edge over its competitors at the market place. Financial institutions have formed credit bureaus and credit scoring models that enable them get information on the borrowers and inform their decision-making process (Adu-AsareIdun & Aboagye, 2014). The financial institutions are going a step forward by doing credit scoring to assess the credit worthiness of borrowers; the firms engage experienced staff to score creditors and make a decision on whether to advance a credit or to deny the applicant. Credit scoring analyses the credit borrowers’ likelihood of defaulting in making the repayments. The higher the probability that a borrower would not make a full repayment on the advanced monies; the higher the interest should be charged and the higher the credit risk.

Financial institutions that are able to adhere to higher standards of efficiency in all its operations have a higher likelihood of performing better as opposed with those without. As noted by Moro and Fink (2013), efficiency in information gathering has intensified credit sharing amongst financial institutions which has eventually result in higher performance and lowers the credit risks. Furthermore, firms with strong information gathering techniques are positively related to the size of the credit market. But Goel and Thakor (2015) state that information gathered must be accurate so as not to mislead the credit analysts’ decision on whether to grant credit advance on not. Inaccurate information negatively affects the performance of financial institutions.

1.1.1 Performance of Selected Commercial Banks

Performance is the state of yielding a financial gain. It is the capacity to make a profit whether accounting or economic. Performance is measured using bank profitability (Fredrick, 2013). Profitability is a primary goal of any business venture without which
the business cannot survive in the long run. Kithinji (2010) further revealed that profitability is measured using income and expenses, income being money generated from the activities of the business for example interest income for banks and expenses being costs incurred or resources consumed by the activities of the business for example interest paid on deposits by banks. Profitability is measured using an income statement and it is the most important measure of business success. Increasing profitability therefore is one of the most important tasks of business managers (Fredrick, 2013). It is for this reason therefore that they are constantly looking for ways to change their businesses and consequently increase profitability and hence the adoption of policies such as the use of CRBs or the credit information sharing initiative which have the ultimate goal of increasing banks profitability by reducing losses through loan defaults (Morekwa et al., 2013).

Research on the determinants of banks’ profitability has been attentive to both the returns on bank assets and equity and net interest rate margins. It has conventionally explored the impact on banks’ performance of bank-specific factors, such as risk, and regulatory costs market power, Credit risks and operating inefficiencies explain most of the disparities in net interest margins and thus profitability (Beck et al., 2014). Enhancement of bank profitability requires new standards in risk management and operating efficiency which crucially affects profits. In the presence of asymmetric information, a well-capitalized bank is less risky but profits are lower since they are perceived as safer. However, Allred and Addams (2013) find a positive and significant effect of capital on bank profitability where capital is regulated and therefore acts as a binding restriction.

Bank performance and bank interest margins can be seen as indicators of the efficiency or inefficiency of the banking system, as they drive a wedge between the interest rate received by savers on their deposits and the interest paid by borrowers on their loans Martinez Peria and Singh (2014). Profitability measure seems to be most significant for stockholders of a bank since it reveals what the bank is earning on their investments (Rasiah, 2010). Two types of interest influence the profitability of a bank, interest expenses and interest income. Interest expenses and interest income affect net interest income and therefore bank profitability. Rasiah (2010) loans are the bank’s assets
whereas the deposits are the bank’s liabilities. Though there are numerous other sources of income for banks such as account maintenance fees, cheque clearance fees, over the counter and ATM withdrawal charges etc., interests charged on bank loans are expected to be the main source of income and are expected to have a positive and greatest impact on a commercial banks’ performance (Martinez et al., 2014).

According to Central Bank of Kenya CBK Supervisory Report (2015), there was 5.03 per cent decline in pre-tax profits during the year 2015 as compared to the year 2014. The report further notes that the banking sector registered a decline in asset quality with the non-performing loans (NPLs) ratio increasing from 5.6 per cent in December 2014 to 6.8 per cent in December 2015. The commercial banks cannot do without cash flows and when this is held due to loans, the situation can shift from bad to dire, affecting the operations of the commercial banks.

1.1.2 Credit Information Sharing

Credit Information Sharing (CIS) is a process where banks and other credit providers submit information about their borrowers to a CRB 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”. Many credit providers have benefitted a lot through the shared information in such a manner as they don’t extend credit to customers with poor credit scores based on their past borrowing and repaying behaviors.

The Credit Information Sharing mechanism was launched in Kenya following the Gazetting of the banking (Credit Bureau) regulations, 2008 on 11 July 2007. The regulations were issued in line with an amendment to the Banking Act passed in 2006 that made it obligatory for deposit protection funds and institutions licensed under the Banking Act to share information on non-performing loans through protection funds and institutions licensed under the Banking Act to share information on non-performing loans through credit reference bureaus licensed by the Central Bank of Kenya. In addition, the amendment to the law also provides for the sharing of information on performing loans. Kallberg and Udell (2003) noted that historical information provides relevant great
predictive information on the likely behavior of a borrower. It helps the lender determine the default probability of a loan applicant especially in circumstances where all lenders enrich the credit registries with their debtors’ information (Powell et al. 2004).

Credit Information Sharing became operational in Kenya from 31st July 2010. It is done through licensed credit reference bureaus (CBRs) by the CBK. The Banking (Credit Reference Bureau) Regulations, 2008 provides that the information to be shared among the banks is any customer information concerning their customer’s non-performing loans (NPLs) and also any other adverse information relating to a customer (negative information). Licensed CRBs are required under the CRB regulations to hold information on non-performing loans submitted to them by banks for at least 7 years after the date of final settlement of the amount in default (Central Bank of Kenya, Supervision Annual Report, 2010)

Commercial banks in Kenya are now sharing customers’ credit information through the use of CRB, which has become an integral part in loan processing. According to the Kenya bankers’ association report of 2016, all commercial banks have adopted the use of CRB and this has reduced the non-performance of loans. The trend is such that customers with poor credit histories are unable to access any credits from any lending institution in the country. Credit information sharing reduces chances of information asymmetry and provides predictive power to lenders which enable them to know about the behavior of their customers enter into a credit contractual relationship. This happens through countering cases of adverse selection by availing the historical account of borrowers hence ensuring that only the safe borrowers are given credit.

Credit Report is a report generated by the CRB, containing detailed information on a person's credit history, including information on their identity, credit accounts, loans, bankruptcies, late payments and recent inquiries. It can be obtained by prospective lenders only when they have a permissible reason as defined in law, to determine their credit-worthiness. This information is provided upon request by a credit firm and used during credit processing for clients; the decisions made are better (Padilla & Pagano, 2000). Sharing of credit information enables commercial banks to reduce over-
indebtedness of their loan applicants which is one of the greatest contributors to repayment default.

Credit information Sharing (CIS) is the exchange of information on client financial histories (Brown et al., 2009). Sharing of credit information can make an important contribution to the development of the financial system which is a crucial determinant of economic growth (Doblas-Madrid & Minetti, 2009). Credit scores have immense benefits to both lenders and borrowers. Borrowers are able to negotiate with lenders on better terms. Highly rated borrowers with good credit history can convincingly negotiate for lower interest rates or even waiver of collateral (Bennardo et al., 2009).

Houston, Lin and Ma (2010) show that information sharing mechanisms reduce adverse selection by improving the pool of borrowers and the knowledge of applicants’ characteristics therefore improving bank efficiency in the allocation of credit. Based on some case studies, for instance, Olweny and Shipho (2011) pointed out that CIS plays a key role in improving the efficiency of financial institutions by reducing loan processing costs as well as time required to process loan applications. Lin, Ma and Song (2012) show that information sharing institutions; through their incentive effects on curtailing imprudent behavior of borrowers are also valuable in addressing moral hazard problems. Besides, they show that information sharing helps to reduce average interest rates and information rent that banks can otherwise extract from their clients, reduce or even eliminate the information advantage of larger size banks and therefore should enhance credit market completion (Kusa & Okoth, 2013).

Information sharing can also create incentives for borrowers to perform in line with banks' interests. Johnson, Badger, Waltermire, Snyder and Skorupka (2016) shows that information sharing can motivate borrowers to repay loans, when the legal environment makes it difficult for banks to enforce credit contracts. In this model borrowers repay their loans because they know that defaulters will be blacklisted, reducing external finance in future. Büyükkarabacak and Valev (2012) show that, exchange of information
on defaults by banks motivate borrowers to exert more effort in their projects. Sutherland (2016) shows that information sharing can also mitigate hold-up problems in lending relationships, by eliciting more competition for borrowers and thereby reducing the informational rents that banks can extract. The reduced hold-up problems can elicit higher effort by borrowers and thereby make banks willing to lower lending rates and extend more credit.

Due to the increasing spate of Non-Performing Loans (NPLs), the Basel II Accord emphasized on credit risk management practices. Compliance with the Accord means a sound approach to tackling credit risk has been taken and this ultimately improves bank performance. Through the effective management of credit risk exposure, banks not only support the viability and profitability of their own business, they also contribute to systemic stability and to an efficient allocation of capital in the economy (Psillaki et al., 2010). CIS is one way to screen loan applicants in order to mitigate defaults on loan advances. CIS also known as Credit Reporting 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 (KCISI, 2008). It also enables banks to know how borrowers repay their loans. Globally, the biggest problem facing commercial banks is the non-repayment of loans. Thus, the idea of establishing a CRB was conceived in order to enable banks in: sharing information on default among banks (Song, Yu, Ganguly & Turson, 2016), eliminating corrupt borrowers – those with the aim of borrowing from different financial institutions with the aim of defaulting, providing commercial professional credit reference to prospective foreign investors and also identifying honest/credible borrowers based on known history and character in order to enhance profitability. Services of CRBs were first introduced in London and have now spread to other countries worldwide (Sacerdoti, 2005).

CRBs thrive in a good legal environment where there is data protection law, a fair credit reporting law, a data retention law, consumer protection admissibility of electronic evidence and certification of electronic signatures; without which credit reporting becomes a shenanigan (Sacerdoti, 2005).
1.1.3 Commercial Banks in Kenya

Kenya’s banking industry is divided into three tiers with a total of 43 banking houses. These include both commercial and public banks although strictly speaking, there is no such thing as a public bank since all of them aim to make profits openly with common burdens of unpaid loans as well as risky ventures in their day to day operations. The Central Bank of Kenya (CBK) reports that there are 43 banks currently operating in Kenya with 6 banks found in the top tier controlling almost 50 percent of the market followed by 16 Tier 2 banks that control another 42 percent of the market leaving out a paltry 8 percent of the market controlled by Tier 3 banks which are mainly 21 small private banks. In effect, the Tier 1 banks are the old stable large banks composed of Cooperative, Commercial, Equity, Barclays, Standard Chartered and CBA. Some of the major Tier 2 banks include Diamond Trust, NIC, Family bank, Eco bank, HFCK, NIC, I&M and CFC Stanbic. The final Tier 3 banks include such banks as Baroda, Jamii Bora, Fidelity, ABC and Guardian. Although the CRB Act requires linkage of the banks to the CRBs, it is up to the individual banks to decide when to use the CRB information on their clients thus making it difficult to fully enforce the powerful tool of CRBs.

Even though the CRB policy is aimed at reducing the changes of risky loans, reports indicate that there was an increase in the defaulting loans by almost 35 percent in the recent past including 2012 and 2013. This is in spite of there being stringent measures taken by most banks to ensure compliance with CRB guidance. The reports further indicated that the main cause of defaulting was now high interest rates in which even after a client has taken a loan, it became difficult to service the same due to high charges on the rates. Other observations have come up to prove that the defaulting loans have actually come down yet in Kenya, commercial banks of high repute have gone under in the recent past due to bad debts (CBK, 2015). And in the recent past, the commercial banks have realized losses and recessed profit margins due to high number of bad debts.

1.1.4 Credit Referencing

Credit referencing is basically a system where details about an individual’s record with
credit is tracked, monitored and scored. According to Brown et al. (2011), credit information sharing is to collect and collate credit financial data on borrowers including individuals, businesses, companies, sole proprietors, companies and Government entities. A credit reference bureau is a company that provides credit information on borrowers. The credit information is sourced by the credit reference bureau from the banks and financial institutions and from the companies’ registries in respect of companies.

The credit information collected on individuals can be made available to financial institutions upon request. Since financial institutions do not like customers who do not pay their loans, a borrower who has a good credit history is more likely to get a loan and at a reasonable interest rate. According to Zehnder (2007) on Credit Reference Reporting (CRR), relationship banking, and loan repayment; CRR arose from the demand by financial institutions to hedge and diversify credit risk, but they have now become a major investment tool as well. Almost all credit referencing takes the form of the credit default swap, which transfers the default risk of one or more corporation’s entities from one party to the other (Galindo & Miller, 2001).

Credit Reference Bureaus (CRBs) are private companies that compile databases that potential lenders can access to help them evaluating a consumer's credit application. They provide information to potential lenders about an applicant's credit record, producing a “credit report” that contains details of the payment and credit history of an individual, financial accounts and the way they have been managed, as well as other information of interest to the credit industry (Ferretti, 2006).

According to Wandera (2010) Credit Reference Reports help banks stem out misconducts 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 banks suppress the levels of Non-Performing Loans while increasing their loan books. Credit information sharing to bank customers, is expected to minimize the problem of information asymmetry in the financial sector. Information asymmetry between banks and borrowers is one of the main contributors to high cost of credit. Thus, banks tend to load a risk premium to borrowers because of lack of customer
information. This in turn, increases cost of borrowing, meaning repayment of loans escalate which translates to a high level of default. The Credit Information Sharing (CIS) apparatus is therefore expected to facilitate the development of information capital to reduce information asymmetry or increase information symmetry and allow cost of credit to decline substantially. It is therefore the Central Bank’s expectation that savings arising from the sharing of credit information will translate to lower cost of credit.

According to CBK (2010), CRB complement the fundamental role played by banks and other financial institutions in extending financial services within an economy. CRBs assist lenders to make faster and more accurate credit decisions. They collect, manage and disseminate customer information to lenders in the form of credit reports. These credit reports will help lenders to decide whether to extend an applicant’s loan, credit card overdraft facility or extend any other product, which is reliant on customer’s ability to repay at a determined cost. Credit referencing has seen a decline in bad debts amongst commercial banks (CBK, 2015), the report further noted, with the mandatory requirement that all borrowers get a credit report before being awarded a cash overdraft or loan has ensured that only credit worthy borrowers get funds. And as the commercial banks enforce the requirements, it is them that realize the benefits in the long run.

1.1.5 Credit Reference Bureaus and Commercial Banks

In establishing the Credit Reference Bureaus, what needed to be done first was to convince banks and other financial institutions that if one institution benefits, they all benefit Leonard, (1996). Customers are then well served and, consequently, receive products that they can afford. Thus, there will be fewer loan losses, as the credit institutions loan money responsibly, and then fewer write-offs. In the end, much as with the fraud detection models, savings can be passed on to customers in the form of lower interest rates and better customer service. However, Cavelaars and Passenier (2012) cautions that although individual banks may find it hard to resist following these trends as a result of market pressure, such an increased homogeneity of business models may augment the vulnerability of the banking sector as a whole.

Empirical studies done on performance of selected commercial banks indicate that the
increase of repayment default which causes default risk negatively impacts the performance of commercial banks. Sharing of credit information between lenders shows borrowers’ debt exposure to all participating lenders ultimately reducing aggregate indebtedness as highly indebted individuals receive less credit (Bannrado et al., 2009).

Bustelo (2009) in a study on integrating microfinance to credit information sharing in Bolivia found out that the new private credit bureau greatly improved lending operations particularly for MFIs. With the new bureau, lenders could verify the overall indebtedness of a customer before extending credit. According to the CBK the introduction of CRBs was an effort to primarily address information asymmetry, to build information capital, to reduce information search costs and to base the extension of credit on financial identity (Central Bank of Kenya, 2011). At first in 2010 it was made mandatory for commercial banks in Kenya to share only negative credit information in terms of NPLs (CBK, 2010). By 2011, there were two licensed CRBs and in 2012 non – bank lenders such as Saccos and Microfinance institutions were also required to participate in credit information sharing. In addition, at this point in time, information shared was to include both positive and negative information (Central/ Bank of Kenya, 2012). Since then the uptake of credit reports by banks has been increasing tremendously.

The individual financial institutions can use the information from the CRBs for credit scoring and evaluating client credit worthiness. The process of modeling the variables important in the extension of credit is referred to as credit scoring (Tchamyou & Asongu, 2017). Based on statistical analysis of historical data of the customers, certain financial variables are determined to be important in the evaluation process of a credit applicant’s financial stability and strength. This analysis produces coefficients which are translated into score weights. Subsequently, information on these important variables is obtained for new bank customers. An overall score for these new applicants is produced by adding the weighted scores which were generated from the responses to the different variables. If this overall score is above a predetermined cut-off point, the loan applicant receives a certain line of credit. If not, the applicant is denied credit.
1.2 Statement of the Problem

Many banks in Kenya have been experiencing poor financial performance. Most of these financial problems arise from lack of credit information on the loan applicants which then affect their ability to recover both the principle and the interest. There have been efforts to advance credit information sharing on loan applicants among commercial banks so as to reduce the default rates among loan beneficiaries. Thus, it is important to understand the effect that credit information sharing has on performance of commercial banks (Asongu, Anyanwu & Tchamyou, 2016).

Various studies have been done on the effect of credit information sharing on performance such as Gaitho (2013), Kipyego and Wandera (2013) and Shisia et al. (2014) have in turn been carried out regarding the new phenomena of CRBs in the Kenyan banking sector and the main focus has been on how the CRBs and information sharing have influenced the NPLs but failing to link information sharing with performance. However, these studies concentrated on implementation of CRB and its effect without looking into the accuracy of the processes of gathering credit history data which has a bearing on credibility of scoring. The studies also did not consider the effect of competitiveness of information sharing and the need to protect the performance of commercial banks which is the focus of the current study.

Kabiru (2002) did a study on the relationship between credit risk assessment practice and the level of non-performing loans of Kenyan banks. Noting that credit risk assessment practices affected the level of NPLs. This study concentrated on risk assessment practices and does not mention the effect of credit information sharing to performance. Adam (2003) did an analysis of the usefulness of annual financial statements to credit risk analysts in Kenyan commercial banks. The study established that annual financial statements are important in determining the riskiness of organizations applying for loans and ultimately their ability to repay the loan. The study doesn’t mention information sharing and performance, thus creating a knowledge gap. Mutwiri (2003) studied the use of 6C’s credit risk appraisal model and its relationship with the level of nonperforming
loans of commercial banks in Kenya. The study fails to mention the effect of information sharing on performance.

Credit information sharing is fairly a new concept and little research has been done on the subject. The above studies did do not cover the effect of credit information sharing on performance, hence creating a knowledge gap, which this study wished to fill. This study therefore sought to investigate the impact of credit information sharing on the performance of selected commercial banks in Kenya.

1.3 Objectives of the Study

1.3.1 General objective

To investigate the effect of credit information sharing on the performance of selected commercial banks in Kenya.

1.3.2 Specific Objectives

The specific objectives include:

i. To establish the influence of competitive information sharing on the performance of commercial banks in Kenya.

ii. To assess the effect of credit scoring on the performance of commercial banks in Kenya.

iii. To determine the effect of efficiency in the information gathering process on the performance of commercial banks in Kenya.

iv. To examine the effect of information accuracy on the performance of commercial banks in Kenya.

1.4 Research Hypothesis

\( H_{01} \): Competitive credit information sharing has no significant effect on the performance of Commercial banks in Kenya

\( H_{02} \): Credit scoring has no significant effect on performance among commercial banks in Kenya
\textbf{H_{03}}: Efficiency in information gathering has no significant effect on performance among commercial banks in Kenya

\textbf{H_{04}}: Information accuracy has no significant effect on performance of among Commercial banks in Kenya

\textbf{1.5 Significance of Study}

The findings of this study would be useful in providing knowledge on the use of positive information shared by the commercial banks to engage the lender on the pricing as the credit score becomes a bargaining power. The shared information would guide commercial banks on how to analyze and give credit services to only credit worth customers.

The findings of this study would aid in the decision making among commercial bank managers with regard to credit information sharing and assess the influence of credit referencing on the overall level of banks’ profitability. They would also provide information to the Central Bank of Kenya which may be used to improve policy formulation and amendments on the credit reference bureaus and their operation hence aid in development of policies necessary to enable a conducive environment for the banks and loan applicants to promote Kenya’s economic growth and performance.

The findings would reveal to the credit borrowers on what needs to be done to improve information sharing which would translate into increased access to credit and reduced cost of capital. It would provide a framework for better information sharing through credit reference bureaus which would enhance information symmetry, ease adverse selection and counter moral hazard which would significantly reduce the non-performing loans portfolio among financial institutions.

The Government would also benefit as this research would propose ways of addressing challenges facing commercial banks in Kenya. This research can help to make Policy changes to the Banking (Credit Reference Bureau) Regulations 2008 that govern the licensing, operation and supervision of credit reference bureaus by the Central Bank of Kenya. Scholars who are interested in further research in this field would be able to
investigate any research gap in the study not researched or be under researched by the researcher in the course of providing the evidences supporting the research topic and research problems.

1.6 Scope of the Study

The study concentrated on the effect of credit information sharing on profitability of commercial banks in Kenya. The specific context of interest was 43 Commercial banks in Kenya. The study utilized both primary data and secondary data. The data was collected in the month of July and August 2017.

1.7 Limitations of the Study

The study used questionnaires to collect primary data. There might be a problem of social desirability whereby some of the respondents might tend to exaggerate or give information deemed to please others instead of being honest.

Another limitation was inadequate finances to fund the expensive undertaking which included travelling and payment of research assistants. An appropriate budget plan had been developed to ensure that all expenditures are justifiable and within the budget.

1.8 Organization of the Study

The project comprises of five chapters. Chapter one involves conceptual and contextual discussion on the statement of the problem, outlines the research objectives, gives significance of the study, scope and limitations. Chapter two presents the theoretical underpins and empirical literature clearly establishing the gaps in research. The chapter three deals with research methodology while chapter four deals with analysis of the research findings. Chapter five summarizes the analyzed findings, makes relevant conclusions and recommendations.
CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

This chapter summarized the information from other researchers who have carried out their research in the same field of study. The specific areas covered here are theoretical literature, empirical review on credit information sharing, and its significance, conceptual framework and research gaps.

2.2 Theoretical Literature

This section discusses the theories underpinning the current study. The underpinning theories include: The Information Asymmetry Theory; the Moral Hazard Theory; and the Financial intermediation theory.

2.2.1 Information Asymmetry Theory

The asymmetric information theory was advanced by Akerlof, Spence and Stiglitz who won the Nobel Prize for their contribution to economic theory. Akerlof (1970) posited that there is a potential for market failure in situations where the buyer and seller possess asymmetrical valuation information as illustrated by the ‘lemons’ problem. Vickrey and Mirrlees, also Nobel laureates, explored economic transactions in the real world, where not all players possess the same information about the costs and benefits of a given deal.

Information asymmetry refers to a situation where business owners or managers know more about the prospects for, and risks facing their business, than do lenders (Rochaix, 1989). It describes a condition in which all parties involved in an undertaking do not know relevant information. In a debt market, information asymmetry arises when a borrower who takes a loan usually has better information about the potential risks and returns associated with investment projects for which the funds are earmarked.

The lender on the other hand does not have sufficient information concerning the borrower (Edwards & Turnbull, 1994). Binks and Ennew (1997) point out that perceived information asymmetry poses two problems for the banks, moral hazard (monitoring
entrepreneurial behavior) and adverse selection (making errors in lending decisions). Stiglitz and Weiss (1981) pointed out that in a market with imperfect information the lender is not able to discriminate between different types of borrowers.

It is difficult for financial institutions to overcome these problems because appraisal and monitoring requires a lot of resources and this may not be economical where lending is for relatively small amounts. This is because information needed to screen credit applications and to monitor borrowers is not freely available to lenders. Bankers face a situation of information asymmetry when assessing lending applications (Binks & Ennew, 1997). The information required to assess the competence and commitment of the entrepreneur, and the prospects of the business is either not available, uneconomic to obtain or difficult to interpret. Thus, creates two types of risks for the Banker (Deakins & Hussain, 1999).

Information asymmetry theory is applicable in this study as it shows how credit valuation can be done using information that is accurate and competitively shared as it would be relevant during the credit appraisal process hence positively influencing the performance of commercial institutions like the case of commercial banks operating in Kenya.

2.2.2 Moral Hazard Theory

The moral hazard problem implies that a borrower has the incentive to default unless there are consequences for his future applications for credit. This results 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 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 Alary and Goller (2001).

According to Klein (1992) credit information sharing motivates borrowers to honor their contractual obligations. Borrowers will likely honor their loans obligations since they know if they default, they will be negatively listed which essentially implies that they will be excluded from formal borrowing in future. Both cases demonstrate that default
attract heavy penalty in terms of interest rates or exclusion from future borrowing hence information sharing is a mechanism that helps to overcome the moral hazard challenges postured by borrowers (Padilla & Pagano, 2000).

This study in anchored on this theory as it encourages the gathering of accurate and credible information, during the assessment of the credit process so as to reduce credit risks and increase financial performance of financial institutions.

2.2.3 Financial intermediation Theory

A Financial intermediary is an entity that acts as the middleman between two parties in a financial transaction. Common examples of financial intermediaries include commercial banks, investment banks, insurance companies, pension funds and mutual funds (Seed, 2005). Financial intermediaries have the role to create assets for creditors and liabilities for debtors which are much more attractive for each of them than if the transfer of funds from creditor to debtor were to be made directly between the two parties (Diamond, 1984). Fundamentally, financial intermediation is about enticing investors to buy securities backed by investments whose risks the investors cannot fully evaluate. The intermediary, such as a bank, insurance company, hedge fund, or ordinary corporation, specializes in evaluating risk. According to Saeed (2005), commercial banks are considered to be financial intermediaries due to their nature of mobilizing deposits from entities at low interest rates and creation of credit using the same funds at a relatively higher rate on the deposit rate.

When information asymmetries are not the driving force behind intermediation activity and their elimination is not the commercial motive for financial intermediaries, the question arises which paradigm, as an alternative, could better express the essence of the intermediation process. It is the opinion of this author that the concept of value creation in the context of the value chain might serve that purpose. The absorption of risk is the central function of both banking and insurance firms. The risk function bridges a mismatch between the supply of savings and the demand for investments as savers are on
average more risk averse than real investors. Risk means maturity risk, counterparty risk, and market risk (Beck, Lin & Ma, 2014).

2.3 Empirical Literature Review

This section reviews the findings of empirical studies done on the impact of CRBs on competitive information sharing, interest rates and quality of assets. This is meant to identify the gaps in research so as to inform the current study.

2.3.1 Competitive Information Sharing and Performance of Commercial Banks

Thuo (2016) did a study to determine the effect of sharing of credit information on financial performance of commercial banks in Kenya. The researcher employed a descriptive research design. A regression model was used to determine effects of sharing of credit information on banks’ performance in financial perspective. The study established an insignificant negative relation between credit information sharing assets quality and banks’ performance in financial perspective. Results also found a negative but significant relation between capital adequacy and financial performance and an insignificant positive relation between liquidity and banks’ performance in financial perspective. From this study it can be asserted that failure by the commercial banks in sharing credit information increases credit risk, which in turn reduces banks’ financial performance. There is need for the management of the commercial banks in Kenya to set up appropriate mechanisms of sharing credit information in order to reduce credit risk and enhance their financial performance. Thuo (2016) concentrated on credit information sharing assets quality and capital adequacy as study variables not competitiveness in sharing information, credit scoring and efficiency in information sharing which is the focus of the current study.

Kwambai and Wandera (2013) in the study on the effects of credit information sharing on nonperforming loans in Kenya using Kenya commercial bank. The study specifically aimed at establishing the trend of bad loans before and after the introduction of CRB, to identify the factors that account for bad loans and to determine the economic sector that records higher bad loans and the efforts taken to reduce the risk in this sector. Descriptive
case research design approach and stratified proportionate random sampling technique was used to select the sample. Quantitative data was analyzed using descriptive statistical tools such as the mean and the percentiles while qualitative data was analyzed using content analysis. The study established that credit information sharing led to overall reduction in the operating costs associated with debt approval and collection. With CIS mechanisms the number of staff employed in the credit department will reduce based on the fact that fewer staff will be required to approve loans and as such the commercial banks to reduce the staff cost by reducing the number of staff involved in loan approval and collection. This implies that banks should come up with strong and appropriate measures that will guide the credit information sharing to boost their overall financial performance. The study by focused on the level of NPL before and after introduction of credit information sharing. The current study looks into the efficiency of credit scoring and information sharing and its effect on loan disbursement and bank performance.

Nyangweso (2013) did a study on the relationship between credit information sharing and loan performance of commercial banks in Kenya. Descriptive and correlation research designs were employed. The study established that loan performance as measured by loan default rate is negatively related to credit information sharing, lending rate and total loans. The study concluded that sharing of credit information in credit appraisal is of great significance in loan recovery. The management of the commercial banks in Kenya, should have clear policies and guidelines to govern loan disbursement and loan recovery. Proper credit appraisal should be done before granting a loan facility to a customer through the use of credit information sharing platform that is established by the Central Bank of Kenya. The study focused on the relationship between credit information sharing and loan performance and not similar variable as those in current study.

Wambui (2012) did a study on the impact of credit information sharing on credit risk for commercial banks in Kenya. Descriptive research design was employed. Both primary data and secondary data were used. To test whether the difference between the expected and observed frequencies was significant, chi-square test was employed. Data was analyzed using SPSS. The study established a significant difference on the reports requested by banks from CRB. It concluded that credit information sharing has a positive
impact on credit risk although not statistically significant. The commercial banks in Kenya are also encouraged to make use of the current CRBs in profiling customer risk especially the portfolio at risk. The study focused on reports of CRB to banks and not the efficiency with which the credit scoring is done and the efficiency of information as is the case of the current study.

Mutesi (2011) did a study on information sharing, risk management and financial performance of commercial banks in Uganda. The study specifically sought to examine the relationship between information sharing and risk management, to examine the relationship between information sharing and financial performance, to investigate the relationship between information sharing, risk management and financial performance. A sample of 104 commercial banks branches in Kampala was selected. Across sectional research design was employed. The primary data collected through questionnaires was analyzed using SPSS, correlation and regression analysis. The results of the analysis showed a positive correlation of all the study variables. This implies that there is need for the commercial banks to build strong information sharing facilities such as Credit Reference Bureaus, recruit competent and well-trained staff to increase efficiency in information gathering and accuracy of information used. The study focused on risk management as the independent variable and not performance as is the case of the current study.

2.3.2 Credit Scoring and Performance

Muturi (2014) did a study on credit scoring practices and the level of nonperforming loans of deposit taking microfinance institutions in Kenya. The study employed descriptive research design whereby a census survey of all the 8 deposit taking microfinance institutions that were registered and operating by the year 2013 was done. Descriptive statistical tools such as the mean and percentiles were used in describing data while inferential statistics was used to generalize samples to populations. Regression analysis was used to analyse the relationship between credit scoring practices and nonperforming loans. The latest SPSS version was used in analysing the data. The study established that deposit taking institutions adopted credit scoring practices in screening
and analysing risk before awarding credit to clients. It concluded that there was a negative relationship between credit scoring practices and nonperforming loans. When the percentage of nonperforming loans increases, the financial performance of the financial institutions reduces. This implies that proper and efficient credit scoring measures should be adopted by the financial institutions in order to increase the rate at which their loans lent to customers are recovered. The study measured performance in terms of NPL and not return on investment or equity as is the case in the current study.

Milimu (2013) examined the relationship between credit scoring by commercial banks and small and medium enterprises’ loans accessibility in Kenya. The study sought to establish the relationship between credit scoring by commercial banks and loans accessibility by SMEs in Kenya. The census type of sampling was used comprising of all 43 commercial banks in Kenya. Descriptive analysis was used to analyze the data. Regression analysis was used to establish the relationship between credit scoring and loans accessibility by SME customers in Kenya through the Excel and SPSS statistical tools. The study established that there exists a strong positive relationship between credit scoring and loans accessibility by SME customers in Kenya. This is explained by the various parameters considered while scoring an SME credit customer. The commercial banks and SMEs in Kenya need to improve the adoption of credit scoring. The use of credit scoring will lead to an increase in loan accessibility by customers hence higher chances of greater performance levels. The study considered loan accessibility and not return on investment or equity hence limiting the application of its findings in the current study.

Samreen and Zaidi (2013) studied the design and development of credit scoring model for the commercial banks in Pakistan. The study aimed at evaluating credit risk in commercial banks of Pakistan using credit scoring models. They used logistic regression and discriminant to support the results of developed credit scoring model. The accuracy rate of Credit Scoring Model for Individuals was excellent, logistic regression (LR) had a high level of accuracy rate and the discriminant analysis credit scoring model for individuals. The study established that the Credit Scoring Model for Individuals assessed the creditworthiness of individual borrowers with high accuracy rate and distinguished
the high-risk loan applications to low risk prior to default. The banking industry in Kenya should use the advanced credit scoring techniques such as the genetic algorithms, fuzzy discriminant analysis and neural networks.

Mutie (2006) assessed credit scoring practices and nonperforming loans in the Kenyan commercial banks. The study was carried out to achieve two objectives, to evaluate the credit scoring practices in the Kenyan commercial banks and to assess the relationship between these credit scoring practices and Non-Performing Loans. Data was collected using questionnaires from 43 commercial banks in Kenya as at end of the year 2004. The findings were that most of the banks used credit-scoring practices compared to that which never used. Analyzing the level of non-performing loans measured by assets quality ratio and comparing this with the credit scoring practices using correlation analysis achieved the second objective. The results indicated a strong negative relationship between credit scoring practices and nonperforming loans with a correlation. Credit scoring practices should be an area that the bank management has to give a deeper concern in spearheading performance since nonperforming loans is one of the aspects of performance indication in Kenya. The study considered Non-Performing Loans NPLs and not return on investment or equity as is the case in the current study.

2.3.3 Efficiency in Information Gathering Process and Performance

Agarwal and Hauswald (2010) did a study on the effects of physical distance on the acquisition and use of private information in informationally opaque credit markets. The study established that borrower proximity facilitates the collection of soft information, leading to a trade-off in the availability and pricing of credit, which is more readily accessible to nearby firms albeit at higher interest rates ceteris paribus. Analyzing loan rates and firms’ decision to switch lenders provides further evidence for banks’ strategic use of private information. However, distance erodes lender’s ability to collect proprietary intelligence and to carve out local captive markets.

Houston et al. (2010) did a study to evaluate the viability of credit default swap (CDS) spreads as substitutes for credit ratings. The study focused on CDS spreads based on the
obligations of financial institutions, particularly fifteen large financial institutions that were prominently involved in the recent financial crisis. They established that data from 2006 through 2009 showed that CDS spreads incorporate new information about as quickly as equity prices and significantly more quickly than credit ratings. Although CDS spreads did not identify accumulating risk exposures before 2007, they quickly reflected disclosures and developments beginning in the summer of 2007 at the latest. Thus, CDS spreads are a promising market-based tool for regulatory and private purposes, and they may serve as a viable substitute for credit ratings. This implies that credit information gathering is crucial and consequently associated with higher lending, measured by private credit to GNP ratio, and lower defaults. The focus of the study however was on CDS, and not efficiency in information gathering process. CDS are totally different from information gathering.

Houston et al. (2010) did a study to investigate the impact of lenders' information sharing on firms' performance in the credit market using rich contract-level data from a U.S. credit bureau. The study established that information sharing reduces contract delinquencies and defaults, especially when firms are informationally opaque. The study results also revealed that information sharing does not reduce the use of guarantees, that is, it may not loosen lending standards. If banks obtain information about their client's credit worthiness, they can easily determine the quality of non-local credit seekers and lend to them as safely as they do with local clients. The study was done in the context of United states. Additionnaly, the study did not focus on commercial banks.

2.3.4 Information Accuracy and Performance

Smith, Staten, Eysell, Karig, Freeborn and Golden (2013) assessed accuracy of information maintained by the United States (US) Credit Bureaus by examining the level and frequency of Errors and their effects on consumers' credit scores. The study examined scoring of one thousand loan applicants from three different credit rating bureaus. Twenty six percent of study participants claimed to find at least one potentially material error and filed formal disputes with the relevant bureau(s). The findings indicated that every three reports analyzed showed that the credit bureaus altered the
credit report accordingly. In summary, the study concluded that credit bureau data were accurate enough to facilitate efficient lending and creditors' management of accounts, but individual consumers need to be vigilant to protect themselves against potentially costly errors in their files.

In another study, Getter (2017) focused on consumer and credit reporting, scoring, and related policy issues. The study acknowledges the importance of consumer information in screening for the risk that consumers are likely to engage in behaviors that are costly for businesses. Lenders rely upon credit reports and scores to determine the likelihood that prospective borrowers will repay their loans. The study notes that reporting inaccuracies arise from a number of reasons including: consumers inadvertently providing inaccurate data when applying for financial services. Furnishers inadvertently inputting inaccurate information into their databases. Challenges in matching information to the proper individual, such as in cases when multiple individuals have similar names and spellings. In some cases, the information may be properly matched, but the individual could be a victim of fraud or identity theft. The context that the study was done is not clearly brought out resulting into a gap that the current study sought to fill by examining how credit information sharing affect performance of Kenyan selected commercial banks.

Gorla et al. (2010) did a study on organizational impact of system quality, information quality, and service quality. Their study sought to establish the relationship between information systems’ (IS) quality and organizational impact. They hypothesized greater organizational impact in situations in which system quality, information quality and service quality are high. They also hypothesized a positive relationship between system quality and information quality. They tested their hypotheses using survey data. Using the structural equation model exhibited a good fit with the observed data. The study results showed that IS service quality is the most influential variable in the model (followed by information quality and system quality), thus highlighting the importance of IS service quality for organizational performance. Based on the findings of this study, it is evident that IS success models through the system quality-to-information quality and IS quality-to-organizational impact links. The study also concurs that on historical information must be verified ex-post, since it is difficult for a financial institution to validate the accuracy
of future information at the time of its issuance because the associated realizations have not yet occurred. Since financial institutions may not validate the accuracy of such information, then it becomes difficult to make accurate predictions on whether the clients of the financial institutions will be able to repay their obligations or not. A bank’s ability to assess the accuracy of the information obtained during contract negotiations depends on the information source.

### 2.4 Research Gaps

**Table 2.1: Research Gaps**

<table>
<thead>
<tr>
<th>Author/year</th>
<th>Title</th>
<th>Methodology</th>
<th>Findings</th>
<th>Recommendations</th>
<th>Gaps</th>
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<tbody>
<tr>
<td>Thuo (2016)</td>
<td>Effect of sharing of credit information on financial performance of commercial banks in Kenya</td>
<td>Descriptive research design and regression model</td>
<td>The study established an insignificant negative relation between credit information sharing, assets quality and banks’ performance in financial perspective.</td>
<td>There is need for the management of the commercial banks in Kenya to set up appropriate mechanisms of sharing credit information.</td>
<td>This is only linked CIS to financial performance creating a gap, as the current study covers performance.</td>
</tr>
<tr>
<td>Kwambai and Wandera (2013)</td>
<td>The effects of credit information sharing on non-performing loans in Kenya</td>
<td>Descriptive case research design approach</td>
<td>The study established that credit information sharing led to overall reduction in the operating costs associated with debt approval and collection.</td>
<td>Banks should come up with strong and appropriate measures that will guide the credit information sharing to boost their overall financial performance.</td>
<td>The study concentrated on non-performing loans and not overall performance.</td>
</tr>
<tr>
<td>Mutesi (2011)</td>
<td>Information sharing, risk analysis</td>
<td>Across sectional</td>
<td>The results of the analysis.</td>
<td>There is need for the study was done.</td>
<td></td>
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<tr>
<td>Study</td>
<td>Research Design</td>
<td>Findings</td>
<td>Recommendations</td>
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<tr>
<td>Muturi (2014)</td>
<td>Credit scoring practices and the level of nonperforming loans of deposit taking microfinance institutions in Kenya</td>
<td>There was a negative relationship between credit scoring practices and nonperforming loans.</td>
<td>Proper and efficient credit scoring measures should be adopted by the financial institutions.</td>
<td>The study covered NPLs in microfinance and doesn’t look at banks. Banks have some different operating regulations from MFI's.</td>
<td></td>
</tr>
<tr>
<td>Milimu (2013)</td>
<td>The relationship between credit scoring by commercial banks and small and medium enterprises’ loans accessibility in Kenya</td>
<td>The study established that there exists a strong positive relationship between credit scoring and loans accessibility by SME customers in Kenya</td>
<td>Commercial banks and SMEs in Kenya need to improve the adoption of credit scoring.</td>
<td>The study was done on SMEs and doesn’t mention commercial banks.</td>
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</tr>
<tr>
<td>Samreen and Zaidi (2013)</td>
<td>The design and development of credit scoring model for the</td>
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<td>The banking industry in Kenya should use the advanced credit scoring techniques such.</td>
<td>The study was done in Pakistan a different context from Kenya.</td>
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commercial banks in Pakistan assessed the creditworthiness of individual borrowers with 100% accuracy as the genetic algorithms, fuzzy discriminant analysis and neural networks.

Houston, Lin, Lin and Ma (2010) Impact of lenders' CIS on firms' performance in credit market using rich contract-level in U.S. credit bureau. Secondary data collected from 2006 through 2009. The study established that information sharing reduces contract delinquencies and defaults. If banks obtain information about their client's creditworthiness, they can easily determine the quality of non-local credit seekers and lend to them as safely as they do with local clients. The study was done in US, a different context from Kenya’s hence creating a gap.

Gorla, Somers and Wong (2010) Organizational impact of system quality, information quality, and service quality. Tested hypotheses using survey data relying on the structural equation model. Study showed that IS service quality is the most influential variable followed by information quality and system quality in affecting organizational performance. Historical must be verified ex-post. The study doesn’t look at CIS and how it affects performance in commercial banks but instead concentrated on system quality.

Source: (Author, 2018)

2.5 Summary of Literature Review

The Literature review on this study has focused on the credit information sharing and how it influences the performance of financial institutions. While lending to public borrowers and small sized institutions, is essential for the economies of the third world
countries, it is equally vital to ensure the repayment of loans to sustain the progress of the banks. Due to increased number of cases of Non-performing loans and business failures, the commercial banks need efficient techniques to notice and capture prospective successive credit borrowers by having sufficient information on their credit histories. Lending is a challenging proposition in any setting particularly in the developing world, where legal/judicial enforcement is weak, where information about the ability and willingness to repay of applicants is not readily available and where many of the prospective lenders are from a poor household/ firms; many of whom have never before borrowed and cannot pledge collateral to guarantee repayment. Thus, it is important for financial institutions to share whatever little information they have on borrowers and other clients so as to collectively improve their performance.

2.6 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 independent and dependent variables completes the framework for certain expected outcomes. Credit information sharing and performance of commercial banks is greatly involved; competitive information sharing, credit scoring, efficiency in information gathering, and information accuracy. These information sharing respond to the various forces in the commercial banks which include threats of new entry, intensity of rivalry, technological advancement and substitute products.
The conceptual framework identified the independent variables as competitive information sharing, credit scoring, efficiency in information gathering and information accuracy. Competitive information sharing has been operationalized in terms of usage of CRB and the costs associated with information gathering. The study examines how information costs and importance of CRB reports affect the competitiveness in information sharing and performance of commercial banks.
Credit scoring is operationalized in terms of risk assessment and classification which enable CRBs to give an index on the risk levels of each loan applicant. It is also operationalized using score cards and technology applied in allocating the scores. The third variable of the study is efficiency in information gathering. It looks at the competency of the persons contacted to collect information, enter into a system and generate scores that can be used to ascertain the riskiness of loan applicants. It is operationalized in terms of credit track records, establishment of risk profile of a loan applicant and credit sharing institution credibility.

The fourth variable is information accuracy. In order for the CRBs to be of benefit, they need to avail accurate information of every borrower which is not altered. This will depend on the technology in use, borrower’s disclosure of key information regarding their past credit records and site visits.
CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Introduction

In this chapter the research identified the procedures and techniques that was used in the collection, processing, analysis and presentation of data. Specifically, the following subsections were included; research design, target population, data collection instruments, data collection procedures and finally data analysis.

3.2 Research Design

Research design refers to the method used to carry out a research. Orodho (2003) defines a research design as the scheme, outline or plan that is used to generate answers to research problems. A descriptive research design was adopted in this study as it explains a subject by creating a pool of events, people and problems through data collection. This design was preferred for this research because it enabled generalization of the findings on the effect of credit information sharing on performance and the findings can be shared to the entire industry. In addition, descriptive research design accommodates analysis and relation of variables based on questionnaires and secondary data to be used in this study.

3.2.1 Empirical Model

This study adopted a multiple linear regression model; so as to test the relationship that the independent variables have on the dependent variable. Regression model was effective in testing the hypothesis since it addresses the cause-effect relationships (Darlington & Hayes, 2016).

The following analytical model was used.

\[ P = \alpha_0 + \beta_1 \text{CIS} + \beta_2 \text{CS} + \beta_3 \text{EIG} + \beta_4 \text{IA} + \epsilon_i \]

Where;

\( P \) = Bank Performance which is measured by Return on Investment (ROI) and Return on Equity (ROE).
\( \alpha_0 \) - intercept coefficient
ε_i – error term (extraneous variables)
CIS - Competitive information sharing
CS – Credit Scoring
EIG – Efficiency in Information Gathering
IA – Information Accuracy
β_1, β_2, β_3 and β_4 = regression coefficients

The findings from the analysis was presented in charts, pie charts, figures, graphs and tables.

### 3.2.2 Operationalization and Measurement of Variables

The variables of the study are operationalized in Table 3.1 below.

<table>
<thead>
<tr>
<th>Table 3.1: Operationalization of Study Variables</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Variable</strong></td>
</tr>
<tr>
<td>Competitive Information Sharing</td>
</tr>
<tr>
<td>Credit Scoring</td>
</tr>
<tr>
<td>Efficiency in Information Gathering Process</td>
</tr>
<tr>
<td>Information Accuracy</td>
</tr>
<tr>
<td>Performance</td>
</tr>
</tbody>
</table>

*Source (Author, 2017)*

### 3.3 Target Population

Elmore *et al*, (2006), defines the target population as the population from which we would want to collect data if we were conducting a complete census rather than a sample
survey. For this research project, all the 43 commercial banks licensed under the banking Act as at 31 December 2015 (Appendix VI) in Kenya formed the target population. A census approach was employed since the numbers of banks were few and the information could easily be accessed.

3.4 Sampling Design

The study adopted purposive sampling and target senior staffs from the finance and credit departments in the bank who had information on credit sharing and how it affected performance of their specific banks. Purposive sampling was used because the experience and judgement of the researcher informed the sample to be selected for inclusion in the study. The study excluded Savings and Credit Societies because they were beyond the scope of regulation by Central Bank of Kenya. SACCOs were also excluded because they have not proactively shared information on credit standing of their customers.

3.5 Data Collection Process

The study used primary and secondary data. Primary data was collected using questionnaires which were both open and close-ended questions. The closed ended questions were used to test the rating of various attributes for each of the four study variables (Competitive information sharing; Credit Scoring; Efficiency in Information Gathering and Information Accuracy) and this helps in reducing the number of related responses in order to obtain more varied responses. The open-ended questions provided additional information that might not have been captured in the close-ended questions.

Secondary data was collected from CBK annual supervision reports and the banks specific audited accounts through the document review guide. This data relates to, total assets, total NPLs, total loans and advances. Secondary data collected covered a period 2011 to 2016. This period was selected since that is the time that banks started actively sharing information through generating and sharing information through credit referencing bureau (CRB).
3.6 Validity and Reliability

3.6.1 Validity

Kothari (2004) notes that validity measures the accuracy of the instruments in obtaining the anticipated data that can meet the objectives of the study. Yin (2013) noted that validity is established by experts’ judgment. The researcher sought the assistance of University Supervisors to review the process used to develop the test as well as the test itself, and then make a judgment about how well items represent the intended content area. Pre-testing of the research instruments was done using three subjects randomly drawn from the population before the field collection of data to determine the validity.

3.6.2 Reliability

A reliable instrument is one which consistently produces the expected results when used more than once to collect data from to achieve reliability the instruments was analysed using Cronbach’s alpha, a useful and flexible tool that you can use to investigate the reliability of your language test results (Peters, Fritz & Krotish, 2013). According to Orodho (2004), a coefficient of at least 0.7 or above for reliable data.

3.7 Data Analysis and Presentation

The data that was collected was cleaned, coded and entered into computer application for further analysis. The data was analysed using Statistical Package for Social Science (SPSS version 23.0) program. Descriptive analysis was done where frequencies, means and percentages (the central measures of tendencies) was used to organize, describe and summarize the data. In order to facilitate inferential statistics, the study computed a composite index for all variables using the various indicators. This allowed inclusion of all parameters in the computation of inferential statistics.

The study used multiple regression analysis. Before carrying a regression analysis, the researcher conducted diagnostic tests to determine the suitability of dataset for regressing. These diagnostic tests included Multicollinearity, Normality, and Heteroscedasticity.
Normality test was done using Kurtosis and Skewness. Data analysis proceeds if the kurtosis and skewness is between +2 and -2 as this will be an indicator that the data has a normal distribution (Kothari, 2004). Multicollinearity was detected using the Variance Inflation Factor VIF. Heteroscedasticity is useful in examining whether there is difference in residual variance of the observation period to another period of observation (Godfrey, 2008), and it was done using Scatter Plots.

3.8 Ethical Considerations

Informed consent was obtained from all those participating in the study. Those not willing to participate in the study were under no obligation to do so. Respondents’ names were not indicated anywhere in the data collection tools for confidentiality and information gathered was only used for the purposes of this academic study. The necessary research authorities were consulted and permission granted.
CHAPTER FOUR
DATA ANALYSIS AND PRESENTATION

4.1 Introduction

This section represents data collected and analyzed from the field. The purpose of this study was to investigate the effect of credit information sharing on the performance of selected commercial banks in Kenya. The specific objectives of the study were; to establish the effect of competitive information sharing on the performance of commercial banks in Kenya, to assess the effect of credit scoring on the performance of commercial banks in Kenya, to establish the effect of efficiency in the information gathering process on the performance of commercial banks in Kenya and to assess the effect of information accuracy on the performance of commercial banks in Kenya. The data collected was then coded into SPSS version 23 for analysis using descriptive and inferential statistics.

4.1.1 Response Rate

The study sampled 43 commercial banks licensed under the banking Act as at 31st December 2015 in Kenya. Out of 43 questionnaires administered by the researcher, only 32 duly filled questionnaires were returned by the respondents. This gave a response rate of 75%. The findings are indicated in the Table 4.1 below.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Response</td>
<td>32</td>
<td>75</td>
</tr>
<tr>
<td>Non- Response</td>
<td>11</td>
<td>25</td>
</tr>
<tr>
<td>Total</td>
<td>43</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: (Research Data, 2018)

According to Mugenda (2008), a response rate of 50% is adequate for analysis and reporting, a rate of 60% is generally good while a response rate of above 70% is excellent. Similarly, Babbie (2010) noted that a response rate of above 70% is deemed to be very good. Therefore, the response rate in the current study was sufficient for analysis and reporting of the findings.
4.1.2 Diagnostic Tests

In order to ascertain the validity of the data used, the study conducted three tests: multicollinearity, normality and heteroscedastic tests as discussed below:

4.1.2.1 Multicollinearity

Multicollinearity was tested using Variance of Inflation Factor VIF. The findings are illustrated in Table 4.2

Table 4.2 Multicollinearity Test

<table>
<thead>
<tr>
<th>Collinearity Statistics</th>
<th>Tolerance</th>
<th>VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Competitive information sharing</td>
<td>.444</td>
<td>2.252</td>
</tr>
<tr>
<td>Credit scoring</td>
<td>.390</td>
<td>2.563</td>
</tr>
<tr>
<td>Efficiency in information gathering</td>
<td>.280</td>
<td>3.578</td>
</tr>
<tr>
<td>Information accuracy</td>
<td>.277</td>
<td>3.610</td>
</tr>
</tbody>
</table>


Source: (Research Data, 2018)

From the results in Table 4.2 above, competitive information sharing had VIF of 2.252, credit scoring had 2.563, efficiency in information gathering had 3.578 and information accuracy had 3.610. Since the values of VIF are less than 5, it shows that there was no Multicollinearity in the data set.

4.1.2.2 Normality Test

Normality test was conducted using Skewness and Kurtosis. The findings are indicated in Table 4.3:
Table 4.3: Normality Test

<table>
<thead>
<tr>
<th></th>
<th>N Statistic</th>
<th>Skewness Statistic</th>
<th>Std. Error</th>
<th>Kurtosis Statistic</th>
<th>Std. Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bank performance</td>
<td>32</td>
<td>.231</td>
<td>.171</td>
<td>-1.636</td>
<td>.340</td>
</tr>
<tr>
<td>Competitive information sharing</td>
<td>32</td>
<td>-1.252</td>
<td>.171</td>
<td>.161</td>
<td>.340</td>
</tr>
<tr>
<td>Credit scoring</td>
<td>32</td>
<td>-.176</td>
<td>.171</td>
<td>-1.218</td>
<td>.340</td>
</tr>
<tr>
<td>Efficiency in information gathering</td>
<td>32</td>
<td>.271</td>
<td>.171</td>
<td>-1.168</td>
<td>.340</td>
</tr>
<tr>
<td>Information accuracy</td>
<td>32</td>
<td>.118</td>
<td>.171</td>
<td>-1.656</td>
<td>.340</td>
</tr>
</tbody>
</table>

Source: (Research Data, 2018)

From the findings in Table 4.3 above, the highest skewness was -1.252 with corresponding highest Kurtosis of -1.656. The lowest Skewness was 0.188 with corresponding lowest Kurtosis of 0.161. According to Kothari (2004), data analysis when values of Kurtosis and Skewness lie between -2 and +2. It can therefore be deduced that the data set was normally distributed.
4.1.2.3 Heteroscedasticity

Heteroscedasticity was useful in examining whether there is difference in residual variance of the observation period to another period of observation (Godfrey, 2008).

**Figure 4.1: Heteroscedasticity Test**

*Source: (Research Data, 2018)*

From the Figure 4.1 above, the data points are scattered with no clearly established pattern. This shows that variables were not correlated. This further shows that the data set had no heteroscedasticity but had homoscedasticity, which is desirable for modelling of regression equation.
4.2 Demographic Findings

The study sought to determine the general information about the respondents. The results are shown in this subsection.

4.2.1 Gender of the Respondents

The gender of the respondents is shown in Figure 4.2 below.

![Gender of the Respondents](image)

**Figure 4.2: Gender of the Respondents**  
*Source: (Research Data, 2018)*

From the findings in Figure 4.2 above, 56% of the respondents were male and 44% were female. This indicates that the researcher sought information all-inclusive gender.

4.2.2 Age of the Respondents

The distribution age of the respondents is as shown in the Figure 4.3:
Figure 4.3: Age of the Respondents

Source: (Research Data, 2018)

From the findings in Figure 4.3 above, 12.5% of the respondents were 19-29 years old, 21.9% of the respondents were 30-40 years old, 37.7% of the respondents ranged between 41-51 years old and 28.1% of the respondents were above 51 years old. Thus, the study established that most of the respondents were aged between 41-51 years old hence more experienced.

4.2.3 Length of Service of the Respondents

The length of the service of the respondents is as shown below in Figure 4.4

Figure 4.4: Length of Service of the Respondents

Source: (Research Data, 2018)
From the findings in Figure 4.4, the researcher found out that 12.5% had worked at their current station less than 2 years, 21.9% of the respondents had worked at their current station between 2-6 years, 31.3% of the respondents had worked at their current station between 6-9 years and 34.4% had worked above 10 years. Therefore, the researcher found out that most of the respondents’ length of service was above 10 years thus more experienced at their current work station.

4.2.4 Departments

The findings on departments that respondents worked in are indicated in Table 4.4 below.

<table>
<thead>
<tr>
<th>Departments</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Credit Administration unit</td>
<td>8</td>
<td>25.0</td>
</tr>
<tr>
<td>Corporate banking</td>
<td>9</td>
<td>28.1</td>
</tr>
<tr>
<td>Business banking</td>
<td>8</td>
<td>25.0</td>
</tr>
<tr>
<td>Personal banking</td>
<td>7</td>
<td>21.9</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>32</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

Source: (Research Data, 2018)

From the findings in Table 4.4 above, 25% of the respondents worked either credit administration unit or business banking, 28.1% worked in corporate banking while 21.9% worked in personal banking. This shows that respondents were equally drawn across the departments of the studied banks, therefore, representative findings were sought.

4.3 Descriptive Findings

The main objective of this study was to investigate the effect of credit information sharing on the performance of selected commercial banks in Kenya. The descriptive findings on each specific objective are indicated in subsequent sections below.
## 4.3.1 Competitive Information Sharing

Several statements on competitive information sharing were carefully identified by the researcher, the respondents were requested by the researcher to indicate their extent of agreement with each statement using Likert scale of; 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree and 5= Strongly Agree. The findings are indicated in the Table 4.5 below.

### Table 4.5: Competitive Information Sharing

<table>
<thead>
<tr>
<th>Competitive Information Sharing</th>
<th>Mean</th>
<th>Std. Dev</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Our credit scoring system gives information on borrowers’ capability to repay loans</td>
<td>3.31</td>
<td>1.11</td>
</tr>
<tr>
<td>• Complete information about the borrower’s payment characteristic helps recovery of credit</td>
<td>3.68</td>
<td>1.09</td>
</tr>
<tr>
<td>• Using CRB enhances borrowers’ chances of repaying loans</td>
<td>4.18</td>
<td>.737</td>
</tr>
<tr>
<td>• Documenting borrower behavior positively impact borrower repayment thus bank performance</td>
<td>4.31</td>
<td>.644</td>
</tr>
<tr>
<td>• Competitive information on borrowers helps in pooling risks for financial institutions</td>
<td>4.18</td>
<td>.820</td>
</tr>
<tr>
<td>• Quality information aides in assessing risks hence cut administrative costs</td>
<td>2.75</td>
<td>.950</td>
</tr>
<tr>
<td>• Repayment probabilities can be predicted by sharing accurate information by the banks</td>
<td>3.62</td>
<td>.975</td>
</tr>
<tr>
<td>• Timely credit reports about borrowers’ repayment history quickens credit processing</td>
<td>3.40</td>
<td>1.01</td>
</tr>
</tbody>
</table>

**Source:** (Research Data, 2018)

From the findings in Table 4.5, the respondents were not sure that their credit scoring system gave information on borrowers’ capability to repay loans with a mean of 3.31 and standard deviation of 1.11. The finding contradicts Getter (2017) who revealed that lenders rely upon credit reports and scores to determine the likelihood that prospective borrowers will repay their loans. Respondents agreed that complete information about the
borrower’s payment characteristic helped recovery of credit with a mean of 3.68 and standard deviation of 1.09. As noted by D’halster (2012), lenders need to access borrowers’ credit information as part of their assessment of the risks associated with lending. The respondents also agreed that Using CRB enhanced borrowers’ chances of repaying loans with a mean of 4.18 and standard deviation of 0.737. The finding concurs with Gorla et al. (2010) who revealed that since financial institutions may not validate the accuracy of such information, then it becomes difficult to make accurate predictions on whether the clients of the financial institutions will be able to repay their obligations or not.

Documenting borrower behavior positively impacted borrower repayment thus bank performance with a mean of 4.31 and standard deviation of 0.644. According to Thuo (2016), there is need for the management of the commercial banks in Kenya to set up appropriate mechanisms of sharing credit information in order to reduce credit risk and enhance their financial performance. Competitive information on borrowers helped in pooling risks for financial institutions with a mean of 4.18 and standard deviation of 0.820. The finding is consistent with Houston, Lin and Ma (2010) who showed that information sharing mechanisms reduce adverse selection by improving the pool of borrowers and the knowledge of applicants’ characteristics therefore improving bank efficiency in the allocation of credit. Respondents disagreed that quality information aided in assessing risks hence cut administrative costs with a mean of 2.75 and standard deviation of 0.950. The finding concurs with Alary and Goller (2001) who indicated that if lenders cannot assess the borrowers’ wealth, the latter will be tempted to default on the borrowing.

Respondents agreed that repayment probabilities could be predicted by sharing accurate information by the banks with a mean of 3.62 and standard deviation of 0.975. The finding concurs with Smith, Staten, Eyssell, Karig, Freeborn and Golden (2013) who revealed that credit bureau data were accurate enough to facilitate efficient lending and creditors' management of accounts, but individual consumers need to be vigilant to protect themselves against potentially costly errors in their files. Respondents were not sure that timely credit reports about borrowers’ repayment history quickened credit
processing with a mean of 3.40 and standard deviation of 1.01. In line with this finding, Kallberg and Udell (2003) noted that historical information provides relevant great predictive information on the likely behavior of a borrower.

4.3.2 Credit Scoring

Several statements on credit scoring were carefully identified by the researcher, the respondents were requested by the researcher to indicate their extent of agreement with each statement using Likert scale of; 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree and 5= Strongly Agree. The findings are indicated in the Table 4.6 below.

Table 4.6: Credit Scoring

<table>
<thead>
<tr>
<th>Description</th>
<th>Mean</th>
<th>Std. Dev</th>
</tr>
</thead>
<tbody>
<tr>
<td>We do scoring to predict the probability of a credit borrowers’ likelihood of defaulting</td>
<td>4.01</td>
<td>.822</td>
</tr>
<tr>
<td>The credit scorecards are the tools that assess the behavior of prospective borrowers</td>
<td>3.47</td>
<td>1.04</td>
</tr>
<tr>
<td>Advanced computer technology has popularized credit scoring across our bank</td>
<td>2.90</td>
<td>1.17</td>
</tr>
<tr>
<td>Credit scoring improves our accuracy in decision making hence higher returns on investment</td>
<td>4.28</td>
<td>.771</td>
</tr>
<tr>
<td>Technology has increased speed in the response during the loan processing</td>
<td>4.40</td>
<td>.756</td>
</tr>
<tr>
<td>Integration of technology in credit scoring benefits financial institutions’ lending process</td>
<td>3.96</td>
<td>.822</td>
</tr>
</tbody>
</table>

Source: (Research Data, 2018)

The researcher found out as shown in Table 4.6 that scoring was done to predict the probability of a credit borrowers’ likelihood of defaulting with a mean of 4.01 and standard deviation of 0.822. The finding is consistent with Getter (2017) who established that lenders rely upon credit reports and scores to determine the likelihood that prospective borrowers will repay their loans. The credit scorecards were tools that assessed the behavior of prospective borrowers with a mean of 3.47 and standard
deviation of 1.04. According to Getter (2017), the importance of consumer information is screening for the risk that consumers are likely to engage in behaviors that are costly for businesses. Respondents disagreed that advanced computer technology had popularized credit scoring across the bank with a mean of 2.90 and standard deviation of 1.17. According to Tchamyou and Asongu (2017), the individual financial institutions can use the information from the CRBs for credit scoring and evaluating client credit worthiness.

Respondents agreed that credit scoring improved their accuracy in decision making hence higher returns on investment with mean of 4.28 and standard deviation of 0.771. Adu-AsareIdun and Aboagye (2014) in a Ghanaian study recommends encouragement of a more competitive banking system with more innovative products tailored toward mobilization of savings and investment to growth induced sectors of the economy. Non-performing loans and technology had increased speed in the response during the loan processing with a mean of 4.40 and disagreed with 0.756. According to Mutie (2006), credit scoring practices should be an area that the bank management has to give a deeper concern in spearheading performance since nonperforming loans is one of the aspects of performance indication in Kenya. Integration of technology in credit scoring benefited financial institutions’ lending process with a mean of 3.96 and standard deviation of 0.822.

4.3.3 Efficiency in Information Gathering

Several statements efficiency in information gathering were carefully identified by the researcher, the respondents were requested by the researcher to indicate their extent of agreement with each statement using Likert scale of; 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree and 5= Strongly Agree. The findings are indicated in the Table 4.7.
Table 4.7: Efficiency in Information Gathering

<table>
<thead>
<tr>
<th>Description</th>
<th>Mean</th>
<th>Std. Dev</th>
</tr>
</thead>
<tbody>
<tr>
<td>Efficient information on client's credit worthiness, determines the quality of non-local credit seekers</td>
<td>3.90</td>
<td>.689</td>
</tr>
<tr>
<td>Exchange information about borrowers' types increases lending to safe borrowers increasing the volume of lending</td>
<td>3.84</td>
<td>.807</td>
</tr>
<tr>
<td>Financial institutions benefit from credit sharing institutions as they safely lend realizing higher returns</td>
<td>4.18</td>
<td>.692</td>
</tr>
<tr>
<td>Good credit track records reduce credit risks, increasing leading to the public resulting to higher performance</td>
<td>3.46</td>
<td>1.39</td>
</tr>
<tr>
<td>Doing risk assessment when appraising loans improves financial performance of banks</td>
<td>3.25</td>
<td>.803</td>
</tr>
</tbody>
</table>

Source: (Research Data, 2018)

From the findings in Table 4.7, respondents agreed that efficient information on client's credit worthiness determined the quality of non-local credit seekers with a mean of 3.90 and standard deviation of 0.689. According to Houston et al. (2010), if banks obtain information about their client's credit worthiness, they can easily determine the quality of non-local credit seekers and lend to them as safely as they do with local clients. Exchanging information about borrowers' types increased lending to safe borrowers increasing the volume of lending with a mean of 3.84 and standard deviation of 0.807. The finding is in line with Doblas-Madrid and Minetti (2009) who established that sharing of credit information can make an important contribution to the development of the financial system which is a crucial determinant of economic growth.

Financial institutions benefited from credit sharing institutions as they safely lend realizing higher returns with a mean of 4.18 and standard deviation of 0.692. According to Houston et al. (2010), information sharing does not reduce the use of guarantees, that is, it may not loosen lending standards. Respondents disagreed that good credit track records reduced credit risks, increasing lending to the public resulting to higher performance with a mean of 3.46 and standard deviation of 1.39. The finding concurs with Beck et al., (2014) who established that credit risks and operating inefficiencies
explain most of the disparities in net interest margins and thus profitability. Doing risk assessment when appraising loans improved financial performance of banks with a mean of 3.25 and standard deviation of 0.803. According to Kabiru (2002), credit risk assessment practices affected the level of NPLs.

4.3.4 Information Accuracy

Several statements on information accuracy were carefully identified by the researcher, the respondents were requested by the researcher to indicate their extent of agreement with each statement using Likert scale of; 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree and 5= Strongly Agree. The findings are indicated in the Table 4.8 below.

Table 4.8: Information Accuracy

<table>
<thead>
<tr>
<th>Statement</th>
<th>Mean</th>
<th>Std. Dev</th>
</tr>
</thead>
<tbody>
<tr>
<td>Borrowers historical information is verified by financial firms to validate the accuracy of information for future use</td>
<td>4.31</td>
<td>.737</td>
</tr>
<tr>
<td>Information uncertainty impacts negatively to the performance of the financial institutions</td>
<td>3.43</td>
<td>.800</td>
</tr>
<tr>
<td>Accuracy of the borrower’s prospective disclosures improves financial performance as loans are fully repaid</td>
<td>3.87</td>
<td>.659</td>
</tr>
<tr>
<td>Historical accuracy of the borrower’s earnings predictions serves as a credible projection for credit repayment</td>
<td>4.15</td>
<td>.627</td>
</tr>
<tr>
<td>Management forecasts using public and private information determines the accuracy of the earnings</td>
<td>3.93</td>
<td>.715</td>
</tr>
<tr>
<td>Site visits also give credence to the accuracy of the information given by the borrowers</td>
<td>3.12</td>
<td>1.21</td>
</tr>
</tbody>
</table>

Source: (Research Data, 2018)

From the findings in Table 4.8, respondents concurred that borrowers’ historical information was verified by financial firms to validate the accuracy of information for future use with a mean of 4.31 and standard deviation of 0.737. Kallberg and Udell (2003) noted that historical information provides relevant great predictive information on the likely behavior of a borrower. According to Powell et al. (2004), historical
information of borrowers helps the lender determine the default probability of a loan applicant especially in circumstances where all lenders enrich the credit registries with their debtors’ information. Respondents were not sure whether information uncertainty impacted negatively on the performance of the financial institutions with a mean of 3.43 and standard deviation of 0.800. Respondents agreed that accuracy of the borrower’s prospective disclosures improved financial performance as loans were fully repaid with a mean of 3.87 and standard deviation of 0.659. Gorla et al. (2010) established that historical information must be verified ex-post, since it is difficult for a financial institution to validate the accuracy of future information at the time of its issuance because the associated realizations have not yet occurred.

Historical accuracy of the borrower’s earnings predictions served as a credible projection for credit repayment with a mean of 4.15 and standard deviation of 0.627. Samreen and Zaidi (2013) noted that the Credit Scoring Model for Individuals assessed the creditworthiness of individual borrowers with high accuracy rate and distinguished the high-risk loan applications to low risk prior to default. Management forecasts using public and private information determines the accuracy of the earnings with a mean of 3.93 and standard deviation of 0.715. Respondents were not sure whether site visits gave credence to the accuracy of the information given by the borrowers with mean of 3.12 and standard deviation of 1.21. Gorla et al. (2010) notes that a bank’s ability to assess the accuracy of the information obtained during contract negotiations depends on the information source.

4.3.5 Bank Performance

The researcher collected secondary data on profit before tax and shareholders’ equity to calculate return on equity as a measure of performance among commercial banks in Kenya. The data was collected over 6-year period (2011-2016). A general trend in movement of ROE under the period of consideration is shown in figure 4.5.
Figure 4.5: Secondary Data on Bank Performance

Source: (Research Data, 2018)

From Figure 4.5, return on equity as a measure of performance among commercial banks in Kenya, moved with an increasing trend over the period of consideration. The peak point was in the year 2015. This could be attributed to increased net revenue, by using leverage and by sharing information through generating and sharing information through credit referencing bureau (CRB). Similarly, the cooperate banks decreased their profit in 2016 and this could be explained by decline in profitability to a faster growth in expenses compared to the growth in income, this could further be explained by the legislation of interest rate capping by the Kenyan government.

4.4 Qualitative Analysis

Respondents were asked to indicate other ways that competitive information sharing influenced performance of their institution. From the findings, respondents indicated that competitive information sharing resulted into cost reduction hence efficiency that transpired into improved performance of commercial banks. Majority of respondents said that competitive information sharing resulted into transparency in the entire credit appraisal process. The study established that through competitive information sharing, credit risk among commercial banks had significantly reduced resulting into improved
performance. Respondents indicated that competitive information helped commercial banks to identify the key determinants of Non-Performing Loans and with this, the quality of loans had improved. The study revealed that due to competitive information sharing, loan recovery costs had significantly dropped hence better financial performance of commercial banks. These findings are in line with Nyangweso (2013) who did a study on the relationship between credit information sharing and loan performance of commercial banks in Kenya and established that sharing of credit information in credit appraisal is of great significance in loan recovery.

The study sought to determine other ways that credit information sharing had affected performance of commercial banks. From the findings, majority of respondents said that credit information sharing helped in risk assessment that reduced chances of default among borrowers. From the findings, credit information sharing was supported by credit score cards that represented individual ability to repay loans. According to Bennardo et al. (2009), credit scores have immense benefits to both lenders and borrowers. Borrowers are able to negotiate with lenders on better terms. Highly rated borrowers with good credit history can convincingly negotiate for lower interest rates or even waiver of collateral. The study revealed that credit information sharing helped in accurate appraisal of loans that enhanced financial performance of commercial banks. The findings of the study indicated that credit information sharing played an important role in assessing credit worthiness of bank customers and this improved performance of commercial banks. The finding is in line with Samreen and Zaidi (2013) who studied the design and development of credit scoring model for the commercial banks in Pakistan and established that Credit Scoring Model for Individuals assessed the creditworthiness of individual borrowers with high accuracy rate and distinguished the high-risk loan applications to low risk prior to default.

The study examined how efficiency in information gathering affected performance of commercial banks. It was noted that efficiency in information gathering resulted into formation of alliances and partnership with credit sharing institutions. This partnership according to respondents helped commercial banks to assess credit worthiness of customers and therefore financial performance. The study established that efficiency in
information sharing resulted into credit track records that showed borrowers’ ability to meet borrowed funds. The study revealed that through credit track records, borrowers’ risk profiles were established. The study established that efficiency in information gathering was associated with higher lending among commercial banks. Houston et al. (2010) did a study to evaluate the viability of credit default swap (CDS) spreads as substitutes for credit ratings and established that credit information gathering is crucial and consequently associated with higher lending, measured by private credit to GNP ratio, and lower defaults. The findings of the study indicated that efficiency in information gathering resulted into reduction of default among commercial banks.

When asked to suggest other ways that information accuracy affected performance of commercial banks, the study established that information accuracy resulted into heavy investment in technological use that boosted performance of commercial over a long period of time. The study found out that information accuracy enhanced management forecasts that estimated performance of commercial banks into future. The study established that information accuracy was enhanced through site visits that helped the lending institution to get the exact picture of the project of the client before extending the credit facility. In one study, Getter (2017) focused on consumer and credit reporting, scoring, and related policy issues and noted that lenders rely upon credit reports and scores to determine the likelihood that prospective borrowers will repay their loans.

4.5 Regression Analysis

In order to determine the effect of credit information sharing on performance of commercial banks in Kenya, the researcher conducted regression analysis. The findings of the Model Summary, ANOVA and Regression coefficient are indicated in subsequent sections.

4.5.1 Model Summary

The coefficient of correlation R and coefficient of determination $R^2$ are indicated in the Table 4.10.
Table 4.9: Model Summary

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>.847</td>
<td>.717</td>
<td>.681</td>
<td>1.43993</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), information accuracy, competitive information sharing, efficiency in information gathering, credit scoring

Source: (Research Data, 2018)

From the findings in Table 4.10 above, the coefficient of determination $R^2$ is 0.717 hence 71.7% change in bank performance is explained by information accuracy, competitive information sharing, efficiency in information gathering and credit scoring among commercial banks in Kenya. The independent variable cannot explain 28.3% change in the dependent variable, it therefore means that there are other factors that were not covered in the current study, thus an effect credit information sharing and performance of commercial banks in Kenya.

4.5.2 Analysis of Variance

An ANOVA was conducted at 5% level of significance. A comparison of $F_{calculated}$ and $F_{critical}$ is shown in Table 4.11 below.

Table 4.10: Analysis of Variance

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>15.487</td>
<td>4</td>
<td>3.872</td>
<td>17.133</td>
<td>0.000b</td>
</tr>
<tr>
<td>Residual</td>
<td>6.113</td>
<td>27</td>
<td>0.226</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>21.60</strong></td>
<td><strong>31</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


b. Predictors: (Constant), information accuracy, competitive information sharing, efficiency in information gathering and credit scoring.

Source: (Research Data, 2018)

From the ANOVA Table 4.11 above, $F_{calculated}$ is 17.33 while $F_{critical}$ is 2.72776531, this shows that $F_{calculated} > F_{critical}$ thus 17.33 > 2.7277 therefore the overall regression model was significant in determining credit scoring on credit information sharing and performance of commercial banks in Kenya. The p value is 0.000, an indication that at least one of the independent variables significantly influenced factors determining credit information sharing and performance of commercial banks in Kenya.
4.5.3 Regression Results

The Beta coefficients and the p values of the study are indicated Table 4.12 below

Table 4.11: Regression Coefficient

<table>
<thead>
<tr>
<th></th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>4.723</td>
<td>1.849</td>
<td>2.554</td>
<td>.016</td>
</tr>
<tr>
<td>Competitive information sharing</td>
<td>.277</td>
<td>.107</td>
<td>.285</td>
<td>2.597</td>
</tr>
<tr>
<td>Credit scoring</td>
<td>.164</td>
<td>.053</td>
<td>.257</td>
<td>3.088</td>
</tr>
<tr>
<td>Efficiency in information gathering</td>
<td>.126</td>
<td>.141</td>
<td>.192</td>
<td>.892</td>
</tr>
<tr>
<td>Information accuracy</td>
<td>.732</td>
<td>.337</td>
<td>.535</td>
<td>2.176</td>
</tr>
</tbody>
</table>


Source: (Research Data, 2018)

The resultants become

\[ Y = 4.723 + 0.277X_1 + 0.164X_2 + 0.732X_4 \]

Where: \( Y \) = Bank performance

\( X_1 \) = Competitive Information Sharing

\( X_2 \) = Credit Scoring

\( X_4 \) = Information Accuracy.

In terms of the significance and hypothesis testing, competitive information sharing had p value 0.022 which is less than 0.05. It beta coefficient (0.285) is positive. Therefore, it can be inferred that competitive information sharing has a positive significant effect on performance of commercial banks. Hence, the study rejects the null hypothesis and accepts the alternative hypothesis that competitive information sharing has significant effect on performance of commercial banks. The finding contradicts Thuo, (2016) whose study established an insignificant negative relation between credit information sharing assets quality and banks’ performance in financial perspective.
Credit scoring had p value (p=0.026) which is less than 0.05. The beta coefficient (0.257) is positive. This can be interpreted that credit scoring has a positive and significant effect on performance of commercial banks. Thus, the study rejects the null hypothesis and accept an alternative one that credit scoring has significant effect on performance of commercial banks. The finding contradicts Muturi (2014) who concluded that there was a negative relationship between credit scoring practices and nonperforming loans. The finding further contradicts with Mutie (2006) whose results indicated a strong negative relationship between credit scoring practices and nonperforming loans with a correlation.

Information accuracy (p=0.039) with beta coefficient (0.535). The beta coefficient is positive and the p value is less than 0.05. Hence, it can be inferred that Information accuracy has a positive and significant effect on performance of commercial banks. Based on the finding, the study hence rejects the null hypothesis and accepts the alternative hypothesis that information accuracy has significant effect on performance of commercial banks. The finding concurs with Kiplagat (2013) whose results showed that there is a positive relationship between the various technological innovations and the amount of loan recovered in a given year. Similarly, Gorla et al. (2010) showed that information sharing service quality is the most influential variable in the model (followed by information quality and system quality), thus highlighting the importance of IS service quality for organizational performance.
CHAPTER FIVE
SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 Introduction

In this chapter the researcher summarized the findings of the study. Discussions were also presented by interacting with literature. Relevant conclusions were drawn from the key findings of the study. Recommendations with implications on theory, policy and practice were also drawn. Suggestions for further studies to increase the available knowledge base were also provided.

5.2 Summary of the Findings

The study sought to investigate the effect of credit information sharing on the performance of selected commercial banks in Kenya. The specific objectives of the study were to establish the effect of competitive information sharing on the performance of commercial banks in Kenya, to assess the effect of credit scoring on the performance of commercial banks in Kenya, to establish the effect of efficiency in the information gathering process on the performance of commercial banks in Kenya and to assess the effect of information accuracy on the performance of commercial banks in Kenya.

On competitive information sharing, the study established that respondents concurred that complete information about the borrower’s payment characteristic helped recover credit. Respondents also agreed that competitive information on borrowers helped in pooling risks for financial institutions. The study established that repayment probabilities would be predicted by sharing accurate information by the banks.

In view of credit scoring, the study established that scoring was done to predict the probability of a credit borrowers’ likelihood of defaulting. The study found that respondents agreed that credit scoring improved their accuracy in decision making hence higher returns on investment. Technology had increased speed in the response during the loan processing and integration of technology in credit scoring benefited financial institutions’ lending process.
In regard to efficiency in information gathering, the study established that efficient information on client's credit worthiness, determined the quality of non-local credit seekers. The study found out that exchange information about borrowers' types increased lending to safe borrowers hence increased the volume of lending. Commercial banks benefited from credit sharing institutions as they safely lend realizing higher returns.

On information accuracy, the researcher found that the respondents concurred that borrowers’ historical information was verified by financial firms to validate the accuracy of information for future use. The respondents agreed that Accuracy of the borrower’s prospective disclosures improved financial performance as loans were fully repaid. Historical accuracy of the borrower’s earnings predictions served as a credible projection for credit repayment.

The study established that management forecasts using public and private information determined the accuracy of the earnings. The study made use of qualitative data readily available from the Higher Education Loans Board database; the data gave the yearly amounts of money collected by respective payment mechanisms for the last ten years.

5.3 Conclusion

The study concluded that their credit scoring system gave information on borrowers’ capability to repay loans. Complete information about the borrower’s payment characteristic helped recovery of credit, using CRB enhanced borrowers’ chances of repaying loans, documenting borrower behavior positively impacted borrower repayment thus bank performance. Competitive information on borrowers helped in pooling risks for financial institutions. Repayment probabilities can be predicted by sharing accurate information by the banks and timely credit reports about borrowers’ repayment history quickens credit processing.

The researcher concludes that respondents do scoring to predict the probability of a credit borrowers’ likelihood of defaulting, credit scoring improved their accuracy in decision making hence higher returns on investment, technology had increased speed in the
response during the loan processing and integration of technology in credit scoring benefited financial institutions’ lending process.

From the findings, the researcher concludes that respondents agreed that efficient information on client's credit worthiness, determines the quality of non-local credit seekers. Agarwal and Hauswald (2010) did a study on the effects of physical distance on the acquisition and use of private information in informationally opaque credit markets and the study used a unique data set of all loan applications by small firms to a large bank.

The study concludes that exchange information about borrowers’ types increased lending to safe borrowers increasing the volume of lending and financial institutions benefited from credit sharing institutions as they safely lend realizing higher returns. These findings concurred with the asymmetric information theory advanced by George Akerlof, Michael Spence and Joseph Stiglitz who won the Nobel Prize for their contribution to economic theory.

5.4 Recommendations

The study established that that competitive information sharing has significant effect on performance of commercial banks. Based on this finding, the study recommends that the top management of all commercial banks in Kenya should strengthen their channels and systems of sharing information which shall significantly influence performance. Commercial banks need to share information about borrowers on a timely basis so that the CRBs can compile and give accurate scoring.

The key finding of the study was that credit scores have significant effect on performance of commercial banks. In view of this finding, the study recommends that the top management team of Credit Reference Bureau CRB in Kenya should improve on their credit monitoring role in the country to allow generate effective scores that commercial banks use for lending purposes. The study recommends that credit scorecards tools should be used to assess the behavior of prospective borrowers and also recommended that advanced computer technology should popularize credit scoring across the bank.
Efficiency in information sharing had no significant effect on performance of commercial banks. In view of this finding, the study recommends to top management of all commercial banks to pay little attention and emphasis efficiencies during the process of information collection. More emphasis should be placed on competitive information sharing, credit scores and information accuracy since they significantly influence performance.

The study revealed that information accuracy had significant effect on performance of commercial banks. Based on this finding, the study recommends that all financial institutions in Kenya need to safeguard the accuracy of their information sharing platforms for increased performance. There should be regular site visits that should give credence to the accuracy of the information given by the borrowers.

**5.5 Suggestion for Further Studies**

The study carried out both primary and secondary data, future scholars are advised to use empirical data for more reliable results. The $R^2$ was 71.7% thus there were other factors that were not included in the current study on credit information sharing and performance of commercial banks in Kenya hence future scholars should focus on. As the current study was carried out on commercial banks in Kenya future studies should be carried out in other organizations for instance, Nonprofit making organizations.
REFERENCES


Blair, B. J., Poon, S. H., & Taylor, S. J. (2010). Forecasting S&P 100 volatility: the incremental information content of implied volatilities and high-frequency index
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Kuntchev, V., Ramalho, R., Rodríguez-Meza, J., & Yang, J. S. (2013). What have we learned from the enterprise surveys regarding access to credit by SMEs?


Martinez Peria, M. S., & Singh, S. (2014). The impact of credit information sharing reforms on firm financing?


APPENDICES

APPENDIX I: COVER LETTER

Oira Sammy Machoka

Kenyatta University

P.O. Box 29768-00202knh

NAIROBI.

Dear Respondent,

RE: Request to fill in the Questionnaire

I am a graduate student at Kenyatta University, carrying out research on the influence of
credit information sharing on the profitability of selected commercial banks in Kenya.
This is in partial fulfillment of the requirement of the Master of Business Administration
degree program at the Kenya University

You have been randomly selected among many to participate in this study. It is estimated
that it will take less than twenty (20) minutes of your time to complete the questionnaire.
Please respond as honestly and objectively as possible. Your participation is very
essential for the accomplishment of this study and it will be highly appreciated. I
guarantee that the information that you will provide will be treated with the utmost
confidentiality and will be used only for academic purposes.

This is an academic research and confidentiality is strictly emphasized, your name will
not appear anywhere in the report. Kindly spare some time to complete the questionnaire
attached.

Thank You

Yours Faithfully,

Sammy Oira Machoka
APPENDIX II: RESEARCH QUESTIONNAIRE

Part A: Biographical Data

1) Name of the bank (Optional)...........................................................................................................

2) Gender

[ ] Male  [ ] Female

3) State your age bracket (Tick where appropriate).

[ ] 19 to 29 years

[ ] 30 to 40 years

[ ] 41 to 51 years

[ ] Above 51 years

4) How long have you worked at your Current station?

[ ] Less than 2 years

[ ] 2 to 6 years

[ ] 6 to 9 years

[ ] 10 years and above

5) In which of the following departments do you work?
Part A: Product Portfolio

a) Credit Administration unit [ ]
b) Corporate banking [ ]
c) Business banking [ ]
d) Personal banking [ ]
e) Others (Please state) ..................................................................................................................

Part B: Competitive Information Sharing

6) For each of the following are statements on credit information sharing, please tick where applicable to the extent to which you agree with these statements as they apply in your bank. Use the Likert scale where: 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree and 5=Strongly Agree

<table>
<thead>
<tr>
<th>Statement</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Our credit scoring system gives information on borrowers’ capability to repay loans</td>
<td></td>
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<tr>
<td>Complete information about the borrower’s payment characteristic helps recovery of credit</td>
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<tr>
<td>Using CRB enhances borrower’s chances of repaying loans</td>
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<tr>
<td>Documenting borrower behaviour positively impact borrower repayment thus bank performance</td>
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<tr>
<td>Competitive information on borrowers helps in pooling risks for financial institutions</td>
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<tr>
<td>Quality information aids in assessing risks hence cut administrative costs</td>
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<tr>
<td>Repayment probabilities can be predicted by sharing accurate information by the banks</td>
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<tr>
<td>Timely credit reports about borrowers’ repayment history quickens credit processing</td>
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</tbody>
</table>

7. In what other ways does competitive information sharing influence performance of in your institution?
Part C: Credit Scoring

8) With respect to your organization, please indicate to what extent the credit sharing information influence the performance of your commercial bank. Use the Likert scale where: 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree and 5= Strongly Agree

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>We do scoring to predict the probability of a credit borrowers’ likelihood of defaulting</td>
<td></td>
<td></td>
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<tr>
<td>The credit scorecards are the tools that assess the behaviour of prospective borrowers</td>
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<tr>
<td>Advanced computer technology has popularized credit scoring across our bank</td>
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<tr>
<td>Credit scoring improves our accuracy in decision making hence higher returns on investment</td>
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<tr>
<td>Technology has increased speed in the response during the loan processing</td>
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</tr>
<tr>
<td>Integration of technology in credit scoring benefits financial institutions’ lending process</td>
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</tbody>
</table>

9. How else had credit information sharing affected performance of your institution?

Part D: Efficiency in Information Gathering

10) The following are statements on efficiency in information gathering and its impact on performance. Please state your extent of agreement with each statement as it applied in
your organization. Use the Likert scale where: 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree and 5= Strongly Agree

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Efficient information on client’s credit worthiness, determines the quality of non-local credit seekers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exchange information about borrowers' types increases lending to safe borrowers increasing the volume of lending</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Financial institutions benefit from credit sharing institutions as they safely lend realizing higher returns</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Good credit track records reduce credit risks, increasing leading to the public resulting to higher performance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Doing risk assessment when appraising loans improves financial performance of banks</td>
<td></td>
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</tr>
</tbody>
</table>

11). In what other ways has efficiency in information gathering affected performance of your bank?

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

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

**Part E: Information Accuracy**

12) Below are statements on information accuracy and its effect on performance.

State your extent of agreement in each statement as to how it applied in your organization. Use the Likert scale where: 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree and 5= Strongly Agree

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Borrowers historical information is verified by financial firms to validate the accuracy of information for future use</td>
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</tr>
<tr>
<td>Information uncertainty impacts negatively to the performance of the financial institutions</td>
<td></td>
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<tr>
<td>Accuracy of the borrower’s prospective disclosures improves financial performance as loans are fully repaid</td>
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</tr>
</tbody>
</table>
Historical accuracy of the borrower’s earnings predictions serves as a credible projection for credit repayment.

Management forecasts using public and private information determines the accuracy of the earnings.

Site visits also give credence to the accuracy of the information given by the borrowers.


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

Thank you for your co-operation
### APPENDIX III: DATA COLLECTION SCHEDULE

<table>
<thead>
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<tbody>
<tr>
<td>Total assets</td>
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<td></td>
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<tr>
<td>Total NPLs</td>
<td></td>
<td></td>
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<tr>
<td>Total loans</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total advances</td>
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</tr>
</tbody>
</table>
APPENDIX IV: DOCUMENT REVIEW GUIDE

1. Loan book
2. Credit reports
3. Non-performing loans database
4. Non-performing loan cases submitted to the CRB
5. Number of credit files or reports shared amongst industry players
6. Financial Statements of the bank for the period under study
7. Asset value records
8. Equity reports and records
APPENDIX VI: LIST OF BANKS LICENSED BY CBK

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

Source: (Central Bank of Kenya, 2017)