

**RELATIONSHIP BETWEEN CREDIT RISK MANAGEMENT TECHNIQUES
AND LOAN PERFORMANCE OF SASRA REGULATED DEPOSIT TAKING
SACCOS IN NAIROBI COUNTY.**

KIMANI MARY WAIRIMU

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REQUIREMENTS FOR THE AWARD OF THE DEGREE OF MASTER OF
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DECLARATION:

This research project is my original work and has not been presented to any other institution or university.

Signature: _____ Date _____

MARY WAIRIMU KIMANI

D61/81194/2015

This research project has been submitted for examination with my approval as the university Supervisor.

Signature: _____ Date _____

DR. NYAMUTE WINNIE

Senior Lecturer, Department of Finance and Accounting

School of Business

University of Nairobi

DEDICATION

I dedicate this research project to My husband Anthony Mwangi and son Eliud Maina, for their love and support. May you Maina go beyond this!

ACKNOWLEDGEMENT

I give thanks to the Almighty father for giving me strength, good health and resources to enable me complete my studies.

Special thanks to my Supervisor Dr. Winnie Nyamute for the great guidance and constructive feedback without which the study would not have been completed.

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ABBREVIATIONS

ATMS	Automated Teller Machines
CBK	Central Bank of Kenya
CRM	Credit risk Management
D-T	Deposit Taking
FIT	Financial Intermediation Theory
GDP	Gross Domestic Product
MPT	Modern Portfolio Theory
SACCO'S	Savings and Credit Co-operative Societies
SASRA	SACCOs Society Regulatory Authority

ABSTRACT

Credit risk management is considered to be integral to the loan performance for SACCOs. In accomplishing this all important function, SACCOs employ different techniques to mitigate risks they face relating to their lending activities. The purpose of the study was to investigate the relationship between credit scoring, credit monitoring and credit risk diversification and loan performance among DT-SACCOs headquartered in Nairobi County. A descriptive study of Credit risk management techniques used by SACCOS was conducted. The study focused on 36 DT-SACCOs headquartered in Nairobi County. The study used both primary and secondary data. Primary data was collected using structured and semi-structured questions and open and close ended questions. These questions were presented to Credit Managers and Credit Officers. The data was analyzed by use of summary statistics, including means, standard deviation and percentages to measure the interrelationships between variables. Graphs were also used to display information of the analyzed results to ease interpretation. A regression analysis was done to determine the relationship between the identified techniques and loan performance. Results from the study suggest that there was a significant positive correlation between credit risk scoring and loan performance. The study further established that there was a positive correlation between credit monitoring and loan repayments though the relationship was not significant as the case of credit risk scoring. Moreover, this study found that credit scoring significantly influences the ability of borrowers to repay their loans. The conclusion drawn from the study is that credit risk management techniques play a critical part in determining the Loan performance of DT-SACCOs headquartered in Nairobi. It is suggested that more emphasis should be placed on credit monitoring and credit risk diversification to reduce the risk exposures of SACCOs and other financial intermediaries.

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

Credit risk management is an important practice for lending institutions. Credit risk management as coordinated tasks and/or activities meant to control as well as direct credit risks facing financial intermediaries through key processes with a view of attaining its objectives (Nikolaidou & Vogiazas, 2014). These tasks and process are meant to mitigate the risk as a technique of solidifying the market position of the firm in relation to its objectives. However, Ahmed and Malik (2015) note, the principal objective of risk management is not to eliminate risks completely but aim at controlling opportunities and hazards that cause an occurrence of risk.

This study was anchored on three theories: Modern Portfolio theory (MPT) by Markowitz whose fundamental idea is that investors who are risk-sensitive can maximize their expected returns by modeling portfolios on a given level of market risk. The financial intermediation theory is built on the idea that intermediaries are meant to minimize the transaction cost and informational asymmetries and Agency theory which deals with relationship between shareholder interests and those of executives. These theories provided the platform upon which the concepts of credit risk management techniques and loan performance were investigated.

In Kenya, it is estimated that SACCOs contribute 45 percent to the country's GDP and as of 2017; the sub-sector had effectively mobilized resources worth over KS. 600 billion in deposits and asset base amounting to Ksh870 billion (Ministry of Industry, Trade and Cooperatives, 2017). This huge resource base can perform a significant role in the country's development and

economic growth economic growth if risks related to their core activities are mitigated effectively through prudent management.

1.1.1 Credit Risk Management Techniques

A credit risk management technique is a unique approach used by a financial institution to reduce the risk of loan default by borrowers. The techniques help financial institutions to decide who gets credit, the amount of credit accessible, the cost of credit, and what mechanisms that have been put in place to ensure the profitability of the financial institutions through lending (Thomas et al., 2017; Abdou&Pointon, 2011). Techniques include credit scoring, credit diversification, and credit monitoring.

Credit scoring is a technique that examines the profiles of customers to determine their ability to make loan repayments. According to Abdou and Pointon (2011), credit scoring entails using statistical models to establish the probability of a given applicant defaulting on the money they have borrowed from financial institutions. Usually, a credit score is awarded to a prospective borrower based on historical information to determine their creditworthiness.

The creditworthiness is not the score assigned to a given customer but an assessment that has been arrived at regarding a given customer and is denoted with a numeral (Thomas, Edelman, & Crook, 2017). The technique helps financial institutions to decide who gets credit, the amount of credit accessible, the cost of credit, and what mechanisms that have been put in place to ensure the profitability of the financial institutions through lending (Thomas et al., 2017; Abdou&Pointon, 2011).

Risk monitoring is an important function in the risk management process. Here, risks are identified, assessed and credit given to the customers after which the institutions make a follow up on the progress of the risk profile of the borrower. According Thomas et al. (2017) and Nyamwange (2010), risk monitoring helps lenders to reassess their credit decisions and revise them as per the changes noted on the customer's profile.

Credit risk diversification is one of the highest practiced prudential guidelines by banks and other financial intermediaries. Diversification helps to spread risks so as minimize the impact of loss in the case of risk occurrence (Ahmed and Malik, 2015). By applying this technique, firms invest various classes of portfolios to spread the risk if borrowers default on their loans. This may entail investment in securities and reinsurance of loan products. In their investigation of risk management practices at Harambee SACCO, Kibui and Moronge (2014) identified collateralization, use of guarantors, insurance of loan products, shareholding as the credit risk control strategies that the SACCO use to diversify risks.

1.1.2 Loan Performance of DT-SACCOs

DT-SACCOs in Kenya rely majorly on loans to generate revenue. It refers to the likelihood of borrowers honoring their obligations regarding loan repayment as per the terms and conditions agreed with the lender at the time of disbursement. When there is a high loan default /default risk, loan repayment performance is considered as poor and vice versa (Nawai, &Shariff, 2012).

Loan performance is very important to financial institutions that lend money to its members. This is important in reducing loan loss which results from high default rate. As a result the financial institutions such as DT-SACCOs are able to maximize their returns from lending and also keep credit risk within an acceptable bound (Van der Maas, 2006). For the financial institution to have

high loan performance, it is essential to have a balance on low arrear rates, high repayment rates, low default rate and a very minimal portfolio risks. Loan repayment performance is influenced by factors such as loan size, loan policy, and credit risk management, among others.

1.1.3 Credit risk Management Techniques and Loan Performance

According to Einav, Jenkins, and Levin (2013) credit scoring enhances the returns from borrowers. In their study, they investigated an auto-finance company in a selected region in the United States which specializes in lending to low-income and high-risk consumer market. Their study found that risk classification helps the institution to screen high-risk borrowers as well as the ability to target low-risk borrowers for maximum returns. As underscored by Abdou and Pointon (2011), credit scoring has led to phenomenal rise in consumer credit over the last half of a century due to the willingness of lenders to use it due to its reliability. Although SACCOs do not operate in a developed market, their line of business is highly risky hence research findings from risky ventures can offer great insights on how credit risks should be managed.

Credit monitoring seeks to reduce the size of risk after advancing credit. According to Thomas et al.(2017), credit monitoring has a significant correlation with loan default. Migwi (2013) found that Kenyan banks actively engage in credit monitoring to increase chances of repayment thereby minimizing losses arising from defaults. In a study of causes and control measures for loan delinquency among microfinance institutions in Ghana, Korankye (2014) finds that poor credit monitoring practices from the lenders contributed significantly to the high loan defaults. Credit monitoring ensures that borrowers use loans for the intended purposes. As a result, borrowers repay their loans which, in turn, reduce the expense on loan write-offs and recovery costs.

Diversification is a vital technique used by SACCOs to achieve financial viability. Diversification policies are used to avoid concentration of credit risk problems by spreading the credit risk. (Bessis, 2003). The study of Karagu and Okibo (2014) on the risks Kenyan SACCOs face and how they can be mitigated, the researchers found that diversification could play a key role in reducing the rate of loan default which exposes SACCOs to default and risks of insolvency. The increase in loan portfolio underlines the benefits associated with diversification in credit risk management.

1.14 D-T SACCOS in Nairobi County

SACCOs in Nairobi range from farmers' SACCOs to housing SACCOs. Non-deposit taking institutions are registered and regulated under the Cooperative Services Act while deposit-taking SACCOs, which offer basic banking services such as demand deposits and ATMs, are registered and supervised under the Sacco Societies Act of 2008(Hezron&Muturi, 2015). The trend in Kenya is that SACCOs start their operations as saving institutions and later graduate into deposit-taking and quasi-banking institutions when they have solidified their capital base through increased membership.

Population-wise, Nairobi County has the highest concentration of SACCOs in Kenya. According to the SACCOs' regulatory authority, SASRA, there are 176 deposit-taking -SACCOs operating across the country. Nairobi County is the headquarters of a majority of the SACCOs with SASRA indicating that, as of the year beginning January 2018, 42 DT-SACCOs(see appendix 2) were headquartered in the county, making the number the largest concentration in the entire 47 counties network (SASRA, 2018). This level of concentration and the location of these SACCOs informed the decision to base the study in Nairobi. However, it is important to note that an

overwhelming majority of the SACCOs in the county are non-deposit taking intermediaries and actively participate in lending activities as well.

Kenya's SACCO sub-sector remains robust despite sluggish economic growth in the last two years. For instance, assets for DT-SACCOs grew in 2016 from Kshs. 342.84 Billion recorded in the previous year to Kshs. 393.49 Billion, representing 14.8 percent growth. The growth was mainly funded by members' deposits (SASRA, 2017).

Although the location of DT-SACCOs in Nairobi provides greater opportunities for them to generate more revenues, it also creates unique credit risks that must be managed adequately for sustainability and creation of value to the members. As these SACCOs continue to expand their loan book, it can be expected that managing their loan portfolios will be critical to their continued growth. According to SASRA (2017), government-based SACCOs and private sector-based SACCOs continue to endure a tough climate.

1.2 Research Problem

Credit risk management techniques are methods which are used to mitigate losses through the understanding of the adequacy of loan loss reserves at any given time. Credit risk management techniques therefore involve identifying, measuring, and controlling of risks due to likelihood of loan default. Loan default is a loss that results from failure of loanees to honor the terms of loan payment on the principle and interest (Coyle, 2000).

Credit that is extended to borrowers is usually at the risk of default such that whereas SACCOs in Nairobi County extend credit to borrowers on the understanding that they will repay their loans, some borrowers usually default. SACCOs therefore bear some degree of risk when they lend to business and consumers and hence experience some loan losses when some borrowers fail to pay

back their loans as agreed. Such unpaid loans are referred to as non-performing loans as referred by Kithinji (2010). A number of local and international studies have focused on the relationship between credit risk management and loan performance. Walsh (2010), carried out an assessment of the credit management process of credit unions. The study found that credit unions are deficient in the credit control department. A study conducted by Ahlberg and Anderson (2012) on credit risk management in 95 small and large banks in Sweden found out that most banks had a well-developed credit mechanism which emphasizes on building a mutual trust relationship with the customer as the overriding principle of their lending activities. A study by Iqbal and Mirakhor (2007) found out that strong risk management practices can help financial institutions reduce their exposure to credit risk and enhance their ability to compete well in the industry. A study by Simiyu (2008), found out that most of the financial institutions measured credit migration and default risk using Credit Metrix. The findings showed the challenge of strict operational regulations from the Central Bank of Kenya that the microfinance institutions face. In his studies, Chege (2010) concluded that profitability is enhanced by credit risk management practices of the financial institutions.

In his Studies, Mwithi (2012) established that there was a positive correlation between credit risk assessment and management of microfinance institutions in Nyeri County. Kisala (2014) found a significant relationship between loan performance and credit risk management in financial institutions in Nairobi, Kenya. However, these studies do not cover credit risk management techniques and loan performance in DT-SACCOs in Nairobi. Despite the low interest rates charged by SACCO'S to borrowers they continue to experience a high loan default rate. In 2017, the loan default rate in the two SACCOs categories rose from 5 % in 2016 to 9 % in 2017. Yet a

survey by Ndung'u (2013) revealed that all DT-SACCOs in Nairobi employ conventional credit risk management techniques to improve the repayment performance of loans.

This study, therefore, aimed at answering the question: what is the relationship between credit risk management techniques and loan performance of SASRA-regulated SACCOs headquartered in Nairobi County?

1.3 Objective of the Study

The objective of the study was to investigate the relationship between credit risk management techniques and loan performance of SASRA regulated DT-SACCOs headquartered in Nairobi County.

1.4 Value of the Study

Findings from the study as recorded in here would provide an insight into different approaches that can be used in managing credit risk in SACCOs operating across the country. Specifically, the findings can be used to determine the most effective Credit risk management techniques. This information has the potential to help SACCOs improve the quality of their portfolios. The findings of this study would also assist SACCOs to recognize the need to establish effective formal credit risk management within their ranks. As evidenced in the study, some SACCOs do not pay much attention to monitoring of loan performance. As such, the findings can guide SACCOs on how to adopt the most effective techniques of mitigating risks on their loan portfolios.

To academicians, this study would create a basis upon which further studies on credit risk management in the SACCOs sub-sector could be anchored. Based on the findings, the study generated new questions regarding the whole concept of credit risk management. The questions would provide researchers the opportunity to seek further answers on the best techniques that should be employed by SACCOs to maintain high quality loan portfolio. The areas that require

further answers regarding credit risk management techniques would be as recommended and documented in chapter five of this paper.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter reviews past scholarship about credit risk management. The specific areas that have been covered include theoretical review, empirical studies, determinants of Loan performance of SACCOs, and a summary of the literature review.

2.2 Theoretical Review

2.2.1 Modern Portfolio Theory

In 1991, Harry Markowitz, a renowned American economist, proposed the Modern Portfolio Theory. The theory spells out how risk-averse investors can arrive at an optimum portfolio combination. According to Omisore, Yusuf, and Christopher (2012), MPT allows investors to maximize the expected returns for a certain amount of portfolio by carefully choosing the proportion of the various assets to arrive at the best investment combination. Thus, investors strive to choose those investments that can yield higher returns at a much lower risk under a given investment climate.

The MPT theory is a mathematical representation of the concept of diversification when making investments. The aim of the proposition is to select a range of investment assets that are collectively lower when compared to when an investment is done in one individual asset (Omisore et al., 2012). For instance, investment in both the stock and the bond markets represent an application of the theory as a fall in the stock price results in an increase in prices in the bond market and vice versa (Ndung'u, 2013). Essentially, the theory advocates for hedging against both market and company-specific risks. However, Omisore et al.(2012) note that the theory has been challenged in the recent years as a model for risk diversification despite its widespread use in financial management. This theory proposes that Loan performance will be achieved if loan default rate is reduced.

2.2.2 Financial Intermediation Theory

Financial intermediation theory (FIT) concerns the movement of resources from those who own such resources to points of need where they are used to advance economic activities. Major component of intermediation is information asymmetry between the borrowers and the lenders. For instance, a borrower may wish to raise capital from several lenders (investors) but in the absence of an intermediation, there would be a huge amount of duplication of information among the two parties resulting in exorbitant costs of transferring capital. The role of the financial intermediation, therefore, is to reduce the cost of transferring capital from the lenders to the borrowers (Allen & Santomero, 1998). As such, SACCOs are meant to reduce the cost of accessing credit among its members in the sense they put together a pool of resources which they advance only to members who are interested as borrowers.

However, technological developments, deregulation, and change in operating environments have altered the functions of financial intermediation. In other words, financial institution can no longer be regarded as conduits of reducing information asymmetry and transaction costs between borrowers and investors but value creating institutions for both investors and borrowers (Scholtens & Wensveen, 2003). One of the changes that have occurred in the activities of financial intermediaries in the wake of technological developments is the increased focus on risk management (Clark, 2017; Allen & Santomero, 1998). In context, SACCOs are not only engaged in the business of advancing credit to the members while building the value of shareholders' investments but also engage in deliberate activities that seek to create value for the borrowers and

credit risk management is at the heart of the new focus in financial intermediation. The theory proposes that Loan performance will be achieved if loan default rate will be reduced.

2.2.3 Agency Theory

Agency theory defines the relationship between corporate organizations' executives and shareholders. Owners of a financial institutions delegate authority to managers who have the know-how on management of their money, creating an agent-principal relationship. However, conflicts often arise due to different levels of risk perception and also lack of alignment of the interests of the agent and the principal. For instance, managers may be encouraged to take high risks by advancing a considerable amount of loans to generate revenues necessary for them to be given bonuses as per the agreement with the shareholders (Fernando, 2012). Such strategic moves could result in high loan default rate or low revenues in case of high-pricing of loans. The theory asserts that Loan performance will be realized if the amount of loan issued is considerate.

2.3 Determinants of Loan Performance of DT-SACCOs

Credit risk management is essential in SACCO management because it affects the quality of loan portfolio. The quality of the loan portfolio for any financial intermediary is critical to its performance since loans account for the largest source of revenue for SACCOs. CRM entails institution of internal mechanisms by financial intermediaries to manage and control risks relating to lending activities. Enforcement of risk management techniques seeks to improve the quality of the loan book by mitigating the risk of default. A study done by Ogilo (2012) indicates that loan portfolio quality significantly influences the performance of financial institutions. According to Ndung'u (2013) the quality of the loan portfolio influences the revenues generated from lending activities of SACCOs. A factor that influences revenue would obviously have a bearing on the profitability of the SACCOS and their overall performance.

2.3.1 Loan Policy

The loan policy of a Sacco provides general guidelines and standards of management of the loan portfolio of a lending institution. The credit policy entails internal mechanisms instituted by financial intermediaries to manage and control risks relating to lending activities. These guidelines and standards are meant to help credit managers and credit officers in evaluating, lending and monitoring of loans (Ndung'u, 2013). Moti, Masinde, Mugenda and Sindani (2012) report that credit policy significantly influences loan repayment performance for SACCO customers. A solid credit policy means that there is a rigorous process of evaluation, credit advancement and monitoring of loan performance which ensures that the loans are advanced to the deserved borrowers and also whether loans are utilized for the intended purposes.

2.3.2 Loan Size

The amount of loan advanced to borrowers is done based on the needs of the borrowers as assessed by the lending institutions. Studies have shown that an efficient loan amount (an amount that meets the needs of the borrowers) stimulates enterprise thereby increasing the repayment capacity of the borrower. When the loan exceeds the needs of the borrower, some loan amount may go to personal use or unintended purposes hence the risk of default is increased. If the loan amount is inadequate, the business performance may be undermined, resulting in reduction of repayment capacity (Lagat, Mugo, & Otuya, 2013; Nawai & Shariff, 2012). Dhungana (2016) reports that there is poor application of small loans as clients who take such loans are more likely to divert the loan into domestic use while big-sized loans have a greater application in productive activities. The findings agree with the study of Gatimu (2014) who notes that amount of debt and credit risk management practices have a significant impact on loan performance.

2.3.3 Interest Rate

The interest rate affects the cost of loans advanced to borrowers. Loans that create value for the borrowers are a critical in building enterprises which in turn increases the repayment performance. An interest rate that is too high for the borrowers not only creates a repayment burden on the borrowers but also encourages cases of lending to risky borrowers (Kivuvo&Olweny, 2014). Some borrowers would seek loans regardless of the interest even though their ability does not support the need for more money in their businesses. As a consequence, the loan portfolios of the SACCOs are exposed to more risks of default.

2.4 Empirical Review

A body of research has shown that credit management is imperative for organizations for them to survive in today's competitive business environment. A study covering the performance of American banks from 2000-2008 revealed that bank-specific factors are significantly positively related to their performance (Zhang & Dong, 2011). The study by Ali SuliemanAlshatti on the effect of risk on bank performance yielded similar results. The researcher investigated how risk influenced performance of Jordanian banks and findings suggest that credit risk management is correlated with bank performance as measured by the return on assets and return on equity (Alshatti, 2015). Although the nature of risks faced by banks differ from one country to another, exposure to credit risk reduces the ability of these institutions to achieve their objectives regardless of the jurisdiction.

On a micro- level, studies have also shown that other financial intermediaries are not immune to the risks related to their lending. Ahmed and Malik (2015) conducted a research on the effect of risk management and performance of micro-finance banks in Pakistani and the study revealed that credit terms and credit appraisal have a significant impact on the performance of loans. Micro-

finance institutions target small borrowers, and since the SACCOs engage in lending that target small and micro enterprises, information obtained on risks faced by micro-finance institutions offer a great insight into credit risk management in SACCOs.

SACCOs face numerous challenges related to loan default. Studies in the region show that credit risk management is essential for the sustainability of SACCOs. In a study on the role of risk management techniques on the performance of loans for rural SACCOs in Tanzania, Magali (2013) finds that absence of proper credit risk management practices among the SACCOs examined was significantly responsible for the high loan default rate recorded among the borrowers. The study further noted that there is lack of risk diversification practices such as provision of collateral and insurance covers for borrowers. The findings underscore the pivotal role credit risk management techniques play in sustaining not only the SACCOs but also in cushioning borrowers against losses.

Although banks, micro-finance institutions and SACCOs operate in the same economic and political environment in Kenya, the risks faced may vary based on the techniques that each category of these institutions employ in managing credit because they attract different borrowers. Therefore, the studies of Ahmed and Malik (2015), Zhang and Dong (2011) and Alshatti (2015) may not give an accurate measure of the credit risks faced by SACCOs in Kenya. Domestically, research done by Gakure, Ngugi, Ndegwa, and Waithaka (2012) reveal that credit management techniques are significantly correlated with lower rates of default of unsecured loans offered by commercial banks in Kenya. The study of Gatimu Frederick assessed the institutional factors contributing to loan default in Kenya. The findings from the study suggest that credit risk management practices were a major factor contributing to high rates of loan default among micro-

finance institutions in Kenya (Gatimu, 2014). This scholarship demonstrates that credit risk management is critical to the profitability and sustainability of all financial institutions in the long-run.

In a survey of SACCOs operating in Nairobi County, Ndung'u (2013) finds that credit risk is one of the highly prioritized areas regarding lending since loan default has a significant effect on profitability as well as on the daily operations of the SACCOs. Given the huge significance of risk management among SACCOs, research has shown that techniques adopted by these firms have a considerable bearing on the yields of the loans given out to borrowers and also on the overall profitability of the SACCOs. A survey of 31 SACCOs operating in Nairobi revealed that a majority of the SACCOs employ credit risk management techniques to mitigate risks. 28 of the surveyed SACCOs examined agreed that risk management positively impacts on the ability of these firms to carry out their core activities in line with their objectives (Gaitho, 2013). These findings are similar to the study of Nyamwange (2010) who suggested that SACCOS in Nairobi adopted rigorous credit management practices to counter the impact of the risks they are exposed to on a daily basis. However, the type of technique(s) used by SACCOs may vary from one institution to another and this is likely to determine the exposure of that particular institution.

According to the research of Fredrick Lagat, Robert Mugo and Robert Otuya, credit risk management is an imperative for SACCOs if they aspire to attain their set objectives. The researchers sampled 59 SACCOs operating within Nakuru County and analyzed data on credit risk identification, risk monitoring, risk analysis, and risk evaluation. The study concluded that all risk management practices selected had a significant effect on the lending portfolio except for risk evaluation which registered minimal impact on the SACCOs loan book (Lagat, Mugo, &Otuya,

2013). The reduced impact of risk evaluation may be attributed to the human element in the process of risk management and its little impact on assessing borrowers. That is, if risk processes as outlined in the credit policy are followed, then the impact of loans officer in awarding loans to risky borrowers is minimal.

2.5 Summary of Literature Review

Credit risk is the principal source of risk for financial intermediaries, including SACCOs. As Ogilo (2012) reports, credit risk management is a major factor in influencing the financial soundness of financial institutions. SACCOs use various risk techniques and practices to manage their credit risks. Empirical studies reviewed offer strong evidence to effect that credit risk management is significantly positively correlated with performance of financial intermediaries.

Although considerable amount of empirical literature on credit risk management among the SACCOs exist, to the authors best of knowledge, few studies have focused on the effect on risk management techniques on the Loan performance of DT-SACCOs operating in Nairobi County. The aim of this study, therefore, was to build on this nascent literature about credit risk management techniques for DT-SACCOS headquartered in Nairobi County. The findings would enrich the little available knowledge on the correlation between credit risk management techniques and Loan performance of DT-SACCOs headquartered within Nairobi City County.

2.6 Conceptual Framework

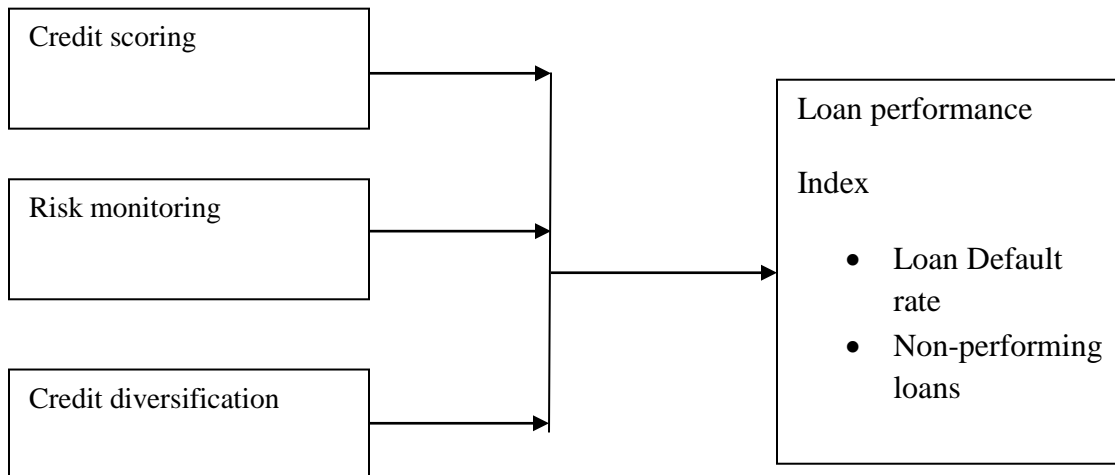


Figure 2.1: Conceptual Framework

Dependent Variable

Independent Variable

Source: author (2018)

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter covers research design and methodology used in the study. It covers the research design, study population, methods of data collection, data analysis, analytical model and Test of Significance.

3.2 Research Design

This study employed descriptive survey design. It was vital to use this design because it supports the investigation of different organizations within a given period of time and can also be used when conducting comparative analysis of various events, people and the entire population within a given period of time. In this study, the data relating to credit risk management techniques and Loan performance was collected from different respondents selected from SASRA regulated DT-SACCOs headquartered in Nairobi. The researcher also adopted correlation research design whereby quantity data was collected and examined to describe a given event in its current trends, events and associations between various factors relating to current risk management practices among SACCOs situated and headquartered in Nairobi County.

3.3 Population of the Study area

Mugenda (2003) describes a population as a group of items with common observable features. For the purposes of research, Sim and Wright (2000) defined a population as a group of cases in which the researcher is interested and hopes to generalize about a given phenomenon. The population of this study is composed of all the DT-SACCOs headquartered in Nairobi County. The study took the form of a census survey. The study targeted a population of 42 SACCOs (see appendix 2) that have received registration from SASRA and are headquartered in Nairobi. All the information regarding the SACCOs under study was collected from the SASRA

regulatory authority and their respective websites as it was deemed appropriate and this was determined by the type of information that the researcher wanted to utilize in the study.

3.4 Data Collection

Questionnaires were used in data collection. The data collected mainly related to the DT-SACCOs. It has been highlighted by Sekaran (2003) that self-administered questionnaire is the best approach to producing a self-report on the opinion of people, attitudes, beliefs and values. Therefore, the questionnaires that were administered contained both open and closed ended questions. In this study, both primary and secondary data was used as well. Primary data is the information that was collected directly from the field through the administration of semi-structured questionnaires. Administration of the questionnaires was done randomly.

The persons targeted for the administration of the questionnaire were risk managers, credit officers and other credit handling individuals within DT-SACCOs to give their opinion in non-restricted environment. There was also self-administration of questionnaires to some respondents while others were administered by the researcher. Secondary data was also in this research. It was obtained from books and internet. In this case, the main source of information about SACCOs was obtained from financial statements of different SACCOs registered with SASRA. This information helped the researcher to collect financial information regarding performance of every SACCO under investigation in this study.

3.5 Data Analysis

In this study, data was analyzed using qualitative and quantitative techniques. Once the opinion of respondents was collected, it was edited and proofread, classified, coded and tabulated to examine the data using SPSS version 21. Tables were used in the representation of the result. Inferential statistics was also used to establish the association between Credit risk management

techniques and Loan performance of DT-SACCOs headquartered in Nairobi County. The researcher employed inferential statistics was used to determine the association between loan performance with the identified credit risk management techniques whereby the techniques were quantified from Likert questions. To determine the strength of the relationship, correlation analysis was conducted to show whether Credit risk management techniques and Loan performance have positive or negative correlation. Linear regression model for both Loan performance and Credit risk management techniques was applied to examine relationship between the two variables. Linear regression model uses Loan performance of DT-SACCOs headquartered in Nairobi County as dependent variables and Credit risk management techniques as independent variable. The feedback of participants on Credit risk management techniques was quantified on the basis of the kind of responses obtained from Likert scaled questions.

3.6 Analytical Model

The following multiple regression model was used in the study

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \epsilon$$

Whereby β_0 denotes the constant of the model while β_1 , β_2 , β_3 , were the coefficients of the independent variables

Y = Loan Performance =Dependent Variable

Information regarding the independent variables had been captured in thequestionnaire as follows:

Independent Variables (X)

X1 = Credit Scoring variable

X2= Risk Monitoring Variable

X3= Credit Diversification Variable

ϵ = an error term for the model

3.7 Test of Significance

The statistical significance of the study independent variables was tested. F-test, a Fisher distribution test was adopted for the analysis to indicate the ratio between model mean square divided by the error mean square. The robustness and significance of the overall model was tested using F- statistics and at a 5 % level of confidence. The conclusion was drawn on the basis of P value where if the null hypothesis was rejected then the overall model was interpreted as significant and if the null hypothesis was considered as acceptable then model was interpreted as insignificant.

This implies that if P –value is less than 0.05 the model was treated as significant and has a good predictor of the dependent variable and that the outcome is not dependent on the likelihood of the presence of the independent variable. When the P-value is more than 0.05 the model was considered insignificant and, therefore, could not be applied in explaining the variation in the dependent variable. At the same time, t-statistics was used in testing the significance of each independent variable and hypothesis. The P-value for every t-test was used to make a conclusion on whether to reject or accept the null hypothesis. The yardstick for this study for failure to reject or accept the null hypotheses was put at a level of significant of 5%. If the p value is less than 5% null hypothesis is rejected and the alternative hypothesis accepted.

CHAPTER FOUR: DATA ANALYSIS, INTERPRETATION AND DISCUSSION

4.1 Introduction

The chapter exemplifies the empirical findings and results of the application of the variables using procedures mentioned in chapter three. Particularly, the data analysis was in line with specific objectives where patterns were investigated, interpreted and implications drawn on them. The chapter is organized as follows; Section 4.2 presents response rate while section 4.3 discusses the results of validity and reliability. Section 4.4 presents demographical Profiles. Section 4.5 presents descriptive analysis of the variables while section 4.6 discusses correlation analysis. Lastly, Section 4.7 regression analysis.

4.2 Questionnaire Response Rate

Of the 42 questionnaires administered, 36 were completed and returned, which represents 85.7% response rate. This rate is deemed ideal to make appropriate deductions for the study. Mugenda and Mugenda (2003) asserts that 50% response rate is ideal, 60% good while 90.7% was rated very good. This combines with Bailey (2000) assertion that states that a response rate of 50% is adequate, while a response rate greater than 70% is very good. This implies that based on this presumption, 85.7% which is the response rate in this case is therefore very good.

The verified high response rate can be attributed to the procedures used in data collection, where the potential participants (Sacco's credit managers and credit officers) were pre-notified of the intended survey. Also, the researcher deployed a self-administered questionnaire. The responses were hand- picked thereafter. Follow up calls were made to clarify queries so as to hasten the process by encouraging the respondents fill the questionnaires promptly.

Table 4.1: Response Rate

Respondents	Questionnaire Distributed	Questionnaire Returned	Response Rate
	42	36	85.70%

Source: Researcher, (2018)

4.3 Reliability Analysis

The researcher found it necessary to assess the properties of the psychometric constructs even though a majority of the methods used in this study were obtained from well-established scales in the extant literature. Cronbach's alpha coefficient was used to measure reliability of the scale. The coefficient was applied to establish the consistency or average correlation of items in a survey tool meant for measuring reliability (Sekaran, 2003). The results are presented in Table 4.2

Table 4.2: Reliability Analysis

Variable	Cronbach's Alpha
Credit scoring	.843
Risk monitoring	.826
Credit diversification	.813

Source: Researcher, (2018)

The measures of the study were instituted to be very reliable in that they all had alpha coefficient superior than the accepted Cronbach's alpha coefficient of 0.70 which was the preset cut off point.

4.3.1 Validity Tests

Validity in research involves determining whether the research instruments really measure what was intended to measure (Patton, 2002). The content validity was determined by discussing the questionnaires with the supervisors, department lecturers and research experts. Also content

validity index was determined at 0.791. According to Oso and Onen (2009) validity coefficient of minimum 0.70 is deemed acceptable. This implies the data collection instrument passed validity test.

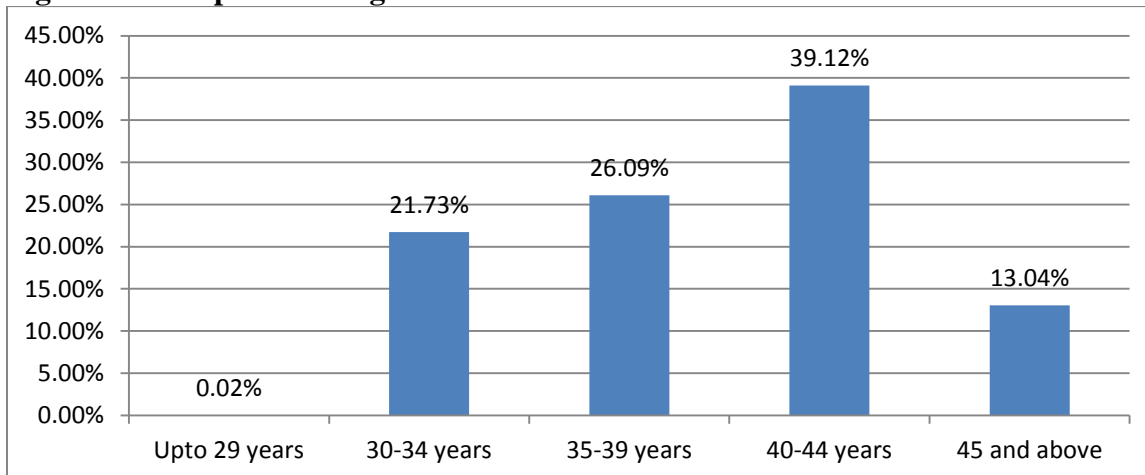
4.4 Demographic Information

The study sought to create the demographic profile of respondents and hence respondents were requested to indicate their age distribution, gender and work experience in the SACCO. The results are presented in subsections below

4.4.1 Age Distribution

The study sought to establish the age distribution of the respondents in the SASRA regulated deposit taking SACCOS. The age of the employees is crucial since it determines how well they can interpret the environment and consequently make decisions for their organizations that will eventually influence loan performance. Figure 4.1 shows the results of the findings on the age brackets of the respondents.

Figure 4.1: Respondents Age



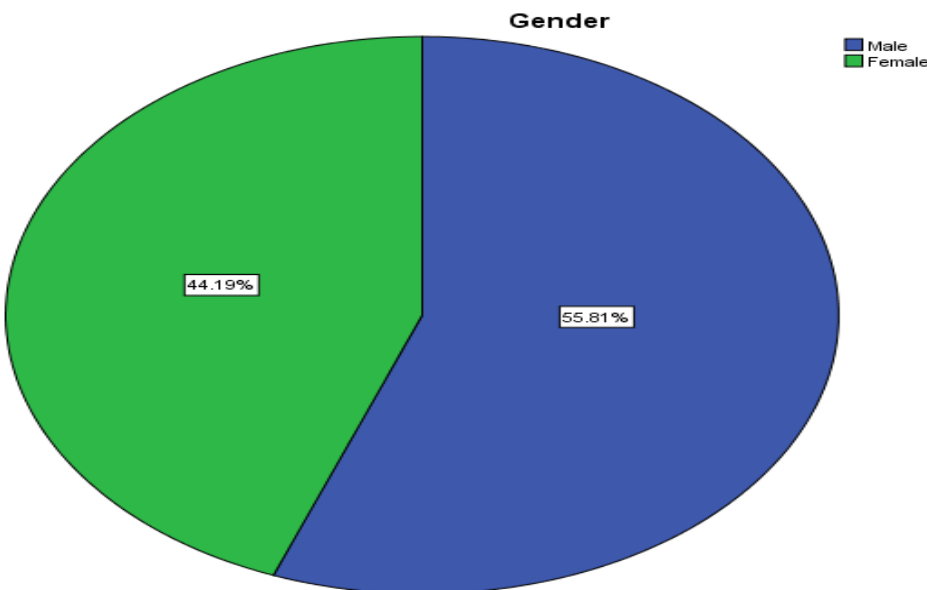
Source: Researcher, (2018)

The results shows that 39.12% of the respondents ranged between 40 and 44 years,26.09% who ranged between 35and 39 years of agewhereas21.73% were between30 and 34 years. A few of the respondents 13.04% were more than 45 years. The age of the respondents suggests that they mature enough to interpret credit management and loan performance functions.

4.4.2 Gender distribution

The study established that it's essential to establish the respondents' gender in order to find out whether there was gender equality in the positions indicated by the respondents. The results are presented in Figure 4.2

Figure 4.2 Gender Distribution



Source: Research data, (2018)

As per the analysis it was apparent that most of the respondents were male which represented (55.81%) while (44.19%) were female. According to Acker (2006) gender equality is a very significant trait since it can be used to improve decision making process. He posited that it

nurtured teamwork and also harmonized the aspect of working together for a mutual goal with every individual exertion whether male or female being essential to the realization of the overall objectives. A gender responsive firm provides a favorable working atmosphere where a staff/Manager interacts with other colleagues of the opposite gender in search of merit and achievement of set targets. The findings showed that there were both male and female members in the organization studied. The findings suggest that the views expressed in these findings can be taken as representative of the opinions and gender balanced in regards to the credit risk management techniques and loan performance.

4.4.3 Size in Terms of Personnel

Size of the firm is key in ascertaining internal processes and therefore the study determined how SASRA regulated deposit taking SACCOS is manifested across Nairobi County. The firm with many personnel means its operation is bigger thus requiring more employees in each functional unit to carry out the needed roles. It further indicated that the firm may be doing well in terms of number of branches spread across the country. The findings are presented in Table 4.3.

Table 4.3: Size of Organization

Size of organization	Frequency	Percentage (%)
Between 1-100	15	42.2
Between 101-200	14	39.4
Between 201-300	6	16.5
Between 301-400	1	0.9
Over 401	1	0.9
Total	36	100.0

Source: Field Data (2018)

Nairobi County has an employee range from 1-100. This was followed by (39.4%) who indicated a range between 1-100 employees. Further (16.5%) indicated a range between 201-300 and only 0.9% indicated employee ranges between 301-400 and over 401 respectively. The findings therefore suggest that SASRA regulated deposit taking SACCOS in Nairobi County are relatively large with complex handling processes including handling large number of customers.

4.4.4 Years of Operation

The study determined the number of years the surveyed SACCOS have been in existence. This was to investigate whether the SASRA regulated deposit taking SACCOS were well versed with the dynamics of the SACCOs industry and fully understand the various credit risk management techniques required for loan performance. The study findings are presented in Table 4.4

Table 4.4: Years of Operation

Years of Operation	Frequency	Percentage (%)
Less than 5	6	18.3
5 to 10 years	7	19.3
11 to15 years	8	22.0
16 to 20 years	3	8.3
Over 20 years	12	32.1
Total	36	100.0

Source: Field Data (2018)

The study indicates that majority 32.1% of SASRA regulated deposit taking SACCOs have been in existence for over 20 years followed by 22.0% who indicated having been in existence for a period between 11 to 15 years. Further 19.3% and 18.3% indicated having been in existence for a period between 5 to 10 years and less than 5 years respectively.

Further only 8.3% indicated having been in existence for a period ranging between 16 and 20 years. The finding indicates that majority of the SASRA regulated D- taking SACCOs have been in existence for long and are able to manifest and inform the purpose of the study on credit risk management techniques and how they influence loan performance.

4.5 Manifestations of Study Variables

The study focused on how the key variables were manifested in different SASRA regulated D-taking SACCOs in Nairobi county. This was determined through presenting statements in each of the study sub variables to be responded in line with how the manifestation occurred. The key study variables included credit scoring, risk monitoring and credit diversification. The results were derived and discussed in the following subsections.

4.5.1 Credit scoring

Credit scoring was measured by the statements deemed necessary in measuring how credit scoring manifests among the SASRA regulated D- taking SACCOs using a 5 type Likerts' scale (where 1=strongly disagree 2= disagree 3=neither disagree nor agree 4=agree 5=strongly agree). Table 4.5 presents the pertinent results.

Table 4.5 Credit Scoring Attributes

Credit Scoring Attributes	N	Mean	Std. Deviation
Our SACCO award loans on a credit scoring basis	36	3.417	1.204
Most of our customers scores highly before they are awarded loans	36	3.750	1.052
Our SACCO evaluates past repayment period of the customer before awarding a loan	36	3.722	1.233
Our SACCO scrutinizes information about the customer before awarding the loan	36	3.889	1.036
The SACCO customers have good past repayment record	36	3.611	1.271
Those with past bad repayment records are awarded low amount of loans	36	3.861	.961
The loan given are strictly on how the past repayment have been done	36	3.806	1.064
Average Mean Score	36	3.722	1.117

The results show that the average mean score for the credit scoring attributes is 3.722 and standard deviation of 1.117. This is a strong mean score implying that SASRA regulated deposit taking SACCOs in Nairobi County are keen of credit scoring as a technique of credit risk management. The statements that showed a higher mean was that of our SACCO scrutinizes information about the customer before awarding the loan (Mean=3.889 and SD=1.036). However the statement with the lowest mean score was that our SACCO award loans on a credit scoring basis (Mean=3.417 and SD=1.204). This means that SACCOs are mainly based on shares contributed as members that determine the amount of loan awarded. The findings therefore depicts that it is important for deposit taking SACCOs to scrutinize the customers past repayment history before determining the amount of the loan to be given.

4.5.2 Risk Monitoring

The study determined the extent to which risk monitoring attributes are manifested among the surveyed SASRA regulated D- taking SACCOs headquartered in Nairobi County. Risk monitoring might play a significant role in determining loan performance through reduced default rates. To capture these data, the respondents were asked to suggest the rating to which they view which statements relating to risk monitoring manifest themselves in the surveyed SACCOs. The findings are presented in Table 4.6 and were measured in terms of mean scores, standard deviation and coefficient of variation.

Table 4.6 Risk Monitoring Attributes

Risk Monitoring Attributes	N	Mean	Std. Deviation
Our SACCO has a way of monitoring risks associated with loans advanced	36	3.861	.990
There is a security required for a loan to be processed in our firm	36	3.111	1.326
Our SACCO requires customers to have guarantors before their loans are processed	36	3.417	1.381
Guarantors funds are withheld in the event that a customer fails to repay the loans	36	3.167	1.183
The SACCO has a mechanism of collecting an overdue loan from the customer	36	3.306	1.191
The SACCO offers loans to members only	36	3.083	1.180
In the event that a customer dies before clearing the loan, the insurance company pays	36	3.194	1.117
Average Mean Score	36	3.306	1.195

The average mean score of risk monitoring attributes is 3.306 and standard deviation of 1.195. This is a moderate mean score depicting that SASRA regulated D- taking SACCOs moderately monitor risks. The results for other attributes were above 3.0 implying that risk monitoring is crucial in determining loan performance. For instance that statement that our SACCO has a way

of monitoring risks associated with loans advanced had the highest mean score of 3.861 and standard deviation of .990. This implies that all the D-taking SACCOs have a clear laid down ways of how the loans advanced to customers are monitored to ensured repayment and the statement with the lowest mean was that there is a security required for a loan to be processed in our firm with a mean score of 3.111 and standard deviation of 1.326. This implies that for SACCOs, there is no need of security but the members' contributions and members as guarantors forms the requirements needed.

4.5.3 Credit Diversification

The study established the extent to which credit diversification attributes are manifested among the SASRA regulated D- taking SACCOs headquartered in Nairobi County. The statements depicting how credit diversification attribute manifests were presented to respondents and the findings are presented in Table 4.7. The results are presented in terms of mean scores, standard deviation and coefficient of variation.

Table 4.7 Credit Diversification Attributes

	N	Mean	Std. Deviation
Our SACCO gives loans to different sectors and individuals	36	3.361	1.199
Our SACCO has invested the money in different properties to spread risk	36	3.472	1.183
Our SACCO gives credit on the basis of the shares contributed by the customer	36	3.444	1.027
Those individuals with good rating are given more loans compared with those with low rating	36	3.444	1.107
Most of the credit is given to areas of higher return for easy repayment	36	3.500	1.183
Average Mean Score	36	3.444	1.140

The findings in Table 4.7 shows that the attributes of credit diversification have an average mean score of 3.444 and a standard deviation of 1.140. This is an indication that credit diversification is manifested moderately within the regulated D- taking SACCOs in Nairobi County. All the other attributes gave a mean more than 3.0; implying that they manifested above average. For instance the attributes with highest mean score was that most of the credit is given to areas of higher return for easy repayment (Mean=3.500 and SD=1.183) and that our SACCO has invested the money in different properties to spread risk (Mean=3.472 and SD=1.183). This depicts that D- taking SACCOs are keen on diversifying risks to avoid bad debts.

4.5.4 Descriptive Statistics for Loan performance

Table 4.8 presents the descriptive statistics and the distribution of loan performance in terms of non-performing loans portfolio and default rate. The descriptive statistic considered were minimum, maximum, mean, standard deviation, skewness and kurtosis.

Table 4.8: Descriptive Statistics

	Min	Max	Mean	Std. Deviation	Skewness		Kurtosis	
					Statistic	Std. Error	Statistic	Std. Error
Non-performing loans portfolio	6,888,087,000	16,473,353	8,055,219,000	112.15750	.900	.289	.787	.570
default rate	.17	.41	.3456	.25042	.366	.289	-.565	.570

Table 4.8 shows that non-performing loans portfolio had a mean of 8,055,219,000 and a standard deviation of 112.157. That is, non-performing loans is, on average, 8,055,219,000 across all the years under study. Further the mean default rate for the performance cycles was 0.3456 on

average. This is relatively low implying that D- taking SACCOs have put in place measures of managing risks associated with loan performance.

4.6 Correlation Analysis

The degree of association between variables under consideration i.e. independent variables (credit scoring, risk monitoring and credit diversification) and the dependent variable (loan performance) was measured using Pearson correlation. Pearson correlation coefficients range from -1 to +1. Negative values suggest a negative correlation and positive values suggest a positive correlation where Pearson coefficient <0.3 infers weak correlation, Pearson coefficient $>0.3<0.5$ infers moderate correlation and Pearson coefficient >0.5 infers strong correlation. The results are presented in Table 4.9

Table 4.9: Correlation Analysis Results

		Correlations			
		Credit scoring	Risk monitoring	Credit diversification	Loan performance
Credit scoring	Pearson Correlation	1	.627**	.273	.570**
	Sig. (2-tailed)		.000	.107	.000
	N	36	36	36	36
Risk monitoring	Pearson Correlation	.627**	1	-.026	.742**
	Sig. (2-tailed)	.000		.882	.000
	N	36	36	36	36
Credit diversification	Pearson Correlation	.273	-.026	1	-.071
	Sig. (2-tailed)	.107	.882		.682
	N	36	36	36	36
Loan performance	Pearson Correlation	.570**	.742**	-.071	1
	Sig. (2-tailed)	.000	.000	.682	
	N	36	36	36	36

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

The analysis above shows that risk monitoring has the strongest positive influence on loan

performance (Pearson Correlation coefficient =.742 and $P < 0.05$) inferring that the relationship is statistically significant. In addition, credit scoring is positively correlated to loan performance (Pearson correlation coefficient =.570 and $P < 0.05$) suggesting a statistically significant strong relationship. However, the relationship between credit diversification and loan performance is weak and statistically insignificant (Pearson correlation=.071with $P > 0.05$) implying that credit diversification does not necessary influence how the loans advanced to customers perform. The results in the correlation matrix imply that the independent variables credit scoring and risk monitoring are crucial in enhancing performance of the loans and therefore D- taking SACCOs should consider them if loan performance is to be achieved.

4.7 Regression Analysis

This section presents the results of the tests of regression analysis tested using; simple linear regression analysis. The regression was tested at 95 percent confidence level ($\alpha = 0.05$), hence decision points to interpret the results were based on the p-values. Where $p < 0.05$, the results are significant, and where $p > 0.05$, the results are insignificant. Interpretations of results and subsequent discussions also considered correlations (R), coefficients of determinations (R^2), F-Statistic values (F) and beta values (β). R^2 indicated the change in dependent variable explained by change in the independent variables combined. Further, the higher the F-Statistic, the more significant the model was. The negative or positive effect of the independent variable on the dependent (either negative or positive) was explained by checking the beta (β) sign. The R-value shows the strength of the relationship between the variables, t-values represent the significance of individual variables.

4.7.1 Model Summary

Credit risk management techniques were measured using credit scoring, risk monitoring and credit diversification which are presumed to influence loan performance. This was done by calculating the indices for each of the risk management techniques and loan performance and performs a regression analysis. The results of model summary are presented in Table 4.10.

Table 4.10 Model Summary Results

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.762 ^a	.580	.541	.28510

a. Predictors: (Constant), Credit diversification, Risk monitoring, Credit scoring

The effects of risk management techniques constructs on loan performance are shown in Table 4.9. The study found a relatively moderate association between Credit risk management constructs and loan performance ($R = .762$). Coefficient of determination was ($R^2 = .580$) indicating that Credit risk management techniques constructs together explain 58.0% of variation in loan performance with the remaining 42% being explained by other factors not considered in the model. This therefore implies that the techniques used are effective in explaining loan performance.

The study further determined the significant level of the model to determine if the model has an explanatory value in measuring how loan performance is affected by Credit risk management techniques. The results are presented in Table 4.11

Table 4.11 ANOVA Results

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	15.134	3	5.045	14.736	.000 ^b
	Residual	10.955	32	.342		
	Total	26.089	35			

a. Dependent Variable: Loan performance

b. Predictors: (Constant), Credit diversification, Risk monitoring, Credit scoring

The significance value is 0.000 which is less than 0.05 thus the model is statistically significant in predicting how credit scoring, risk monitoring and credit diversification influence loan performance of SASRA regulated D- taking SACCOs headquartered in Nairobi County. The F critical at 5% level of significance was 14.736. This shows that the overall model was significant.

The study ran the procedure of obtaining the coefficients, and the results were as shown in Table 4.11.

Table 4.12 Coefficient Results

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.160	.757		1.532	.135
	Credit scoring	.245	.170	.229	1.446	.015
	Risk monitoring	.612	.157	.595	3.906	.000
	Credit diversification	.161	.169	-.118	-.957	.346

a. Dependent Variable: Loan performance

The construct with highest influence is risk monitoring ($\beta=.612$, $p<0.05$). This was followed by credit scoring ($\beta=.245$, $p<0.05$). However credit diversification manifested insignificant results indicating that although it has an effect on the loan performance, the effect is not

significant which means that risk monitoring and credit scoring influences customers' loan performance more.

As per the SPSS generated table above, the equation ($Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \epsilon$) becomes:

$$Y = 1.160 + 0.245X_1 + 0.612X_2 + 0.161X_3$$

According to the regression equation established, taking all factors into account (credit scoring, risk monitoring and credit diversification) constant at zero loan performance was 1.160. The data findings analyzed also shows that taking all other independent variables at zero, a unit increase in credit scoring will lead to a 0.245 increase in loan performance; a unit increase in risk monitoring will lead to a 0.612 increase in loan performance and a unit increase in credit diversification will lead to a 0.161 increase in loan performance. All the significance values were less than 0.05 ($p < 0.05$) except for credit diversification implying that they were statistically significant in explaining loan performance.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

The purpose of the study was to critically examine the impact of credit risk management techniques on loan performance of SASRA regulated D- taking SACCOs headquartered in Nairobi County. This chapter summarizes the research findings, conclusions and recommendations and proposes areas of future research.

5.2 Summary of Findings

The study established the demographic profile of respondents and the firm in terms of age distribution, gender and work experience in the SACCOs. The age of the employees is crucial since it determines how well they can interpret the environment and consequently make decisions for their organizations that will eventually influence loan performance. The results shows that majority of the respondents ranged between 40 and 44 years with only a few of the respondents being above 45 years of age. This implies that respondents are mature enough to interpret credit management and loan performance functions. Further according to the analysis it was evident that majority of the respondents were male with few being female. Gender equality was a very important trait since it can be used to improve decision making process. He argued that it raised coordination and also created a sense of harmony and the aspect of working together for a mutual goal with every individual endeavor whether male or female being key to the attainment of the overall objectives.

Size of the firm is key in ascertaining internal processes and therefore the study determined how SASRA regulated deposit taking SACCOs is manifested across Nairobi County. The results show

that majority of SASRA regulated D-taking SACCOs in Nairobi county have an employee range from 1-100. The findings therefore suggest that SASRA regulated D- taking SACCOs in Kenya are relatively large with complex handling processes including handling large number of customers.

The study determined the number of years the surveyed SACCOs have been in existence. This was to investigate whether the SASRA regulated deposit taking SACCOs were well versed with the dynamics of the SACCOs industry and fully understand the various credit risk management techniques required for loan performance. The study indicates that majority of SASRA regulated deposit taking SACCOs have been in existence for over 20 years. These findings, therefore, show that most of the SASRA regulated deposit taking SACCOs have been in existence for long and are able to manifest and inform the purpose of the study on credit risk management techniques and how they influence loan performance.

The study focused on how the key variables were manifested in different SASRA regulated deposit taking SACCOs in Kenya. This was determined through presenting statements in each of the study sub variables to be responded in line with how the manifestation occurred. The key study variables included credit scoring, risk monitoring and credit diversification. The results show that the average mean score showed a strong manifestation. This is a strong mean score implying that SASRA regulated deposit taking SACCOs headquartered in Nairobi County are keen of credit scoring as a technique of credit risk management. This means that SACCOs are mainly based on shares contributed as members that determine the amount of loan awarded. The findings therefore depicts that it is important for deposit taking SACCOs to scrutinize the customers past repayment history before determining the amount of the loan to be given.

The study determined the extent to which risk monitoring attributes are manifested among the surveyed SASRA regulated deposit taking SACCOs headquartered in Nairobi County. Risk monitoring might play a significant role in determining loan performance through reduced default rates. To capture these data, the respondents were asked to indicate the rating to which they view which statements relating to risk monitoring manifest themselves in the surveyed SACCOs. The average mean score of risk monitoring attributes was moderate. This moderate mean score depicting that SASRA regulated deposit taking SACCOs moderately monitor risks. This implies that all the deposit taking SACCOs have a clear laid down ways of how the loans advanced to customers are monitored to ensure repayment and the statement.

The study established the extent to which credit diversification attributes are manifested among the SASRA regulated deposit taking SACCOs. The statements depicting how credit diversification attribute manifests were presented to respondents. The findings shows that the attributes of credit diversification have an average mean score. This is an indication that credit diversification is manifested moderately within the regulated deposit taking SACCOs in Nairobi county. All the other attributes gave a mean more than 3.0; implying that they manifested above average. This depicts that deposit taking SACCOs are keen on diversifying risks to avoid bad debts.

5.3 Conclusions

The analysis above shows that risk monitoring has the strongest positive influence on loan performance implying that the relationship is statistically significant. In addition, credit scoring is positively correlated to loan performance implying a statistically significant strong relationship. However, the relationship between credit diversification and loan performance is weak and statistically insignificant implying that credit diversification does not necessary influence how the

loans advanced to customers perform.

The results in the correlation matrix imply that the independent variables credit scoring and risk monitoring are crucial in enhancing performance of the loans and therefore deposit taking SACCOS should consider them if loan performance is to be achieved. The effects of risk management techniques constructs on loan performance found a relatively moderate association between risk management constructs and loan performance. This therefore implies that the techniques used are effective in explaining loan performance.

The significance value was 0.000 which is less than 0.05 thus the model is statistically significant in predicting how credit scoring, risk monitoring and credit diversification influence loan performance of SASRA regulated deposit taking saccos. The construct with highest influence was risk monitoring. This was followed by credit scoring. However credit diversification manifested insignificant results indicating that although it has an effect on the loan performance, the effect is not significant which means that risk monitoring and credit scoring influences customers' loan performance more.

5.4 Recommendations

SACCOs should embrace credit monitoring and as credit risk management technique in their lending practices. This is due to its significant impact on reducing the level of non-performing loans and default rate. SACCOs situated in Nairobi should, therefore, assess profiles of its members before authorizing their loans or lend to different customers and financial institutions to reduce the impact of loss resulting from poor loan repayment performance. Thus, the study recommends that SACCOs in Nairobi should run updates of credit files for purposes of client rating to be used for approval or sanctions with a view of minimize riskiness of the loan beneficiaries before awarding loans. This can be done through analyses of profitability, efficiency

and leverage of the business. The process may include formation of credit evaluation committees to assess the risks specific SACCOs in their trading activities and evaluation of loan performance on a regular basis (of monthly) determine impact of risks on client business and their loan repayment performance. On the same note, credit managers and credit SACCOs to adopt comprehensive follow up strategies on members who have been advanced loans as a way of minimizing the likelihood of default.

The use of credit scoring led to a significant decrease in level of non-performing loans in SACCOs in Nairobi hence, lowering the level of non-performing loans to a very great extent. Hence SACCOs should put restrictive measures to enhance checks on customer profiles and history of financial records to identify credit risks they are exposed to as a strategy of evaluating creditworthiness of SACCO loan clients. The study recommends that SACCOs operating both in Nairobi and other parts of the country should incorporate credit scoring in their credit risk management measures. Particularly, they should enhance usage of credit risk scoring to a very great extent because vetting clients before approving loan facility has shown to minimize the level of occurrence of non-performing loans significantly.

Regarding diversification, the study recommends that DT-SACCOs should ensure loan portfolio are insured, loan pricing is made depending on the risk level of the clients' business and diversifies its credit facilities to various clients in different sectors, and assess purpose of the loan applied by the clients to reduce the exposure of SACCO loans to default. This is because diversification has a significant effect on improving the quality of loan repayment performance. Since it does not necessarily involve lending to the members of the DT-SACCOs, there should be

some balancing between what is invested in other entities apart from the SACCO members and what is to be advanced to members seeking credit facilities.

5.5 Limitations of the Study

The study's limitation was the inability to cover financial institutions operating in the rest of the country. This study concentrated only on SASRA regulated DT-SACCOs in Nairobi. The study would have covered all SACCOs in Kenya to provide a broader based analysis on SACCOs. However, since the study was funded by the researcher, resource constraints such as time and finances meant that study was to be confined in Nairobi. Although a majority of the DT-SACCOs carry out their operations in Nairobi, the failure to collect data from other parts of the country means that the researcher may have missed some insights as a result of lack of inclusion of all DT-SACCOs in Kenya. The other limitation of the study is that data obtained from the DT-SACCOs is limited to the duration in which it was obtained. Time changes market dynamics. As such, information obtained from the study may not be relevant in market conditions where commercial banks do not operate under a law that caps interest as this environment affects the activities of the economy, which may, in turn, influence how SACCOs perform in terms of their lending activities.

5.6 Suggestions for Further Research

The study sought to find out the relationship between credit risk management techniques and the loan portfolio performance of SASRA regulated D-T SACCOs in Nairobi- Kenya. The study showed that credit risk management techniques such as credit scoring, credit diversification and credit monitoring reduce the Loan default rate, reduce non-performing loans and ensure that SACCOs in Nairobi grant credits only to members who is creditworthy. Given that the study investigated only SASRA regulated DT-SACCOs operating in Nairobi, there is a need for a more

comprehensive study to incorporate other DT-SACCOs operating outside Nairobi. The result of such study would give a more overall picture of the loan performance of SACCOs in Kenya.

There is need for study that uses recent data from SACCOs due to the dynamic nature of the macroeconomic environment. As shown in the analysis, interpretation of this paper was done using data from 2013 to 2017. Over the last two years, reports have indicated that credit has shrunk as a result of the capping of interest rate for commercial banks. Therefore, there is a need to investigate the loan performance of DT-SACCOs in Nairobi in the context of the capping of interests for banks to assess whether credit risk exposures for SACCOs vary when changes are introduced in the banking sector.

The study focused on three credit risk management techniques (credit scoring, credit monitoring and credit risk diversification). The results and findings recorded in the preceding chapters consider the effect of each credit risk management technique in isolation. Hence, there is a need for future studies to investigate the combined effect of the three techniques.

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APPENDIX I: INTRODUCTION LETTER



UNIVERSITY OF NAIROBI
SCHOOL OF BUSINESS

Telephone: 020-2059162
Telegrams: "Varsity", Nairobi
Telex: 22095 Varsity

P.O. Box 30197
Nairobi, Kenya

DATE... 09/11/18

TO WHOM IT MAY CONCERN

The bearer of this letter ... MARY W. R. M. KIMANI

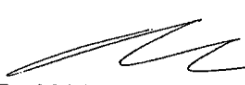
Registration No. DG1/31194/2015

is a bona fide continuing student in the Master of Business Administration (MBA) degree program in this University.

He/she is required to submit as part of his/her coursework assessment a research project report on a management problem. We would like the students to do their projects on real problems affecting firms in Kenya. We would, therefore, appreciate your assistance to enable him/her collect data in your organization.

The results of the report will be used solely for academic purposes and a copy of the same will be availed to the interviewed organizations on request.

Thank you.


PROF. JAMES M. NJIHIA
DEAN, SCHOOL OF BUSINESS



SECTION B: CREDIT SCORING

7. Please indicate the extent to which each of the following statements match credit scoring in your SACCO where 1=strongly disagree 2= disagree 3=neither disagree nor agree 4=agree 5=strongly agree

Items	Strongly disagree (1)	Disagree (2)	Neither disagree nor agree (3)	Agree (4)	Strongly agree (5)
Credit scoring Statements					
Our Sacco award loans on a credit scoring basis					
Most of our customers scores highly before they are awarded loans					
Our Sacco evaluates past repayment period of the customer before awarding a loan					
Our Sacco seeks information about the customer from other financial institutions before awarding the loan					
The Sacco customers have good past repayment record					
Those with past bad repayment records are awarded low amount of loans					
The loan given are strictly on how the past repayment have been done					

SECTION C: RISK MONITORING

8. Kindly indicate the extent to which you agree or disagree with the following statements as relates to risk monitoring in your SACCO where 1=strongly disagree 2= disagree 3=neither disagree nor agree 4=agree 5=strongly agree

Items	Strongly disagree (1)	Disagree (2)	Neither disagree nor agree (3)	Agree (4)	Strongly agree (5)
Risk monitoring statements					
Our Sacco has a way of monitoring risks associated with loans advanced					
There is a security required for a loan to be processed in our firm					
Our Sacco requires customers to have guarantors before their loans are processed					
Guarantors funds are withheld in the event that a customer fails to repay the loans					
The Sacco has a mechanism of collecting an overdue loan from the customer					
The Sacco offers loans to members only					
In the event that a customer dies before clearing the loan, the insurance company pays					

SECTION D: CREDIT DIVERSIFICATION

9. Kindly indicate the extent to which you agree or disagree with the following statements as relates to credit diversification in your SACCO where 1=strongly disagree 2= disagree 3=neither disagree nor agree 4=agree 5=strongly agree

Items	Strongly disagree (1)	Disagree (2)	Neither disagree nor agree (3)	Agree (4)	Strongly agree (5)
Credit diversification					
Our Sacco gives loans to different sectors and individuals					
Our Sacco has invested the money in different properties to spread risk					
Our Sacco gives credit on the basis of the shares contributed by the customer					
Those individuals with good rating are given more loans compared with those with low rating					
Most of the credit is given to areas of higher return for easy repayment					

THANK YOU

APPENDIX III

List of Licensed Deposit Taking SACCOs regulated by SASRA, and headquartered in Nairobi County as at 31st December 2017.

1. AFYA SACCO SOCIETY LIMITED
2. AIRPORTS SACCO SOCIETY LIMITED
3. ARDHI SACCO SOCIETY LIMITED
4. ASILI SACCO SOCIETY LIMITED
5. CHAI SACCO SOCIETY LIMITED
6. CHUNA SACCO SOCIETY LIMITED
7. COMOCO SACCO SOCIETY LIMITED
8. ELIMU SACCO SOCIETY LIMITED
9. HARAMBEE SACCO SOCIETY LIMITED
10. HAZINA SACCO SOCIETY LIMITED
11. JAMII SACCO SOCIETY LIMITED
12. KENPIPE SACCO SOCIETY LIMITED
13. KENVERSITY SACCO SOCIETY LIMITED
14. KENYA BANKERS SACCO SOCIETY LIMITED
15. KENYA POLICE SACCO SOCIETY LIMITED
16. MAGEREZA SACCO SOCIETY LIMITED
17. MAISHA BORA SACCO SOCIETY LIMITED
18. METROPOLITAN NATIONAL SACCO SOCIETY LTD
19. MILIKI SACCO SOCIETY LIMITED
20. MWALIMU NATIONAL SACCO SOCIETY LTD
21. MWITO SACCO SOCIETY LIMITED
22. NACICO SACCO SOCIETY LIMITED
23. NAFKA SACCO SOCIETY LIMITED
24. NSSF SACCO SOCIETY LIMITED
25. NATION SACCO SOCIETY LIMITED
26. NYATI SACCO SOCIETY LIMITED
27. SAFARICOM SACCO SOCIETY LIMITED
28. SHERIA SACCO SOCIETY LIMITED
29. SHRIKA SACCO SOCIETY LIMITED
30. SHOPPERS SACCO SOCIETY LIMITED
31. STIMA SACCO SOCIETY LIMITED
32. TAQWA SACCO SOCIETY LTD
33. TELEPOST SACCO SOCIETY LIMITED
34. TEMBO SACCO SOCIETY LIMITED
35. UFANISI SACCO SOCIETY LIMITED

36. UKRISTO NA UFANISI WA ANGLICANA SACCO SOCIETY LIMITED
37. UKULIMA SACCO SOCIETY LIMITED
38. UNAITAS SACCO SOCIETY LIMITED
39. UN-SACCO SOCIETY LIMITED
40. WANA-ANGA SACCO SOCIETY LIMITED
41. WANANDEGE SACCO SOCIETY LIMITED
42. WAUMINI SACCO SOCIETY LIMIT