

Effect of Credit Risk Management Practices on Lending Portfolio Among Savings and Credit Cooperatives in Kenya

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Abstract

Sound lending procedures in financial institutions involve identifying high-risk loan applicants, modifying lending conditions such as security requirements and monitoring repayments. Credit risk management is an emerging activity that lies within Sacco's. Many researches have attempted to answer the benefits of the credit risk management. However, it has remained unclear for the Sacco's management on the effects of credit risk management practices on lending portfolio. The purpose of this study was to examine the effects of credit risk management practices on lending portfolio among Sacco's in Nakuru County, Kenya. Data on risk identification, risk analysis, risk monitoring, risk evaluation and risk mitigation obtained from 59 Sacco's sampled from among Saccos in Nakuru County were analyzed using regression models to identify its effect on lending portfolio. Results indicate a significant effect of all the risk management practices on lending portfolio except risk evaluation which did not register a significant effect on the lending portfolio of the Sacco's. The findings further show that majority of the Sacco's have largely adopted risk management practices as a means of managing their portfolio.

Key words: Credit Risk Management, Lending Portfolio, Savings and Credit Cooperative Societies, Kenya.

1 Introduction

The financial sector comprises players from banking industry, micro finance institutions, capital markets, insurance companies, mutual funds and development finance institutions (CBK, 2007). In Kenya, SACCOS remain the most important players in provision of financial services and have deeper and extensive outreach than any other type of financial institution (ICA, 2002). They provide savings, credit and insurance services to a large portion of the population. Financial sector reforms were adopted in 1989 through the Structural adjustment programs supported by World Bank credit, which included liberalization of interest rate-attained in July 1991, and exchange rate-attained in October 1993. From the year 2010 new developments and intense competition in lending industry in Kenya's economy has been witnessed since the introduction of the economic liberalization which has posed serious challenges to the Sacco's. The emergence of formal and informal segments in the financial sector fragmentation implies that different segments approached problems such as high transactions costs, risk management, mobilization of funds, grants and capitalization (Steel, 1998).

The Cooperative movement in Kenya dates back to 1931 when the first ordinance to regularize the operations of the cooperatives in the country was enacted. The following decade witnessed increased intervention in the sector with the eventual enactment of the Co-operative Ordinance Act of 1945, the predecessor of the current Co-operative Societies Act, Cap. 490 of the laws of Kenya - as amended in 1997. Savings and credit cooperative societies (SACCOS) are registered and regulated under the Co-operative Societies Act. SACCOS are accorded the same treatment as producer or marketing cooperatives, and to qualify for registration they are not required to raise any capital. In addition, Sacco's are restricted in terms of where to invest their funds of deposits (Sacco Act, 2008).

Three types of cooperatives are recognized in the Act; Primary Cooperatives, Cooperative Unions and Apex Cooperatives. SACCOS fall in the category of Primary Cooperatives. Before the 1990's, only employer – based SACCOS were operational in the country with employment as the common bond (WOCCU, 2005). This system locked out a large number of people who were self-employed. An amendment to the Act in 1997 recognized the possibility of forming a SACCO on a base other than employment. This development ushered in a new category, referred to as rural SACCOS. Their activities derive from agricultural produce being marketed through an organized system such as marketing cooperative societies. The reforms also ushered in the formation of SACCOS among informal sector operators engaged in public transport, textiles and commerce. Informal sector SACCOS are referred to as "rural" and employer – based SACCOS are referred to as "urban".

Ngugi and Kabubo (1998), Bisasi and Pagano (2001), note that liberalization of the financial sector in developing countries such as Kenya during the 1990s has received considerable attention in the recent times. Consequently most borrowers have had problems relating to loan repayment making Sacco's to carry huge bad debts in their loan books. to continue being in business Sacco's depends on effective debt repayment by member

borrowers. Without debt collection, no amount of supervision or competition can make Sacco's operate efficiently.

1.1 Problem Statement

Increasing profitability is a priority for all managers in financial institutions. For Sacco managers, credit risk management is equally very important. On the one hand Sacco managers need to reduce the risk of loan default because the institutions financial viability is weakened by the loss of principal and interest, yet on the other hand Sacco's operate under objectives of maximizing benefits to members which include the social role of providing loans to help members achieve their standard of living goals. This social roles conflict with financial viability of Saccos' if managers become less stringent in the lending practices to assess and monitor the credit risk of member borrowers. This calls for the need to conduct more research on credit risk management practices in Saccos. The study is an attempt to close this gap by providing further insights and information on the effect of credit risk management practices on lending portfolios of Saccos'.

1.2 Objectives

1. To establish the effects of credit risk identification methods on lending portfolio of Savings and credit co-operatives.
2. To assess the effect of risk analysis on lending portfolio of Savings and credit co-operative's.
3. To determine risk monitoring on lending portfolio of Savings and credit co-operatives.
4. To explore in more detail risk evaluation on lending portfolio of saving's and credit co-operatives.
5. To examine risk management mitigation measures on lending portfolio among Savings and credit co-operatives.

1.3 Hypothesis to the Study

The study tested the following null hypothesis:

1. Ho Credit Risk identification practices have no significant effect on lending portfolio of Savings and credit cooperative societies.
2. Ho Credit Risk analysis has no significant effect on lending portfolio of savings and credit co-operative societies.
3. Ho Credit Risk monitoring has no significant effect on lending portfolio of Savings and credit co-operative societies.
4. Ho Credit risk evaluation has no significant effect on lending portfolio of savings and credit co-operatives societies.
5. Ho Credit risk mitigation has no significant effect on lending portfolio of savings and credit co-operative societies

2 Literature Review

2.1 Credit Risk Management in Saccos

According to Alexandra (2006), performance of a Sacco depended so much on the quality of its portfolio. Further studies by Chipembere (2009) and FSD (2009) assert that performance of Saccos mainly is determined by the management and governance structures. Apart from the financial deficiencies, the provision of loan products to profitable low-risk borrower members, the appropriate risk management is more nebulous. On the one hand Sacco managers need to reduce the risk of loan default because the institutions financial viability is weakened by the loss on principle and interest, the cost of recovery and the opportunity cost of management time taken to recover (Eales and Bosworth, 1998). Yet on the other hand Sacco's operates under the objective of maximizing benefits to members which include providing loans to help members achieve their standards of living goals. This social role can conflict with the financial viability if Sacco managers become less stringent in the application of sound lending practices to assess and monitor the credit risk of member borrowers. The non-performing loans can definitely cause too much stagnation of the financial sources. Effective provision of credit risk management depends on the lenders assessment of the risk of default of the loaners. For Sacco's this is typically based on the borrower's incomes, employment and the credit history at the time of loan application (Higgins, 1999).

A Sacco's sustainability and levels of development basically depend on high recovery of its loan portfolio. Therefore, the policies and implementation of the collection actions and disciplines have unquestionable importance and must be carried out constantly and with consistency required by the results of the analysis of the loan portfolio. The responsibility for implementing collection actions and enforcing both their policies and procedures falls directly on the Sacco's management and loans officer. The policies and procedures for implementing credit and collection activities shall basically be based on the levels of legalization of the loans and prior conditions with which the disbursements have been agreed to. Therefore it is stressed that collection policies and procedures are measures and disciplines complementary to the primary loan portfolio granting and management activities (Kablan, 2010).

It is very common that the banking process limits the occurrence of the risks during every transaction; therefore, the Sacco managers should also rely on the effectiveness of the imposed regulations to anticipate the future risks. From the different financial indicators, the position of the institution on the market failure still depends on the internal process and the actions of the people. The economic theory in banking encompasses the interest and income theory which is the basis of the cash flow approach in bank lending (Akperan, 2005). Credit risk management needs to be a robust process that enables the banks to proactively manage the loan portfolios to minimize the losses and earn an acceptable level of return to its shareholders. The importance of the credit risk management is recognized by banks for it can establish the standards of process, segregation of duties and responsibilities such in policies and procedures endorsed by the banks (Focus Group, 2007).

Credit risks appear in banking institution because of the uncertainties plagued the financial system. The uncertainties remain a major challenge in every country (Malimba and Ganesan 2009). But still the major approaches applied by the banks are the continuing efforts on research and close monitoring. Banks believe that research and monitoring are the key sources of uncertainties like data generating institutions and the treasury (Uchendu, 2009). The market structure is important in banking for it influences the competitiveness of the banking system and companies to access to funding or credit investment. For the Sacco's who target to lend to low income earners who have low access to real estate and mortgages, but a high priority for both compared to high income earners, applying stringent lending criteria to low income borrowers, may lead to their exclusion in the financial system which may not be socially acceptable or legitimate (Cheron et al, 1999). At the same time failure to accommodate for credit risk increases the likelihood of loan default. In addition, the vast knowledge in risk assessment and managerial approach is recognized as part of the development.

2.2 Empirical Analysis of major Researches

Anam et. al (2012) examined liquidity risk management practices of Islamic banks of Brunei Darussalam using from two perspectives. The first part covered the issue related to understanding risk and risk management, risk assessment and analysis, risk identification, risk monitoring, credit risk analysis and risk management practices. While, the second part covered the methods of risk identification in addition to risks faced by the Islamic banks. The Study revealed that, there are three significant types of risks that face the Islamic banks in Brunei Darussalam. The first type of risk is foreign exchange risk and the second type is credit risk and finally the operation risk. Concerning the most important methods used in risk identification of Islamic bankers, the results revealed that, Inspection by Sharia's supervisors, executive and supervisory staff; audit and physical inspection; financial statement analysis; and. risk survey are the most significant factors of risk identification. The study also revealed that, Islamic banks in Brunei Darussalam are reasonably efficient in risk assessing and analysis, risk management, risk identification.

Griffin et al (2009), investigated the risk management techniques of twenty eight Islamic banks by examining the perception of senior Islamic banker toward risk. The result revealed that, Islamic banks are typically exposed to the same types of risk in conventional banks with different levels of the risks. Olomola (2002) found that repayment performance is significantly affected by borrower's characteristics, lenders characteristics and loan characteristics. Repayment problems can be in form of loan delinquency and default. Whatever the form however, the borrowers alone cannot be held responsible wherever problems arise; it is important to examine the extent to which both borrowers and lenders comply with the loan contract as well as the nature and duties, responsibilities and obligations of both parties as reflected in the design of the credit programme rather than heaping blames only on the borrowers.

According to Basel committee (1999) on the management of credit risk, the following was observed: Many credit problems reveal basic weaknesses in the credit granting and monitoring processes. While shortcomings in underwriting and management of market-related credit exposures represent important sources of losses at banks, many credit problems would have been avoided or mitigated by a strong internal credit process. They noted too that many banks find carrying out a thorough credit assessment (or basic due diligence) a substantial challenge. For traditional bank lending, competitive pressures and the growth of loan syndication techniques create time constraints that interfere with basic due diligence. Globalization of credit markets increases the need for financial information based on sound accounting standards and timely macroeconomic and flow of funds data. When this information is not available or reliable, banks may dispense with financial and economic analysis and support credit decisions with simple indicators of credit quality, especially if they perceive a need to gain a competitive foothold in a rapidly growing foreign market. Finally, banks may need new types of information, such as risk measurements, and more frequent financial information, to assess relatively newer counterparties, such as institutional investors and highly leveraged institutions.

Basel (1999) indicated that the absence of testing and validation of new lending techniques is another important problem. Adoption of untested lending techniques in new or innovative areas of the market, especially techniques that dispense with sound principles of due diligence or traditional benchmarks for leverage, have led to serious problems at many banks. Sound practice calls for the application of basic principles to new types of

credit activity. Any new technique involves uncertainty about its effectiveness. That uncertainty should be reflected in somewhat greater conservatism and corroborating indicators of credit quality. An example of the problem is the expanded use of credit-scoring models in consumer lending in the United States and some other countries. A large credit loss experienced by some banks for particular tranches of certain mass-marketed products indicates the potential for scoring weaknesses.

It was also noted from Basel's research that some credit problems arise from subjective decision-making by senior management of the bank. This includes extending credits to companies they own or with which they are affiliated, to personal friends, to persons with a reputation for financial acumen or to meet a personal agenda, such as cultivating special relationships with celebrities (Nikhade et al, 2004). Many banks that experienced asset quality problems in the 1990s lacked an effective credit review process (and indeed, many banks had no credit review function). Credit review at larger banks usually is a department made up of analysts, independent of the lending officers, who make an independent assessment of the quality of a credit or a credit relationship based on documentation such as financial statements, credit analysis provided by the account officer and collateral appraisals. At smaller banks, this function may be more limited and performed by internal or external auditors (WOCCU, 2011). The purpose of credit review is to provide appropriate checks and balances to ensure that credits are made in accordance with bank policy and to provide an independent judgment of asset quality, uninfluenced by relationships with the borrower.

Effective credit review not only helps to detect poorly underwritten credits, it also helps prevent weak credits from being granted, since credit officers are likely to be more diligent if they know their work will be subject to review. A common and very important problem among troubled banks in the early 1990s was their failure to monitor borrowers or collateral values. Many banks neglected to obtain periodic financial information from borrowers or real estate appraisals in order to evaluate the quality of loans on their books and the adequacy of collateral. As a result, many banks failed to recognize early signs that asset quality was deteriorating and missed opportunities to work with borrowers to stem their financial deterioration and to protect the bank's position. This lack of monitoring led to a costly process by senior management to determine the dimension and severity of the problem loans and resulted in large losses.

In some cases, the failure to perform adequate due diligence and financial analysis and to monitor the borrower can result in a breakdown of controls to detect credit-related challenges. For example, banks experiencing fraud-related losses have neglected to inspect collateral, such as goods in a warehouse or on a showroom floor, have not authenticated or valued financial assets presented as collateral, or have not required audited financial statements and carefully analyzed them. An effective credit review department and independent collateral appraisals are important protective measures, especially to ensure that credit officers and other insiders are not colluding with borrowers (Njoku, 1997). In addition to shortcomings in due diligence and credit analysis, bank credit problems reflect other recurring problems in credit-granting decisions. Some banks analyze credits and decide on appropriate non-price credit terms, but do not use risk-sensitive pricing. Banks that lack a sound pricing methodology and the discipline to follow consistently such a methodology will tend to attract a disproportionate share of under-priced risks. These banks will be increasingly disadvantaged relative to banks that have superior pricing skills.

According to the same report by Basel, Many banks have experienced credit losses because of the failure to use sufficient caution with certain leveraged credit arrangements. As noted above, credit extended to highly leveraged borrowers is likely to have large losses in default. Similarly, leveraged structures such as some buyout or debt restructuring strategies, or structures involving customer-written options, generally introduce concentrated credit risks into the bank's credit portfolio and should only be used with financially strong customers. Often, however, such structures are most appealing to weaker borrowers because the financing enables a substantial upside gain if all goes well, while the borrower's losses are limited to its net worth.

The team also noted that many banks' credit activities involve lending against real collateral. In lending against real assets, many banks have failed to make an adequate assessment of the correlation between the financial condition of the borrower and the price changes and liquidity of the market for the collateral assets. Much asset-based business lending (i.e. commercial finance, equipment leasing, and factoring) and commercial real estate lending appear to involve a relatively high correlation between borrower creditworthiness and asset values. Since the borrower's income, the principal source of repayment, is generally tied to the assets in question, deterioration in the borrower's income stream, if due to industry or regional economic problems, is likely to be accompanied by declines in asset values for the collateral.

Some asset based consumer lending (i.e. home equity loans, auto financing) exhibits a similar, if weaker, relationship between the financial health of consumers and the markets for consumer assets. A related problem is that many banks do not take sufficient account of business cycle effects in lending. As income prospects and asset values rise in the ascending portion of the product business cycle, credit analysis may incorporate overly optimistic assumptions. Industries such as retailing, commercial real estate and real estate investment trusts,

utilities, and consumer lending often experience strong cyclical effects. Sometimes the cycle is less related to general business conditions than the product cycle in a relatively new, rapidly growing sector, such as health care and telecommunications. Effective stress testing which takes account of business cycle effects is one approach to incorporating into credit decisions a fuller understanding of a borrower's credit risk. They concluded that, many underwriting problems reflect the absence of a thoughtful consideration of downside scenarios. In addition to the business cycle, borrowers may be vulnerable to changes in risk factors such as specific commodity prices, shifts in the competitive landscape and the uncertainty of success in business strategy or management direction. However many lenders fail to "stress test" or analyze the credit using sufficiently adverse assumptions and thus fail to detect vulnerabilities.

Santomero (1997) conducted an analysis of the commercial bank risk management Process and noted that throughout the past years, on-site visits to financial service firms were conducted to review and evaluate their financial risk management systems. The commercial banking analysis covered a number of North American super-regionals and quasi-money center institutions as well as several firms outside the U.S. The information obtained covered both the philosophy and practice of financial risk management. This paper outlines the results of this investigation. It reports the state of risk management techniques in the industry. It reports the standard of practice and evaluates how and why it is conducted in the particular way chosen. In addition, critiques are offered where appropriate. He also noted that common risk avoidance practices here include at least three types of actions. The standardization of process, contracts and procedures to prevent inefficient or incorrect financial decisions is the first of these. The construction of portfolios that benefit from diversification across borrowers and that reduce the effects of any one loss experience is another. Finally, the implementation of incentive-compatible contracts with the institution's management to require that employees be held accountable is the third. In each the goal is to rid the firm of risks that are not essential to the financial service provided, or to absorb only an optimal quantity of a particular kind of risk.

According to standard economic theory, managers of value maximizing firms ought to maximize expected profit without regard to the variability around its expected value. However, there is now a growing literature on the reasons for active risk management including the work of Stulz (2004), Smith, Smithson and Wolford (2000), and Froot, Sharfstein and Stein (2003) to name but a few of the more notable contributions. In fact, the review of risk management reported in Santomero (1997) lists dozens of contributions to the area and at least four distinct rationales offered for active risk management. These include managerial self-interest, the non-linearity of the tax structure, the costs of financial distress and the existence of capital market imperfections. Any one of these justifies the firms' concern over return variability, as the above-cited authors demonstrate.

2.3 Portfolio Theory

Portfolio theory deals with the selection of portfolios that maximize expected returns consistent with the individual acceptable levels of risk. The theory provides a framework for specifying and measuring investment risk and to develop relationships between risk and expected returns. Its main basic assumption is that investors often want to maximize returns from their investments for a given level of risk. The full spectrum of investments must be considered because the returns from all these investments interact hence the relationship between the returns for assets in the portfolio is important (Reilly & Brown, 2011).

The basic portfolio model was developed by Harry Markowitz in the 1950s and early 1960s. Markowitz is considered the father of modern portfolio theory since he originated the portfolio model that underlies modern portfolio theory. He derived the expected rate of return for a portfolio of assets and the expected risk measure. Markowitz established that under reasonable assumptions, the variance (or standard deviation) of the expected rate of return was a meaningful measure of portfolio risk. From his model, the expected rate of return of a portfolio is the weighted average of the expected return for the individual assets in the portfolio. The standard deviation is a function of:

- a) Standard deviations for individual assets in the portfolio
- b) The Covariance between the rates of return for all paired assets in the portfolio

He derived the following formulas for computing the expected rate of return and the variance (standard deviation) of a portfolio

- 1) Expected rate of return for a portfolio $ER_p = \sum W_i ER_i$
- 2) The Variance & Standard deviation $\delta_p = \sum W_i \delta_i + \sum \sum W_i W_j COV_{ij}$
Where $i \neq j$

From the formulas, Markowitz determined how to diversify effectively and the importance of diversification of investments in order to reduce total risk of a portfolio. The theory asserts that the risk of a portfolio returns is influenced by three factors

- a) The risk or standard deviation of individual securities that constitute the portfolio
- b) The weights or proportions of individual securities in the portfolio
- c) The correlation of returns between the securities in the portfolio

2.4 Conceptual Framework of credit Risk Management and its Effects on Lending Portfolios of Sacco's

A Sacco's sustainability and financial viability depends on sound lending procedures and effective credit risk management practices which involves procedures of understanding risk and risk management. It is a process that encompasses independent, moderating and dependent variables.

2.4.1 Independent Variables

2.4.2 Risk identification

This are the methods and mechanisms which the Sacco has in place to identify the existing and potential risk inherent in a Sacco's loan products and lending activities, it also includes the development and implementation of clearly defined policy that sets out the lending philosophy of the Sacco that effectively manages and controls these risks. The methods used to identify risks in Saccos were subjected to a Likert scale of 1 to 5 so as to determine the extent to which they are applied. Where, 1 = Not at all and 5 = To a great extent.

2.4.3 Risk Analysis

These are the methods that are used to calculate the creditworthiness of a member borrower.it involves an analysis or examination of sources of repayment as well as credit history of the member borrower. Before any approval is made the Sacco will look for all the factors with primary emphasis on the borrower ability, various policy requirements and judgmental discretion's. Risk analysis also includes the management's policies and the activities conducted during loans granting, that highly influences whether the loan will be a good or a bad loan. These factors were subjected to a Likert scale of 1 to 5 so as to determine the extent to which they are applicable in Saccos under study. Where, 1 = To a small extent and 5 = To a great extent.

2.4.4 Risk monitoring

Are the constant and timely processes that effectively monitor and control the credit function and carefully control loans with members, the risk monitoring variable are the established continuous procedures and guidelines to effectively monitor and control the characteristics and quality of its credit portfolio. The procedures involve identifying problem accounts, frequent review and follow-up for appropriate corrective action taken from the time a loan is granted, repayments and diagnostic indicators of incidences of delinquency. These procedures were measured on a Likert scale of 1 to 5 so as to determine the extent to which they are used in Saccos. Where, 1 = to a small extent and 5 = To a great extent.

2.4.5 Risk Evaluation

Credit risk were evaluated using methods the Sacco has in place to make meaningful comparisons on the relative performance between loans and other elements such as their expected losses. The evaluation was done using performance of loans in respect to event scenario's, one possible scenario was the default by borrowers under certain circumstances that would span under different employment conditions of the borrower members, under such credit risk was evaluated using stress tests by observing certain accounts that was used to forecast loss distribution relative to the performance of the loans. These methods were subjected to a Likert scale of 1 to 5 so as to determine the extent to which they are applied in Saccos. Where 1= To a low extent and 5 = To a high extent.

2.4.6 Risk mitigation

They are the established procedures and techniques that are used to reduce and prevent the occurrence of credit risk associated with loan exposures. Risk mitigants give protection to an exposure which the Sacco continues to hold. Sacco's have to use their internal measures for key drivers of credit risk as a primary input to their minimum regulatory capital calculations subject to meeting certain conditions per regulatory approvals; this also include internal credit risk measurement and documented policies and practices accepted in the management systems. The commonly applied is the guarantee system where the reduction of the credit exposure is derived by the undertaking of a third party to pay an amount in the event of a default of a borrower or on occurrence of other specified events. The procedures used by Saccos to reduce and prevent occurrence of credit risk associated with loan exposure was measured on a Likert scale of 1 to 5 so as to determine the extent of their application in Saccos. Where, 1 = To a small extent and 5 = To a great extent.

2.4.7 Moderating Variables

2.4.8 Risk management policies

These are all the developed and implemented management credit policies, framework, procedures practices which are intended to clearly define roles and responsibilities ,acceptable practices limits and treatment of exceptions. This includes general policies covering origination, evaluation, documentation, settlement and ongoing management of credit risks. The policies should prescribe the manner in which the Sacco makes prudent lending practices; it should also set out general requirements to evaluate application by borrowers.

2.4.9 Risk management attitudes

This is how the management views the role of credit risk management in their organization. A positive attitude towards credit risk management procedures by management greatly reduces an organizations' risk exposure.

2.4.10 Dependent Variable

Lending portfolio performance is the dependent variable in this study. It was measured in terms of loan performance and number of loan products. These variables were subjected to a Likert scale of 1 to 5 so as to determine the extent to which they are applied in the Sacco's. Where 1= To a low extent and 5 = To a high extent.

3 Research Methodology

A descriptive survey research design was used in this study. The study targeted all urban Sacco's who are registered with the Ministry of Cooperative Development in Nakuru county. In each of the Sacco two managerial positions directly involved on credit management and specifically decisions on lending facilities namely: Finance manager and credit manager formed the key target respondents for the study. A total of 118 managers therefore was selected from 59 Sacco's. To select the two participants in each of the Sacco, purposive sampling was applied given that the finance and credit managers were key respondents in each Sacco.

A questionnaire was adopted for this study that contained 28 questions broken down into five general categories to assess credit risk management practices among Sacco's in Nakuru county. The questionnaire gathered information in the following categories, portfolio composition, portfolio performance, risk identification, risk evaluation and analysis, risk monitoring and risk mitigation. Cronbach's Alpha test was used to examine consistency among the responses against each item in the questionnaire. A coefficient of 0.78 was achieved and hence the questionnaire was considered reliable.

Descriptive statistics in form of frequencies and percentages was used mainly to describe the characteristics of what was being studied. Multiple regression models was used to investigate the relationship between risk management and the independent variables and was guided by the following model:

$$PP = \beta_0 + \beta_1 URMi + \beta_2 RI + \beta_3 RAAi + \beta_4 RM_i + \beta_5 CRA_i + E_i$$

Where, PP is the dependent variable (Portfolio Performance),

β_0 is the intercept

RI=Risk Identification.

RAA=Risk Assessment

RM=Risk Monitoring,

CRA=Credit Risk Analysis.

E_i is the residual.

Pearson's correlation moment was used to test the strength of relationship for inferential statistics at 95% confidence levels. For hypothesis testing, Pearson's correlation was used where each independent variable (risk identification, analysis, evaluation, monitoring and mitigation) were tested against the dependent variables (Lending portfolio performance and number of products in the portfolio).

4 Results and Discussions

4.1 Response Rate

A total of 118 questionnaires were issued of which all were collected back. After the initial screening 4 were rejected for being incomplete for analysis. This represents 96.6% response rate adequate for any inferential analysis and meaningful conclusions in research. All the SACCOs were found to have loan facilities for its members of which the major types were: development loans, educational loans, emergency loan and refinancing loan facility. Business loans were the second most available facility and was present in 95.6% of the SACCOs. Agri-business loans were available in 78.9% of all the SACCOs, while 53.5% were offering overdrafts and 38.6% were offering asset financing. Other products that do not fall into the mainstream credit categories mainly specializations for their unique market were present in 64% of the SACCOs. This was an indication that most SACCOs had a number of diversified credit facilities that constitutes their lending portfolio unique to clientele needs.

4.2 Number of Products in the Portfolio

All the SACCOs had more than one product in their portfolio where the majority (43.9%) had five products, 34.2% had four products 9.6% had three products, 7% had two products while 5.3% had more than five products. This indicates that most of the SACCO had diversified their products. This result is supported by Alexandra (2006) found out that performance of Saccos depended on the quality of their portfolio.

4.3 Portfolio performance

Forty four percent (44.7%) of the respondents noted that their emergency loans attained between 61-80% of their expected performance, while 18.4% noted over 80% performance, 13.2% respondent with performance of between 40-60% , 9.6% indicated that it was between 21 -40% and 6.1% noted that it was less than % 20 of the expected targets/ performance. On education loans, 43% of the respondents had attained more than 80% of their expected performance while 16.7% had attained between 61-80%, 14% had attained between

41-60%, 10.5% had attained between 21-40% and 61% attaining less than 20% of their expected performance. In relation to development loans, 36% had attained more than 80%, 18.4% had attained between 61-80%, 13.2% attained between 41-60% while 8.8% attained between 21-40% and less than 20%.

For overdrafts, 35.1%, 6.1%, 4.4% and 1.8% had performed over 81%, between 41-60%, between 21-60% and between 61-80% respectively. Agri business loans had an average performance where 33.3% attained between 41-60%, 8.8% attained between 61-80%, 5.3% had over 80%, 4.4% had performed to a level of between 21-40% while 2.6% had performance of less than 21%. Asset financing also performing moderately where, 30.7%, 19.3%, 7.0% and 2.6% had performed between 41-60%, between 61-80%, between 21-60% and less than 20% and over 81%, respectively. Business loans were performing significantly well where 47.4% of the SACCOs indicated that it was over 81%, 12.3% had attained between 61-80%, 9.6% rated it between 41-60% , 4.4% indicating that it was performing significantly well, while the remaining 4.4% of the SACOSs noted that it was between 21-40% and less than 20% respectively. It was notable that most of the product performed above average.

4.4 Preferred form of Security

Two major form of security namely: Members guarantor (75.4%) and Saving/Deposits (70.2%) were the most widely used by the SACCO in securing their credit facilities. Fixed deposits was used by 34.2% while a minimal 11.4% did not attach any security requirement in their lending facilities. The reliance on the two major forms of security was majorly in line with the risk sharing principles of SACCO operation. Half (50%) of the SACCOs had between 2- 5 branches, 20% had between 6 – 10 branches, 15% had less than 2 Branches , 12% had between 11-15 branches while 3% had more than 15 branches within their network. This is an indication of the SACCOs adoption of expansion and location strategies that centers on decentralization.

4.5 SACCO Size and Risk

A majority (70.2%) of the respondents acknowledged that there was a relationship between the increase in the SACCO size and the level of Risk they are exposed to while 29.8% thought otherwise.

4.6 Risk Identification and Influence on Portfolio

A majority (39.5%) of the respondents noted that there exists clear methods and mechanisms for identifying their risks and were influencing the lending portfolio to a moderate extent. 29.8% noted that it was to a very great extent, 16.7% noted that it was to a small extent, 12.3% indicated to a great extent and 1.8% indicated that they were not related. On risk identification policy existence and implementation, half (50.9%) of the respondents acknowledged that that it was influencing their portfolio to a great extent, 19.3% to a very Great extent, 14% to a small extent 9.6% to a moderate extent while 6.1% responded indicating that they were not related. This was in agreement with the outcome of their overall perception of the relationship between risk identification and their lending portfolio.

4.7 Risk Analysis and Lending Portfolio

It was notable that 33% of the respondents noted that there was a moderate effect of risk analysis on their lending portfolio. Twenty three percent (23%) noted that it had a great effect, 21% indicated that there was a great effect, 12% noted that there was no relation between the two and 11% indicated that there was a relationship to a small extent. The overall indication was pointing toward the existence of a relationship between risk analysis and the lending portfolio they were holding.

4.8 Risk evaluation tools

A majority (87%) of the respondents indicated that they were relying on financial statements from their clients for evaluating their risks. This was followed by their cash flow projections(60%), business plan evaluation(32%), site visits(27%) while the least used tool was the pro forma statements where only 3% of the respondents indicated that they were used. This was an indication that most of the SACCOs were using historical data/ information for evaluating clients risks.

4.9 The influence of Risk evaluation on lending portfolio

Majority (28.1%) of the participants in the study indicated that their risk evaluation was related to their portfolio to a great extent while 26.3% noted that it was to a small extent. Sixteen percent (16.7%) indicated that the effect was moderate, 13.6% found no relationship between the two and 12.3 % indicated that it was to a very great extent. A majority of the respondents were seen to support that their risk evaluation activities were affecting their lending portfolio. The findings are supported by Chipembere (2009) who attributed success of Saccos operations on governance structures.

4.10 Risk Evaluation processes and SACCOs portfolio

It was found out that most of the respondents(47.4%) saw credit history of the borrow to moderately influence their lending portfolio while 20.2% equally noted that it influences to a very great extent and to a great extent. only 10.5% indicated that it did affect the portfolio to a small extent. In regards to the borrowers income stability, 36.8% indicated that it had moderate influence, 26.3% noted that it was to a very great extent, 22.8% indicated that it was to a great extent while 12.3% gave it a small extent. Direct and indirect expenditure analysis

was found to influence their portfolio by 36%, 26.3%, 24.6% and 12.3% great extent, to a moderate extent, to very great extent and to a small extent respectively. Collateral evaluation saw 33.3%, 25.4%, 22.8% and 16.7% of the respondents indicate to a moderate, very great, great and a small extent respectively. The use of SACCO standards as a bench mark for the evaluation process had 28.1%, 23.7%, 21.9%, 18.4% and 6.1% of the respondents indicating a great extent, moderate extent, very great extent, small extent and not at all respectively. The last item to be evaluated was the use of industry standards as benchmarks in the evaluation process where 36%, 34.2%, 12.3% and 3.5% responded with a great extent a moderate extent, a very great and small extent and not at all respectively.

4.12 Risk Mitigation

Being the last activity in the risk management cycle, mitigation is critical and defines how well the organization achieves and maintains its risk within the desired levels. This was supported by the responses received indicating that all 100% were carrying out risk mitigation in their SACCOs. Half (50%) of the respondents acknowledged that risk mitigation was affecting their portfolio to a very great extent followed closely by 45.6% who indicated that it was to a great extent. The remaining 4.4% indicated that it was to a moderate extent. It was clearly notable that all the SACCOs were emphasizing risk mitigation as a key tool for managing their risks due to the significant influence of their portfolio.

4.13 Risk Mitigation elements and the Lending portfolio

From the analysis all but one element of the risk mitigation (Internal controls) did have the majority of the respondents responding that the influence on their lending portfolio to a very great extent. A similar trend is evident with the proportion who indicated that it was to a Great extent. Thirty two percent (32.5%) strongly agreed and agreed that the stringent rules used during the application process influenced their lending portfolio. 27.2% and 7.9% responded with moderate and a small extent. Clarity of penalties for default received 43%, 21.9%, 22.8% and 12.3% for those who indicated very great, great moderate and small extent respectively. Similarly 41.2%, 27.2%, 17.5% and 14.2% responded with similar views respectively in regards to the use of reliable third party guarantors. The inclusion of risk component in pricing of credit products was found to influence the lending portfolio by 43.9%, 26.3%, 21.1% and 8.8% of the respondents for very great extent, great extent, moderate extent and small extent respectively. Progress reports were similarly found by 34.3%, 32.5%, 22.8% and 10.5% of the respondents to influence their lending portfolio to very great extent, great extent, moderate extent and small extent respectively.

Taking insurance cover for the expected risk was influential to very great extent, great extent, moderate extent and small extent in determining the lending portfolio as responded to by 35.1%, 28.1%, 21.9%, and 14.9% respectively. Diversification strategies to cover for risk were acknowledged to influence the SACCOs portfolio by 36.8%, 29.8%, 21.9% and 11.4% of the respondents indicating that they were to very great extent, great extent, moderate extent and small extent influential respectively. Use of tight risk mitigation policies received 35.1%, 27.2%, 25.4% and 12.3% for those who indicated very great, great moderate and small extent respectively. Finally, 27.2%, 40.4%, 22.8% and 9.6% of the respondents noted that internal control did influence their lending portfolio to a very great, great moderate and small extent respectively.

4.14 Regression Analysis

To derive the appropriate conclusion to the study, the dependent variable (Lending Portfolio) was tested against the five independent variables using multiple regression. The number of products in the portfolio and the performance of the portfolio which was computed as the mean performance (Total scores for all products in the portfolio divided by the number of products in the portfolio) was regressed against the independent variables and the results are as summarized in Table 4.1 and Table 4.2

Table 4.1 Portfolio Performance Regression Results

Model Summary	R Square	Adjusted Square	R	df1	df2	Sig. F Change
	0.507	0.484		5	108	0.000

Model Coefficients	Un		Standardized		Models ANOVA Sig
	Coefficients	Std. Error	Beta	Sig.	
(Constant)	-5.750	0.810		0.000	
Risk identification	0.175	0.043	0.299	0.000	
Risk Monitoring	0.122	0.026	0.331	0.000	
Risk Evaluation	0.027	0.020	0.098	0.196	0.000
Risk Mitigation	0.075	0.020	-0.276	0.000	
Risk Analysis	0.103	0.024	0.303	0.000	

The regression output indicated that all the five risk management activities used as the independent variables in the study were significantly explaining 48.4% of the performance of the SACCOs lending portfolio. Further analysis of the regression output indicates that risk evaluation had no statistical significance contribution in determining the lending portfolio performance at a significance level of ($p < 0.05$). The remaining variables: risk identification, monitoring mitigation and analysis significantly explained 29.9%, 33.1% , 27.6% and 30.0% of the portfolio performance respectively. This result is in agreement with Chembere (2001) and FSD (2009) who reported that that performance of Saccos was determined by management and governance structures. In this case, governance structures is represented by risk identification, monitoring, and mitigation.

The regression results on the effects of risk management on the number of products in the lending portfolio were as presented in Table 4.2

Table 4.2 Effect of Risk Management Activities on Number of products in the portfolio

Model Summary	R Square	Adjusted Square	R	df1	df2	Sig. F Change
	0.523	0.501		5	108	0.000

Model Coefficients	Un		Standardized		Models ANOVA Sig
	Coefficients	Std. Error	Beta	Sig.	
(Constant)	-0.324	0.795		0.684	
Risk identification	0.099	0.042	0.169	0.021	
Risk Monitoring	0.233	0.026	0.633	0.000	
Risk Evaluation	-0.053	0.020	0.196	0.009	0.000
Risk Mitigation	0.055	0.020	-0.202	0.007	
Risk Analysis	0.010	0.024	0.031	0.664	

Four of the risk management activities included in the study were found to significantly explain 50.1% of the decisions on the number of products included in the lending portfolio by the SACCOs. Risk analysis was the only activity that did not significantly explain the number of products in the portfolio at ($p < 0.05$). Risk identification, monitoring, evaluation, and mitigation each significantly explained, 16.9%, 63.3%, 19.6% and

20.2% respectively. This implies that proper management of these variables would improve the quality of product portfolio. Alexandra (2006) asserts that performance of a Sacco is so much dependent on the quality of its portfolio.

4.15 Correlation Analysis

To test the four hypothesis of the study, correlation analysis was used and the results are presented in Table 4.3

From the results, the null hypotheses on the effect of Risk identification, monitoring, mitigation and analysis on the performance of the lending portfolio were rejected at ($P < 0.05$), leading to the conclusion that the four risk management activities affected the portfolio performance. The hypothesis on effect of risk evaluation on portfolio performance however was accepted leading to the conclusion that the activity did not affect the performance of SACCOS lending portfolio. In relation to the number of products in the portfolio, the null hypothesis testing the effect of risk identification, monitoring, evaluation and mitigation were rejected ($p < 0.05$) while the null hypothesis test of the effects of risk analysis was accepted at significance level ($P < 0.05$). Notable was also the negative correlation (-0.306 , & -0.447) that exists between risk mitigation measures used and the performance of the portfolio and the number of products in the portfolio respectively.

Table 4.3 Correlation Analysis

Independent Variable	Test	Portfolio Performance	Decision	Number Products	of Decision
Risk Identification	Pearson Correlation	0.366**	Reject Ho	0.284**	Reject Ho
	Sig. (2-tailed)	0.000		0.002	
Risk Monitoring	Pearson Correlation	0.679**	Reject Ho	0.475**	Reject Ho
	Sig. (2-tailed)	0.000		0.000	
Risk Evaluation	Pearson Correlation	0.028	Accept Ho	0.318**	Reject Ho
	Sig. (2-tailed)	0.771		0.001	
Risk Mitigation	Pearson Correlation	-0.306**	Reject Ho	-0.447**	Reject Ho
	Sig. (2-tailed)	0.001		0.000	
Risk Analysis	Pearson Correlation	0.349**	Reject Ho	0.113	Accept Ho
	Sig. (2-tailed)	0.000		0.230	

** Significant at 0.01

5 Summary of Findings

All the SACCOS were found to have loan facilities for its members of which the major types were: Development loans, educational loans, emergency loan and refinancing loan facility. It was notable that most of the product performed above average while there was reliance on members deposits and guarantors as cover for any default. Half (50%) of the SACCOS had between 2- 5 branches. This is an indication of the SACCOS adoption of expansion and location strategies that centers on decentralization. A majority (70.2%) of the respondents acknowledged that there was relationship between the increase in the SACCO size and the level of risk they are exposed to, while all (100%) the SACCOS acknowledged the existence of a strong relationship between risk identification and the SACCOS lending portfolio.

A majority of the respondents noted that there are clear methods and mechanisms for identifying their risks and were influencing the lending portfolio to a moderate extent. On existence of risk identification policy and implementation, half (50.9%) of the respondents acknowledged that that it was influencing their portfolio to a great extent. All the SACCOS who participated in the Study also acknowledged the existence of risk analysis in their risk management activities. The overall response indicates existence of a strong relationship between risk analysis and the lending portfolio they were holding. It was further noted that most of the respondents indicated that credit history, risk profiling, cash flow analysis and security ascertainment were to a moderate extent influencing their lending portfolio. Almost all (99%) the respondents who participated in the study noted that

monitoring was part of their credit management activities and it was influencing their lending portfolio to a great extent. Existence of clear monitoring procedures, frequent follow up and timely actions were all found to influence their portfolio to a great extent while existence of clear diagnosis indicators was found to influence the lending portfolio to a moderate extent.

Ninety Six percent (96%) respondents who participated in the study acknowledge that they undertook risk evaluation as part of their risk management activities. A majority (87%) of the respondents indicated that they were relying on financial statements and cash flow projections from their clients for evaluating their risks. This was an indication that most of the SACCOs were using historical data/ information for evaluating client's risks.

A majority of the respondents were seen to support that their risk evaluation activities were affecting their lending portfolio to a moderate extent. It was found out that most of the respondents saw credit history, income stability, cash flows, expense analysis, collateral valuation and use of both internal and industry standards to influence their risks to a very large extent. All (100%) of the SACCOs were also found to carrying out risk mitigation in their portfolio. A majority indicated that their risk mitigation was affecting their lending portfolio to a great extent and hence an indication that most of the SACCO were emphasizing on risk mitigation as a key tool for managing their risks due to their significant influence of their portfolio.

The number of products in the portfolio and the performance of the portfolio which was computed as the mean performance (Total scores for all products in the portfolio divided by the number of products in the portfolio) were regressed against the independent variables. The regression test indicated that all the five risk management activities used as the independent variables in the study were significantly explaining 48.4% of the performance of the SACCOs lending portfolio. The hypotheses testing risk identification, monitoring, mitigation and analysis against the performance of the lending portfolio were rejected leading to the conclusion that the four risk management activities affected the portfolio performance. The hypothesis testing the effect of risk evaluation on portfolio performance however was accepted leading to the conclusion that the activity did not affect the performance of SACCOs lending portfolio. In relation to the number of products in the portfolio, hypothesis testing the effect of risk identification, Monitoring, evaluation and mitigation were rejected while the null hypothesis on the effects of risk analysis was accepted.

6 Conclusions

From the finding of the study it can be concluded that majority of the SACCOs have adopted largely risk management practices as a means of managing their portfolio. All the five areas of risk management: risk identification evaluation, analysis, monitoring and mitigation were integrated into their management processes. Furthermore, most of the SACCOs had several branches and multiple products in their lending portfolio that necessitates the need to effectively manage their risk exposure. It is also concluded that risk identification was a significant factor to consider due to its positive influence on both the performance of the portfolio and the decision on the number of products to be included in the portfolio. Risk analysis did not make a significant influence on the number of credit products to be included in the portfolio. However, it is an important determinant of the performance of the portfolio. It is evident that risk monitoring, and risk mitigation are key determinants of both the performance of the SACCOs portfolio and the number of products in the portfolio. The negative correlation between risk mitigation and the performance of the lending portfolio was also a notable characteristic in the study. This points to a relationship where tighter risk mitigation measures leads to decrease in the adoption of more risky products and clients hence significantly affecting the portfolio.

7 Recommendations

From the outcome of the study, it is recommended that management of the SACCOs should consider risk management as a critical determinant of their portfolio performance. Not all the products in their portfolio were performing to their expectation and hence the need to evaluate effectively the relationship between the individual risk management element and individual product with a view of adopting the right balance that promotes their performance.

In their risk identification, the SACCOs should ensure that there are clear methods and policies to direct their activities. It is also important that the SACCOs take a critical look at their risk analysis approaches so as to understand how it's outcome influences their portfolio. Risk monitoring being a continuous process should be implemented in a progressive manner that allows the SACCOs to understand their potential risk and hence guide in the use of other risk management activities. It is also important for the SACCOs to adopt new approached and tools for carrying out their risk evaluation, reliance on the traditional and historical information and records as key sources for evaluation process may lower the chances of understanding the inherent risks in their portfolio. The inverse effect of risk mitigation measures on the performance of the portfolio should be evaluated critically before they are adopted to ensure only beneficial approaches are adopted. The researcher further recommends

that the SACCOs should analyze the contribution of the individual risk management activity with a view of understanding their effect on the performance of their portfolio. In doing so SACCOs will be in a better position to develop risk management models and strategies that are effective.

Based on the findings of this study, the researchers recommend a more critical look at the following areas in future

- i. A study to critically look at the relationship between the different risk managements factors with the aim of revealing how they influence each other.
- ii. The need to isolate a few of the risk management elements that will allow the SACCOs to develop a cost effective model for managing their portfolio without necessarily undertaking all the risk management activities

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