Effectiveness of Loan Portfolio Management in Rural SACCOS: Evidence from Tanzania

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Abstract

This article uses 496 loans from ABC rural SACCOS located in the Northern zone of Tanzania to describe the effectiveness of loan's portfolio management. The data analysis is done by using the multivariate regression, descriptive and qualitative methods. The data for this study was collected at the end of May 2013. The findings reveal that women constituted 52.6% of the loan portfolio. Also the doubtful and bad loans were 51 and 31 million TZS which was more than 10% of the loan portfolio. The findings show loans were aged into 4 classes and the loans aging was not very effective because loans of different ages were classified in a single class. The results from the regression analysis reveal that the quality of loan portfolio was positively influenced by the loan size while the influence of gender and location of the borrowers were not significant. Moreover, ABC rural SACCOS used portfolio diversification, collateral, guarantors, letter from the village/ward government offices and the affidavit from the lawyer as credits risk mitigation techniques. The findings also revealed that fluctuation of the price of agricultural produce threatened the quality of loan portfolio. This article recommends that ABC rural SACCOS should seek the effective insurance services, use the effective software for loan portfolio management, search the market for agriculture produce, write off non repaid loans, enhance the repayment of overdue loans and revise the loan classes and maturity in order to improve the quality of the loan portfolio in the SACCOS.

Keywords: Loan portfolio Management, Rural SACCOS, Tanzania

1. Introduction

Savings and credits cooperatives societies (SACCOS) in Tanzania have been established since 1980s (Maghimbi 2010). Since their establishment SACCOS play important role in providing

the financial services in both rural and urban areas. Moreover, SACCOS are considered to be more important in rural area of Tanzania because they are semiformal financial institutions which serve many inhabitants in rural areas (Wangwe 2014). SACCOS also operate by focusing not only on the profit but also the welfare of members. SACCOS like any other cooperative work to maximize the welfare of members. In SACCOS members participate in setting the interest rates for loans in which members receive back later as dividends.

SACCOS in Tanzania are not only important for providing the capital to rural dwellers who were not previously served by the formal financial institutions but also contribute to overall economy of the country. Bwana and Mwakujonga (2013) stressed that SACCOS contribute to about 40% of the Tanzania's GDP, act as employer for secondary school and college leavers and play important roles for financing small and medium enterprises in the rural areas. Hence many small and medium entrepreneurs are self employed in the rural areas because they have access to capital from the rural SACCOS. Likewise SACCOS provide opportunity to their clients both in rural and urban areas to save their money and hence work as rural banks (Qin and Ndiege 2013).

The government of Tanzania continues to promote SACCOS to enable them to perform their essential roles in Tanzania. The government has formulated various policies which help to sensitize the formation of many SACCOS in Tanzania especially in rural areas. At the end of March 2013, about 1,153,248 members joined 5,559 SACCOS (MOFT 2013). These members contributed 463.5 billion TZS of shares, savings and deposits. However, the literatures show that poor structures, corruption, theft, inadequate working capital, lack of innovation in business, high amount of overdue loans, poor leadership and poor corporate governance are the problems which limit the development of SACCOS in Tanzania (TFC 2006; Bibby 2006; Maghimbi 2010). Both Mwakajumilo (2011) and Magali (2013a) revealed that SACCOS in Tanzania face the problem of non-performing loans (NPL). The problem of NPL for SACCOS in Tanzania indicates poor loan portfolio which might be caused by various factors.

NPL in SACCOS usually occur because of inappropriate practices in credits risk management (Magali and Qiong 2014). Moreover, other factors such as weather, poor leadership and corporate governance might influence the quality of loan portfolio in the rural SACCOS (Magali 2014; Magali and Lang'ati 2014). In order to have lower number of NPL SACCOS need strategies for managing the risk of both individual loan and loan portfolio. Magali (2013b) revealed that poor credits risk management practices influence the credits default risks for rural SACCOS in Tanzania. Poor portfolio management also influences negatively the profitability of banks, SACCOS or MFIs (Rashid and Samad 1996; George et al 2013; Imeokpararia 2013; Magali 2013a). Thus, in order to increase their profitability, the rural SACCOS require effective loan portfolio management strategies. Other factors which influence effective loan portfolio management include management strategies, MFIs or banks' staff competencies, choice of lending methodology and management information system (Derrick et al 1998; FCA 1998; OCC 1998; IACPM 2005; Crabb and Keller 2006).

Since the loan portfolio management determines profitability of MFIs, it also might determine their sustainability or operation efficiency. Therefore staffs concerned with the management of

loans in MFIs are required to monitor the loan portfolio regularly and examine the factors influencing the infectiveness of loans' portfolio and act immediately to find solutions to the identified weakness. Inactive reaction of the loans staff to find solutions to the factors threatening the effectiveness of loan portfolio might lead to huge loss to the MFI since loan portfolio act as the life blood of the MFI. The literatures show that banks have structured loan portfolio management which is derived from Basel II accord. The Basel II accord guidelines also are applied by the central bank of different countries to formulate the regulatory practices for commercial banks operating in a particular country. For Example in Tanzania the loan portfolio management for the commercial banks are regulated by the Bank of Tanzania (Magali and Qiong 2014). However, the loan portfolio management practices for rural MFIs like rural SACCOS are not known because to the best of my knowledge there is no study done to disclose the information. Therefore this article analyses the effectiveness of loan portfolio management of one rural SACCOS located in Northern zone of Tanzania. I believe that if the rural SACCOS understand how to manage their loan portfolio well, they will improve their profitability, efficiency and sustainability and this is a motive for writing this article. The remaining part of the article is structured as follows: The following section covers the review of literatures where the loan portfolio management practice in banks and other MFIs is described. Then the methodology used to design this article will be presented and results and discussion of the data will follow. The last section covers the conclusion and recommendations based on the findings derived from the article.

2. Literature Review

2.1 Meaning of Loan Portfolio and Loan Portfolio Management

Business Dictionary (2014) defines a Loan portfolio as the total of all loans held by a bank or finance company on any given day. Therefore, individual loans form a loan portfolio in a bank or any other MFI. Moreover, the size of loan portfolio depends on the size the individual loan which is also influenced by the economic status of the borrowers in a particular location. IACPM (2005) asserted loan portfolio management is the process by which risks that are inherent in the credit process are managed and controlled while Wise Geek (2014) describe credit portfolio management as the process of building a series of investments based upon credit relationships and managing the risks involved with these investments. Therefore, credit portfolio management encompasses assessing the risk involved with each loan and then analyzing the total amount of risks for all loans. The major objective of portfolio management is to reduce the amount of loans default. Banks reduce the loan portfolio default risk by considering the credits repayment history of both individuals and groups applying for loans. This strategy also might be applied by MFIs and SACCOS to screen qualified clients applying for loans.

2.2 Characteristics of Effective Loan Portfolio Management

FCA (1998) asserted that effective loan portfolio management considers maximizing the lending opportunities which benefit both MFIs and clients. FCA (1998) listed strategic planning, lending policies and procedures, underwriting standards, risk identification, an internal credit review program or process and other internal control systems as elements of

effective loan portfolio management. The information from FCA indicates that effective loan portfolio management should integrate other functions in a financial institution. Thus a MFI will have effective loan portfolio management if it has effective management system and procedures.

IACPM (2005) stated that effective loan portfolio management function is vital for maintaining the bank safety and soundness. Therefore, banks should employ the qualified and competent staff who can identify risks associated with individual borrowers and all borrowers (the loan portfolio). The portfolio management staff should possess the fundamental credit handling experience, quantitative analytics skills and marketing skills and experiences in order to perform their tasks well. Moreover, the bank should design the stress testing measures to examine the vulnerability of portfolios loss due to unanticipated events. Effective portfolio management also might foster the performance and sustainability of MFIs and SACCOS.

According to OCC (1998) effective loan portfolio management process should integrate the basic principles of credit risk management such as sound underwriting, comprehensive financial analysis, adequate appraisal techniques, loan documentation practices and sound internal controls. Moreover, the nine elements which comprise the effective loan portfolio management include assessment of the credit culture, formulation of sound portfolio objectives and risk tolerance limits, effective management information systems, portfolio segmentation and risk diversification objectives, analysis of loans originated by other lenders, aggregate policy and underwriting exception systems, portfolios stress testing, independent and effective control functions and analysis of portfolio risk/reward tradeoffs. However, most of these techniques are applied in banks than in rural MFIs such as rural SACCOS (Magali and Qiong 2014).

Derrick et al (1998) argued that loan portfolio is the lifeblood of each lending institution, since the success of the MFI depends on how well it manages its portfolio. They recommended the agricultural lenders to consider the needs of different groups of their clients in order to remain competitive in the agricultural lending market. They further argued that reducing operating expenses, paper work and provision of the faster loans will strengthen the competitive advantage of MFIs which issue loans to farmers in USA. Moreover, they stressed that effective loan portfolio management identify and control lending risks.

Crabb and Keller (2006) found that group lending methodologies reduce the loans portfolio risk compared to individual loans lending. The same results were confirmed by Gómez and Santor (2008) for MFIs in Nova Scotia Canada, Diagne and Zeller (2001) and Simtowe and Zeller (2006) in Malawi, Ofuoku and Urang (2009) in Nigeria, Satgar (2003) for Grameen bank in Bangladesh and Al- Mamun et al (2011) in Malaysia. Similarly, Nawai and Shariff (2010) revealed that the group lending is effective loan portfolio management in their paper which reviewed the literatures describing the determinants of repayment performance in microcredit programs.

George et al (2013) found that the effective loan portfolio management had a direct influence on the profitability of the banks in Kenya. This is because banks and other MFIs depend on interest income as their revenue. Thus, effective loan portfolio management will make

borrowers to repay their loans on time and this will lead to increase of banks' or MFIs revenue of which in turn will lead to increase of their profitability. Imeokpararia (2013) found that despite effective management of loan portfolio and credit function is fundamental for the banks to earn interest income as revenue, it has not affected the performance of banks in Nigeria. However, the findings further revealed banks generally failed to establish the effective lending policies and adequate credit administration procedures. Rashid and Samad (1996) revealed that profit maximization for USA banks between 1836 and 1863 which was considered as a period of free banking depended on successful portfolio management. They further asserted that portfolio choice influenced both risk and return of banks' loans and other assets.

2.3 Factors Influencing the Loan Portfolio Management in Bank and MFIs

Brandt et al (n.d) argued the largest share of an MFI's operating income is generated from the loan portfolio. They asserted income generated by the loan portfolio is affected by number of loans disbursed, number of active clients and the effective term for repaying the loan. They argued that higher default rate occurs because of setting inappropriate loan terms. Moreover, they argued that size of loan portfolio increases if the MFI has ability to retain clients. Furthermore, they recommended the convenient loan size with reasonable delinquency rate for promoting the repayment of loans from the MFIs clients. Usually the convenient loan size and delinquency rate depends on the financial strengths of the borrowers, borrowers' repayment history and the risks associated with loans activities. Similarly, Magali (2013a) revealed that poor credits risk administration and poor credits risk management practices have led to decline of profitability of rural SACCOS in Tanzania.

Edimister and Srivastava (n.d) revealed that in banks regulatory framework is the one which influences the loan risks mostly. The findings further revealed that banks use insurance and diversification of loans portfolio as risk mitigation strategies. Similarly, Magali (2014) revealed the influence of leadership, corporate governance and regulation on credits risk management for rural SACCOS in Tanzania. Magali (2014) revealed that regulations affects the loan portfolio management because banks credits risk management in Tanzania were highly regulated by the bank of Tanzania and therefore banks were more profitable than rural SACCOS, of which their credits risk management functions were not regulated by the bank of Tanzania.

Wood (2004) asserted strategies that can optimize the portfolio value include diversification for reducing risk, having adequate sources of funding, balancing the mixture of assets to provide growth and to operate efficiently so as to optimize the cash flow. These strategies can be applied by MFIs and SACCOS to optimize their loan portfolio. However, MFIs should be keen in loans processing and recovery in order to have the adequate funding. External loans as source of loan portfolio is recommended only if the MFI and the rural SACCOS can enhance the repayment of loans from clients. Moreover, diversification of loan portfolio might be used as loans default risk mitigation strategies for MFIs as recommended by Moti et al (2012).

Rossi et al (2009) found that despite the loan portfolio diversification strategy for the large Australian banks negatively affected the cost efficiency; it increased the profit efficiency, reduced the banks' risk and hence increased the banks' capital. David and Dionne (2005) found

that due to practical complexities in diversifying loan portfolio in geographical locations and industries, the banks in Sweden didn't diversify the loan portfolio because it occurred naturally. The banks believe that the portfolio diversification occurred naturally because there are always good companies in all industries. The study further revealed that some clients defaulted their loans because of leniency procedures in loans processing and appraisal. Increasing the amount of Non Performing Loans (NPL) implies that the MFI or bank has poor portfolio management. Khemraj and Pasha (2014) examined the determinants of NPL for banks in Guyana-South America. The findings from the study revealed appreciation in the local currency increases NPL while the increase of GDP lowers the NPL. The findings further revealed that higher interest rates and lending large amount of loans increases the NPL. However, their study revealed no difference in NPL amount between the large and small banks. Similarly, Magali and Qiong (2014) found the rural SACCOS in Tanzania had bad portfolio with large number of NPL because of poor loan portfolio management. Compassionateness in loans follow-up and inadequate skills in loan portfolio management were the reasons for loans defaults and poor portfolio for rural SACCOS in Tanzania.

Afroz (2013) declared that in order to manage the loan portfolio well in Bangladesh Krishi Bank diversified its credit portfolio among various groups of poor farmers who are engaged in horticulture, dairy, fishery, poultry, sericulture, tea plantation, irrigation equipment, farm machinery, processing and marketing of agricultural or fish produce, employment generation and poverty alleviation programs. In order to run the lending activities successfully, the study recommended the employment of graduates who can handle the portfolio management functions and train farmers on entrepreneurship. Moreover, Wenner et al (2007) reported that MFIs in Latin America applied the portfolio limit as credits risk mitigation technique. The findings asserted that less than 40% portfolio limit for agricultural loans helped the MFIs in Latin America to have good loan portfolio.

Mileris (2012) found that the quality of loan portfolio in banks is influenced by macroeconomic factors such as GDP, inflation, interest rates, money supply, industrial production index, current account balance and others. These factors also might influence the portfolio quality in SACCOS and other MFIs. Tadele and Rao (2014) revealed that deterioration of loan portfolio for MFIs in Andhra Pradesh in India was caused by loans disbursement without taking into account borrowers' repayment capacity, non diversification of loans portfolio, poor record keeping, accounting and management information systems, lack of staff control and corruption. Aballey (2009) revealed that huge bad loans portfolio for African Development Bank (ADB) in Ghana was largely caused by ineffective loan monitoring and poor credit selection. The study recommended training, effective loan monitoring, effective collateral, establishment of agriculture infrastructural facilities and use of credit bureaus as strategies for reducing the bad loans and improving the quality of loan portfolio for ADB in Ghana. Haas et al (2010) revealed that determinants of effective loan portfolio for banks in 20 transition countries were ownership styles, size and legal protection of creditors. Lagat et al (2013) found that credits' risk identification, analysis, monitoring, evaluation and mitigation influenced the lending portfolio for SACCOS' in Kenya.

FAO (n.d) argued that loan portfolio risk depends on the individual loans risks. For farmers changes of prices of inputs and output might influence famers not to repay the loans and hence deteriorate the loan portfolio. Likewise, FAO asserted that high fluctuation of inputs and output prices restrict farmers to properly project the profitability of the farming activities. Moreover, FAO listed the regional, sector/product and loan concentration risks as the three main categories of risks which affect the loan portfolio for agriculture based MFIs. Factors which influence regional risk include microclimate which is a big challenge for the rural SACCOS in Tanzania because majority of clients (more than 80%) allocate loans in agriculture production and they depend on rain fed agriculture. According to Magali (2013b), other factors which influence loan portfolio in Tanzania are non performance of business, loan diversion and loans mismatch (loans disbursed beyond management capacities of the borrowers or without adhering to the internal regulations).

3. Methodology

The paper analyzes data obtained from one rural SACCOS located in northern zone of Tanzania. For the sake of anonymity, I rename it as ABC rural SACCOS. The ABC rural SACCOS had more than 15 years of operating experience. Moreover, the SACCOS had 3567 (1375 male, 1934 female and 258 groups) members at the end of May 2013. This study applies the loan portfolio of ABC SACCOS consisting of 496 borrowers to describe the effectiveness of loan portfolio management. The data analysis is done by using the multivariate regression, descriptive and qualitative methods. The data for this study were collected at the end of May 2013 and data was analysed using SPSS version 16 where the effectiveness of techniques used to manage the loan portfolio in the ABC rural SACCOS was fully examined.

4. Results and Discussion

4.1 Portfolio Composition

The portfolio composition in gender is represented in Table 1. The findings show that the male borrowers were 46.4% while the female borrowers were 52.6% and the group borrowers were 1%. The findings indicate that female borrowers were more sensitized to borrow in a rural SACCOS than male borrowers. The findings are in tandem with Girabi and Mwakaje (2013) who revealed that male and female borrowers in rural SACCOS in Iramba district in Singida region-Tanzania were 46.5% and 53.5% correspondingly. However, the findings are contrary with Magali (2013b) who revealed that that 58% and 42% of the borrowers for rural SACCOS in Morogoro, Dodoma and Kilimanjaro regions in Tanzania were male and female respectively. The findings indicate that the outreach of the rural SACCOS was reasonable since the portfolio consisted of more females. The findings are consistent with Onumah and Acquah (2011) who revealed that percentage of women clients for MFIs increase from 25-47% in Ghana. The findings show that there were few groups in the loan portfolio which was 1% of the total loan portfolio.

Table 1. Portfolio composition

Gender/group	Frequency	Percent
Male	230	46.4
Female	261	52.6
Group	5	1.0
Total	496	100.0

4.2 Loan Aging for Borrowers

The findings from Table 2 represent the loan aging for borrowers in ABC rural SACCOS. The ABC rural SACCOS used Ms excel software to classify loans in the portfolio. The findings reveal that all loans were having maturity of one year and loans were aged into 4 classes which are current, sub-standard, doubtful and bad debt. The mentioned aging classes represent the delinquency status of the borrowers by days of 0-30, 31-180, 181-365 and more than 365 days while the approximate percent of default of each class was 1% 30%, 50% and 100% respectively. The analysis reveals that 63.1%, 17.1%, 13.3% and 6.5% of the borrowers from the SACCOS were classified into current, sub-standard, doubtful and bad debt correspondingly. The findings show that 63.1% of borrowers were at smaller risk of default while 17.1% of borrowers were at 30% risk of default. The findings further indicate that 13.3% and 6.5% of borrowers were at medium and higher risk of default respectively. Moreover, the findings indicate it was difficult for a SACCOS to recover loans from 6.5% of the borrowers who were classified at a bad debt class. These findings are compatible with Magali (2013b) who reported that 22% of borrowers from the rural SACCOS in Tanzania defaulted their loans and they loans were delinquent for more than 180 days. Moreover, Magali and Qiong (2014) revealed that most commercial banks in Tanzania classify their loans into five classes in order to manage their loan portfolio well. Probably the rural SACCOS modified the loan aging style from the bank because their loan maturity was one year. The findings show that despite the rural SACCOS didn't use effective software for classification of loans, it was in a right track towards managing her loan portfolio effectively.

Table 2. Loan aging in a rural SACCOS among clients

Loan class	Approx % of default	Frequency	Percent
Current (0-30 days)	1	313	63.1
Sub-Standard (31-180 days)	30	85	17.1
Doubtful (181-365 days)	50	66	13.3
Bad debt (more than 365 days)	100	32	6.5
Total	N/A	496	100.0

4.3 Comparison between Loan Aging in Commercial Banks and the Rural SACCOS

By comparing the loan aging in rural SACCOS and commercial banks, the findings reveal that the loans aging in the rural SACCOS is not effective since many loans are classified in the same

class. The findings from Table 2 show that sub-standard loans for ABC rural SACCOS are those loans who had 31-180 days since their disbursement. The rural SACCOS classify loans in this way probably because most borrowers in rural area took loans to finance the agriculture production where farmers expect to repay their loans after harvesting their farm produce. Usually farmers spend six months to one year in crop production. Magali (2013b) and Girabi and Mwakaje (2013) revealed that more than 80% of rural SACCOS in Tanzania allocate loans to agriculture production. Therefore, the long maturity and classification of loans in 4 classes favoured the majority of clients who were farmers. However, ABC SACCOS could split loans into more classes to simplify the definition of NPL. The banks define NPL as loans which are not repaid back for more than 90 days after its due date (Eastern Caribbean Central Bank, 2009). Moreover, the findings from Table 3 show that banks don't accumulate many loans into a single class. The findings show that the current loan class for the banks is the same as the one used by the rural SACCOS. However, in the following classes, banks classify loans in the periods of 30 to 90 days except for a loss class. The findings show that in banks, if the loan age is more than 90 days and borrowers have not started to repay or stopped to repay are considered as doubtful while in the rural SACCOS, doubtful loans are loans which borrowers have not started to repay or stopped to repay after more than 181 days since their disbursement date. The findings further indicate that the rural SACCOS consider loans as loss after one year of disbursement date while the banks consider loans as loss after 181 and some 271 days after their disbursement, if borrowers have not started to repay or stopped to repay. Furthermore the findings show that banks regard loans which are not repaid for 31-60 days after its disbursement date to have 5% default rate while the rural SACCOS considers those loans with zero percent of default rate. The findings show that banks have strict and effective loan portfolio management procedures compared to rural SACCOS. The comparison was made by using the findings obtained from Magali and Qiong (2014) who confirmed that commercial banks in Tanzania have effective credits risk management practices than the rural SACCOS. Thus banks are likely to have effective loan portfolio management as opposed to the rural SACCOS.

Table 3. Bank's Internal Ratings Scale

Bank's rating	Description of the grade	Aging mostly used	Aging for special loans	% for regulatory Provisioning
1	Current	0-30 days	0-30	0
2	Especially mentioned	31-60 days	31-90	5
3	Sub-standard	61-90 days	91-180	10
4	Doubtful	91-180 days	181-270	50
5	Loss	181 days and above	271 and above	100

Source: *Magali and Qiong (2014).*

4.4 Amount of Loans in Classes and Total Loan Portfolio

The findings show the total amount of loans in the loan portfolio for rural SACCOS were 779 million Tanzanian shillings-TZS (1 USD =1610 TZS). The portfolio contained both the overdue loans disbursed from 2009 and current loans disbursed in 2012 and 2013. Amount of

outstanding loans were 567 million TZS which were 72.79% of the loan portfolio while the amount of repaid loans was 222 million TZS which were 27.21% of the loan portfolio. The analysis further reveals that loans which borrowers started to repay within 0-30 days was 57.15% of the loan portfolio while loans aged 31-180 days, 181-365 days and more than 365 days were 5.14%, 6.5% and 3.94% of the loan portfolio respectively. Generally the findings indicate that the repayment performance was fairly convincing. However, the ABC SACCOS needs to persuade other borrowers to repay their loans so as to increase the repayment rate. The findings show that more than 10% of the loans were non-performing and hence were having high probability of default. The amount of doubtful and bad debt loans which borrowers have not started to repay or stopped to repay for more than six month was 82 million TZS. The percentage of loans which were classified as bad debts was 3.94% which is compatible with the percentage which is recommended by commercial banks in Tanzania.

Magali and Qiong (2014) revealed that commercial banks in Tanzania have strategies to have NPL less than 5%. However, the findings from this article reveal that ABC SACCOS were operating inefficiently because it incurred higher costs of operations. The data from the SACCOS show that in 2011 the SACCOS incurred the operating costs of 75 million TZS and it incurred loss of 2 million TZS while in 2012 it incurred the costs of 117 million TZS and it earned the profit of 12 million TZS (Magali and Lang'ati 2014). The findings from this study are in tandem with Karumuna and Akyoo (2011) and Magali (2013b) who revealed that amount of overdue loans from rural SACCOS in Tanzania are higher.

Table 4. Amount of Loans in loan classes and total loan portfolio

Loans	Amount in million TZS	As % of Total Loans
Total disbursed	779	100
Amount outstanding	567	72.79
Amount repaid	222	27.21
Current (0-30 days)	445	57.15
Sub-Standard (31-180 days)	40	5.14
Doubtful (181-365 days)	51	6.50
Bad debt (more than 365 days)	31	3.94

4.5 Factors Influencing Loan Portfolio Management in the ABC Rural SACCOS

4.5.1 Location of Borrowers

The findings reveal that apart from having borrowers near the SACCOS, other borrowers were found in more than 10 locations far from the SACCOS. The findings from Table 5 show that borrowers located near and far from SACCOS comprised of 42.9% and 57.1% of all borrowers respectively. The findings indicate that more borrowers were located far from the SACCOS. However, the findings from regression analysis in Table 7 show that the influence of location in effectiveness of loan portfolio management which is measured by the amount of loans repaid was not significant. It implies that factors that hindered borrowers from repaying their loans affected all borrowers regardless of their locations. Contrary to these findings, Tr à and Lensink

(n.d) revealed that informal and semi-formal borrowers located in urban areas had higher probability of loans default in Vietnam, implying that location influenced the effectiveness of loan portfolio management.

Table 5. Location of the borrower

Location of a borrower	Frequency	Percent
Near from SACCOS	213	42.9
Far from SACCOS	283	57.1
Total	496	100.0

4.5.2 Individual and Group Loans

The findings reveal that the minimum amount of group loan was 400,000 TZS while the maximum loan was 9 million TZS while the findings from Table 6 shows that the minimum and maximum loan for individual borrowers was 50,000 and 30 million TZS respectively. The findings indicate that the maximum loan for individual borrowers was very higher compared to group loan. Probably the SACCOS had recognized that lending groups results in non-repayment of loans. The findings from Table 1 also show that the SACCOS lent to only 5 groups which was 1% of the loan portfolio. The findings are contrary to various scholars who recommended the group lending for effective loan portfolio management in MFIs (Crabb and Keller 2006; Simtowe and Zeller 2006; Al- Mamun et al 2011). The findings further revealed that groups also defaulted their loans like individuals. This happened probably because the group did not use social cohesion as a collateral and guarantor as used in Grameen bank (Satgar 2003). The findings from Table 6 further reveal that the minimum amount of repaid loan for individual borrowers was 0, implying that some borrowers did not start to repay their loan while the maximum amount was 27.5 million TZS. Similarly, the minimum and maximum amount of remaining loan was 600 and 22.6 million TZS respectively. Moreover, the minimum loan age ranged from 0.17 years (2 months) to 4.17 years (4 years and 2 months). The findings indicate that the rural SACCOS had no strategies to write-off the loans which stayed for long time without being repaid. For example the loan with 4 years and 600 TZS amount was supposed to be written off, because 600 TZS was too small for it to remain in a loan portfolio.

4.5.3 Education of the SACCOS' Staff and Loan Portfolio Management

The findings reveal that the chairman of the board was having the primary education while the clerk, the manager, chairperson loan committee and the loan officer were having the secondary education. The findings imply that SACCOS' staff responsible for the management of loan portfolio management possessed the minimum qualifications which might help them to perform the loan portfolio management functions. However, IACPM (2005) asserted that effective management of portfolio requires staff with quantitative analytics skills. Hence it is recommended that the SACCOS should develop staff by allowing them to attend long term training so as to acquire the needed skills. Moreover, portfolio management requires staff with honesty and integrity. Hence education alone is not enough to enhance the effective portfolio management in the rural SACCOS. Magali (2013c) found that education of the SACCOS staff

influence the loan default risk negatively. It implies that higher level of education of the staff involved in loan management accelerated default risk and thus leads to deterioration of loan portfolio management in rural SACCOS. Moreover, Magali and Lang'ati (2014) revealed that low education was not a limiting factor for the performance of the best rural SACCOS in Tanzania.

4.5.4 Credits Risk Management and Loan Portfolio Management

As confirmed by OCC (1998), effective loan portfolio can be enhanced with effective credits risk management. The findings reveal that there were no insurance services for covering the loans against risks such as erratic weather and other unanticipated events. Presence of insurance services in rural MFIs has been recommended by various scholars as a strategy for maintaining the quality of loan portfolio (FunHo and Yusoff 2005; Mustafa et al 2007; Moti et al 2013; Lagat et al 2013). Instead of using insurance, the SACCOS diversified its portfolio and issued loans to borrowers of different financial capabilities and for different purposes to control credit risk. The portfolio consisted of borrowers with low, moderate and higher income where the loans amount issued ranged from 50,000 to 30 million TZS as shown in Table 6. Most loans were medium sized loans which ranged from 100,000 to 800,000 TZS. Moreover, the SACCOS issued loans to both individuals and groups and various activities were considered for loans. The types of loans issued by the rural SACCOS include agricultural, business, social and education loans. Diversification of loans portfolio was also recommended by Atieno (2001), Wenner (2010) and Lagat et al (2013).

The SACCOS also used the collateral and 3 guarantors including the spouse of the borrowers as portfolio management strategies. Furthermore, the SACCOS demanded from the borrowers the letter of introduction from the village or ward village offices and the letter of residence confirmation from an advocate or magistrate. The SACCOS confirmed to make follow-up of overdue loans to the homes of borrowers. The SACCOS also invited in the SACCOS office borrowers with overdue loans for conversation. During the conversation the borrowers stated the reasons for default and pledged the repayment of their loans and many defaulters repaid their loans by using this strategy. SACCOS' leaders reported that two defaulters who were not willingly to repay their loans through normal procedures, repaid their loans amounted 2.5 million TZS through the court action. The SACCOS also confirmed that there were some cases where the SACCOS sold the collateral of the defaulters to recover the defaulted loans. However, Magali (2013b) revealed that the use of collateral to recover the loan is not an effective strategy for the rural SACCOS because collateral are not valued legally and seemed to be difficult to sell collateral such as residential house to repay the overdue loans. Moreover, Evers et al (2000) recommended that the court action should be the last means to be used by MFIs in forcing borrowers to repay their loans because it has negative impacts on both the MFIs and borrowers. The SACCOS management stated that borrowers reported that they failed to make on time loans repayment because of poor business performance and low price of agriculture produce where farmers experience the drop of paddy price per bag from 70,000 TZS in 2012 to 20,000 TZS in 2013. FAO (n.d) confirmed that changes in prices of agricultural inputs and outputs might lead to deterioration of loans portfolio because it will restrain farmers not to repay their loans.

4.5.5 Size of Loan, Gender and Loan Age

The findings from regression analysis in Table 7 indicate that the specified variables fit the equation where the adjusted R-square and F-statistics are 0.504 and 143.555 respectively. The regression equation was constructed to examine the influence of loan size, gender, location and age on the quality of portfolio management. The quality of loan portfolio is measured by the amount of loan repaid. The findings from the regression analysis show that the size of loan positively influences the quality of loan portfolio. It implies the repayment performance was higher for loans with larger size. The findings are contrary with Magali (2013b) who found that the loans default risk for rural SACCOS in Tanzania was higher for loans with large size. The findings from Table 7 further reveal that the influence of gender and location on the quality of loan portfolio for ABC rural SACCOS was not significant. Magali (2013b) also revealed that the influence on gender on loan default risk for the rural SACCOS in Tanzania was not significant.

Table 6. Age and loans quantative information

Variable (s)	N	Minimum	Maximum	Mean
Loan age (Years)	496.00	0.17	4.17	0.76
Loan issued (TZS)	496.00	50,000.00	30,000,000.00	1,625,237.10
Loan repaid (TZS)	496.00	0.00	27,500,000.00	500,308.36
Remaining loan (TZS)	496.00	600.00	22,562,500.00	1,129,430.75

Table 7. Estimated Value of Regression Coefficients

Independent variables	Estimated value of Beta coefficient	t-value
Dummy of Gender	0.005**	0.130
Dummy of location	0.021**	0.577
Log Loan amount	0.742*	20.192
Value of R^2	0.553	-
Adjusted R^2	0.504	-
Value of F	143.555*	
Durbin Watson	1.987	-
Mean VIF	1.052	
Standard Error of Estimate	0.414	-

[*]Significant at 1% level; **Not significant

4.6 Testing Multivariate Regression Assumptions

I test the assumption of multivariate regression results to examine the presence of multicollinearity, heteroscedasticity and autocorrelation of among the independent variables specified in the regression model as recommended by Gujarat and porter (2010). The findings from the test are found in the appendix. The findings reveal that the mean Variance Inflation Factors (VIF) is 1.052 which is recommended for acceptance of results because it is less than 10. This confirms that there is no serious problem of multicollinearity among the variables. Moreover, the Durbin Watson (DW) coefficient which tests the occurrence of autocorrelation

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among variables is 1.987 which is approximately equals to 2.0 confirming that there is no autocorrelation problems in the model. I abide with Gupta (1999) and Gujarat and Porter's (2010) recommendation regarding the testing of the existence of heteroscedasticity in the multivariate regression model by using the White test. I compare the coefficients of which chi square calculated, $NXR^2 \rightarrow 0.504*496=249.984$ at 0.05 significance level which is less than (chi square) $\chi^2(496) = 553.127$ tabulated. Therefore, I confirm that the there is no problems of heteroscedasticity in the multivariate regression model.

5. Conclusion and Recommendations

The findings indicate that women constituted 52.6% of the total loan portfolio. Also the doubtful and bad loans were 51 and 31 million TZS summing to 82 million TZS which was more than 10% of the loan portfolio. Therefore, the ABC rural SACCOS should devise strategies to improve the quality of the loan portfolio. The findings show that loan aging in ABC SACCOS was not very effective because loans of different age were classified in a single class. The results from the regression analysis reveal that the quality of loan portfolio was positively influenced by the loan size while the influence of gender and location of the borrowers were not significant. The findings further reveal that groups loan were only 1% of the loan portfolio and the individual loans were of larger size compared to group loan and both individuals and groups defaulted their loans. Moreover, ABC SACCOS used portfolio diversification, collateral, guarantors, letter from the village/ward government offices and affidavit from the lawyer as credits risk or mitigation techniques. However, the findings reveal that there were no insurance services which could help to reduce the risk of loans default and maintain the quality of loan portfolio. The findings also revealed that fluctuation of the price of agricultural produce acted as threat for maintaining the quality of loan portfolio in ABC rural SACCOS.

This article recommends that ABC SACCOS should seek the insurance coverage services (Especially crop insurance since majority of the clients engage in agriculture production). Also other effective types of insurance such as business and vehicle insurances should be introduced. The ABC rural SACCOS also should use the effective software for effective loan portfolio management, search the market for agriculture produce and practice warehouse receipt system or contract farming, should write off loans which borrowers have no ability to repay, enhance the repayment of overdue loans, and revise the loan classes and maturity for different types of loans.

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Appendix

Appendix 1: The results from the regression Equation

Model Summary[b]					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.744[a]	.553	.549	.41407	1.987

a. Predictors: (Constant), Log Loan amount, Dummy of location, Dummy of Gender

b. Dependent Variable: Log Loan Repaid

ANOVA[b]						
	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	73.840	3	24.613	143.555	.000[a]
	Residual	59.667	348	.171		
	Total	133.507	351			

a. Predictors: (Constant), Log Loan amount, Dummy of location, Dummy of Gender

b. Dependent Variable: Log Loan Repaid

Coefficients[a]								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.558	.237		2.358	.019		
	Dummy of Gender	.006	.046	.005	.130	.897	.926	1.079
	Dummy of location	.026	.045	.021	.577	.564	.975	1.026
	Log Loan amount	.825	.041	.742	20.192	.000	.950	1.053

a. Predictors: (Constant), Log Loan amount, Dummy of location, Dummy of Gender

b. Dependent Variable: Log Loan Repaid

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