

A SURVEY OF LOAN AMORTIZATION PRACTICES BY SACCOS IN NAIROBI

BY

NDEGE ZACHARIA

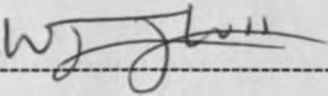
D/61/P/8141/98

**A MANAGEMENT RESEARCH PROJECT SUBMITTED IN PARTIAL
FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTERS OF
BUSINESS ADMINISTRATION AT THE UNIVERSITY OF NAIROBI**

NOVEMBER, 2009

DECLARATION

I hereby declare that this is my original work and has not been presented to any other university as a proposal for research.



Date 13/11/09

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This project has been submitted with my approval as the University supervisor.



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DEDICATION

Dedicated to my wife, children for their patience during my studies. Special to my mother (Irene Wangari Ndege) and grandmother (Elizabeth Wanjiku Ndege) for their continued prayers and my father (John Wachira Wambugu) for financial support.

ACKNOWLEDGEMENTS

I am grateful to my project supervisor, Mr. Mirie Mwangi for his continued support, guidance and professional input that made this project see the light of day. I also wish to thank my friends and colleagues in my workplace for their support and encouragement. Finally, I recognise the SACCOs that assisted in providing data for this project that has enhanced its professional objectivity.

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LIST OF ABBREVIATIONS

AMIs	Alternative Mortgage Instruments
CAM	Constant Amortization Method
CBK	Central Bank of Kenya
CPM	Constant Payment Mortgage
FRM	Fixed Rate Mortgage
GPM	Graduated Payment Mortgage
KARI	Kenya Agricultural Research Institute
KERUSSU	Kenya Rural Savings & Credit Societies Union
KIPPRA	Kenya Institute of Public Policy Research and Analysis
KLI	Kenya Leadership Institute
KSH	Kenya Shillings
KUSCCO	Kenya Union of Savings & Credit Co-operatives
PLAM	Price-Level Adjusted Mortgage
SACCOs	Savings and Credit Cooperative Societies
SAM	Shared-Appreciation Mortgage
SFPM	Standard Fixed Payment Mortgage
SPSS	Statistical Package for Social Sciences
UoN	University of Nairobi
US\$	United States Dollar
VRM	Variable Rate Mortgage

ABSTRACT

The study explored the loan amortization practices of SACCOs in Nairobi with a view of establishing the preferred loan amortization approach by SACCO members. In addition, the study was also to establish the determinants of making a loan amortization approach preference. The population comprised all SACCO members and SACCO management committees of Nairobi.

From the survey it was evident that SACCOs have only used one type of loan amortization approach and 80% used CAM, 20% used CPM and none used GPM, hence this tended to limit the choice that a SACCO member could have in determining how to repay a loan. From the analysis, salary income is one of the key determinates of making a loan amortization preference on the part of the members whereas the key determinant in adopting a loan amortization approach by a SACCO was the simplicity of calculating the interest rate. Those earning Ksh. 60,001 and above mostly preferred the CAM payments while those earning below Ksh. 60,000 preferred CPM for emergency loans. It was also evident that initial loan amounts paid at a given time of taking up a loan was considered very important for purposes of making a decision to take a loan with a SACCO. This attests to the fact that higher Loan deductions would significantly affect the net income salary of an individual. Of the 10 SACCOs that responded 88.89% indicated that they adopted their loan amortization approach because of computational simplicity while the remaining 11.11% indicated higher cash inflows as a consideration for its adoption.

It was further observed that over 80% of the members had borrowed from their SACCOs indicating that salaried employees relied heavily on credit from the SACCOs, hence the study recommended that SACCOs adopt different types of loan amortization approaches to enable all members maximize on their credit desires.

Areas for further research that were recommended for study was the effects of adopting various amortization approaches by SACCOs.

CHAPTER ONE

INTRODUCTION

1.1 Background

One of the main roles of a financial system is aggregating capital from surplus sources and allocating the resources to investors through formal and informal channels. Among the formal channels are commercial banks, Savings and Credit Cooperative Societies (SACCOs) and capital markets. SACCOs are voluntary associations of primarily salaried people who pay fixed contributions at regular intervals usually monthly. The common bond is mainly employment in the same organization/industry or membership to an organization. The sector has primarily developed as a response to the inability or apathy of commercial banks and the formal financial system to serve the needs of the bulk of Kenya's working class and farmers. The pooling together of these groups is triggered by the need to establish mechanisms for saving and sourcing for credit to finance an individual's development agenda and settle unforeseen financial obligations

There are basically two types of SACCOs, employer-based (usually urban) and cash crop/agriculture-allied activities (usually rural) whose apex bodies are the Kenya Union of Savings & Credit Co-operatives (KUSCCO) and the Kenya Rural Savings & Credit Societies Union (KERUSSU) respectively (Mutua, 2006).

The growth and potential of SACCOs as a provider of financial services, is not without challenges. Market liberalization, lack of capacity, outdated technology and lack of proper regulatory framework are some of the reasons why outreach of Sacco's financial services is still low and the performance of the industry is below full potential. To meet these challenges, the SACCOs have continued to diversify their products and services, including the provision of near retail banking services, based on what are popularly known as Front Office Service Activities (Mutua, 2006).

According to Collins (1981) loan amortizations refer to various financial calculations, including the structural breakdown between principal and interest loan payments. Part of the payment on any loan represents a periodic return of principal and the remainder

represents interest on the outstanding principal balance. Details of the repayment components for a loan are typically presented in a month by month debt service breakdown, shown in an amortization schedule.

The amortization approaches that are used in financial institutions for personal loans are mainly borrowed from mortgage loan approaches, one being the Standard Fixed Payment Mortgage (SFPM) and the approaches under SFPM are Constant Payment Mortgage (CPM), Constant Amortization Method (CAM).

Payments on CAM are determined first by computing a constant amount of each monthly payment to be applied to principal. Interest is then computed on the monthly loan balance and added to the monthly amount of amortization. The total monthly payment is determined by adding the constant amount of monthly amortization to interest on the outstanding loan balance (Brueggeman and Fisher, 1997).

CPM payment pattern means that a level or constant, monthly payment is calculated on an original loan amount at a fixed rate of interest for a given term. Like the CAM, payment includes interest and some (though not a constant) repayment of principal. At the end of the term of the CPM loan, the original loan amount, or principal, is completely repaid, or fully amortized, and the lender has earned a fixed rate of interest on the monthly loan balance (Brueggeman and Fisher, 1997).

The formula applied is as below.

$$PV = R \cdot \sum_{t=1}^n \left[\frac{1}{1 + \frac{i}{12}} \right]^t$$

Where; PV = present value

R = annuity

I = fixed interest rate on mortgage

n = number of months loan will remain outstanding.

A hypothetical (Ksh 600,000) loan amortization schedule as shown below with a constant 12% interest P.A and different durations has different initial loan payments while applying CAM and CPM as tabulated below.

Duration/Months	CAM	CPM	Variance	%
12	56,000	53,309	2,691	0.05
24	31,000	28,244	2,756	0.09
36	22,666	19,928	2,738	0.12
48	18,500	15,800	2,700	0.15
60	16,000	13,346	2,654	0.17
120	11,000	8,608	2,392	0.22

The approach of computing loan repayments is of concern to SACCO management as well as SACCO members to ensure that the process of amortization is applied to the best interest of the SACCO stakeholders; hence it is of paramount importance to understand the implication of adopting various amortization approaches.

Collins (1981) argued in his study on the allocation of monthly payments to principal and interest, that although the differences are minor in percentage terms, a borrower faced with two loans with identical closing costs, interest rates and conditions, but different payment amortization methods a customer would surely choose the one with the correct calculations/procedure if the differences were disclosed

In view of this, the SACCO managers should adopt an approach that will enable the SACCO maximize on its core objective of lending to a significant number of members while at the same time maximizing on the returns of the loan portfolio.

1.2 Statement of the Problem

The Standard Fixed Payment Mortgage (SFPM) has been the dominant mortgage instrument in the United States for the last 50 years, and for much of this period it has performed well. However, during periods of high and volatile rates of inflation, the SFPM suffers from severe weaknesses. Foremost among these problems, from the standpoint of the borrower, is the tilt in the stream of real mortgage payments toward the

initial years of the mortgage. For consumers unconstrained by capital market imperfections, this tilt is unimportant. However, a consumer is typically unable to borrow against expected higher future income, or against the nominal capital gains that accrue to the owner of a house over the life of the mortgage. In addition, common practices of mortgage lenders often limit mortgage payments to some fraction of income at the time of purchase. Together, these liquidity constraints create a mismatch between the time sequence of mortgage payments and income, a mismatch that reduces the number of borrowers who qualify for financing and that limits the value of the house purchased by those who do obtain financing.

In an attempt to reduce the problems created by this mismatch, a variety of alternative mortgage instruments (AMIs) has been suggested. Three of the most important are the Graduated Payment Mortgage (GPM), the Shared-Appreciation Mortgage (SAM), and the Price-Level Adjusted Mortgage (PLAM).

Follain and Struyk (1977) analyzed AMIs by assuming that their effects are comparable to an increase in income and then using estimates of the impact of income on home ownership to infer the impact of AMIs. Smith et al (1977) used a counting model to estimate how many additional home buyers could be created if the GPM were available. Colton et al (1977) based their conclusions on a national survey of borrower attitudes toward mortgage features. The results of the studies suggested that AMIs were attractive to the borrowers and they would increase home ownership.

SACCOs use two approaches of loan amortization which are referred to as Constant Amortization Method (CAM) and the Constant Payment Mortgage (CPM) and the approaches have different implications with regard to the amount of initial loan payments. Some of the approaches adopted by SACCO lenders often limit the amount of loan which a member can qualify for and by and large there is usually the tilt problem on the borrowers' side. In an attempt to reduce the tilt problem, a SACCO should adopt an appropriate approach to maximize on the size of loan portfolio which would consequently lead to an increase on a SACCOs' profitability.

The main purpose of this research is to undertake a survey of loan amortization practices by SACCOs in Nairobi and also to establish the determinants for making certain preferences. There is no research focusing on the preferences of SACCO members towards loan amortization approaches that have been carried out in Kenya.

1.3 Objectives of the Study

- a) To establish the preferred loan amortization approach by SACCO members.
- b) To establish the determinants of making loan amortization approach preferences by SACCO members.
- c) To establish the determinants of adopting a loan amortization approach by a SACCO management committee.

1.4 Importance of the Study

The results of the study will provide useful information to policy makers, notably SACCO managers in developing appropriate amortization approaches that consequently translate to increased loan portfolios and profitability. The SACCO members will benefit from a variety of loan amortization approaches. Finally the study will help to determine if there are alternative forms of loan amortization other than the ones traditionally applied and inform the academic world of gaps the gaps to be filled in the loan amortization approaches.

CHAPTER TWO

LITERATURE REVIEW

2.1 Development of Mortgage Payment Patterns

Given the many types of financial instruments that have evolved in recent years, there is no longer a "common" or "standard" mortgage pattern available in residential financing as well as consumer loans. Prior to the 1970s, changes in mortgage instruments generally occurred gradually. When changes did occur, they were considered major. This pattern of gradual change existed for many years because of a relatively stable economic environment characterized by very low rates of inflation. Because of volatility in interest rates and inflation during the 1970s, changes in the design of mortgage loan instruments had become very common (James, 1984)

2.2 History of Loan Amortization

Prior to the 1930s and 1940s, a very common practice in mortgage lending was the requirement of a substantial down payment from borrowers trying to purchase housing. Lenders would limit maximum loan amounts to 50 percent of property value, and the term of the loan would vary. Five years was commonly the maximum term available. Payments were generally "interest only," with the full loan balance due after five years. At that time, it would be expected that another loan would be made, usually for a lesser amount as the borrower saved on his or her own account and applied those savings to reduce the amount of the loan. Based on the description, a few relationships should be obvious. First, mortgage loans were considered very risky and only relatively wealthy individuals could qualify for a mortgage loan because of the large down payment required by the lender. Second, lenders considered the borrower's ability to repay the loan far more important than the collateral value represented by the real estate; consequently, the borrower's ability to earn income and retire the debt "on his 'Own" was critical in the lending decision. Finally, the loan could be called, or not renewed, after five years, which presented the possibility that if economic conditions were unfavorable the borrower could be required to repay the full loan balance at that time (Brueggeman and Fisher, 1997).

After the Depression, the U. S. economy experienced a relatively long period of

economic prosperity characterized by relatively high real growth and low rates of inflation. As employment and real income increased, lenders began to recognize the possibility that longer-term loans could be made because households were earning greater real incomes. This influence resulted in lower risks to lenders, since households were more likely to repay their debt and housing values were not likely to decline. Hence, lenders were willing to make a longer-run assessment of both the borrower and the collateral when making lending decisions given the economic environment just described, lenders devised the self amortizing loan, a longer-term loan with monthly payments consisting of partial repayment of principal. Indeed, a first effort to accomplish this was referred to as the CAM loan (Brueggeman and Fisher, 1997).

2.2.1 Theory of Loans

According to Collins (1981) the true cost of credit depends not only on the amount borrowed and the interest rate, but also the manner in which monthly interest charges are calculated. Changes in this calculation method that appear to be minor can produce surprising changes to cost of credit. These changes, which do not have to be disclosed on some types of loans, are worth watching for when shopping for credit. The small loan business, as it has developed according to legal requirements and necessary collateral, has given rise to a theory somewhat different from that of long term mortgages. Indeed, the usual problem of the consumer with respect to the small loan is to find the interest rate, whereas the problem for the mortgagee is to find the term, the cost or the balance due after a given time.

Sangkyun and Anthony (2000) argue that according to the permanent income/life-cycle hypothesis and the predictive power of consumer borrowing among other factors found to be of significance were interest rates, home equity loans and lenders' willingness to lend. Hugh (1962) suggests in his study that approximate formulas which are satisfactory for small loans may give poor results for mortgages due to the increase in size of the term. However, in actual usage this is partly compensated for by use of a smaller interest rate. Also, if the mortgage is paid monthly, the interest rate is usually a monthly interest rate. Formulas for mortgages are somewhat extensive for small loans but it seems desirable to

establish formulas satisfactory for both fields.

Collins (1981) examined the effects of applying the three common methods (12-month per year; 365-day per year; 365.25/360) used to allocate monthly payments to principle and interest on the cost of credit by considering its impact on effective interest rates, on loan balances, on the total cash outlay required to repay a loan and on the present value of the differences in charges. The study concluded that, although there are minor differences in percentage terms when different amortization methods are used, a consumer faced with two loans with identical closing costs, interest rates and conditions, but different payment amortization methods, the consumer would surely choose the approach with correct procedure if the differences are disclosed.

2.3 Types of Loan Amortization Approaches

There are several loan amortization approaches under the Standard Fixed Payment Mortgage (SFPM) as outlined below.

2.3.1 Constant Amortization Mortgage

Lenders in early days devised the self amortizing loan; a longer-term loan with monthly payments consisting of partial repayment of principal. Indeed, a first effort to accomplish this was referred to as the CAM loan. Payments on CAMs were determined first by computing a constant amount of each monthly payment to be applied to principal. Interest was then computed on the monthly loan balance and added to the monthly amount of amortization. The total monthly payment was determined by adding the constant amount of monthly amortization to interest on the outstanding loan balance (James, 1984).

By instituting the constant amortization mortgage, lenders recognized that in a growing economy, borrowers could partially repay the loan over time, through the amortization process, as opposed to being left to their own devices to reduce the loan balance when the term of the loan ended, which was the case with the shorter-term, "interest only," loan pattern. While the constant amortization payment pattern was considered an improvement, it was still very conservative because it placed primary emphasis on the

amortization of the loan and gave much less recognition to the fact that in an economy with long periods of sustained real growth, a borrower's income was more likely to increase, not decline. Therefore, the prospect that a borrower's ability to repay debt more slowly from an income stream that was expected to grow seemed to be reasonable enough to warrant further modification in mortgage lending instruments. Indeed, the CAM was relatively short-lived phenomenon and quickly gave rise to Constant Payment Mortgage (CPM) loan (Brueggeman and Fisher, 1997)

2.3.2 Constant Payment Mortgage

The most common loan payment pattern used in real estate finance from the post depression era to the present, and one which is still very prevalent today in commercial lending, is the fully amortizing, CPM. This loan payment pattern is used extensively in financing single family residences, personal loans and in long-term mortgage lending on income-producing properties such as multifamily apartment building complexes and shopping centers. This payment pattern means simply that a level or constant, monthly payment is calculated on an original loan amount at a fixed rate of interest for a given term. Like the CAM, payment includes interest and some (though not a constant) repayment of principal. At the end of the term of the CPM loan, the original loan amount, or principal, is completely repaid, or fully amortized, and the lender has earned a fixed rate of interest on the monthly loan balance (James, 1984).

The formula applied is as below.

$$PV = R \cdot \sum_{t=1}^n \left[\frac{1}{1 + \frac{i}{12}} \right]^t$$

Where; PV = present value

R = annuity

I = fixed interest rate on mortgage

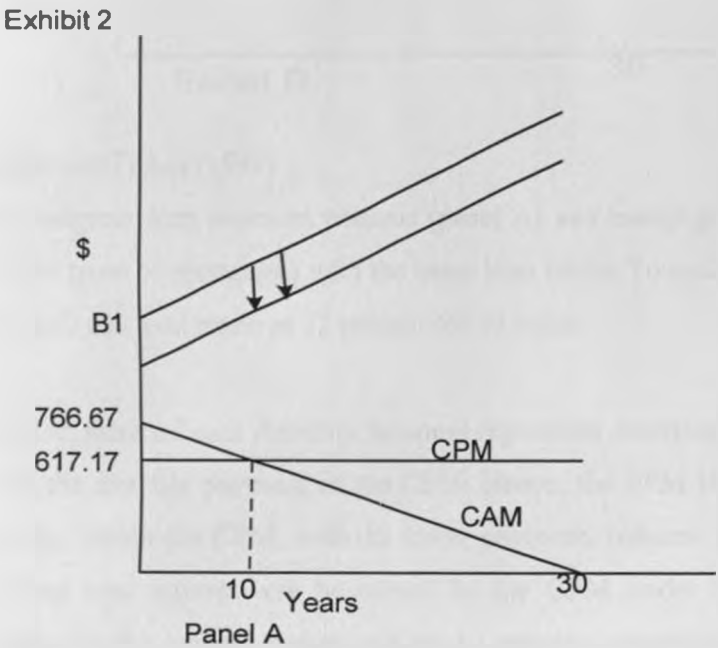
n = number of months loan will remain outstanding.

In this case, we are interested in solving for R, or the constant monthly payment (annuity)

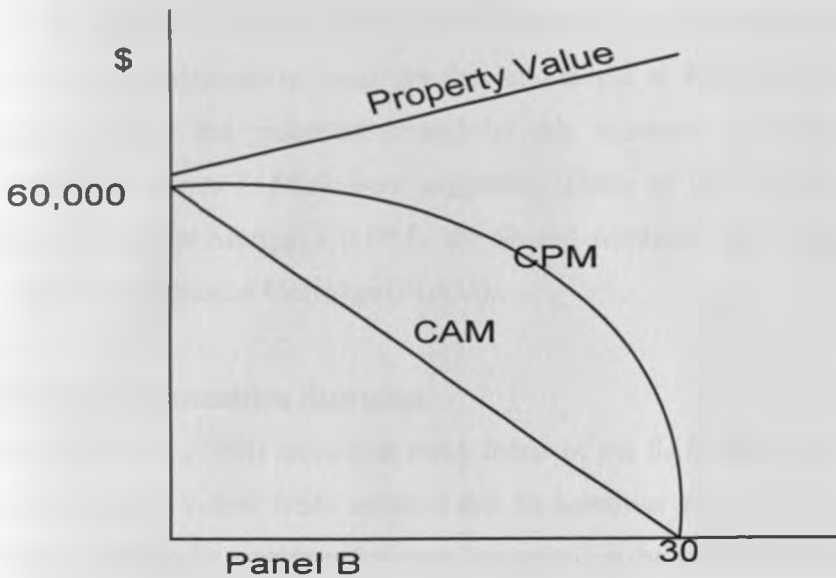
that will fully repay the loan amount (PV) and earn the lender some interest compounded monthly.

A Comparison of Constant Payment Mortgage and Constant Amortization Loans

Although the CAM was not used for an extensive period of time, the change to the CPM was a dramatic modification in mortgage lending instruments and the forces that brought this change about, and its impact on borrowers and lenders were appreciated.



Source: Brueggeman and Fisher (1997)



Source:

Brueggeman and Fisher (1997)

Exhibit 2 compares loan payment patterns (panel A) and mortgage loan balance patterns (panel B) for types of mortgages with the same loan terms. To make this comparison, we consider a \$60,000 loan made at 12 percent for 30 years.

With a CAM, more of each monthly payment represents amortization of principal compared with the monthly payment of the CPM. Hence, the CPM loan balance is reduced more slowly. Hence the CPM, with its lower payment, reduces the loan balance more slowly. More total interest will be earned by the CPM lender over the 30-year loan period, although the lender's return will be 12 percent, compounded monthly, in each case.

This shift to the CPM pattern, however, was based on the fact that lenders were convinced that borrower incomes would increase. In an economy experiencing real economic growth with relatively stable prices, increases in income and property values would reduce borrower default risk associated with a CPM loan. Hence, this fundamental change to the CPM pattern occurred after lenders realized the ability of households to meet mortgage payments from future income, as well as current income (Brueggeman and Fisher, 1997).

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According to Karl (1979) and Follain (1982) common practices of mortgage lenders often limit mortgage payments to some fraction of income at the time of purchase. In an attempt to reduce the problems created by this mismatch, a variety of alternative mortgage instruments (AMIs) were suggested. Three of the most important are the Graduated Payment Mortgage (GPM), the Shared-Appreciation Mortgage (SAM), and the Price-Level Adjusted Mortgage (PLAM).

2.3.3 Shared-Appreciation Mortgage

James and Follain (1984) notes that many forms of the SAM have been suggested. The one they analyzed in their study assumed that the borrower makes two types of payments. The first is the regular mortgage payment, computed in the same manner as for the SFPM but now based on a below-market rate of interest. The second type equals a fraction of the appreciation in the value of the house. By basing mortgage payments on a below-market rate of interest, the SAM reduces substantially the payments in the early years of the mortgage and the tilt problem is, therefore, much less severe than with the SFPM.

2.3.4 Price-Level Adjusted Mortgage

James and Follain (1984) argue that the PLAM is designed to keep real mortgage payments constant over the life of the mortgage. It does this by basing the initial mortgage payment schedule on a real interest rate and then increasing the nominal mortgage payment each year by the rate of inflation. The outstanding mortgage balance at the beginning of each period also is adjusted by the rate of inflation. The PLAM has great potential to combat the tilt problem. Payments in the initial years can be much lower than those with the SFPM when inflation-and interest rates are high. In addition, the payment-to-income ratio is constant over the life of the mortgage for a household whose income keeps pace with inflation. However, if the household's income growth falls below the rate of inflation, mortgage payments will take an increasing share of income.

2.3.5. Graduated Payment Mortgage

James and Follain(1984) note that one of the first instruments suggested to combat the tilt problem was the GPM, now widely used in the Federal Housing Administration Program.

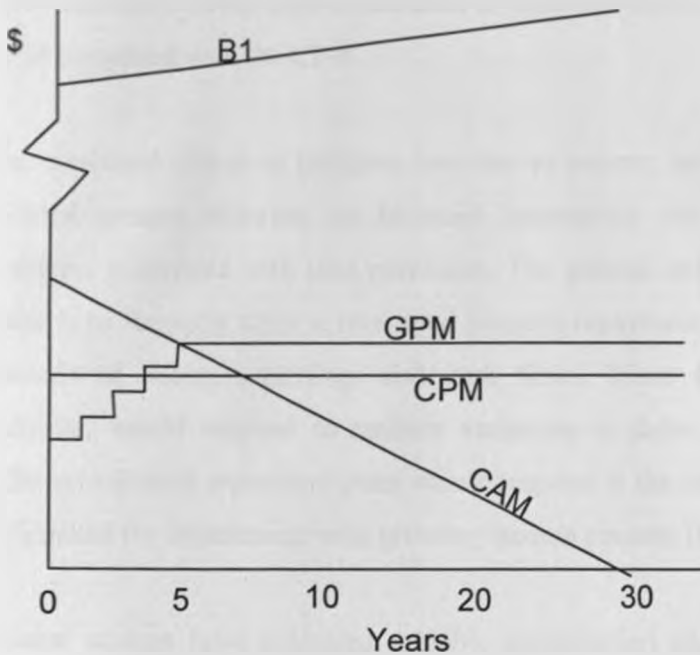
Here the mortgage payments increase during some portion of the mortgage (the graduation period) at some specified annual rate (the graduation rate). At the end of the graduation period, the mortgage payments remain constant (although at a higher level than for the SFPM) for the rest of the mortgage. The simulations they performed here assumed that the graduation period was five years and the graduation rate equals the rate of inflation. The principal advantage of the GPM for the borrower is that mortgage payments are designed to shift the burden of the mortgage to the later years. The initial payment-to-income ratio is, therefore, such that the household is able to borrow more than it would with the SFPM. However, the GPM does not take into account the capital gains that the household will earn when the house is sold. To that extent, the GPM does not completely match payments and income. In an attempt to deal with the problem of inflation and its impact on mortgage interest rates and monthly payments, lenders have instituted new mortgage instruments. One such instrument is the graduated payment mortgage (GPM). The objective of a GPM is to provide for a series of mortgage payments that are lower in the initial years of the loan than they would be with a standard mortgage loan. GPM payments then gradually increase at a predetermined rate as borrower incomes are expected to rise over time. The payment pattern thus offsets the tilt effect to some extent, reducing the burden faced by households when meeting mortgage payments from current income in an inflationary environment (Brueggeman and Fisher (1997).

An example of the payment pattern for the graduated payment mortgage is illustrated in Exhibit 3

EXHIBIT 3 Comparison of GPM Payments and Standard Constant Payments (\$60,000, 30-year maturity, various interest rates)

	Interest Rate				
	10%	11%	12%	13%	14%
Constant Payments	\$526.54	\$571.39	\$617.17	\$663.72	\$710.94
GPM payments graduated (7.5% annually)					
1	\$400.22	\$436.96	\$474.83	\$513.71	\$553.51
2	430.24	469.73	510.44	552.24	595.03
3	462.51	504.96	548.72	593.66	639.65
4	497.19	542.83	589.87	638.18	687.63
5	534.48	583.55	634.11	686.04	739.20
6-30	574.57	627.31	681.67	737.50	794.64

Source: Brueggeman and Fisher (1997)



Source: Brueggeman and Fisher (1997)

When judged relative to the CAM, the CPM and GPM clearly provide for initial payments that are far below payments required for the CAM with the same terms. It is important to stress that higher rates of inflation have caused a modification in mortgage instruments over time. Even though all three mortgage instruments provide the same yield (12 percent), changes in mortgage payments have clearly been structured to reduce initial payments. This has been done with the expectation that growth in real incomes and expected inflation will extend into the future, resulting in sufficiently high borrower incomes to repay the debt while reducing initial payments sufficiently to reduce the payment burden at the time of loan origination (Brueggeman and Fisher, 1997)

Colwell and Carolyn (1997) argue that GPM will generally not be available at the same interest rate as a standard CPM mortgage. It would appear that because of the additional risk taken by the lender-in the form of an increasing loan balance due to negative amortization in the early years of the loan and lower initial monthly cash flows received from reduced payments the GPM lender would require a higher risk premium than the CPM

lender. Hence, all things being equal, a slightly higher interest rate may be required on a GPM than on a CPM. This would tend to neutralize some of the positive features of the GPM compared with the CPM.

The combined effects of inflation, low current returns, and swings in farm income have focused greater attention on financial innovations for responding to the liquidity problems associated with land purchases. The general objective of innovative financing plans is to formally tailor a leveraged farmer's repayment obligations to the anticipated patterns of business earnings and cash flows. More flexible repayment plans, for example, would respond to random variations in debt servicing capacity. Similarly, inflation-adjusted repayment plans would respond to the cash deficits and financing gaps anticipated for investments with growing income streams (Lee and Baker, 1984).

Several studies have evaluated variable amortization plans as a response to random variations in farm income (Rahman and Barry, 1981). But less attention has been given to graduated payment plans. The basic concept of a graduated payment mortgage (GPM) is to match a borrower's repayment obligations with the expected growth in repayment capacity to avoid cash deficits early in the repayment period. Shifting the repayment burden to future years should ease the near term liquidity pressures, especially for low-equity investors, thus providing more funds for investment, consumption and countering business risks. Moreover, the long term lender would formally participate in resolving the borrower's liquidity problems, although future repayment risks could be increased.

GPMs and other related mortgage instruments have been authorized for thrift and banking institutions to finance residential housing (Kaufman and Erdevig, 1981). They are also suggested for use in farm real estate financing (Tauer, 1981).

Paul *et al* (1983) study was to empirically analyze the effects on farm financial performance of investments in farmland subject to graduated payments versus traditional fixed payments. A multi-period, mixed integer linear program was used to model the growth environment for a representative southern Illinois grain farm and to evaluate its

financial performance for various repayment specifications. These results indicated that, graduated payment mortgages may allow more rapid acquisition of farm land, reduce liquidity problems, and permit greater financial growth for low-equity cash grain farmers. With a GPM, non real estate borrowing remains high, but it occurs more to support growth and less to resolve liquidity problems as compared to the traditional fixed payment mortgages. These outcomes for GPMs were largely consistent with the expected results. However, the differences in timing of land purchases and the magnitude of net worth growth for this farming situation appeared modest relative to the total size of financial transactions and the fairly long planning period. GPMs may also introduce additional risks associated with the realization of income growth, the build-up of loan balances early in the repayment period and possible declines in the values of land and other assets pledged to secure the loan. Indeed, the low farm income and drops in land values for many U.S. farmers in the 1981-82 periods would have added to the problems in meeting a growing payment obligation, although the lower level of the payments would be an offsetting factor.

Similar benefits to young homeowners occurred with the growing use of GPMs in Federal Housing Administration insured mortgages and in comparable mortgage developments by private sector lenders (Melton, 1980). Alternatively, combining GPMs with Lee and Baker's (1984) suggestions for variable amortization, debt reserves, and loan insurance would jointly respond to the problems of financing gaps and random variations in farm income and asset values.

Paul *et al* (1983) concluded in their study that graduated payment plans may also contribute to financial performance of farms with greater diversity in enterprises. This analysis focused on investments in land and machinery for a cash grain operation. A more diverse operation, perhaps with livestock enterprise, might benefit more from GPMs through the cash freed up for allocation to non-land investments.

Lee and Baker (1984) posit that the impetus for developing GPMs in farm lending was likely to come from farmers' demand for a broader range of financing choices. Lenders

often argue that their ad hoc, informal methods of managing liquidity problems and default are sufficient, and the graduated as well as flexible payment plans would be too costly and too complex to implement. However, even if inflation is permanently brought under control, GPMs are likely to remain an important innovation in the mortgage market, by providing greater flexibility in tailoring mortgage payments to anticipated growth in returns than does the fixed payment mortgage. This may be especially useful for younger farmers seeking to establish their operations.

2.4 Default Risk Under Alternative Mortgage Instruments

A number of proposals have recently been made to permit the introduction of one or a number of alternative instruments of residential mortgage finance as supplements or replacements for the familiar fixed nominal-interest rate constant payment mortgage (the FRM) and it is worth noting that they have different default profile which cannot be gainsaid.

Cohn and Fischer (1974) These instruments (AMIs), it is contended, will prove superior to the FRM in responding to lenders' or borrowers' cash flow requirements, increasing mortgage capital flows, and increasing the level of housing consumption and opportunities for homeownership. One of the major issues which has emerged in connection with such proposals and which was hindering such introduction is the effect AMI's would have on default risk by certain borrower groups, particularly young, elderly, poor, non-upwardly mobile, or black households.

Kerry (1978) empirically addressed the default issue through (1) estimation of a model relating variables associated with the borrower, property, and mortgage instrument to the probability of default over time and (2) simulation of default risk under various alternative instruments, carried out by observing the behavior of the estimated model under alternative mortgage conditions. The data used in estimation were generated through specification of a default model developed by von Furstenberg, with explanatory variables recast into terms which were not instrument specific. Simulation under a variety of scenarios of borrower and economic conditions permitted a broad assessment of the

desirability of each AMI. The simulations have tended to support the following major points; In the "normal" situation of an upwardly mobile middle-income household in a stable neighborhood with a down-payment of 20 per cent or more, all the instruments tested-the FRM, the GPM, the VRM, and the PLAM-are predicted to behave comparably and to result in acceptable levels of default risk; In the case of lowered income or income expectations by borrowing households or a longer term-to-maturity or higher contract interest rate on the mortgage, default risk is predicted to increase roughly the same for all instruments, but moderately and still within an acceptable range; The VRM, contrary to assertions to the contrary is predicted to compare favorably with the FRM in its default risk characteristics, at least under conditions of moderately fluctuating but not secularly rising interest rates. This suggests that in such a period lenders are not likely to significantly reallocate credit under the VRM away from lower-income, non- upwardly mobile households in older neighborhoods.

2.5 Borrower Risk under Alternative Mortgage Instruments

Bruce (1982) analyzed differences in borrower risk under alternative mortgage instruments and various borrower characteristics. For this purpose a model of potential rather than actual delinquency was developed which made it possible to consider differences in risk without the use of experience data. The results indicated that all of the AMI's studied (VRM, GPM, PLAM) were riskier than the SFPM, based on the number of potential delinquencies. In addition, some evidence was found to suggest that older household heads were more likely to experience potential delinquency, particularly under PLAM loans. Other loans showed no significant differences in the number of potential delinquencies based on age. Thus in terms of personal characteristics of the household head, they concluded that at least some AMI's are appropriate for all borrowers without regard to race, sex, or age. Older borrowers would be wise to avoid the PLAM unless they have reason to be confident that their income can keep pace with the rate of inflation.

2.6 The Mortgage Maturity Decision

Upinder *et al* (1990) conducted a study to understand two issues; why should households used short-term fixed-rate mortgage loans in lieu of long-term mortgage debt? And, why short-term fixed-rate mortgages became an important financing tool in a very short period of time? A popular explanation is that some borrowers especially those in their 30s or 40s who can afford a larger payment and who are on their second or third home and want to build equity quickly can save costs through shorter-term mortgages when much higher interest amounts paid on a longer-term loan have a higher present value than paying off a shorter term loan with larger payments. The empirical results suggested that the mortgage maturity choice is strongly influenced by affordability factors. For instance, they find that borrowers are less likely to select shorter-term mortgages in areas where real house prices are high relative to real incomes and in periods of high interest rates when payments on long-term loans are high relative to income. The evidence also suggested that for those households who are able to overcome these barriers-typically wealthier households in high tax brackets there was a natural incentive to select shorter-term loans.

2.7 Tilt Problem, on Borrowers

Colwell and Carolyn (1997) concluded in their study that CAMs benefit lenders by reducing default and interest rate risk, but they can place difficulty, especially a tilt problem, on borrowers. The preference that some borrowers have show for this lending arrangements attests to the fact that there surely are benefits on the borrowing side that are more substantive than mere computational simplicity. Because the CAM is not widely encountered today, it would be difficult to study empirically the situations in which this type of loan prevails. But theoretical understanding tells us that CAM borrowers must enjoy pricing effects or other benefits that we have not been able to specifically identify.

According to James (1984) theory suggests that the PLAM will be most simulative, followed by the SAM and the GPM. The reason for this ranking is that the PLAM is the only AMI that completely alleviates the tilt problem. Because the PLAM produces a payment stream that is constant in real terms, the household is unconstrained by market imperfections and so may take full advantage of the tax-induced stimulus to housing

demand. The other two AMIs reduce the severity of the tilt problem associated with the SFPI, but they do not eliminate it.

James, (1984) in their paper addressed two issues. First, what was the impact of inflation upon a consumer's housing decisions when the household must use the SFPM? And, second, what was the impact of AMIs on housing demand? On the first question, simulation results indicated that low rates of inflation increase housing demand by reducing the after-tax user cost of housing; however, higher rates of inflation decreased demand, as liquidity problems in the mortgage market dominate. On the second question, AMIs was found to reduce the severity of these mortgage market imperfections and so to increase housing demand. The impact of AMIs was generally quite large, particularly for the PLAM. Use of the PLAM allows the household to purchase a house that is always more than 30 percent greater in value than when the SFPM was used, and in one case the house value more than doubles. The SAM and, to a lesser extent, the GPM are also simulative. Because of the magnitude of their impact, AMIs offer enormous opportunities to households, opportunities for which households are willing to pay substantial amounts.

Follain *et al* (1977) argues that foremost among the problems, from the standpoint of the borrower, is the tilt in the stream of real mortgage payments toward the initial years of the mortgage. For consumers unconstrained by capital market imperfections, this tilt is unimportant. However, a consumer is typically unable to borrow against expected higher future income or against the nominal capital gains that accrue to the owner of a house over the life of the mortgage.

Although there is little disagreement that AMIs will ease the tilt problem, especially for first-time home buyers, little is known about the likely magnitude of the improvement. Previous work on this issue is suggestive but of limited use. Its emphasis has been to determine the effect of AMIs on home ownership rates for example, (Follain and Struyk, 1977) analyze AMIs by assuming that their effects are comparable to an increase in income and then using estimates of the impact of income on home ownership to infer the

impact of AMIs. The studies concluded that the rate of home ownership increased with use of AMIs

2.8 History and Size of SACCOs

The cooperative movement was initiated in Germany in 1896, and spread all over the world. The Savings and Credit Cooperative societies (SACCOs) were first introduced in Kenya, in 1964. Their emergence is traced to cash crop farmers' cooperatives movements, particularly in coffee growing areas, in the 1930's. These cooperatives were used as a medium for channeling to farmers the proceeds from sales of their crops. The SACCO organizational system is members-based. These members mobilize voluntary savings in form of shares. It is these savings that form the basis for extending credit to members, various needs. The Co-operatives Societies Act regulates SACCOs. There are basically two types of SACCOs, employer-based (usually urban) and cash crop/agriculture-allied activities (usually rural) whose apex bodies are the Kenya Union of Savings & Credit Co-operatives (KUSCCO) and the Kenya Rural Savings & Credit Societies Union (KERUSSU) respectively (Mutua and Oyugi, 2006).

Most of the employer-based SACCOs are largely in urban areas with the exception of Mwalimu (Teachers') SACCOs found in every district in Kenya. In view of the varied activities in the country, various other types of SACCOs have developed. These are salaried based, traders, Jua Kali, transport and community based SACCOs. As of December 1997, savings through SACCOs stood at Ksh 29 billion and the outstanding loans amounted to Ksh 22 billion. The loans to deposits ratio were 74%, which demonstrates the effectiveness of the SACCOs as a financial intermediary (KIPPRA, 2001). The total volume of deposits and outstanding credit in the rural SACCOs was Ksh 5.1 billion and Ksh 2.1 billion respectively, over the same period (Swedish Cooperative Centre et al, 1999).

The growth and potential of SACCOs as a provider of financial services, is not without challenges. Market liberalization, lack of capacity, outdated technology and lack of proper regulatory framework are some of the reasons why outreach of SACCOs financial

services is still low in the rural areas. Outreach by most of the rural SACCOs is limited to areas that are found in sugar, tea, coffee, pyrethrum cash crop areas and dairy areas of the country (Hospes et al., 2002). Thus, the marginal and the rain fed agricultural areas of Kenya where the bulk of the poor live do not have access to financial services. To meet these challenges, the SACCOs have continued to diversify their products and services, including the provision of near retail banking services, based on what are popularly known as Front Office Service Activities (FOSA). This is the provision of banking services that constitute services on fixed deposit accounts and checking accounts. There are currently 122 SACCOs with FOSAs whose services have gone along way to filling the void left by the bank branch restructuring (Nyong'o, 2005).

The services offered by SACCOs include sale of shares, savings and credit facilities. Although non-members are also served, SACCO members constitute the main target for services provision. The typical member of a SACCO is a male household head, a cash crop and/or dairy farmer and low to middle class people. The female proportion is about 15%-20% of the total male members. Shares are sold to members for only about Ksh 400. Deposit facilities are available to both members and non-members. Interest paid on deposits is pegged at 3% below commercial banks deposit rates. The savings product is so attractive that a large number of users are normally non-members (two-thirds to members' a third). However, credit provisioning is restricted to SACCO members only and is based on three to four times the level of members' savings/shares. Other members provide additional security for the loan repayments, as guarantors. The maximum loan size to an individual is limited to 5% of the society's total share capital and reserves. The loans are largely classified as either "development" loans (e.g. Housing) or "social" loans (for emergencies, school fees). Between 50 and 80 per cent of the loan are granted for social purposes. The loan term varies but is frequently 12 months at about 1 % per month rate (Chao-Beroff, 2000).

2.8.1 Management of SACCOs

A SACCO is managed by a committee elected at the Annual General Meeting. The management committee is the governing authority and subject to the general meeting and

of the society and the by-laws has powers to enter into contracts, be responsible for the custody of all moneys belonging to the society. The committee approves membership applications, loans and the institution's investments. Large SACCOs have full time staff headed by a chief executive who is the secretary to the management committee (Obuon, 1998)

2.8.2 SACCOs lending policy

The current loan policy and guidelines were issued by the Commissioner for Co-operative Development. The policy was to be effective from 1st September, 1992. Some of the salient features of the loan policy are that, any amount of savings through check-off system not in excess of 1/3 of a member basic salary shall remain in the society for a period of 6 months to qualify for a loan. . In addition, loans are to be repaid from a members salary and no member should be allowed to suffer total deductions (including savings, loan repayment and interest) in excess of 2/3 of his/her monthly basic salary. Basic salary excludes rental house allowance but includes owners occupier house allowance in certain cases (Bomett, 1992)

2.9 Gaps to be filled by the study

The study focuses on loan amortization approach preferences by SACCO members in Nairobi and establishes the determinants of making such preferences. The study seeks to fill a knowledge gap on the preferences of amortization approach by SACCO members in Nairobi, a study that has not been carried out. Colton (1977) conducted a national survey of borrower attitude towards mortgage features and established that AMIs were attractive to home buyers. According to Paul et al (1983) the impetus of developing GPMs in farm lending will likely come from farmers' demand for a broader range of financing choices. Lenders often argue that their ad hoc, informal methods of liquidity problems and default are sufficient, and the graduated as well as flexible payment plans would be too costly and too complex to implement.

The study will reveal the preference a borrower may take despite the identical closing costs, interest rates and conditions depending on calculations and procedures employed in loan amortization (Collins, 1981).

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Research Design

This Chapter outlines the methodology, which was used in carrying out the study. Aspects to be covered include research design, population and sampling design, data collection methods and analysis methods. Anderson and Pole (2001) argue that it is difficult to generalize about research designs because of wide variety of types of research. One subdivision is according to whether the approach is predominantly quantitative or qualitative. Quantitative research is typified by experimental studies in science-based disciplines where findings are usually expressed in numerical form. Qualitative research on the other hand is used in disciplines or parts of disciplines that utilize such methods as case studies, questionnaires surveys personal interviews and participants observation.. According to Cooper (2003) cross-sectional studies are carried out once and represent a snapshot of one point in time. Therefore, the study design will be a cross sectional descriptive survey.

3.2 Population

The population comprised all SACCO members and SACCO management committees of Nairobi who's SACCOs were described as active by the Nairobi Provincial Cooperative Officer's register as at 31st December 2007. There were 1,162 estimated SACCOs in Nairobi and the population of the SACCOs members was estimated to be 3,130,000.

3.3 Sampling

Sampling is the process of selecting a number of individuals for the study in such a way that the selected individuals represent the large group from which they are selected. According to Anderson and Pole (2001) one of the most frequently asked question is on the determination on the sample size. They argue that the answer to this question is influenced by several factors including the purpose of the study, population size, the risk of selection a 'bad 'sample size and the allowable sampling error. In addition to the purpose of the study and population size, three criteria usually determine the appropriate sample size: level of precision, level of confidence or risk and the degree of variability in the attributes being measured (Miaoulis and Michener, 1976). The degree of variability

refers to the distribution of attributes in the population and the more the heterogeneous a population, the larger the sample size required to obtain a given level of precision. The researcher used simple random sampling to select 10 SACCOs and from the estimated 1,162 SACCOs in Nairobi. 9 members were selected from each SACCO using simple random sampling and one management committee member was selected.

3.5 Data collection

The study utilized primary data through use of a questionnaire which had open and closed ended questions. The respondents were SACCO members and SACCO management committees. The researcher personally administered the questionnaire accompanied with different loan amortization schedules to enable the SACCO members to acquaint them on the different approaches. The use of questionnaire was preferred for this study because it is the typical method through which descriptive data is collected Anderson and Pole (2001). The suitability of using the questionnaire is also outlined by Anderson and Pole (2001) to include large coverage of population with little time, personnel and due to characteristic of the interview and allows the respondents time to answer questions to avoid hasty responses.

3.6 Data Analysis

Data was collected, coded and analyzed. Descriptive statistical methods were used to analyze data. This included measures of central tendency, frequency distribution tables and percentages. Data was analyzed with the aid of a computer software package, the Statistical Package for Social Sciences (SPSS Version 15.0). Data was presented by use of tables, pie charts and bar graphs.

CHAPTER FOUR

DATA ANALYSIS AND INTERPRETATION

Introduction

This chapter represents the study findings on the loan amortization practices by SACCOs' in Nairobi. It focused on:

- i. Establishing the preferred loan amortization approach by SACCO members.
- ii. Establishing the determinants of making loan amortization approach preferences by SACCO members.
- iii. Establishing the determinants of adopting a loan amortization approach by a SACCO management committee.

To achieve these objectives questionnaires were administered to the main respondents (SACCO members) who were selected through simple random sampling. Interviews were also conducted on key informants (SACCO managers/officials) who were sampled purposively. A total sample of 90 SACCO members and 10 managers were sampled for this study. In this chapter quantitative data analysis was carried out using SPSS (Statistical Package for Social Science, version 15.0)

4.1 Characteristics Of The Respondents

All the SACCO members interviewed were from 10 selected SACCOS. The researcher interviewed 9 members and 1 manager from each of the 10 SACCOS. The SACCO members' characteristics in terms of age are outlined as per table 4.1 below.

Respondent age	Frequency n=90	Percentage%
20-29 years	22	24.5%
30-39 years	39	43.3%
40-49 years	23	25.6%
Above 50 years	4	4.4%
Missing responses	2	2.2%
Total	90	100.0%

Table 4.1: The age ranges of respondents

Of the respondents, 55(63.3 %) were male and 33(36.7 %) were female.

The respondents were further asked to state their salary income per month and the results are as stated in Fig. 4.1. 54.44% (n=49) of the members earned a salary of between Ksh. 30,000/= and Ksh. 60,000/=. Those earning between Ksh. 10,000 and Ksh. 30,000/= were 28.89% (n= 26). 15.56% (n=14) earned between Ksh. 60,000/= and Ksh. 90,0001=, 1.11% (n=1) earned a salary of over Ksh. 90,000/=.

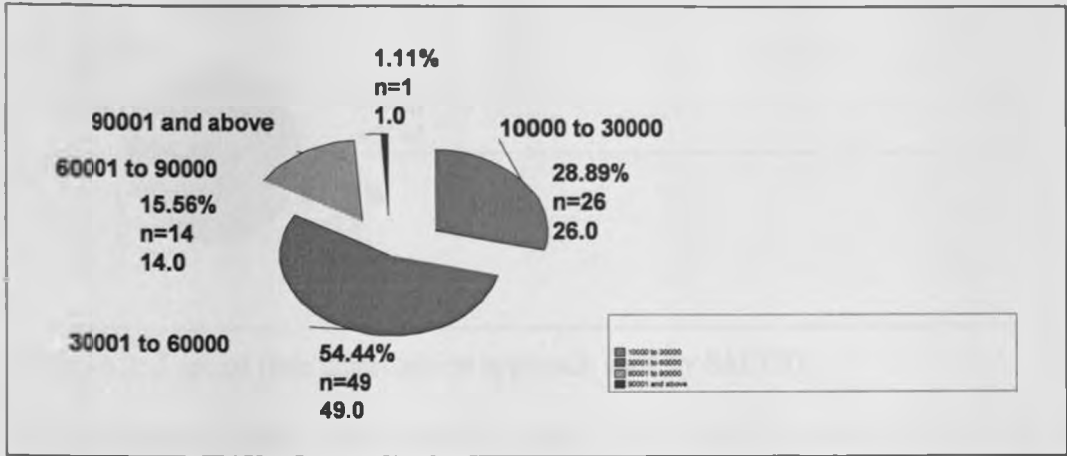


Fig. 4.1 Salary Income

In an attempt to establish the loan duration, the respondents were asked to state the duration of time they borrowed their loans. The results are as outlined in Table 4.2. 46.7% (n=42) borrowed loans for a duration of between 2 to 3 years. 26.7% (n=24) borrowed loans for 1 to 2 years, and 22.2% (n=20) borrowed loans for a duration of 4 years and above. Those who borrowed loans for less than one year constituted 4.4% (n=4).

	Frequency	Percent	Valid Percent	Cummulative Percent
Below 1 year	4	4.4	4.4	4.4
1to2	24	26.7	26.7	31.1
2to3	42	46.7	46.7	77.8
4 and above	20	22.2	22.2	100
Total	90	100	100	

Table. 4.2: Loan Maturity

4.2 Existing Loan Amortization Approach in SACCOs

The respondents were asked to indicate the loan amortization approach used in their SACCOs. The approaches being used were Constant Amortization Method and Constant Payment Method. 81.1% (n=73) of the respondents said their SACCO used Constant Amortization Method while 18.9 % (n=17) use the Constant Payment Method.

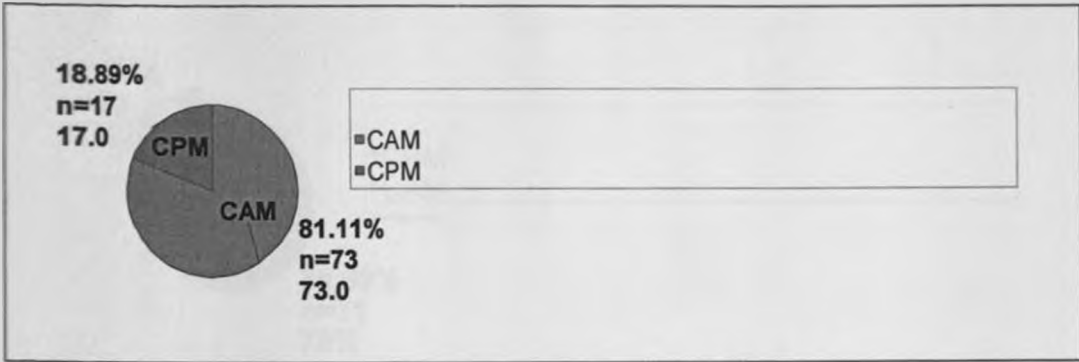


Figure 4.2: Type of loan amortization approach used by SACCO

The respondents were further asked to state if they had borrowed a loan from their SACCO. The results are as per Fig. 4.4 below. 88.89% (n=80) of the members indicated that they had borrowed a loan from their SACCO. 11.11% (n=10) of the members had never borrowed a loan from their SACCO. In addition 100% of the members had borrowed both normal and emergency loan.

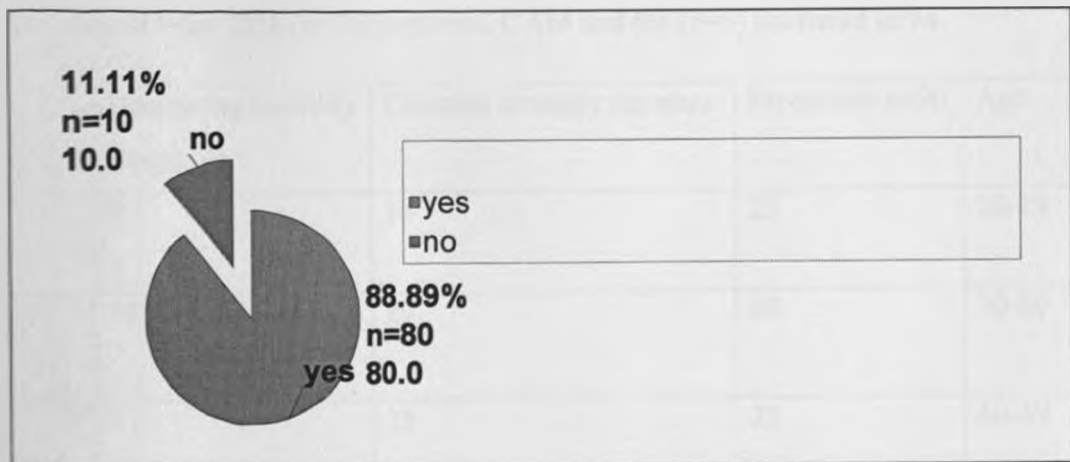


Fig 4.4: Borrowing from the SACCO

4.3 Preferred loan Repayment Method for Emergency and Normal Loans

The respondents were asked to indicate their preferred loan repayment method, whose results are indicated below. 21.11% (n=19) of the respondents preferred the CAM payments while 78.89% (n=71) preferred the Constant Monthly payment. Those earning 60001 and above mostly preferred the CAM payments while those earning below 60000 preferred Constant Monthly Payments for emergency loans.

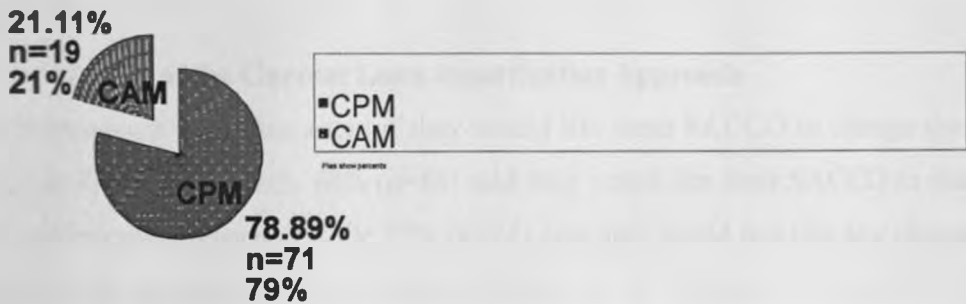


Figure 4.3: Preferred loan repayment method for emergency loan

With regard to the preferred loan amortization approach for normal loans. 20-29 years 60% (n=14) preferred CPM while 30% (n=7) preferred CAM and 10% (n=2) preferred GPM. 30-39 years 72% (n=29) preferred CPM payments 25% (n=10) preferred CAM and 5% (n=1) preferred GPM. 40-49 years 65% (n=15) preferred CPM 26% (n=6) preferred CAM and 9% (n=2) preferred GPM. Those above 50 years 75% (n=3) preferred CAM and 25% (n=1) preferred GPM. Of all the respondents, 64% (n=58) preferred CPM for normal loans 28% (n=26) preferred CAM and 6% (n=6) preferred GPM.

Age Group	Decreasing monthly payments	Constant monthly payment	Frequency n=90	Age
20-29	7	14	23	20-29
30-39	10	29	40	30-39
40-49	6	15	23	40-49
Above 50	3	0	4	Above 50

Table 4.4: Preferred Repayment Method for Normal Loans

4.4 Decline of Loan to SACCO Members

Respondents were asked if they had ever been declined a loan by their SACCO. Those who had been declined loans were in addition asked to state the reasons why it happened. 30% (n=21) of the respondents said they had been declined a loan by their SACCO and 70% (n=68) said they had never been declined a loan. Of those declined a loan 81% (n=17) stated the reason as being their inability to pay the initial repayment amount while 19% (n=4) cited not having enough shares as being reason for being declined a loan.

4.5 Change of the Current Loan Amortization Approach

The respondents were also asked if they would like their SACCO to change the current loan amortization approach. 66% (n=66) said they would like their SACCO to change the loan amortization approach while 27% (n=24) said they would not like any change in the amortization approach. Their preferred choices are as indicated in figure 4.7 below. 74.44% (n=67) preferred to have all the loan amortization approaches i.e. CPM, CAM and GPM. 14.44% (n=13) preferred CAM only, 8.89% (n=8) preferred GPM only and 2.22% (n=2) preferred CPM.

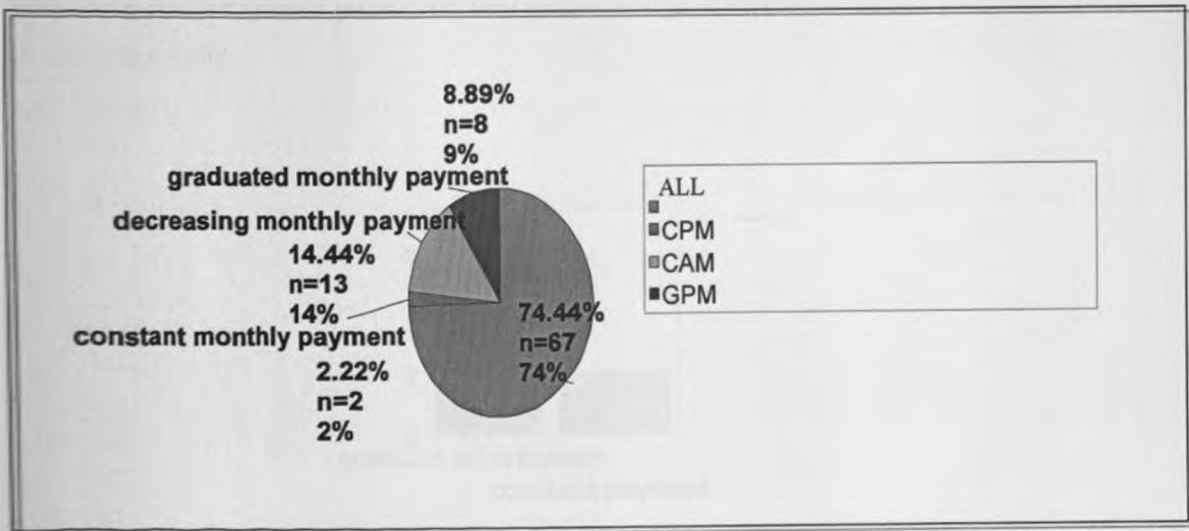


Figure 4.7 Preferred alternative loan amortization

In addition, members were asked the importance of initial loan repayments and the responses are as per the chart below. 87% (n=79) considered initial loan repayments as very important, 10% (n=9) as important and 2.22% (n=2) as less important.

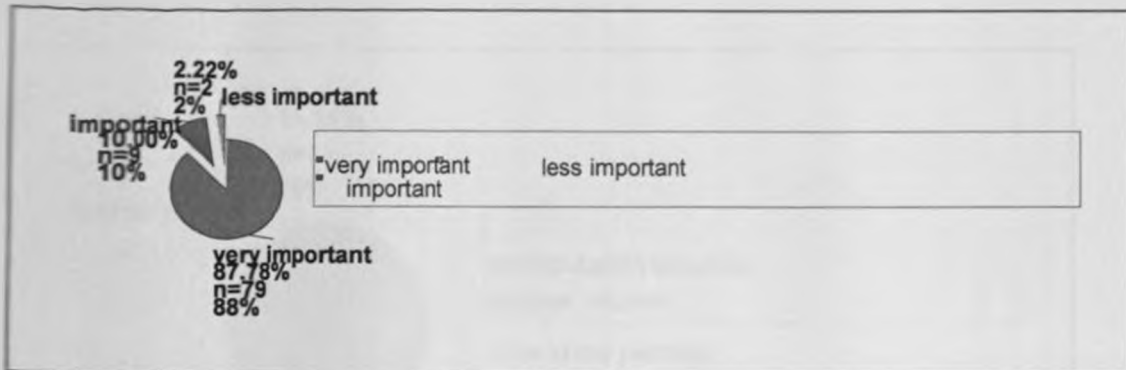


Fig 4.8: Importance of initial loan repayments

4.6 Management Committee Perspective

The study also interviewed SACCO management committees to establish the determinates of adopting a particular loan amortization approach. To achieve this the committees we asked to indicate the type of loan amortization used by their respective SACCO and the results are as outlined below in Fig. 4.9 80% (n=8) use CAM and 20% (n=2) used CPM

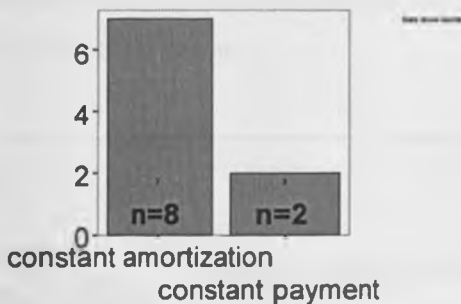


Fig. 4.9 Type of loan amortization used by SACCOs

4.7 Adoption of a Loan Amortization Approach

The respondents were further asked the reason for adopting a particular loan amortization approach and the findings are as Fig. 4.10 below.

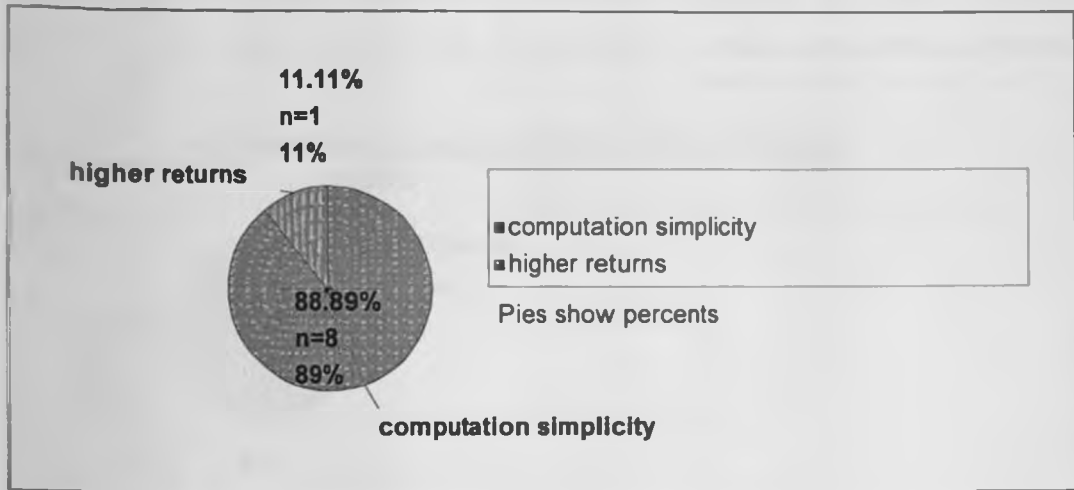


Fig. 4.10 Reasons for adopting amortization approach

Of the 10 SACCOs that responded 88.89% (n=8) indicated that they adopted the approach because of computational simplicity while the remaining 11.11% (n=2) indicated higher returns as a consideration for adopting their loan amortization approach.

4.8 Decline of Loans to Members

The respondents were further asked to state the reasons for declining loans to members and the results are shown in the chart below.

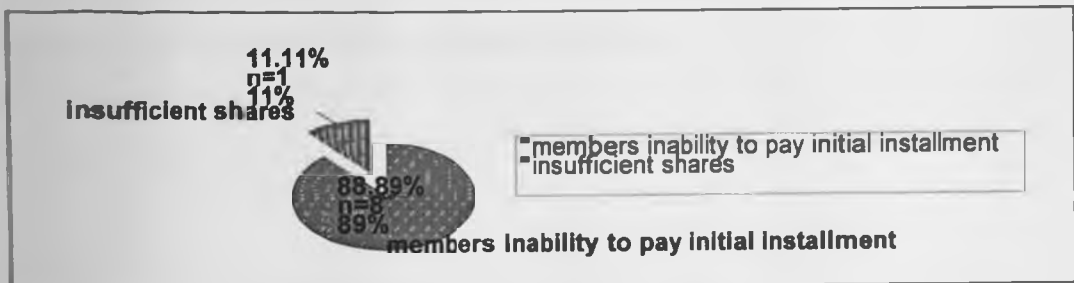


Fig. 4.11 Reason for loan decline in SACCOs

As the chart indicates, inability to pay the initial loan payments accounted for 88.89% (n=8), while 11.11% (n=1) accounted for insufficient shares.

The respondents were further asked to state if the SACCO members had requested the SACCO to review their current loan amortization approach. Of those who said yes 66.67% (n=6) indicated that the members preferred all the loan amortization approaches.

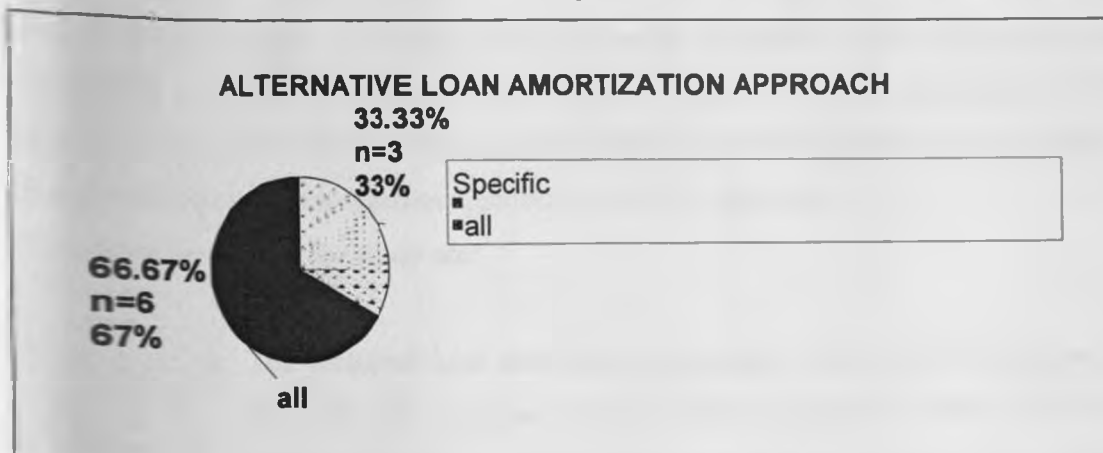


Fig. 4.12 Review of loan amortization

4.9: Summary Findings

Most of the SACCOs (88.89%) adopted the CAM because of the simplicity nature of calculating the interest payments. An interview with SACCO management committees revealed that a significant number of SACCOs were not aware of other loan amortization approaches and GPM was actually a new concept they had learnt during the research. Initial loan payments were considered very important in making a decision to take up a loan. In addition, loans were declined to members because of their inability to pay a loan. As analyzed, inability to pay the initial loan payments accounted for 88.89% (n=8) while 11.11% (n=1) accounted for insufficient shares.

CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS

5.1 Discussion

This study set to establish the preferred loan amortization approach for SACCO members and the determinants of making such preferences. In addition, the study further was to establish the determinants in adopting a particular loan amortization approach by SACCO managements committees. The researcher aimed to provide insights to policy makers on the preferred loan amortization approach by SACCO members.

The key findings of the study are:

- a. The preferred loan amortization approach by the SACCO members was the CPM for emergency loans which constituted 78.89% (n=71). The preferred choice for normal loans was also CPM which also constituted 64.44% (n=58). This can be construed that most of the SACCO members i.e. over 88% were not in favor of their current amortization approach (CAM) hence there was need for their SACCOS to review their loan amortization policy. This is further supported by the fact that the members were more than willing to see their SACCOS adopt other amortization approaches. For instance at least 66% of the members wanted their SACCOS to adopt all the three loan amortization approaches.
- b. The key determinates of making a preferred choice of a loan amortization approach by SACCO members was their salary income. Members who earned salary that ranges from 60,000/= and above preferred CAM while those who earned below 60,000/= preferred CPM whose initial payments are lower. This infers that initial loan repayments are an impediment for taking up normal loans by members with lower income. It can further be urged that members with high salary income were not bothered by the amounts of initial loan repayments as compared to lower income earners despite the variance being a variance 20% if one adopted CPM instead of CAM. Therefore SACCOS whose members were earning low salaries

would adopt the CPM while those with members at high income brackets would adopt CAM. However, since a SACCO membership has members that cut across, it would then be proposed that a SACCO should at least adopt the two approaches to satisfy both the low income as well as high income earners.

- c. All SACCOs' used only one type of a loan amortization approach and the widely used was CAM which constituted 88.89% (n=7) of the sampled population, while CPM was used by 11.11% (n=2) of the SACCOs. None of the sampled population used the GPM or any other type of amortizing their loans. This is clear evidence that SACCOs have not been innovative in designing their amortization approaches hence adoption of AMIs will not see the light of the day. One hindrance for the innovation can also be attributed to the computational simplicity of CAM. This is supported by the fact that 88% of the SACCO adopted the approach owing to its ease of understanding by both the members as well as SACCO officials in establishing the loan balances. An interview with SACCO management committees revealed that a significant number of SACCOs were not aware of other loan amortization approaches and GPM was actually a new approach they had learnt during the research. Towards this end the researcher concluded that a big number of SACCO managers were not trained on finance yet they were expected to foster growth in this critical financial sector.
- d. An interview with the SACCO members revealed that they preferred a scenario where they would make a choice of a loan amortization approach at a given time. For instance members who were to take up a development loan with the sole purpose of putting up a business, their preferred choice was to take up a loan under the GPM. This attests to the fact that the cash inflows from a business development to a member would increase in the future as a business prospered, hence paying higher amounts in the future would be reasonable. This further established that the type of amortization that a member would choose could also depend on the reason of taking up

- a loan. It is supported by the fact 66.67% would have preferred all the amortization approaches.
- e. 87.78% (n=79) of the members considered initial loan payments as very import in making a decision to take up a loan. This is due to the effects that the loan deductions have on the net income and disposable income. This view by the respondents depicts what is expected of a rational investor. It is my opinion that if SACCOs where to reduce the initial loan repayments it would consequently result in higher loan portfolios. This is support by the 88.89% (n=8) of the members who are declined loans by the SACCOs because of their in ability to repay the initial loan amounts.

5.2 Conclusions

The study explored the loan amortization practices of SACCOs in Nairobi with a view of establishing the preferred loan amortization approach. In addition, the study was also to establish the determinants of making a certain preference.

From the analysis it is evident that SACCOs have only used one type of loan amortization approach. and particularly CAM is the most widely used. This tends to limit the choice that a SACCO member can have in determining how to repay a loan. Further analysis also reveals that SACCO members will make a certain choice depending on the type of loan that one commits him or herself to. Based on this analysis one can conclude that SACCOs are required to introduce other loan amortization approaches so as to maximise on lending to their members. The preference that borrowers have shown for having a variety of loan amortization approaches attests to the fact that the reasons for borrowing vary across individuals. For instance a borrower intending to borrow for putting up a business venture would prefer a loan under GPM.

From the analysis, salary income is one of the key determinates of making a loan amortization preference on the part of the members whereas on the pat of the SACCO the determinant is the simplicity of calculating the interest rate. It is evident that initial loan

amounts are very important for purposes of making a decision to take a loan, hence SACCOs should ensure that initial loan repayments are reduced significantly so that the SACCO can maximise on their loan portfolio and consequently increase on return on investments. Ideally, SACCOs should introduce the use of AMIs particularly the GPM so that they can address the tilt problem.

SACCOs have shown the preference for CAM owing to its simplicity on implementation, however the latter has contributed to a significant number of members being declined loans because of higher loan initial payments. To this end SACCOs have not innovated and introduced other amortization approaches to address this shortcoming.

The study established that SACCOs will face the same predicament to address the tilt problem as it was prior to the introduction of AMIs'. This is consistent to the findings of Lee and Baker (1984), hence it is expected that the impetus for developing other loan amortization approach will likely come from the members.

5.3 Limitations of the study

There key limitation of the study was due to financial resources, hence the study drew its sample only from Nairobi and as a result the researcher could not include SACCOs in the rural areas where their incomes were agriculture and hence their income is erratic. It is my considered opinion that the results could not be consistent with my research findings.

5.4 Recommendations

The study recommends that:

- a. The SACCOs should introduce a variety of loan amortization approaches for their members to make an informed decision while taking up a loan.
- b. The SACCO managers should have necessary skills/competences with regard to loan amortization approaches.

- c. The SACCOs should adopt other techniques in addressing their liquidity concerns other than relying on interest income to sustain their lending capacity i.e. good treasury management.

5.5 Areas for further Research

Related areas for further research that could compliment this study include;

- a. Studies of the effects of adopting AMIs since SACCOs have adopted only CAM and CPM. This would in essence affect the returns in the SACCOs and in the long-run affect the profitability; hence their significance should be researched further.
- b. The impact on liquidity after adopting various types of loan amortization approaches by SACCOs would be affected further hence innovativeness and adoption of modern treasury techniques which would also affect the returns and profitability owing to change in cash inflows as a result of adopting AMIs.

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QUESTIONNAIRE

1. Name of SACCO

2. Age (Tick as appropriate)

20 to 29 years	
30 to 39 years	
40 to 49 years	
50 and over	

3. Sex Male. Female No.

4. Salary income per month (Tick as appropriate)

10,000 to 30,000	
30,001 to 60,000	
60,001 to 90,000	
90,001 and Above	

5. What duration of time do you usually borrow your loans for? (Tick as appropriate)

Below one year	
1 to 2	
2 to 3	
4 and above	

6. What type of loan amortization approach does your SACCO use? (Tick as appropriate)

Constant Amortization Method	
Constant Payment Method	
Other, Specify	

7. Have you ever borrowed from the SACCO? Yes. No.

8. What type of loan do you borrow (Tick as appropriate)

Development/Normal loan	
Emergency loan	
Others, Specify	

9. Tick your preferred loan repayment method for your emergency loan. (Tick as appropriate)

Constant Monthly Payment	
Decreasing Payments	
Other, specify	

10. Tick your preferred loan for the development/normal loan (Tick as appropriate)

Constant Monthly Payment	
Decreasing Monthly Payments	
Lower Payments in Initial Years and Increasing in later Years	
Other, specify	

11. Have you ever been declined a loan in your SACCO? Yes. No.

12. If (yes) to question 7 what was the reason? (Tick as appropriate)

In ability to pay the initial repayment amount.	
I did not have sufficient shares	
Other, specify	

13. Do you consider your future salary increment while applying for a loan?
Yes. No.

14. Would you like the SACCO to consider your future salary increment while applying for a loan? Yes. No.

15. Of what importance are the initial loan repayments in making your decision to commit a loan? (Tick as appropriate)

Very Important	
Important	
Less Important	

16. Would you like your SACCO to change the current loan amortization approach?
Yes. No.

17. If yes to question (16) tick the appropriate one?

Constant Monthly Payment	
Decreasing Monthly Payment	
Graduated Monthly Payment	
Other, Specify	

INTERVIEW SCHEDULE FOR SACCO MANAGERS

Name of SACCO.....

A. Please indicate the loan amortization approach that your SACCO uses. (Tick as appropriate)

Constant Amortization Method	
Constant Payment Method	
Graduated Payment Method	
Others, specify	

B. Why do you use the method you have indicated above? (Tick as appropriate)

Computational Simplicity	
Higher returns	
Liquidity	
Others, specify	

C. What are the reasons for declining loans to? (Tick as appropriate)

Member's inability to pay initial instalment	
Insufficient shares	
Others, specify	

D. Have members requested you to review the current loan amortization approach?

Yes No

E. If yes in E, what was their proposed alternative? (Tick as appropriate)

Constant Amortization Method	
Constant Payment Method	
Graduated Payment Method	
Others, specify	

Appendix I

List of SACCOs

	SACCO	Sector	Members
1	Afya	PB	46200
2	KARI	PB	2800
3	Ukulima	PB	17820
4	Safari Park	PV	325
5	Posta	PB	3568
6	Shirika	PB	8532
7	NASSEFU	PB	2350
8	KEWISCO	PB	2350
9	Serena	PV	389
10	Harambee	PB	86000

Key
PV=Private
PB=Public

Source: Research Data

endix ii

n Amortization Shedule

Amount Ksh 600,000

Month	48	CAM	CPM	GPM
Sep-08		18500	15800	12500
Oct-08		18375	15800	12500
Nov-08		18250	15800	12500
Dec-08		18125	15800	12500
Jan-09		18000	15800	12500
Feb-09		17875	15800	12500
Mar-09		17750	15800	12500
Apr-09		17625	15800	12500
May-09		17500	15800	12500
Jun-09		17375	15800	12500
Jul-09		17250	15800	12500
Aug-09		17125	15800	12500
Sep-09		17000	15800	15000
Oct-09		16875	15800	15000
Nov-09		16750	15800	15000
Dec-09		16625	15800	15000
Jan-10		16500	15800	15000
Feb-10		16375	15800	15000
Mar-10		16250	15800	15000
Apr-10		16125	15800	15000
May-10		16000	15800	15000
Jun-10		15875	15800	15000
Jul-10		15750	15800	15000
Aug-10		15625	15800	15000
Sep-10		15500	15800	20000
Oct-10		15375	15800	20000
Nov-10		15250	15800	20000
Dec-10		15125	15800	20000
Jan-11		15000	15800	20000
Feb-11		14875	15800	20000
Mar-11		14750	15800	20000
Apr-11		14625	15800	20000
May-11		14500	15800	20000
Jun-11		14375	15800	20000
Jul-11		14250	15800	20000
Aug-11		14125	15800	20000
Sep-11		14000	15800	20000

