EFFECT OF LIQUIDITY MANAGEMENT ON THE EFFICIENCY OF SAVINGS AND CREDIT COOPERATIVE SOCIETIES IN MURANG'A COUNTY

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DECLARATION

I declare that this is my original work and has not been presented in any other University or College for Examination or Academic purposes.

Signed: _____ Date _____

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

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DEDICATION

This work is dedicated to my unborn son Xavier Abijah, yet to come but walked with me tirelessly as I developed and conducted this research project, and to my sisters', who without their care and support it would not have been possible.

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ABSTRACT

Liquidity and its proper management in financial institutions determine to great extent efficiency hence profitability of the firms. This study aimed at looking at how cash flows, prevailing accounting practices and membership characteristics influence efficiency of SACCOs in Murang'a County. It sought to answer the question, how does management of liquidity affect efficiency of SACCOs in Murang'a County. The study was based on liquidity preference theory, on stakeholders' theory and on shift ability theory. The study adopted a descriptive survey design to access existing information related to the 43 Savings and Credit Cooperative Organizations that are in Murang'a County. Random sampling was used in arriving at 22 SACCOs that participated in the study. The study obtained secondary data in published financial statements. This came from SACCOs financial reports for the period 2012-2015. The study showed that cash flow is the most important aspect of liquidity management that can determine the efficiency of a SACCO. This is followed by the characteristics of members' ship and finally accounting practices. This implies that for SACCOs to meet their obligations and those of their members, they should ensure that cash flow is predictable. They should also diversify their membership and include those able to save and take loans. The results also suggest that SACCOs should seek to recruit members that meet their growth aspirations since membership characteristics is an important aspect in their operations. The study suggests that dormant members should be activated or reduced for they don't add value to liquidity management of SACCOs. This study has shed light on challenges faced by managers and board members of Savings and Credit Cooperatives in their efforts to enhance the efficiency of their SACCOs.

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LIST OF ACRONYMS AND ABBREVIATIONS

BIS	Bank for International Settlements
FOSA	Front Office Savings Account
SACCO	Savings and Credit Cooperative Society
SASRA	Sacco Societies Regulatory Authority
SPSS	Statistical Package for Social Science

CHAPTER ONE
INTRODUCTION TO THE STUDY

1.1 Background to the Study

Liquidity and its proper management in financial institutions determine to great extent efficiency hence profitability of the firms. This is because inadequate liquid or excess liquid may be injurious to the smooth operations of the firm. Liquidity management is a concept that is receiving serious attention all over the world especially with the current financial situations and the state of the world economy (Raheman et all, 2007). The concern of business owners and managers all over the world is to devise a strategy of managing their day to day operations in order to meet their obligations as they fall due and increase efficiency hence profitability and shareholder's wealth (Llewel, 2006).

Dilemma in liquidity management is to achieve desired tradeoff between liquidity and efficiency/profitability (Raheman et all, 2007). Liquidity requirement of a firm depends on the peculiar nature of the firm and there is no specific rule on determining the optimal level of liquidity that a firm can maintain in order to ensure positive impact on its profitability. The ability of a financial institution to meet demand for deposit withdrawals and other cash outflows is a visible indicator of its viability. If a Savings and Credit Co-operative society (SACCO), cannot meet depositors' withdrawal requirements, general creditor expenses, or if it is forced to significantly limit new lending, a lack of member confidence can develop (Llewel, 2006).

1.1.1 Liquidity Management

To financial institutions such as banks and Savings and Credit Co-operative societies (SACCO), liquidity is a measure of their ability to meet cash and collateral obligations without incurring substantial costs. Liquidity management describes the effort of managers to reduce liquidity risk exposure. Liquidity risk is the risk arising from the potential inability to meet all payment obligations when they come due or only being able to meet these obligations at excessive costs (Deutsche Bank, 2011).

Within the financial sector as a whole, BIS (2008) report that the market turmoil that began in mid-2007 re-emphasized the importance of liquidity to the functioning of financial markets and the banking sector. In advance of the turmoil, asset markets were buoyant and funding

was readily available at low cost. The reversal in market conditions illustrated how quickly liquidity can evaporate and that illiquidity can last for an extended period of time. The banking system came under severe stress, which necessitated central bank action to support both the functioning of money markets and, in a few cases, individual institutions (Bank for International Settlements, 2008).

According to the Liability Management Theory the activities involved in obtaining funds from depositors and other creditors (from the market especially) and determining the appropriate mix of funds for a particular financial institution is important. This point of view posits that liability management need to understand how the institution obtains funds from depositors, how it obtain funds from other creditors and what is the appropriate mix of the funds for the financial institution

1.1.2 Efficiency of Savings and Credit Cooperative Society.

Efficiency refers to the level of performance that describes a process that uses the lowest amount of inputs to create the greatest amount of outputs(Li, 2015). It is gauged using a number of quantitative figures such as production costs and production times because it is too broad of a concept to be encapsulated in a single figure. Efficiency relates to the use of all inputs in producing any given output, including personal time and energy and also means doing things right to produce consistent and rapid results (The Growth Coach, 2014). To keep pace in an increasingly competitive world, a business needs to run as efficiently as possible, since any company not operating efficiently will be out of business (Cisco, 2014).An efficient business will show increased profitability with less input of resources.

Factors that determine the efficiency of the organization's use of its resources are either internal or external. Quality of management is perhaps the most influential internal factor on organizational efficiency. It is management that chooses how to implement strategic plans -- including selecting what methods and resources are to be used, and leading employees in order to make the most of their labor. On the hand, the quality of an organization's labor is often dependent in part on the general education of the region in which that organization is based(Li, 2015).

A study on the impact of Sasra regulations on the financial performance of SACCOs' in Kenya by Kioko (2012) showed that higher capital requirements and increase in management efficiency impacted positively to Sacco's profitability in the post regulation period.

1.1.3 Liquidity Management and efficiency of Savings and Credit Cooperative Society.

Mudibo (2005) defines the objective of SACCO Societies as members' empowerment through savings mobilization, disbursement of credit and ensuring SACCOs' long-term sustainability through prudent financial practice. However, there are a number of challenges in promoting quality financial management such as limited capital funding sources, loan delinquency, and assessment and management of risk (Mudibo, 2005). These are challenges that are directly connected to the SACCO's liquidity management. Liquidity

is the ability of a financial institution to honor all cash payment commitments as they fall due. These commitments can be met either by drawing from a stock of cash holdings, by using current cash inflows, by borrowing cash or by converting liquid assets into cash(Bald, 2007).

It should be noted, that the capacity of SACCO to manage its own liquidity can also be affected by what is happening to the people who deposit, or invest in the SACCOs themselves. An example this is the Case of how Ndege Chai SACCO which was affected by Kenya's post-election crisis in 2008. Besides displacing people, the violence also destroyed livelihoods such as businesses, farming activities and property. This translated to loss of business by Ndege Chai SACCO. The SACCO also suffered in terms of deposit mobilization and loan repayments. Monthly remissions from members' salaries dropped from the pre-q December 2007Election KSh35 million per month, to about KSh7.5 million in both January and February. Deposits from the business people were drastically reduced as business activities came to a near standstill. Loan repayments, too, were not forthcoming (SACCO Cap News, 2008).

1.1.4 Savings and Credit Cooperative Society in Muranga County

Murang'a County has forty three operational SACCOs. However, as of 2015 only three that had met regulatory requirement, this includes Murata, Unaitas and Mentor Sacco. (SASRA, 2015). The situation implies there is a very small and insignificant percentage of Saccos that meet required qualifications and standards for registration. This calls for a need to examine efficiency of proper liquidity management of SACCOs in Murang'a. The cooperative movement in Kenya is heavily influenced by SASRA regulations that came into force in 2010. To meet the stringiest requirement and survive, SACCOs had to meet different

operational costs, and had to be more innovative, flexible and efficient. Management and availability of cash flow is a critical function in the survival of SACCOs. Cash flow is a proxy measure of the degree to which a firm is subjected to liquidity constraints and is calculated as the net income of the firm in the previous period. Lack of liquidity can have negative implications on SACCOs such as employees going for weeks without pay, inability to meet short term financial obligations such as rent and bills payment and acquisition of office supplies. In addition, liquidity challenges can delay or curtail SACCOs' capacity to process applied loans. The net effect of poor liquidity is lack of business.

In, Kenya a SACCO is a cooperative society, which is formed as an association of people who have voluntarily come together to achieve a common economic goals through a democratically controlled organization with equitable contribution to capital contribution and sharing of risk and benefit occurring from the business (Davis, 1999). In Kenya, the total Sacco Sub-sector was worth Shs 210 billion in 2010 while deposit taking SACCOs had about Kshs. 171 billion of this amount (Sacco Societies Regulatory Authority, 2010). The Kenya SACCO sub-sector comprises both deposit taking (FOSA operating SACCOs) and non -deposit taking SACCOs. There were 6,007 registered SACCOs in Kenya as at December 2010 of which 2,959 were active (active SACCOs are those whose annual accounts have been audited and the audits registered by the commissioner for cooperatives as well as the newly registered SACCOs during the year under review. Of the active SACCOs 218 were deposits taking (SACCOs operating FOSAs) while 2,011 SACCOs were non -deposit taking (Non-FOSA operating SACCOs). The total membership of SACCOs at Dec 2010 was 1,857,566 accounting for about 4.8% of the total population (Africa, 2012).

Due to the rapid growth, the Government of Kenya's commitment to established SACCO legislation, has implemented international financial performance standards and has begun supervision of SACCO. Furthermore, the critical role of SACCOs has been recognized under vision 2030 of mobilization of savings for investments. It was therefore expected under the new Sacco legislation and adoption of prudential regulations growth of SACCOs will quickly improve. The Sacco movement has entrenched the culture of savings to Kenyans which is a pre-requisite for wealth creation. On retirement employees of various organizations walk home smiling with savings accumulated in their SACCOs during their employment period (Sacco Societies Regulatory Authority, 2010).

1.2 Research Problem

SACCO Societies are established in order to empower members through mobilization of saving, disbursement of credit and ensuring long-term sustainability through prudent financial practice. However, a number of challenges that includes limited capital funding sources, loan delinquency, and assessment and management of risk face SACCOs in their bid to promote quality financial management (Mudibo, 2005). Managing liquidity is among the most important activities conducted by financial institutions. Sound liquidity management can reduce the probability of the fore mentioned challenges.

Another study titled Determinants of Efficiency of Savings and Credit Co-operative Societies in Nairobi County showed that the factors that influence efficiency of SACCOs in Kenya include which are size, capital, credit risk and management quality that either influence it positively or negatively. The study concludes that size, capitalization and management quality positively and significantly influenced efficiency of SACCOs while credit risk inversely affected efficiency of SACCOs. The study recommends that there is need to understand the changes that technology was causing on the financial sector in order to examine in detail how the recent and foreseeable advances in technology can affect its future evolution. The study also recommends that all the SACCOs should embrace the concept of credit risk management practices (Mwangi, 2013).

A study done in Ethiopia titled Relative Efficiency of Rural Saving and Credit Cooperatives: An Application of Data Envelopment Analysis showed that the extent of technical efficiency varies across geographical location and scale size of the cooperatives. From the total of 329 SACCOs, compared to their respective peers, only 18 (5.5%) were identified as relatively efficient with the maximum efficiency score of one. The remaining SACCOs were found to be relatively inefficient with efficiency score of less than one. The average efficiency was 21.3% which indicates that there is substantial amount of inefficiency among rural SACCOs in the study area. Technical efficiency was high for larger SACCOs. In terms of geographical location, the highest mean efficiency has been observed in southern and western zones of the region with a mean score of 0.276 and 0.259 respectively(Sebhatu, Tesfay, & Tesfay, 2013). This study suggested that size of SACCOs and Geographical location can have an influence on the efficiecy of a SACCO.

In Kenya, a study on liquidity as a practice of prudential standard showed that it has an important impact on the performance of SACCOs' financial income. An optimal level should

be maintained to avoid holding too much cash which should otherwise earn income from members' interest on loans and avoid zero cash levels as that would discourage clients mainly the depositors (Kahuthu, Muturi, & Kiweu, 2015). Imperatively, each SACCO needs to generate income which is adequate to cover all its operational costs, enhance the institutional capital, dividends and rebates. In this regard, financial practice is based on sound financial stewardship, solid capital structure, and prudent funds allocation strategy(Maina, 2007).

Why the study done in Ethiopia shows that efficiency of SACCOs is dependent on size and location, the study done by Kahuthu, Muturi & Kiweu (2015) showed the need to establish whether SACCOs are able to generate adequate income and enhance financial stewardship for their efficiency. The study by Mwangi (2013) just covered SACCOs in Nairobi. There is therefore inconclusive empirical data on how liquidity is managed and its effect on efficiency of SACCOs in the Murang'a County especially within the context of control from SASRA. A previous study by Kabaiya (2011) studied the relationship between corporate governance practices andfinancial performance of SACCOs in Murang'a County but it did not look at how liquidity management of the SACCOs can influence efficiency of the SACCOs in the area (Kabaiya, 2011). This study aimed at looking at how cash flows, prevailing accounting practices and membership characteristics influence efficiency of SACCOs in Murang'a County. It sought to answer the question, how does management of liquidity affect efficiency of SACCOs in Murang'a County.

1.3 Objective of the Study

The objective of this study was to investigate how management of liquidity affects efficiency of SACCOs in Murang'a County.

1.3.1 Specific Objectives

i) To analyse the effect of cash flows management on efficiency of SACCOs in Murang'a County
ii) To determine the effect of accounting practices on efficiency of SACCOs in Murang'a County
iii) To establish the effect of membership characteristics on efficiency of SACCOs in Murang'a County

1.4 Value of the Study

1.4.1 To managers

To managers, this study has shed light on challenges they and board members of Savings and Credit Cooperatives faced in their efforts to enhance the efficiency of their SACCOs. This study could assist the management of the various SACCOs that operate in Murang'a County to improve management of cash flows , cash outflows and accounting practices in their efforts to improve efficiency. It would also provide insight to the management on how characteristics of members influence liquidity of their SACCOs and thus enable them to look for members with characteristics that meet their organizational aspirations. To SASRA the study finding could offer an insight in to how management of liquidity is influencing health of SACCOs in Murang'a. To shareholders, the study could offer them a glimpse into the state of affairs related to liquidity management in their SACCOs and thus would self check that would enable them seek for change or sustenance of the status quo.

1.4.2 To Academicians and Researchers

To researchers, the study has added to the existing body of knowledge and a point of reference for future studies in the same field. The study has added to the wealth of knowledge on liquidity management and its influence on efficiency of SACCOs . It has provided empirical evidence how cash flow, accounting practises and membership characteristics affect SACCOs. This study provides a foundation for further research on issues relevant to efficiency among SACCO in Kenya.

1.4.3 SASRA and Policy makers

The study has provided insight on issues affecting SACCOs that would enable SASRA and policy makers' advice SACCOs accordingly.

CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

This chapter examines the literature regarding liquidity management and its influence on the efficiency of SACCOs. The chapter will specifically address literature on the effects of: cash inflows, cash outflows, accounting practices and membership characteristics on the efficient management of SACCOs. The chapter will then outline theoretical framework upon which the study will be guided, and then illustrate the conceptual framework of the study

2.2 Theoretical framework

The following section discusses three theories that inform this research: these are the liquidity preference theory, the stakeholders' theory and the shiftability theory

2.2.1 Liquid Preference Theory

This study will be based on the Liquidity preference theory as advocated for by Keynes. The cash money is called liquidity and the liking of the people for cash money is called liquidity preference. Economist John Maynard Keynes said that people value money for both "the transaction of current business and its use as a store of wealth." According to Keynes people demand liquidity or prefer liquidity because they have three different motives for holding cash rather than bonds etc. These are transaction motive: precaution motive and speculative motive(Tutors to You, 2010). Under transaction motive day –to-day transactions are done by individuals as well as firms. An individual person has to buy so many things during a day. For this purpose people want to keep some cash money with them. This type of demand for liquidity is for carrying day to day transactions is called demand for liquidity for transaction motive. So we can say that money needed by consumers, businessmen and others in order to complete economic transactions is known as the demand for money for transactions motive.

Under precautionary motive every man wants to save something or wants to keep some liquid money with him to meet some unforeseen emergencies, contingencies and accidents. Similarly business firms also want to keep some cash money with them to safeguard their future. This type of demand for liquidity is called demand for precautionary motive. Furthermore, People want to keep cash with them to take advantage of the changes in the prices of bonds and securities. In advanced countries, people like to hold cash for the

purchase of bonds and securities when they think it profitable. If the prices of the bonds and securities are expected to rise speculators will like to purchase them. In this situation they will not like to keep cash with them. On the other hand if prices of the bonds and securities are expected to fall people will like to keep cash with them. They will buy the bonds and securities with the cash only when their prices would fall .So liquidity preference will be more at lower interest rates(Tutors to You, 2010). Thus, they will sacrifice the ability to earn interest on money that they want to spend in the present, and that they want to have it on hand as a precaution. On the other hand, when interest rates increase, they become willing to hold less money for these purposes in order to secure a profit (Keynes, 1936).

In the context of this study, the liquidity preference for SACCOs would be determined by the four situations above: either for transaction purposes, as a precautionary measure or as for speculative concerns. Any liquidity management practices in SACCOs should be motivated by any of the three reasons why people prefer cash money. In this study, the researcher will establish the extent to which the SACCOs are reaping or missing out on the accruing benefits spelt out by the liquidity preference theory.

2.2.2 Stakeholders' Theory

Stakeholder Theory is a view of capitalism that stresses the interconnected relationships between a business, its customers, suppliers, employees, investors, communities and others who have a stake in the organization(Stakeholders Theory Organization, 2015).The stakeholder theory posits that SACCOs are established to meet the interests of diverse stakeholders and institutions.

The stakeholder theory is founded on the premise that co operatives serve the interests of different stakeholders in society. This collaborates well with the study since cooperatives serve different competing interest which all has a stake in the cooperatives thus stakeholders. In their formation, SACCOs draw membership from varying community interests and seek to satisfy all potential interests of the members. This implies that cooperation should care for and satisfy the interests of the stakeholders for it to survive. Failure to do this will mean the SACCO in question is not efficient enough and will be perceived so by the members. Failure to management liquidity is an issue that could make members feel that they are not served.

2.2.3 Shiftability Theory

In banking, Shift ability is an approach to keep banks and financial institutions liquid by supporting the shifting of assets. This means the theory is shiftability is a property of the banking system but not of an single banking institution. The theory posits that shiftability, marketability or transferability of a bank's assets is a basis for ensuring liquidity and that highly marketable security held by a bank is an excellent source of liquidity. When a financial institution is short of ready money, it is able to sell its assets to a more liquid bank. The approach lets the system of banks run more efficiently: with fewer reserves or investing in long-term assets. Under shiftability, the banking system tries to avoid liquidity crises by enabling banks to always sell or repo at good prices.

In the context of the study, the researcher will seek to establish whether SACCOs in Murang'a are aware on how they could hold on to assets that can be converted to cash quickly. In summary, the study will seek to prove whether management of liquidity in targeted SACCOs informed by the liquid preference theory in which they will sacrifice the ability to earn interest on money that they want to spend in the present, and that they want to have it on hand as a precaution. This would ensure they are able to conduct day to day running. In addition, SACCOs should keep assets that are easily convertible to cash under shiftability theory. Despite this desire, the SACCO must strike a balance through consideration of stakeholders through stakeholders theory by determining to increase their worth in the SACCO through long term investments that are likely to earn premium interest.

2.3 Determinants of Saving and Credit Cooperative Associations Efficiency.

This section discusses the factors that determine efficiency of SACCOs. According to a study by Mwangi (2013) size, capital, credit risk and management quality that either influences it positively or negatively.

2.3.1 Size

The size of a SACCO is determined by number of its shareholders. Most SACCOs draw their membership from the formal sector, in times of economic downturn, the functioning of the SACCO can be undermined if member's incomes are destabilized by volatility in the economy and this may lead to reduction of members' savings and increased demand for loans (Kivuvo& Olweny, 2014). However, where the income is assured, the SACCO is likely to grow through out and thus acquire a size big enough to contain external shocks.

A study done in Murang'a shows that that most of the licensed saccos which have satisfied the regulators requirements are large while the entities which are yet to satisfy the requirements are small (Kabaiya 2013). This implies that size is am important consideration.

2.3.2 Management

The cooperative movement has had a challenge of leadership. In some cases SACCOs could be run down through poor leadership and lack of oversight body. Operations of SACCOs demands the putting on place of oversight and supervisory committees which should be empowered and allured of the freedom and mandate to carry out their functions effectively, (Kimathi, 2008). Poor management of SACCOs has been cited as contributor to their poor performance. In Tanzania, this has been associated with embezzlement, lack of working capital, poor business practice and high loan delinquency rates(Maghimbi, 2010), which are issues that are either directly related to liquidity management.

To make corporate control mechanism more effective, effective companies have independent directors on their boards and they also commonly use the practice of employing professionals to their boards which may lack in SACCOs. Professionals have high qualifications and have interest and abilities to monitor a company's dynamics to ensure its success (Krivogorsky, 2004). In the same light, management of SACCOs should be strengthened in order to improve efficiency. For instance, a study in Kenya on recommended that it is very crucial that the SACCOs should evaluate managerial abilities as this would help them to gather valuable information that could provide valuable insights in the strategy and the necessary input to effectively respond and optimize Sacco's performance. The study also recommended that the management should keeps on monitoring as well as reassessing the effect and frequency of internal capital adopted. This could help identify whether the adopted counteractive measures are making any acceptable difference(Obure & Muturi, 2015).

2.3.3 Cash Flows

In the case of a SACCO, the typical revenue (profit) centers are its lending operations and its other investments, which could include treasury bonds, other securities and real estate(properties). Lending operations, in turn, are usually further sub-divided among the different loan product lines, such as consumer loans, business loans and real estate loans(Young & Barigye, 2007)

To establish the revenues attributable to the different profit centers, SACCO management should analyze all of its revenues and then divide them into logical functional groups or" product lines". Examples of product lines are commercial loans, agricultural loans, school fees loans, etc. For loans the typical revenues attributable to each product would include interest and all fees the SACCO charges its clients on these loans. Loan fees would include commitment fees, application fees, late payment or penalty fees, and any other fees(Young & Barigye, 2007).

Loan repayment is the obligation of members to ensure that SACCOs have adequate cash to meet new Members loan obligation. The researchers noted there are huge credit risks encountered among different SACCOs, hence the need of the management to ensure there are improved policy on credit policy and this will reduce liquidity risk and improve financial performance of the SACCOs (Duncan, Njeru, Member, & Tirimba, 2015)

Once one SACCO goes under, depositors and creditors of other small financial institutions in the area will begin to wonder how safe their investments are and possibly start to withdraw their funds. Such domino effects can bring down even healthy institutions. If allowed to run unchecked, the chain reaction can bring about a liquidity crunch in the entire regionaleconomy. The subsequent recession would severely affect the livelihood of most people in the area, many of whom may never have had any direct dealings with a SACCO or any other financial institution for that matter(Bald, 2000).

A recent report that more than Kshs 100 million in deductions on salaries of members of Jitegemee and AfyaSACCOs has not been remitted to the respective societies by the Mombasa County Government, is shocking (Omondi,2015). Imperatively, each SACCO needs to generate income which is adequate to cover all its operational costs, enhance the institutional capital, dividends and rebates. In this regard, financial practice is based on sound financial stewardship, solid capital structure, and prudent funds allocation strategy (Maina 2007).

Limam (2001) argues that Scale efficiency addresses the question of whether a firm is operating at the minimum of its long run average cost curve while Scope efficiency focuses on the relative cost of joint production with the cost of producing the same total output in different firms. Scale economies are measured by the percentage change in costs due to proportionate increase in all outputs. Scope efficiency is measured by the difference between

the cost of joint production and the sum of producing the different outputs individually(Limam, 2001).

A study on Financial Practice as a Determinant of Growth of Savings and Credit Co-Operative Societies' Wealth revealed that returns on loan investment had a positive significant relationship with growth of SACCOs' wealth. This is attributable to the fact that loans are the core investment for SACCOs. Liquid investments showed a strong positive significant relationship with growth of SACCOs' wealth. This could be attributable to the fact that liquid investments can be converted into cash easily to meet short-term obligations. This finances liquidity gaps hence enhancing stability of SACCOs (Olando, Mbewa, & Jagongo, 2012).

2.3.4 Accounting Practices

Sound accounting practices provide a framework for accurate and reliable accounting and record-keeping and adequate management information system needed to help Management and Board to make decisions, to formulate policies and to keep track and monitor performance. They also help to set controls to safeguard against fraud and to detect errors in the system(Fit Uganda, 2015).

According to David (2002), many different financial ratios and rules of the thumb have been promoted for financial institutions worldwide; few have been consolidated into an evaluation program that is capable of measuring both individual components and the system as a whole. In support of this, the World Council of Cooperative Unions (WCCU)has developed the PEARLS monitoring system. The WCCUs set of financial ratios" PEARLS" measures key areas of SACCOs operations: Protection, Effective financial structure, Asset quality, Rates of return and cost, Liquidity and Signs of growth. The use of the PEARLS evaluation system is as an Executive Management Tool and monitoring the performance of the credit union remain the most important. The PEARLS system is designed as a management tool that goes beyond the simple identification of problems and help managers find meaningful solutions to serious institutional deficiencies(David, 2002).

2.3.5 Membership Characteristics

Kasozi (1998) was of the view that, there are weaknesses of the borrower over which the lender has little control. Pischke and Rouse (2004) state that members that can hinder their performance when they refuse to invest in the cooperative. Members will at times demand for

payments based on member user services rather than make investments in the cooperative that would create greater future benefits, thus leaving the cooperative uncompetitive over time. Some members may consider that getting money now is much more important to them than getting more money later as a result of investment made now and thus they may not invest because they do not trust the cooperative, or do not view it as a sustainable venture that will help them increase their wealth over the long run. Others may simply see themselves as cooperative users or customers, regarding the cooperative's management as the real owners (Pischke& Rouse, 2004). .

For SACCOs whose members hold the equity and also provide the vast majority of liabilities in the form of their deposits, the capital adequacy debate may appear not particularly relevant: it is all member money anyway, be it shares or deposits. And even loans are made only to members. Already, this is not entirely true, because a loan is generally much larger than the average share capital and deposit held by an individual member. The bigger the loan amount relative to the individual shareholding and parallel savings, the larger the temptation for the borrower to default on the loan. Yes, it is members own money that they are losing, though in actual fact it is mostly the other members' money, because an individual loss compared to the loan amount is small (Bald2007).

Management of the SACCO business is also an essential part that needs to be emphasized. You find that many borrowers lack the technical skills like keeping records and checking on the business performance until the time of paying back the loan. This is usually hard because they never plough back the profits leading to loan default in the long run (Mulinde, 1998).

2.4 Empirical Review

A study by Mwangi (2014) on The influence of members' income and conduct of saccos in the relationship between characteristics and efficiency of saccos in Kenya found that characteristics (specifically size and age) have a significant positive effect on efficiency of SACCOs and this relationship (for size only) is moderated by the income of members. Increase in size results in improved efficiency and, the older the SACCO the higher the efficiency. The higher the income of members, the stronger the relationship between size and efficiency. Efficiency was negatively related to strength of bond of association, possibly because weakening of the bond would be associated with increased in size, which contributes to increased efficiency. Adoption of technology had a negative relationship with efficiency,

with a probable reason being low levels of computerization of the SACCOs. Managerial competency was not significantly related to efficiency (Mwangi M. , 2014).

A study titled Determinants of Efficiency of Savings and Credit Co-operative Societies in Nairobi County showed that the factors that influence efficiency of SACCOs in Kenya include size, capital, credit risk and management quality that either influences it positively or negatively. The study concludes that size, capitalization and management quality positively and significantly influenced efficiency of SACCOs while credit risk inversely affected efficiency of SACCOs. The study recommends that there is need to understand the changes that technology was causing on the financial sector in order to examine in detail how the recent and foreseeable advances in technology can affect its future evolution. The study also recommends that all the SACCOs should embrace the concept of credit risk management practices (Mwangi, 2013).

A study by Agrawal (2007) on corporate governance and Accounting Scandals: Evidence From Top Management, CFO and Auditor Turnover found that the key governance characteristics such as independence of boards and audit committees, and the provision of non-audit services by outside auditors were unrelated to the probability of a company restating earnings. The study recommended that independent directors with financial expertise were valuable in providing oversight of a firm's financial reporting practices. Imperatively, each SACCO needs to generate income which is adequate to cover all its operational costs, enhance the institutional capital, dividends and rebates. In this regard, financial practice is based on sound financial stewardship, solid capital structure, and prudent funds allocation strategy (Maina, 2007).

Often staff members are fulfilling multiple roles within the institutions, on an as needed basis, to fill in for any staff members who are absent or on leave. While this is normal and customary for small institutions, it does lead to some confusion and inefficiency in the operations. It can also lead to a lack of checks and balances in the internal controls (Shaw, 2005). In addition, Kim et al. (1996) argue that if operational expenses to maintain an organization are excessive relative to the benefits accruing to the stakeholders of the organization, their significance will be reduced

2.5 Chapter Summary

In summary the literature review has shown that firms can prefer to have cash money motivated by three factors, transactional motives, precautionary motives or speculative motives. This motives determines the importance firms attach to liquidity management. Without doing so, the SACCOs will miss out on the accruing benefits shown that size of a SACCO. In addition the literature review shows that determinants of efficiency include management, size of the organization, cash flows, accounting practices and membership characteristics.

Operations of SACCOs demand the putting on place of oversight and supervisory committees which should be empowered and allured of the freedom and mandate to carry out their functions effectively. Management is linked good performance of SACCOs. Management is associated with factors that limit the growth of SACCOs such embezzlement, lack of working capital, poor business practice and high loan delinquency rates.

The literature review shows that cash flow management is important to a SACCO. SACCOS are in the lending operations and other investments, that could include treasury bonds, other securities and real estate(properties). Lending operations could be in consumer loans, business loans and real estate loans. Where there is constant and predictable cash flow, there is higher likelihood of efficiency. With poor liquidity management practices, SACCOs are unable to meet these obligations. When SACCOs fail to meet their liquid obligations, members could withdraw and this would lead to collapse of the organization. The literature review further showed that characteristics of members in aspects such as the number, earning level and knowledgeability are important members' factors that contribute to efficiency in SACCOs. Availability of independent directors with financial expertise are associated with provision of SACCOs good financial reporting practices.

CHAPTER THREE
RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

This chapter outlines how the research design was set, target population, sample and sampling techniques, data collection instruments, validity and reliability of instruments and data analysis.

3.2 Research Design

The researcher adopted a descriptive survey design to access existing information about Savings and Credit Cooperative Organizations that are in Murang'a County, which were used to interpret the conditions under the study. A descriptive study is one in which information is collected without changing the environment (i.e., nothing is manipulated). According to Mugenda and Mugenda (2003), a descriptive survey design aims at explaining and describing the state of affairs as they are and then report the findings. According to Kothari, a survey design supports qualitative analysis and involves a careful and complete observation of a social unit(Kothari, 2004), in this case being the situation of SACCOS within Murang'a county. This survey will be conducted with an aim of obtaining information that is detailed and which will not require visual or other objective perception of the information sought by the researcher (Punch, 2003).

Data obtained was both qualitative and quantitative. The researcher opted to use a survey design since it gave a high representativeness capability in the large population. In addition survey had low costs conducting them, and was convenient in data gathering since they could be administered to the participants through a variety of ways (e.g. face to face and through the Internet).They also would give good statistical significance because of their high representativeness with no observer's subjectivity (Sincero, 2012).

3.3 Population

The study population were all the SACCOs operating in Murang'a County. These are 43 in number.

3.4 Sampling

Random sampling was used in determing the SACCOs that participated in the study. The purpose of sampling was to secure a representative group which would enable the researcher gain information about a population. A sample is a unit within an entire population. The study used random sampling to obtain the sample. Kothari (2004) observes that a sample size of between 10% and 20% of the population is considered adequate for a detailed in-depth study. The higher the population, the lower the percentage and the lower the population the higher the percentage. This study will take 20% sample under each stratum. For this study out of the 43 SACCOs in Murang'a 22 were sampled. The sampling frame was the list from the county commissioner of cooperatives office. Every 2nd SACCO in the list was included in the sample, till all the 22 were sampled.

3.5 Data Collection.

The study obtained secondary data in published financial statements. This came from SACCOs financial reports for the period 2012-2015.The study also obtained past report from publications including journal and media reports on the performance of SACCOs in Murang'a. The study captured data indicative of liquidity and efficiency. On cash inflow this included Charges on loans, Application charges, Members' deposits on the cash inflow side. On cash outflow, the study obtained data on loans given, operations costs and administrative Costs. The study also captured data about Accounting Practices on whether the SACCOs use formal/informal accounting practices, whether there is external auditing, whether they use internal auditing and whether they use petty cash systems. The study also measured members characteristics such as Number of members, members' income and geographical distribution of membership. The study also captured data on efficiency such as operational costs and returns on both investments and profitability.

3.6 Data Analysis

Data was first checked for completeness and consistency before the actual analysis. It was then coded to enable the responses to be grouped into categories. Quantitative analysis was done using SPSS (Statistical Package for Social Sciences). Descriptive statistics was used to summarize the data so as to generate and present frequency Tables, and percentages. Pie

charts and bar graphs were used to enhance clarity. Qualitative data was used to supplement interpretation of quantitative data.

3.6.1 Analytical Model

The model used was be adopted from both Karanja (2013) in a study titled The Relationship between Size and Cost Efficiency of SACCOS with Front Office Service Activity in Kenya and a study by Mirie Mwangi (2014) on The Influence of Members' Income and Conduct of SACCOS in The Relationship between Characteristics and Efficiency of SACCOs in Kenya. The variables of the study comprised of the efficiency ratio (ER) of $SACCO_{it}$, as the dependent variable while the independent variables comprised of Cash flow (which were regarded as liquidity), accounting practices and characteristics of membership. ER as defined by Hays, et al (2009) and adopted from Karanja (2013) was used to measure efficiency.

Hence the following regression Model was applied

$$Eff_{it}=\alpha+\beta_1 Liq_{it}+ \beta_2 Acctp_{it}+ \beta_3 Mbrshp_{it}+\varepsilon_i$$

Where;

$$ER= \frac{\text{Non Interest Expense}}{\text{Non Interest Income+Net Interest Income}}= Eff_{it}$$

Eff_{it} = Efficiency ratio of SACCO i at time t

α= Constant

$$Liq_{it} =\frac{\text{Net Liquid Assets}}{\text{Total Deposits of SACCO i at time t}}$$

$$Acctp_{it}=\frac{\text{Operating Expenses for Accounting}}{\text{Total Gross Income or revenue SACCO i at time t}}$$

$Mbrshp_{it}$=Income +Saver-borrower domination

$$= \frac{\text{Total Deposits}}{\text{Total membership of SACCO i in time t}}+\frac{\text{Savers of SACCO i in time t}}{\text{Borrowers of SACCO i in time t}}$$

Coefficients $\beta 1$, $\beta 2$, & $\beta 3$, was used to measure the sensitivity of the dependent variable (Eff_{it}) to unit changes in the three explanatory variables (Cash flow=liquidity, accounting practices and membership practices).

$\varepsilon_{i=}$ Error Term

F- Statistic and t –Statistics was used to carry out tests of significance, for the overall fit of the Model (R2). Pearson correlation coefficients were used to test for Multicollinearity.

3.7 Tests of Significance

F test (ANOVA- analysis of variance) was done to establish the significance of the multiple linear regression model. This test checked the significance of the whole regression model with the hypothesis that all the independent variables i.e. Cash flow, Accounting practices and Membership characteristics, have no influence on the dependent variable(efficiency) that is Ho: $\beta1=\beta2=\beta3=\beta4 = 0$ and the alternative hypothesis, that at least one of the independent variable is not equal to zero that is H1: $\beta j\neq0$; j=1, 2, 3, 4

The null hypothesis was rejected if the p-value is greater than the common alpha level of 0.05, which indicates that it is not statistically significant. The null hypothesis is rejected if F calculated > F critical hence concluding that at least one of $\beta1$, $\beta2$, $\beta3$, or$\beta4$, is not equal to zero.

The following formula was used to compute the F statistic;

$$F = \frac{R\,2/(K-1)}{(1-r2)/(n-k)}$$

Where, R is multiple coefficient of correlation, k is the number of variables involved, n is the number of paired observations; in this study k was 4 and n will be equal to 22 SACCOS. This test was performed by entering tables of F distribution with k-1 freedom for the variance in numerator and n-k for degrees of freedom for variance in denominator. If F calculated will be less than table value then the decision would be that there will be no statistical evidence of significance correlation at 5% level of significance.

3.8 Operationalization

Variable	Objective	Question	Data Measurement Scale
Efficiency Of Savings And Credit Cooperative Societies	Assess effect of cash flows management	How does cash flows affect efficiency SACCOs in Murang'a County?	Nominal Ordinal
	Determine the effect of accounting practices	What is the effect of accounting practices on SACCOs in Muranga County?	Ordinal Ratio
	Establish the effect of membership characteristics	What is the effect of membership characteristics on efficiency of SACCOs in Murang'a County?	Ordinal Ratio

CHAPTER FOUR

DATA INTERPRETRATION, ANALYSIS AND PRESENTATION

4.1 Introduction

This chapter presents data analysis, findings and discussions of the research findings based on the research objective. Secondary data from annual financial statements of 22 SACCOs with front office Services Activities for period 2011/12, 2012/13 and 2013/14 was used. Results have been presented in form of summary tables. Financial statements of 22 SACCOs were obtained out of a sample of 43 and observation for three years made. Data was analyzed using descriptive analysis, correlation analysis and multiple linear regression analysis to answer the research question using SPSS version 22.

4.2 Descriptive Statistics

The study did descriptive statistics on the different variables and presented the results in the section below.

4.2.1 Cash flow Descriptive Analysis

The study captured data on cash flow and then presented the results in the table below.

Table 4:1: Descriptive Statistics on Cash Flow

N=66

Variable	Range	Min.	Max.	Mean	Std. Deviation	Skewness	Kurtosis
Interest expenses	166,620,212	144,899	166,765,111	16,759,715.3	41,572,710.434	2.88	6.73
Interest Income	684,100,071	357,611	684,457,682	42,141,681.98	140,685,153.414	4.03	15.59
Total Inflow	701,409,194	368,811	701,778,005	44,283,183.02	142,209,811.3	4.0	15.45
Total Outflow	503,916,688	177,111	504,093,799	27,534,775.48	88,142,342.03124	4.28	18.92
Charges on Loans	285,027,296	4,522.00	285,031,818.	16,072,933.86	60,311,040.9	4.22	16.89
Application Charges	17,595,001	1,344	17,596,345	812,693.03	3,036,065.52	5.35	28.38
Member Deposits	1,557,865,727	400,111	1,558,265,838.	64,255,058.03	254,359,297.87	4.82	23.32
Loans Given	3,786,896,286	398,677	3,787,294,963	177,938,210.17	766,411,426.21	4.47	18.54
Oper. & Adm. Costs	78,144,980	15,000	78,159,980	4,243,005.59	16,280,709.94	4.44	18.37
Av.	864,619,495	207,565.11	864,827,060.11	43,782,361.83	168,112,061.95769	4.28	18.02

Findings in table 4.1 shows that interest expense ranged from a low of Kenya shillings 144,899 to a high of Kenya Shillings 16, 759,715 with mean of Kenya shillings 16,759,715.3 and a standard deviation of 41,572,710.434. Skewness for interest income was 2.88. This was lower that interest income which stood at 42,141,681.98 meaning the SACCOs were spending substantial amount of their earnings to pay interest. The interest expense shows skewness that is greater than 0, i.e. right skewed distribution, meaning most values were concentrated on left of the mean, with extreme values to the right. Kurtosis indicates distribution analysis as a sign of flattening or "peakedness" of a distribution. Kurtosis for interest income was 6.73 which mean it was a leptokurtic distribution, sharper than a normal distribution, with values concentrated around the mean and thicker tails. This means data had high probability for high values. It implies that SACCOs received substantially high amount of money through interest income. Table 4.1 further shows that total inflows averaged at Kenya shillings 142,209,811.3 with skewness of 4.0 which was greater than 0 and thus most values were concentrated to the left of the mean and kurtosis of 15.45 which showed a leptokurtic behaviour of data (i.e sharper than normal distribution with values concentrated around the mean and thicker tails.) On charges on loans, the mean value for the 22 SACCOs was 16,072,933.86 over a period of 3 years with a standard deviation of Kenys shillings, 60,311,040.9. Skewness was to the right at 4.22 which was greater than 0 and thus most values were concentrated on left of the mean while kurtosis was at 16.89 which was leptokurtic behaviour of data (i.e sharper than normal distribution with values concentrated around the mean and thicker tails). On average, the values showed that cash flow variables had a mean of Kenya shillings 43,782,361.83 and skewness greater than 0 of 4.28 that showed data was concentrated to the left of the mean. Kurtosis was at 18.02 which showed that leptokurtic behaviour of data (i.e sharper than normal distribution with values concentrated around the mean and thicker tails). This implies that on parameters that measured cash flow, SACCOs in Murang'a had high figures for the three year period.

4.2.2 Descriptive statistics for Accounting Practices

The study obtained data on the accounting practices data which was analyzed descriptively and the results presented in the section below.

Table 4:2: Descriptive Statistics for Accounting Practices
N=66

Variable	Range	Min	Max	Mean	Std. Dev.	Skewness	Kurtosis
Use of Formal or Informal Accounting Practices	1	1	2	1.18	.389	1.689	.877
Presence of External Auditing	1	1	2	1.64	.485	-.580	-1.716
Presence of Internal Auditing	1	1	2	1.18	.389	1.689	.877
Uses Petty Cash Systems	1	1	2	1.05	.210	4.467	18.510
Annual Accounting Expenses	1,590,994	1,266	1,592,260	255,801.3	411,791.5	2.365	4.673

According to table 4:2 the study captured data on the different accounting practices used by SACCOs with 1 being formal accounting practices, 2- informal accounting practices and 3- mixture of both formal and informal accounting practices. Results showed that the mean on whether SACCOs used formal or informal accounting practices was 1.18 which means that both formal and informal practices are practiced with almost equal measure. Skewness was at 1.689 which was a right skewed distribution with most values concentrated on left of the mean, with extreme values to the right and a low kurtosis of 0.877 which was a platykurtic and flatter than a normal distribution with a wider peak. This meant the probability for extreme values is less than for a normal distribution, and the values are wider spread around the mean. This means most of the SACCOs had similar accounting practices. On auditing the analysis showed a mean of 1.64 (close to yes) showing that most of the SACCOs allowed for external auditing. The skewness was -0.580 which was less than 0 and thus a Left skewed distribution. This meant most values are concentrated on the right of the mean, with extreme values to the left. Kurtosis was at -1.716 which was less than 3. This was a Platykurtic and flatter distribution than a normal distribution with a wider peak. This implied that the probability for extreme values is less than for a normal distribution, and the values are wider spread around the mean. On the use of petty cash data showed that means was at 1.05. This implied that the used of petty cash system users and those that did not use was distributed equally between respondents. The study further revealed that while the standard deviation for the responses was .210, skewness was at 4.467 which was a greater than 0 and thus right skewed distribution in which case most values were concentrated on left of the mean, with extreme values to the right. Kurtosis was at 18.510 which was greater than 3; thus it showed a

leptokurtic distribution which was sharper than a normal distribution, with values concentrated around the mean and thicker tails. This means high probability for extreme values. The annual average of the amount that SACCOs used for accounting expenses was 255,801.3 with a standard deviation of 411,791.5. Skewness was 2.365 which was greater than 0 and thus implied a right skewed distribution in which case most values were concentrated on left of the mean. Kurtosis was 4.673 which was greater than 3 and thus was leptokurtic with values concentrated around the mean. In summary, descriptive statistics for accounting practices showed that most of the SACCOs had similar approaches to accounting.

4.2.3 Descriptive Statistics for Membership Characteristics

The study obtained data on membership characteristics and then presented the results in the table below.

Table 4:3 Descriptive Statistics for Membership Characteristics
N=66

Variable	Range	Min	Max	Mean	Std. Deviation	Skewness	Kurtosis
Number of Members	4	1	5	2.86	.975	.281	-.583
Average Monthly Savings	140,024.00	5,600.00	145,624.00	30,170.5000	27,197.41132	3.547	13.377
Members' Income	51,534.00	15,466.00	67,000.00	33,559.5909	11,549.80646	1.178	1.768
Average Monthly Borrowing	438,721.00	15,000.00	453,721.00	76,108.7273	121,836.71961	2.747	6.039
Geographical Distribution of Members	2	1	3	1.82	.493	-.393	.454
Average	126,057	7,213.6	133,270.6	27,968.6996	32,117.08108	1.472	4.211

According to table 4:3 the mean of membership was 2.86 meaning most of the SACCOs had between 150 and 200 members which was considerably high. Skewness was at .281 which was greater than 0 and thus right skewed distribution . This meant most values were concentrated on left of the mean, with extreme values to the right. Kurtosis was at -.583 meant there was a Platykurtic (flatter) distribution than a normal distribution with a wider peak. The probability for extreme values is less than for a normal distribution, and the values are wider spread around the mean. This meant that most of the SACCOs had significant resemblances in terms of membership characteristics. On average monthly savings, the study revealed that the average monthly savings was Kenya Shillings 30,170.5000 with a high standard deviation of 27,197.41. Skewness was at 3.547 which was greater than zero and

which meant that data was right skewed distribution. This meant most values were concentrated on left of the mean, with extreme values to the right. Kurtosis was at 13.377 which was greater than three and which meant that data had Leptokurtic distribution with sharper than a normal distribution and that values concentrated around the mean and thicker tails. This means high probability for extreme values as evidenced by the range of 140,024.00 that was between Kenya shillings 5,600.00 and 145,624.00. On the members monthly income, the average was Kenya Shillings 33,559.6 with a standard deviation of Kenya shillings 11,549.80646 . Skewness was at 1.178 which was above 0 and thus meant right skewed distribution with most values being concentrated on left of the mean, with extreme values to the right. Kurtosis was at 1.768 which was below 3 and thus meant a Platykurtic distribution that was flatter than a normal distribution and had a wider peak. The probability for extreme values is less than for a normal distribution, and the values are wider spread around the mean. The monthly members borrowing showed that the average was Kenya Shillings 76,108.7273 with a standard deviation of 121,836.71961. Skewness was 2.747 which was higher than 0 meaning that data was right skewed distribution and most values were concentrated on left of the mean, with extreme values to the right. Kurtosis value was 6.039 which was greater than 3. This meant that data had a Leptokurtic distribution with a sharper than a normal distribution and in which values concentrated around the mean and had thicker tails. This means high probability for extreme values.

The study captured data on geographical distribution of the members with 1 being Sub-County, 2- Countywide and 3-Nationwide. The data analysis showed that mean was 1.82 which is close to 2. This implied majority of the SACCOs had a county-wide membership. The standard deviation was .493. Skewness was -.393 which was less than 0 meaning that data was left skewed in which case most values are concentrated on the right of the mean, with extreme values to the left. Kurtosis was 0.454 which was below 3 meaning data had a platykurtic distribution that was flatter than a normal distribution and had a wider peak. The probability for extreme values is less than for a normal distribution, and the values are wider spread around the mean. This all shows that most of the SACCOs had almost a similar pattern of membership.

4.2.4 Descriptive Statistics on Efficiency

The study obtained data on efficiency then did descriptive statistics and presented the results in the table below.

Table 4:4 Descriptive Statistics for Efficiency

N=66

Variable	Range	Minimum	Maximum	Mean	Std. Deviation	Skewness	Kurtosis
Return on Investments	1.05232	-.07351	.97880	.21	.2594	1.522	1.548
Profitability of SACCO	1.04977	-.07635	.97342	.204	.2347	1.128	.517
Average	1.05105	-0.07493	0.97611	0.207	0.2471	1.325	1.033

According to table 4:4 the average ratio for the return on investments (ROE) was .21 (i.e 21%) with a standard deviation of 0.2594. This implies low ratio which is indicative of poor business performance. The skewness was 1.522 which was greater than 0 and thus a right skewed distribution with most values concentrated on left of the mean and the extreme values to the right. Kurtosis was at 1.548 and less than 3 meaning data was platykurtic and flatter than a normal distribution with a wider peak. The probability for extreme values therefore less than for a normal distribution, and the values had a wider spread around the mean. On the profitability of the SACCOs, mean was 0 .204 and a narrow standard deviation of 0.2347. Skewness was 1.128 which was greater than 0 and which meant data was right skewed distribution in which case most values are concentrated on left of the mean, with extreme values to the right. Kurtois was at .517 which is less than 0 and which means data was platykurtic in terms of distribution and thus flatter than a normal distribution and had a wider peak. The probability for extreme values is less than for a normal distribution, and the values are wider spread around the mean.

4.2. 5 Summary of Descriptive statistics

The study obtained averages of different parameters and presented them in the table below.

Table 4:5 A table of averages

Variable	**Range**	**Min**	**Max**	**Mean**	**Std.Deviation**	**Skewness**	**Kurtosis**
Cash flow	**!Zero Divide**	**!Zero Divide**	**!Zero Divide**	**!Zero Divide**	**!Zero Divide**	**!Zero Divide**	**!Zero Divide**
Accounting Practices	1,590,994	1,266	1,592,260	255,801.3	411,791.5	2.365	4.673
Membership characteristics	1,590,994	1,266	1,592,260	255,801.3	411,791.5	2.365	4.673
Efficiency	1,590,994	1,266	1,592,260	255,801.3	411,791.5	2.365	4.673

Table 4: 5 above shows that mean for cash flow was Kenya Shillings 43,782,361.83 while that for accounting practices parameters was 255,801.3. In addition the mean for membership characteristic parameters was **!The Formula Not In Table** for efficiency was .207

4.3 Diagnostic Tests

The study made an analysis to proof data normality and co-linearity. The findings were presented in the section below.

4.3.1 Cash Flow

Model Summary

The study obtained a summary table between cash flow and profitability. Results were presented in table 4:3 below.4.3

Table 4:6: Model Summary for Cash Flows

Model 1	R	R Square	Adjusted R Square	Std. Error of the Estimate
	.602[a]	.362	.260	.20197858

a. Predictors: (Constant), Cash flows

b. Dependent Variable: Profitability of SACCO

Table 4.6 shows provide the R and R2 value. The R value is 0.602, which represents the simple correlation. It indicates an average degree of correlation. The R2 value indicates how much of the dependent variable, "Efficiency", can be explained by the independent variable, "cash flow". In this case, 36.2% can be explained, which is relatively low.

ANOVA for Cash Flows

The study did ANOVA for cash flow and presented the findings in the section below.

Table 4:7: ANOVA for Cash Flows

Model 1	Sum of Squares	df	Mean Square	F	Sig.
Regression	1.297	9	.144	3.533	.0002[b]
Residual	2.285	56	.041		
Total	3.582	65			

a. Dependent Variable: Efficiency of SACCO

b. Predictors: (Constant), Cash Flows

The ANOVA results in the table 4:7 show that an F statistic of 3.533 indicated that the model was significant. This was supported by a probability value of 0.0002.This is less than the

conventional probability of 0.0005, which is less than 0.05, and indicates that; overall, the model applied can statistically significantly predict the outcome variable.

4.3.2 Accounting Practices

Model Summary

The study obtained the model summary for accounting practices and presented it in the section below.

Table 4:8: Model Summary for Accounting Practices

Model 1	R	R Square	Adjusted R Square	Std. Error of the Estimate
	.328[a]	.107	.033	.23083272

a. Predictors: (Constant), Accounting Practices
b. Dependent Variable: Profitability of SACCO

Table 4.8 shows the R and R^2 value. The R value is 0.328, which represents the simple correlation. It indicates an average degree of correlation. The R2 value indicates how much of the dependent variable, "efficiency", can be explained by the independent variable, "Accounting Practices". In this case, 10.7% can be explained, which is weak.

ANOVA for Accounting Practices

Analysis of variance on accounting practices was done and the results presented in the section below.

Table 4:9: ANOVA for Accounting Practices

Model 1	Sum of Squares	df	Mean Square	F	Sig.
Regression	.385	5	.077	1.443	.0002[b]
Residual	3.197	60	.053		
Total	3.582	65			

a. Dependent Variable: Profitability of SACCO
b. Predictors: (Constant), Accounting Practices

The ANOVA results in the table 4:9 show that an F statistic of 1.443 indicated that the model was significant. This was supported by a probability value of 0.0002.This is less than the conventional probability of 0.0005, which is less than 0.05, and indicates that; overall, the model applied can statistically significantly predict the outcome variable.

4.3.3 Membership Characteristics

Model Summary

Table 4:10 Model Summary for Member Characteristics

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.358[a]	.128	.055	.22816112

a. Predictors: (Constant), Membership Characteristics

b. Dependent Variable: Profitability of SACCO

Table 4.10 shows the R and R^2 value. The R value is 0.358, which represents the simple correlation. It indicates an average degree of correlation. The R2 value indicates how much of the dependent variable, "efficiency", can be explained by the independent variable, "membership characteristics". In this case, 12.8% can be explained, which is weak.

ANOVA for Membership Characteristics

The study did an analysis of variance on the membership characteristics and presented in the table below.

Table 4:11: ANOVA for Membership Characteristics

Model 1	Sum of Squares	df	Mean Square	F	Sig.
Regression	.458	5	.092	1.760	.0003[b]
Residual	3.123	60	.052		
Total	3.582	65			

a. Dependent Variable: Profitability of SACCO

b. Predictors: (Constant), Membership Characteristics

The ANOVA results in the table 4:11 show that an F statistic of 1.760 indicated that the model was significant. This was supported by a probability value of 0.0002. This is less than the conventional probability of 0.0005, which is less than 0.05, and indicates that; overall, the model applied can statistically significantly predict the outcome variable.

4.4 Correlation Analysis

The study did a co-relational analysis on the data. The results are presented in the section below.

4.4.1 Cash Flows

Coefficient of cash flow on efficiency of SACCOs

A statistical analysis of cash flow on efficiency of SACCOs showed the following

Table 4:12: Cash Flow Coefficient

Coefficients[a]					
Model1	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.328	.036		9.030	.000
Cash flow	2.099	.000	12.577	1.661	.102

a. Dependent Variable: Efficiency of SACCO

The table 4: 12 shows that the relationship between cash flow (CF) and efficiency of SACCOs is as below.

$Eff_{it}=0.328+2.099\ (CF)+ \varepsilon_i$

Where ε_i = Error Term

Where Effit is the efficiency of SACCO it at time t , 0.328 is the constant while 2.099 is the constant and ε_i the error term

4.4.2 Accounting Practices

Co-efficient of Accounting Practices

The study obtained the co-efficient for Accounting Practices and presented the results in the table below.

Table 4:13 Coefficient for Accounting Practices

Model 1	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-.078	.180		-.433	.667
Uses Petty Cash Systems	.252	.158	.226	1.597	.116

a. Dependent Variable: Efficiency of SACCO

The table 4: 8 shows that the relationship between Accounting Practices (AP) and efficiency of SACCOs is as below.

$Eff_{it}=0.252-.078\ (AP)+ \varepsilon_i$

Where ε_i = Error Term

4.4.3 Member Characteristics

The study did correlation of membership characteristics on efficiency of SACCOs in Murang'a County. The findings are presented in the section below.

Coefficient for Membership Characteristics

The study obtained co-efficient for membership characteristics and presented the results in the table below.

Table 4:14 Co-efficient for Membership Characteristics

Coefficients[a]					
Model 1	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.508	.164		3.090	.003
Membership characteristics	1.287	.000	.063	.504	.616

a. Dependent Variable: Efficiency of SACCO

The table 4: 8 shows that the relationship between Membership Characteristics (MC) and efficiency of SACCOs is as below.

$Eff_{it}=0.5078+1.287\ (MC)+ \varepsilon_i$

Where ε_i = Error Term

4.4 Accounting Practices

The second objective of the study was to determine the effect of accounting practices on efficiency of SACCOs in Murang'a County. The statistical operations are presented in the section below.

4.5 Liquidity Management and Efficiency

The study calculated arrived at the relationship between liquidity management and efficiency based on the set model as below.

SACCOs Liquidity

Table:4:15 Descriptive Statistics for Cash Flow

Response	Mean	Std. Deviation	N
Non-interest expenses	16,759,715.29	41,572,710.43378	66
Interest Income	42,141,681.98	140,685,153.41361	66
Total Inflow	44,283,183.02	142,209,811.30336	66
Total Outflow	27,534,775.5	88,142,342.03124	66
Application Charges	812,693.03	3,036,065.52250	66
Member Deposits	64,255,058.03	254,359,297.87394	66
Loans Given	177,938,210.17	766,411,426.21021	66
Operations and Administration Costs	4,243,005.6	16,280,709.93868	66

The descriptive statistics for liquidity according to the model adopted is

$$= Liq_{it} = \frac{\text{Net Liquid Assets}}{\text{Total Deposits of SACCO i at time t}}$$

$$= Liq_{it} = \frac{44,283,183.0152+812,693.0303}{64,255,058.0303}$$

= 0.7 which is about 70%

4.4.1 Descriptive Statistics for Accounting Practices

Table 4:16: Descriptive Statistics for Accounting Practices

	Mean	Std. Deviation	N
Profitability of SACCO	.2040360	.23473578	66
Use of Formal or Informal Accounting Practices	1.18	.389	66
Presence of External Auditing	1.64	.485	66
Presence of Internal Auditing	1.18	.389	66
Uses Petty Cash Systems	1.05	.210	66
Annual Accounting Expenses	255,801.2727	411,791.49307	66

As per the adopted model, efficiency of accounting practices

$$== \frac{\text{Operating Expenses for Accounting}}{\text{Total Gross Income or revenue SACCO i at time t}}$$

$$= \frac{4,243,005.6}{812,693.03+42,141,681.98}$$

=10%

This shows that accounting practices consumed about 10% of the profits made by SACCOs in Murang'a County.

4.5.1 Descriptive Statistics for Member Characteristics

The descriptive after the analysis of the members' characteristics are presented in the section below.

Table 4:17: Descriptive statistics for Member Characteristics

Respondents	Mean	Std. Deviation	N
Profitability of SACCO	.2040360	.23473578	66
Number of Members	2.86	.975	66
Average Monthly Savings	30,170.5000	27,197.41132	66
Members' Income	33,559.5909	11,549.80646	66
Average Monthly Borrowing	76,108.7273	121,836.71961	66
Geographical Distribution of Members	1.82	.493	66

The descriptive for membership were obtained and presented in the section below.

$$= \frac{\text{Total Deposits}}{\text{Total membership of SACCO i in time t}} + \frac{\text{Savers of SACCO i in time t}}{\text{Borrowers of SACCO i in time t}}$$

$$= \frac{64{,}255{,}058.03}{4600} + \frac{4600}{4200}$$

13968.49+1.095

13969.585

4.6 Discussion of Data Analysis and Results

Financial records of 22 SACCOs were obtained out of a population of 43 with a 100% response rate. Descriptive data analysis, correlation analysis and multiple linear regression analysis was done in order to establish how liquidity management in terms of cash flow, accounting practices and membership characteristics affected efficiency of SACCOs in the study area. Data analysis was done with support of SPSS version 22.

On efficiency the overall calculations was as done as below.

Organizational Efficiency was calculated as

=

$$\frac{\text{Non In}}{\text{Non Interest Income} + \text{Net Interest Income}}$$

$$\frac{16{,}759{,}715.2879}{812{,}693.0303 + 42{,}141{,}681.9848}$$

=0.39 or 39%

Thus the study established that the level of efficiency for targeted SACCOs was 39%.

SACCOs being medium sized at 87.4%.

The foregoing analysis shows that that all the factors under consideration had a significant influence on the efficiency of SACCOs.

In addition the statistical operations shows that

Influence of Cash flow on Efficiency =0.328+2.099 (CF)+ ε_i

Influence of Accounting Practice on efficiency= 0.252+078 (AP)+ ε_i

Influence of Membership characteristics of Efficiency = 0.5078+1.287 (MC)+ ε_i

Multi-regression Analysis

The study conducted a multiregression analysis and results presented in the table below

Table 4:18 Overall Coefficients

Model 1	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.266	.522		.509	.613
Cash flow	2.099	.000	-4.262	-1.896	.064

accounting practices	078	.000	6.166	.884	.381
Members Characteristics	1.287	.143	-.602	-2.006	.051
a. Dependent Variable: Liquidity Management					

Multi-regression analysis showed gave constant as 0.266.

Then this shows that

Efficiency of SACCOs=0.266+2.099(CF)+1.287(MC)+ 0.078(AP)

This show cash flow has highest effect on efficiency followed Membership characteristics then accounting practices.

CHAPTER FIVE
SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary of finding, makes conclusions and makes recommendations along the objectives of the study.

5.2 Summary of Findings

The study aimed at understanding the effect of liquidity management on efficiency of SACCOs. Descriptive statistics showed that cash flow variables had a mean of Kenya shillings 43,782,361.83 and skewness of 4.28 meaning data was concentrated to the left of the mean. Data had a leptokurtic behaviour of data (i.e sharper than normal distribution with values concentrated around the mean and thicker tails). This implies that on parameters that measured cash flow, SACCOs in Murang'a had high figures for the three year period. The descriptive statistics showed that the ratio of interest expense against interest income was .3979 which is almost 40%. This means a substantial amount of income for SACCOs is used in paying interest for loans from third parties. In addition , descriptive statistics for accounting practices showed that most of the SACCOs had similar approaches to accounting. Similarly descriptive statistics revealed that SACCOs had almost a similar pattern of membership. The comparison between inflow and outflow show that while members deposit was 64,255,058.03 in the period under study the total amount issued as loan was 177,938,210.17 which was showed a difference of 113,683,152.14. This implied that SACCOs are giving loans much higher than the amount they are getting from members suggesting that they rely on other sources such as third party loans such as from banks. The data on cash flow also suggested that SACCOs are able to raise high volume of capital and that they are not utilizing their capacity to create wealthy effectively.

Diagnostic statistics showed that the three variables had a significant influence on the efficiency of SACCOs. The model for all variables (cash flow, accounting practices and membership characteristics) showed that the models applied can statistically significantly predict the outcome variable. In addition the model summary showed that cash can be used to explain 36.2% of efficiency, accounting practices can explain 10.7% while membership

characteristic can explain 12.8%. This was proofed by the ANOVA that showed the models are significant for all the three variables.

The correlation analysis revealed that Cash flow influence on efficiency can be explained by the equation $Eff_{it}=0.328+2.099\ (CF)+ \varepsilon_i$: Where Effit is the efficiency of SACCO it at time t , 0.328 is the constant while 2.099 is the coefficient for cash flow and ε_i the error term. For accounting practices the correlation analysis showed that $Eff_{it}=0.252-.078\ (AP)+ \varepsilon_i$ where Eff_{it} is the efficiency of SACCO it at time t, 0.252 is the constant for accounting practices while -0.78 is the coefficient value for accounting practices and ε_i = Error Term. Equally correlation analysis for membership characteristics showed that $Eff_{it}=0.5078+1.287\ (MC)+ \varepsilon_i$

Where Eff_{it} is the efficiency of SACCO it at time t, 0.5078 is the constant for membership characteristics, while 1.287 is the coefficient value for membership characteristics and ε_i = Error Term

On liquidity management, the model result in the study showed that cash flow contributed to 70% of SACCOs efficiency, while Accounting Practices contributes to 10% amd Membership characteristics ratio showed deposited amount to member ratio is a high of 13969.59. Descriptive statistics showed that the efficiency of SACCOs is 39%.. The model summary analysis showed all the variables had influence on the dependent variable.

5.3 Conclusions

Descriptive on the cash flow shows that there is a difference between deposits and demands for loans. This is probably based on the fact that the amount a individual borrower get is a multiple of the amount saved. However, the study has shown that the SACCOs are able to facilitate circulation of high volumes of money. The study also revealed SACCOs are spending substantial amount of their income to pay interest. The study has shown that the SACCO got similarities in terms of accounting practices and membership characteristics with most depending upon county-wide membership. The study also reveals that reliance on informal accounting practices is way to high to an extent that its affecting efficiency in the SACCOs under study negatively. This implies there is limited differentiation among different SACCOs in Murang'a county. The study also revealed that efficiency of SACCOs is at 39% which below average.

The study has also shown that cash flow is the most important aspect of liquidity management that can determine the efficiency of a SACCO. This is followed by the

characteristics of membership and finally accounting practices. This implies that for SACCOs to meet their obligations and those of their members they should ensure that cash flow is predictable. The results also suggest that SACCOs should seek to recruit members that meet their growth aspirations since membership characteristics is an important aspect in their operations.

5.4 Recommendations

Based on the findings, the study recommends that SACCOs should ensure that in addition to making cash flow manageable and predictable manner they should encourage higher savings and loaning from among the members. SACCOs are intermediaries that make money through loans to members. Oversight bodies including SASRA and internal oversight boards should always ensure they are abreast with cash flow in their SACCO.

On accounting practices, the SACCOs should practice more formalized accounting practices and all should ensure both internal and external auditing. The costs of conducting accounting seems low and manageable but it is arguably that SACCOs attract best skills in terms of accounting even though at a higher cost for this would translate to higher financial performance and efficiency in the mid term to long term.

The study further recommends that SACCOs should recruit members that meet their goals and aspirations. Some desirable characteristics in the membership should include certain income for the members and high propensity to either borrow or save. Dormant members should be activated or reduced for the don't add good value to liquidity management of SACCOs. The study showed that most of the members are distributed county-wide. Opening up membership to individuals from other parts of the country could also be a viable option for SACCOs.

5.5 Suggestions for Further Studies

This study aimed at investigating how management of liquidity affects efficiency of SACCOs in Murang'a County. However, there are many other factors that influence efficiency of SACCOs that could form basis of further studies. Such includes leadership, age, and capitalization of a SACCO among others. Other include influence internal oversight mechanisms and management structures on efficiency of SACCOs both in the county and in other counties.

The study further suggests that a replica of the study should be conducted in other counties. Different research design and models could be used including obtaining qualitative data from different respondents and stakeholders.,

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Appendix 1: Data Collection template

Name of Sacco.....

RESEARCH QUESTIONNAIRE ONEFFECT OF LIQUIDITY MANAGEMENT ON THE EFFICIENCY OF SACCOS IN MURANG'A COUNTY

I am a student in the University of Nairobi taking a Masters Course in Finance and Investments,. I hereby request you to fill this questionnaire with accuracy so that I can get the relevant information. Any information you give will be completely confidential. It will not be used in any other way other than for academic purpose.

Thank you.

Josephine Karambu

	Year	2012	2013	2014
Totals Cash flows	Interest expense			
	Interest Income			
	Total Inflow			
	Total outflow			
	Charges on loans,			
	Application charges			
	Members' deposits			
	loans given,			
	operations costs and administrative Costs			
Accounting Practices	use of formal/informal practices, mixed			
	Presence external auditing,			
	Use of internal auditing			
	Use petty cash systems.			
	Annual Accounting Expenses			

members characteristics	Number of members,			
	Average Monthly Savings			
	members' income			
	Average Monthly borrowing			
	Geographical distribution of membership. (i.e. Sub-county wide, county-wide, nation-wide)			
Efficiency	returns on investments			
	profitability			

APPENDIX 2: DATA-

CASH FLOW N=66

interest expense	interest income	total inflow	total out flow	loan charges	apllication charges	member deposits	loans	operation and admin cost
396,010.00	445,199.00	7,981,091.00	6,520,209.00	4,539,781.00	45,391.00	6,826,518.00	5,552,671.00	156,254.00
1,345,632.00	1,599,720.00	13,699,922.00	13,598,311.00	1,013,456.00	99,812.00	15,654,154.00	10,341,678.00	1,200,768.00
700,232.00	850,211.00	3,665,990.00	3,354,977.00	2,365,476.00	30,898.00	3,350,288.00	3,145,669.00	600,454.00
140,182,847.00	684,457,682.00	701,778,005.00	504,093,799.00	285,031,818.00	17,596,345.00	1,558,265,838.00	3,787,294,963.00	78,159,980.00
5,635,681.00	3,546,777.00	3,698,776.00	2,876,765.00	673,576.00	546,450.00	6,750,897.00	8,962,971.00	577,609.00
166,765,111.00	200,322,400.00	212,101,888.00	211,345,787.00	56,739,861.00	1,789,254.00	67,444,122.00	115,222,876.00	2,555,123.00
701,111.00	1,322,287.00	1,490,651.00	1,008,222.00	23,000.00	10,092.00	2,050,331.00	3,909,231.00	600,888.00
13,787,111.00	16,981,233.00	18,777,109.00	17,832,111.00	111,333.00	35,000.00	39,099,111.00	32,866,111.00	1,209,911.00
3,590,222.00	3,798,100.00	4,509,800.00	3,877,133.00	92,311.00	35,988.00	15,899,766.00	13,877,112.00	3,888,111.00
3,099,655.00	4,988,115.00	5,112,888.00	4,598,222.00	277,622.00	1,666,777.00	8,022,677.00	6,822,888.00	788,355.00
445,311.00	695,123.00	805,877.00	394,465.00	4,522.00	1,344.00	499,111.00	800,011.00	45,000.00
2,437,724.00	1,622,753.00	2,000,353.00	1,733,667.00	36,555.00	25,111.00	3,134,846.00	3,456,413.00	109,456.00
2,858,771.00	5,097,143.00	6,076,111.00	3,069,116.00	65,099.00	32,000.00	3,072,111.00	5,678,511.00	677,111.00
167,899.00	377,611.00	398,811.00	189,111.00	23,000.00	12,999.00	877,611.00	398,677.00	15,000.00
2,675,909.00	3,876,981.00	4,000,892.00	2,766,111.00	56,119.00	101,888.00	3,000,726.00	2,898,711.00	243,778.00
3,659,999.00	3,988,777.00	4,000,922.00	3,878,116.00	271,166.00	98,777.00	5,097,111.00	5,123,888.00	189,771.00
17,018,111.00	15,997,110.00	17,287,667.00	15,978,119.00	1,678,554.00	799,888.00	20,997,116.00	19,882,220.00	300,998.00
1,998,675.00	2,009,110.00	2,110,899.00	2,310,112.00	87,099.00	34,500.00	2,709,911.00	2,609,188.00	56,000.00
1,287,112.00	3,988,761.00	4,039,116.00	1,567,113.00	89,112.00	45,332.00	3,899,811.00	5,453,099.00	109,887.00
2,390,001.00	2,698,112.00	2,987,132.00	2,465,117.00	35,761.00	65,112.00	4,523,319.00	3,677,871.00	45,677.00
12,345,987.00	13,766,111.00	13,456,112.00	14,000,119.00	276,000.00	112,990.00	13,877,113.00	15,982,441.00	1,776,112.00
1,331,222.00	1,443,321.00	1,544,221.00	1,008,892.00	13,324.00	23,412.00	1,576,122.00	1,321,441.00	39,880.00
356,220.00	432,299.00	7,681,091.00	4,720,209.00	4,839,781.00	55,391.00	5,726,518.00	3,992,671.00	156,254.00
1,145,632.00	1,278,720.00	10,665,112.00	9,998,311.00	1,013,456.00	99,812.00	13,354,154.00	8,311,678.00	1,200,768.00
600,232.00	700,211.00	3,165,990.00	3,000,977.00	2,365,476.00	30,558.00	2,900,288.00	2,745,669.00	600,454.00
138,182,847.00	644,457,682.00	681,778,005.00	4,092,199.00	285,031,818.00	1,596,345.00	1,006,265,838.00	3,557,294,963.00	78,159,980.00

5,635,681.00	3,016,777.00	3,111,776.00	2,746,765.00	673,576.00	546,450.00	6,660,897.00	8,862,971.00	577,609.00
146,765,111.00	165,322,400.00	190,101,888.00	181,345,787.00	56,739,861.00	1,789,254.00	60,444,122.00	101,922,876.00	2,555,123.00
676,111.00	1,001,287.00	1,090,651.00	960,222.00	23,000.00	10,092.00	1,890,331.00	3,009,231.00	600,888.00
12,755,111.00	14,781,233.00	14,997,109.00	15,432,111.00	111,333.00	35,000.00	32,099,111.00	25,866,111.00	1,209,911.00
3,444,222.00	3,798,100.00	4,119,800.00	3,655,133.00	92,311.00	35,988.00	15,000,766.00	13,200,112.00	3,888,111.00
2,899,655.00	4,688,115.00	4,802,888.00	3,898,222.00	277,622.00	1,666,777.00	7,722,677.00	5,922,888.00	788,355.00
453,311.00	555,123.00	695,877.00	324,465.00	4,522.00	1,344.00	400,111.00	734,415.00	45,000.00
2,112,724.00	1,322,753.00	1,890,353.00	1,653,667.00	36,555.00	25,111.00	3,004,846.00	3,346,413.00	109,456.00
2,658,771.00	4,677,143.00	5,456,111.00	2,669,116.00	65,099.00	32,000.00	8,872,111.00	4,478,511.00	677,111.00
144,899.00	357,611.00	368,811.00	177,111.00	23,000.00	12,999.00	767,611.00	398,677.00	15,000.00
2,675,909.00	3,876,981.00	4,000,892.00	2,766,111.00	56,119.00	101,888.00	3,000,726.00	2,898,711.00	243,778.00
3,659,999.00	3,778,777.00	3,800,922.00	3,778,116.00	271,166.00	98,777.00	5,197,111.00	5,623,888.00	189,771.00
16,988,111.00	14,566,110.00	15,811,667.00	15,378,119.00	1,678,554.00	799,888.00	20,111,116.00	20,882,220.00	300,998.00
1,888,675.00	1,999,110.00	2,000,899.00	1,990,112.00	87,099.00	34,500.00	1,809,911.00	2,409,188.00	56,000.00
1,287,112.00	3,628,761.00	3,919,116.00	1,367,113.00	89,112.00	45,332.00	3,799,811.00	5,553,099.00	109,887.00
2,390,001.00	2,698,112.00	2,667,132.00	2,225,117.00	35,761.00	65,112.00	4,493,319.00	3,337,871.00	45,677.00
12,345,987.00	12,366,111.00	12,756,112.00	13,500,119.00	276,000.00	112,990.00	13,877,113.00	15,982,441.00	1,776,112.00
1,221,222.00	1,343,321.00	1,444,221.00	998,892.00	13,324.00	23,412.00	1,426,122.00	1,111,441.00	39,880.00
356,010.00	435,199.00	7,881,091.00	4,520,209.00	4,539,781.00	45,391.00	6,726,518.00	3,452,671.00	156,254.00
1,245,632.00	1,578,720.00	13,665,112.00	12,998,311.00	1,013,456.00	99,812.00	13,354,154.00	8,341,678.00	1,200,768.00
600,232.00	700,211.00	3,465,990.00	3,100,977.00	2,365,476.00	30,898.00	3,000,288.00	2,845,669.00	600,454.00
138,182,847.00	644,457,682.00	601,778,005.00	424,093,799.00	285,031,818.00	17,596,345.00	1,008,265,838.00	3,637,294,963.00	78,159,980.00
5,635,681.00	3,546,777.00	3,698,776.00	2,876,765.00	673,576.00	546,450.00	6,750,897.00	8,962,971.00	577,609.00
146,765,111.00	186,322,400.00	200,101,888.00	201,345,787.00	56,739,861.00	1,789,254.00	66,444,122.00	109,222,876.00	2,555,123.00
676,111.00	1,122,287.00	1,390,651.00	988,222.00	23,000.00	10,092.00	2,000,331.00	3,509,231.00	600,888.00
12,787,111.00	15,981,233.00	14,777,109.00	16,232,111.00	111,333.00	35,000.00	35,099,111.00	30,866,111.00	1,209,911.00
3,590,222.00	3,798,100.00	4,509,800.00	3,877,133.00	92,311.00	35,988.00	15,899,766.00	13,877,112.00	3,888,111.00
2,899,655.00	4,888,115.00	5,002,888.00	3,998,222.00	277,622.00	1,666,777.00	7,822,677.00	6,222,888.00	788,355.00
453,311.00	655,123.00	765,877.00	354,465.00	4,522.00	1,344.00	451,111.00	678,555.00	45,000.00
2,337,724.00	1,422,753.00	2,000,353.00	1,733,667.00	36,555.00	25,111.00	3,134,846.00	3,456,413.00	109,456.00
2,658,771.00	4,897,143.00	5,876,111.00	2,769,116.00	65,099.00	32,000.00	9,872,111.00	4,678,511.00	677,111.00
167,899.00	377,611.00	398,811.00	189,111.00	23,000.00	12,999.00	877,611.00	398,677.00	15,000.00
2,675,909.00	3,876,981.00	4,000,892.00	2,766,111.00	56,119.00	101,888.00	3,000,726.00	2,898,711.00	243,778.00

3,659,999.00	3,988,777.00	4,000,922.00	3,878,116.00	271,166.00	98,777.00	5,097,111.00	5,123,888.00	189,771.00
16,988,111.00	14,877,110.00	16,987,667.00	15,278,119.00	1,678,554.00	799,888.00	20,997,116.00	19,882,220.00	300,998.00
1,998,675.00	2,009,110.00	2,510,899.00	2,110,112.00	87,099.00	34,500.00	2,709,911.00	2,609,188.00	56,000.00
1,287,112.00	3,988,761.00	4,039,116.00	1,567,113.00	89,112.00	45,332.00	3,899,811.00	5,453,099.00	109,887.00
2,390,001.00	2,698,112.00	2,987,132.00	2,465,117.00	35,761.00	65,112.00	4,523,319.00	3,677,871.00	45,677.00
12,345,987.00	13,766,111.00	13,456,112.00	14,000,119.00	276,000.00	112,990.00	13,877,113.00	15,982,441.00	1,776,112.00
1,331,222.00	1,443,321.00	1,544,221.00	1,008,892.00	13,324.00	23,412.00	1,576,122.00	1,321,441.00	39,880.00

ACCOUNTING PRACTICES

accounting practice uses	external auditing	internal auditing	petty cash systems	annual accounting
1.00	1.00	1.00	1.00	135,247.00
1.00	1.00	1.00	1.00	300,453.00
1.00	2.00	1.00	1.00	200,767.00
1.00	1.00	1.00	1.00	1,592,260.00
2.00	2.00	1.00	1.00	300,988.00
1.00	2.00	1.00	1.00	1,300,000.00
2.00	2.00	2.00	1.00	32,500.00
1.00	1.00	1.00	1.00	322,999.00
1.00	2.00	1.00	1.00	31,144.00
1.00	2.00	1.00	1.00	25,543.00
2.00	2.00	2.00	1.00	1,266.00
1.00	2.00	1.00	1.00	54,111.00
1.00	1.00	1.00	1.00	679,111.00
2.00	2.00	2.00	2.00	1,599.00
1.00	2.00	1.00	1.00	45,199.00
1.00	2.00	1.00	1.00	48,002.00
1.00	1.00	1.00	1.00	198,777.00
1.00	2.00	1.00	1.00	65,000.00
1.00	2.00	1.00	1.00	78,990.00
1.00	1.00	2.00	1.00	34,551.00
1.00	1.00	1.00	1.00	145,112.00
1.00	2.00	1.00	1.00	34,009.00
1.00	1.00	1.00	1.00	135,247.00
1.00	1.00	1.00	1.00	300,453.00
1.00	2.00	1.00	1.00	200,767.00
1.00	1.00	1.00	1.00	1,592,260.00
2.00	2.00	1.00	1.00	300,988.00
1.00	2.00	1.00	1.00	1,300,000.00
2.00	2.00	2.00	1.00	32,500.00
1.00	1.00	1.00	1.00	322,999.00
1.00	2.00	1.00	1.00	31,144.00

1.00	2.00	1.00	1.00	25,543.00
2.00	2.00	2.00	1.00	1,266.00
1.00	2.00	1.00	1.00	54,111.00
1.00	1.00	1.00	1.00	679,111.00
2.00	2.00	2.00	2.00	1,599.00
1.00	2.00	1.00	1.00	45,199.00
1.00	2.00	1.00	1.00	48,002.00
1.00	1.00	1.00	1.00	198,777.00
1.00	2.00	1.00	1.00	65,000.00
1.00	2.00	1.00	1.00	78,990.00
1.00	1.00	2.00	1.00	34,551.00
1.00	1.00	1.00	1.00	145,112.00
1.00	2.00	1.00	1.00	34,009.00
1.00	1.00	1.00	1.00	135,247.00
1.00	1.00	1.00	1.00	300,453.00
1.00	2.00	1.00	1.00	200,767.00
1.00	1.00	1.00	1.00	1,592,260.00
2.00	2.00	1.00	1.00	300,988.00
1.00	2.00	1.00	1.00	1,300,000.00
2.00	2.00	2.00	1.00	32,500.00
1.00	1.00	1.00	1.00	322,999.00
1.00	2.00	1.00	1.00	31,144.00
1.00	2.00	1.00	1.00	25,543.00
2.00	2.00	2.00	1.00	1,266.00
1.00	2.00	1.00	1.00	54,111.00
1.00	1.00	1.00	1.00	679,111.00
2.00	2.00	2.00	2.00	1,599.00
1.00	2.00	1.00	1.00	45,199.00
1.00	2.00	1.00	1.00	48,002.00
1.00	1.00	1.00	1.00	198,777.00
1.00	2.00	1.00	1.00	65,000.00
1.00	2.00	1.00	1.00	78,990.00
1.00	1.00	2.00	1.00	34,551.00
1.00	1.00	1.00	1.00	145,112.00
`	2.00	1.00	1.00	34,009.00

MEMBERSHIP CHARACTERISTICS

N=66

Number of members	monthly savings	members income	monthly borrowing	distribution of members
125.00	5,600.00	35,890.00	22,300.00	1.00
175.00	15,000.00	67,000.00	35,000.00	2.00
75.00	22,787.00	35,898.00	25,434.00	2.00
225.00	145,624.00	23,255.00	453,721.00	2.00
75.00	13,655.00	35,887.00	56,589.00	2.00
175.00	34,222.00	22,333.00	122,000.00	1.00
125.00	25,000.00	30,000.00	450,000.00	3.00
175.00	15,000.00	26,899.00	55,123.00	2.00
75.00	24,555.00	25,444.00	35,888.00	2.00
125.00	26,543.00	15,466.00	25,000.00	2.00
125.00	12,332.00	34,222.00	21,666.00	1.00
75.00	35,111.00	43,111.00	39,888.00	2.00
175.00	34,111.00	18,999.00	15,000.00	2.00
25.00	10,099.00	26,132.00	18,345.00	1.00
75.00	31,455.00	45,111.00	31,331.00	2.00
125.00	28,999.00	29,886.00	24,341.00	2.00
175.00	16,550.00	35,444.00	29,888.00	2.00
75.00	25,444.00	26,555.00	30,992.00	2.00
125.00	29,887.00	56,111.00	45,112.00	2.00
75.00	45,112.00	35,441.00	46,551.00	2.00
125.00	34,551.00	35,112.00	67,112.00	1.00
75.00	32,114.00	34,115.00	23,111.00	2.00
125.00	5,600.00	35,890.00	22,300.00	1.00
175.00	15,000.00	67,000.00	35,000.00	2.00
75.00	22,787.00	35,898.00	25,434.00	2.00
225.00	145,624.00	23,255.00	453,721.00	2.00
75.00	13,655.00	35,887.00	56,589.00	2.00
175.00	34,222.00	22,333.00	122,000.00	1.00

125.00	25,000.00	30,000.00	450,000.00	3.00
175.00	15,000.00	26,899.00	55,123.00	2.00
75.00	24,555.00	25,444.00	35,888.00	2.00
125.00	26,543.00	15,466.00	25,000.00	2.00
125.00	12,332.00	34,222.00	21,666.00	1.00
75.00	35,111.00	43,111.00	39,888.00	2.00
175.00	34,111.00	18,999.00	15,000.00	2.00
25.00	10,099.00	26,132.00	18,345.00	1.00
75.00	31,455.00	45,111.00	31,331.00	2.00
125.00	28,999.00	29,886.00	24,341.00	2.00
175.00	16,550.00	35,444.00	29,888.00	2.00
75.00	25,444.00	26,555.00	30,992.00	2.00
125.00	29,887.00	56,111.00	45,112.00	2.00
75.00	45,112.00	35,441.00	46,551.00	2.00
125.00	34,551.00	35,112.00	67,112.00	1.00
75.00	32,114.00	34,115.00	23,111.00	2.00
125.00	5,600.00	35,890.00	22,300.00	1.00
175.00	15,000.00	67,000.00	35,000.00	2.00
75.00	22,787.00	35,898.00	25,434.00	2.00
225.00	145,624.00	23,255.00	453,721.00	2.00
75.00	13,655.00	35,887.00	56,589.00	2.00
175.00	34,222.00	22,333.00	122,000.00	1.00
125.00	25,000.00	30,000.00	450,000.00	3.00
175.00	15,000.00	26,899.00	55,123.00	2.00
75.00	24,555.00	25,444.00	35,888.00	2.00
125.00	26,543.00	15,466.00	25,000.00	2.00
125.00	12,332.00	34,222.00	21,666.00	1.00
75.00	35,111.00	43,111.00	39,888.00	2.00
175.00	34,111.00	18,999.00	15,000.00	2.00
25.00	10,099.00	26,132.00	18,345.00	1.00
75.00	31,455.00	45,111.00	31,331.00	2.00
125.00	28,999.00	29,886.00	24,341.00	2.00
175.00	16,550.00	35,444.00	29,888.00	2.00
75.00	25,444.00	26,555.00	30,992.00	2.00
125.00	29,887.00	56,111.00	45,112.00	2.00

75.00	45,112.00	35,441.00	46,551.00	2.00
125.00	34,551.00	35,112.00	67,112.00	1.00
75.00	32,114.00	34,115.00	23,111.00	2.00

EFFICIENCY

ROI	Profitability
0.21	0.26
0.01	0.01
0.09	0.10
0.13	0.05
0.12	0.09
0.01	0.01
0.24	0.12
0.02	0.03
0.04	0.05
0.06	0.08
0.82	0.51
0.09	0.08
0.98	0.53
0.51	0.53
0.41	0.43
0.02	0.02
0.06	0.07
-0.07	-0.08
0.63	0.45
0.12	0.14
-0.04	-0.03
0.34	0.41
0.52	0.74
0.05	0.08
0.06	0.06

0.67	0.19
0.05	0.04
0.14	0.09
0.07	0.04
-0.01	-0.01
0.03	0.04
0.12	0.15
0.93	0.51
0.08	0.07
0.31	0.62
0.25	0.48
0.41	0.43
0.00	0.00
0.02	0.02
0.01	0.00
0.67	0.46
0.10	0.13
-0.05	-0.05
0.31	0.40
0.50	0.97
0.05	0.08
0.12	0.13
0.18	0.05
0.12	0.09
-0.02	-0.01
0.20	0.11
-0.04	-0.05
0.04	0.05
0.13	0.16
0.91	0.61
0.09	0.08
0.31	0.66
0.09	0.53
0.08	0.43
0.02	0.02

0.08	0.09
0.15	0.15
0.63	0.45
0.12	0.14
-0.04	-0.03
0.34	0.41