

**LIQUIDITY RISK MITIGATION MEASURES AND FINANCIAL
PERFORMANCE OF SAVINGS AND CREDIT CO-OPERATIVE
SOCIETIES (SACCOs) IN KISUMU COUNTY- KENYA**

BY

PERESIA AKOTH OMINO

**RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILLMENT OF
THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF
MASTER OF BUSINESS ADMINISTRATION (MBA),
SCHOOL OF BUSINESS UNIVERSITY OF NAIROBI**

OCTOBER 2014

DECLARATION

This research project report is my original work and has not been presented for an award in any university.

Signature..... Date

Student: Peresia Akoth Omino

REG. NO D61/77078/2012

This Research study has been submitted for examination with my approval as student supervisor

Signature..... Date.....

Supervisor: Mr. Luther Otieno

Lecturer, Department of Finance and Accounting,
School of Business University of Nairobi

ACKNOWLEDGEMENT

This research work would not have been fully accomplished without the valued input from different groups and individuals. While I may not exhaustively mention everybody whose assistance enabled me to finish this proposal, I am humbled by the value-adding endeavors from my supervisors, family, friends and course colleagues.

I give special thanks to my supervisors Mr. Luther Otieno for his selfless and relentless assistance and support in supervision, experience and initiative which guided me throughout the project phases. Mr. Otieno strongly ignited an irreversible skill and strong commitment towards refining the work in befitting its defined contextual and conceptual scope.

I am also indebted to my course lecturers at Nairobi University for their invaluable course-work input that formed basis for this work.

Further, I acknowledge the University for having accorded me opportunity to engage in this particular research scope. The same goes to my colleagues and friends for the great assistance they accorded me in one way or another.

I appreciate the Kisumu County SACCOs for giving me permission to collect working data from their firms. The same goes to all those who completed the questionnaires sent to them in time to guide this study.

It will be impossible to end without a mention of my relatives especially my husband Mr. Amos Owen Akomo Nyadie and our children Tevin, Ian and Lyonel for their encouragement throughout my studies. To them I am highly indebted.

Finally, thanks to the Almighty God for granting me sufficient grace in my academic life.

DEDICATION

This scholarly work is happily dedicated to my parents Mr. and Mrs.Omino for they ignited the secret of success in my life. Thank you Mum and Dad.

ABSTRACT

SACCOs just like other financial institutions are obliged to generate income which is adequate to cover all of their operational costs, inherent risks, and to enhance institutional capital. Given the current ever-dynamic business environment, they are exposed to liquidity risk that affects their financial performance. The objectives of the study were to analyze the liquidity risk mitigation approaches effects on financial performance of SACCOs and to establish the quantitative relationship between liquidity risk mitigation on liquidity levels and financial performance. The targeted population for the study constituted all SACCOs in Kisumu County. Inclusion in the population was determined by time of registration and operational activeness that were in existence from the year 2009 and formally registered with KUSCCO. In this bracket, there were 62 population units spread across the seven sub-counties in Kisumu County. Data was predominantly collected from prepared and availed financial statements, but supplemented by questionnaire feedbacks. Available data was analyzed by relational and descriptive statistics, and results presented in tables, models and graphs/charts.

The study found that liquidity risk mitigation approaches adopted by different SACCOs had a significant effect on their financial performances. It was established that SACCOs adopted a more cautious position in their current liabilities which ensured that operating cash flows were sufficient to cover the short terms obligations entered by the firms. Also, the study found that debtor collection periods were longer than optimality despite the fact that they were strategically intended to sweeten voluntary membership, the SACCOs were either unjustifiably constraining their creditor payment periods or were conditioned to do so, but oblivious of the operational dangers.

In conclusion, the study recommended a consecrated effort towards deploying efficient systems that seek to strengthen liquidity risk control fundamentals. The SACCOs needed professional guidance towards adopting policies on asset and liability management so that precautionary measures are undertaken on appropriate amounts of current liabilities to accept. Also SACCO management needed to be sensitized on payable and receivable periods so that they established the most yielding mark. Ideally, they needed relook at their strategies on shortening debt collection (to avoid default risks) while lengthening credit payment period (to allow payables transformation into a business financing source). Thus, self-optimization of the cash conversion cycle.

TABLE OF CONTENTS

DECLARATION.....	ii
ACKNOWLEDGEMENT.....	iii
DEDICATION.....	iv
ABSTRACT.....	v
List Of Tables.....	ix
List Of Figures.....	x
ACRONYMES AND ABBREVIATIONS.....	xi
CHAPTER ONE: INTRODUCTION.....	1
1.1 Background of the Study.....	1
1.1.1 Liquidity Risk Mitigation.....	3
1.1.2 Financial Performance.....	5
1.1.3 Effect of Liquidity Risk Mitigation on Financial Performance.....	6
1.1.4 Savings and Credit Co-operative Societies.....	8
1.2 Research Problem.....	9
1.3 Research Objective.....	11
1.4 Value of the Study.....	11
CHAPTER TWO: LITERATURE REVIEW.....	13
2.1 Introduction.....	13
2.2 Theories Underpinning the research Study.....	13
2.3 Liquidity Risk Mitigation Approaches.....	15
2.4 Liquidity Risk Mitigation and Financial Performance.....	18
2.5 Empirical Literature.....	19
2.6 Chapter Summary.....	20

CHAPTER THREE: RESEARCH METHODOLOGY	22
3.1 Introduction	22
3.2 Research design.....	22
3.3 Population.....	22
3.4 Data collection.....	23
3.5 Data Analysis	23
CHAPTER FOUR: DATA ANALYSIS.....	26
4.1 Introduction	26
4.2 Demographic Data Analysis.....	26
4.3 Financial Performance of Saccos	30
4.4 Operating Cash Flows among Saccos	32
4.5 Debtors Collection Periods among Saccos.....	34
4.6 Creditors Payment Period among Saccos.....	36
4.7 Cash Conversion Cycle among Saccos	38
4.8 Regression Modeling.....	41
CHAPTER FIVE: SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS.....	45
5.1 Introduction	45
5.2 Summary of Findings	45
5.3 Study Conclusions.....	48
5.4 Limitations of the Study	49
5.5 Suggestions for Further Studies	50
REFERENCES.....	52
APPENDIX I: STUDY VARIABLES	i
APPENDIX II: SECONDARY DATA COLLECTION CHECKLIST.....	ii

APPENDIX III: QUESTIONNAIRE iii
APPENDIX: IV –LIST OF ACTIVE SACCOS IN KISUMU COUNTY vi

List of Tables

Table 4.1: Target Clientele * Type of SACCO Cross-tabulation.....	27
Table 4.2: Registered and Active Number of Members (Binned).....	28
Table 4.3: Correlations between Membership and Asset Base.....	29
Table 4.4: Return on Assets (Binned).....	30
Table 4.5: Operating Cash Flows (Ksh. '000,000') (Binned).....	33
Table 4.6: Operating Cash Flow Descriptive Statistics.....	34
Table 4.7: Debtors Collection Period (Days) (Binned).....	35
Table 4.8: DCP Descriptive Statistics.....	36
Table 4.9: Credit Payment Period (Binned).....	37
Table 4.10: Descriptive Statistics.....	38
Table 4.11: Cash Conversion Cycle (Binned).....	39
Table 4.12: CCC Descriptive Statistics.....	40
Table 4.13: Regression Model Summary.....	41
Table 4.14: Regression ANOVA.....	42
Table 4.15: Regression Coefficients.....	43

List Of Figures

Fig. 4.1: Histogram showing Distribution of ROA among SACCOs.....	32
---	----

ACRONONYMES AND ABBREVIATIONS

ACCOSSCA:	Africa Confederation of Cooperative Society Savings and Credit Association
CCC:	The cash conversion cycle
FSD:	Financial Sector Deepening
FOSA:	Front Office Service Activity
KUSCCO:	Kenya Union of Savings and Credit Cooperative Societies
NIM:	Net Interest Margin
NON-FOSA:	Non Front office service Activity
ROA:	Return on Assets
SACCOs:	Savings and Credit Co-operative Societies
SASRA:	Sacco Societies Regulatory Authority
SPSS:	Statistical Package for Social Sciences
WCM:	Working Capital Management
WOCCU:	World Council of Credit Unions

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

Liquidity concerns in the financial sector have been a source of worry to the management of firms. According to Puneet and Parmil (2012), the inability of a financial entity to meet its financial obligation/liability is a premise on which a crisis may result. Liquidity risk is the potential financial loss arising from inability either to meet obligations or to fund increases in assets as they fall due without incurring unacceptable costs or losses (IFSB, 2005). The risk arises from maturity mismatches where liabilities have a shorter tenor than assets. A sudden rise in the borrowers' demands above the expected level can lead to shortages of cash or liquid marketable assets (Asongu, 2010). In a financial institution, liquidity crisis could lead to insolvency and unanticipated runs. Consequently, minimizing the liquidity risk is one of the most important aspects in asset and liability management. In essence, the objective of liquidity risk management is to mitigate the impact of the maturity mismatch on the firm's statement of financial position. This requires the understanding of how cash flows are moving within an organization, identifying the existence and location of cash flow strains by measuring emerging liquidity pressures and taking corrective actions to prevent these pressures from growing (Taylor, 2001).

Puneet and Parmil (2012), advocate for application of efficiency theory in liquidity risk management among the financial institutions. According to this theory, financial institutions require planning and controlling of current assets/liabilities in such a manner that eliminates the risk of inability to meet due short-term obligations, on one hand, and

avoids excessive investment in these assets, on the other. Moreover, there is the commercial loan theory which contends that liquidity would be assured as long as the assets are held in short term loan that would be liquidated in the normal course of business. A critical underlying assumption of the theory hold that short-term commercial loans are desirable because they would be repaid with income resulting from the commercial transaction financed by the loan (Casu et al., 2006). The shiftability theory holds that lenders could most effectively protect themselves against massive deposit withdrawals by holding, as a form of liquidity reserve, credit instruments for which there exists a ready secondary market. Finally, anticipated income theory of liquidity holds the view that liquidity can be estimated and met if scheduled payments are based on the income of the borrowers. The theory also holds that liquidity can be influenced by the maturity pattern of the loans and investment portfolios, short-term business and customer installment loans which would have more liquidity than those secured by real estate (Ngwu, 2006).

Managing liquidity risk is one of the top priorities of a financial institution's assets and liabilities management. In the context of SACCOs' liquidity or the ability to fund increases in assets and meet obligations as they come due, it is critical to the ongoing viability of the SACCOs. Since there is a close association between liquidity and solvency, sound liquidity management reduces the probability of SACCOs becoming insolvent, thus reducing the possibilities of bankruptcies and disruptive runs. Ultimately, prudent liquidity management as part of the overall risk management ensures a healthy and stable SACCO sub-sector (Ng'ombe & Mikwamba, 2004). In addition, Bhunia, Khan and Mukhuti (2012) emphasize the significance of SACCO liquidity management in

achieving both short and long term objectives of the financial entity. Ideally, therefore, it is imperative that SACCOs retain sound ability to sustainable liquidity controls to provide basis for insulating them against uncertainties and market dynamics while maximizing their owners' worth.

1.1.1 Liquidity Risk Mitigation

The liquidity of an asset means how quickly the assets can be transformed into cash. In corporate context, liquidity means ability of a company to meet its current liabilities when they fall due (Puneet & Parmil, 2012). Tirole (2009) distinguishes two types of liquidity risk: asset side of balance and liability side of balance liquidity risk. Liability side liquidity risk arises when financial institutions liability holders seek cash in their financial claims immediately. If financial institutions have less cash than their liability holders wish to withdraw, it has to liquidate their assets to cover the difference (Saunders, 2003). Asset side liquidity risk arises when a given security or asset cannot be traded quickly enough or at wanted price in the market to prevent a loss or make the required profit. Most of the assets can be turned into cash eventually, but if some assets have to be liquidated immediately, there is a chance that this might be done either at very high cost or at much lower price than financial institution would be able to get in some near future (Allen & Carletti, 2008). Efficiency in liquidity mitigation involves planning and controlling current assets/liabilities in such a manner that eliminates the risk of the inability to meet due short-term obligations, on one hand, and avoids excessive investment in these assets, on the other (Tirole, 2009).

According to Jenkinson (2008), liquidity risk mitigation can influence both the financial institution's capital and earnings. If the risk is over valued, the firm cannot invest its funds in more profitable illiquid assets, so earnings will suffer. If risk is under-evaluated, the firm might have to handle fire-sales and not surely to reasonable price, so it can damage the capital. This is why it becomes the top priority for management to ensure the availability of sufficient funds to meet future demands of providers and borrowers, at reasonable costs. Moreover, the institution's position towards liquidity risk affects not just its performance but also the firm's reputation (Jenkinson, 2008). If the financial institution will be late by providing funds for depositors, it will look not trustful and unsafe; it may lose confidence and at the same time clients (Arif & Nauman, 2012). Liquidity risk mitigation has become a serious concern for the financial sector because of high competition for consumer deposits and new wide assortment of funding products in wholesale and capital markets with technological advancements. The funding and risk management structure has completely been changed (Akhtar, 2007).

An institution having good asset quality, strong earnings and sufficient capital may fail if it is not maintaining adequate liquidity. That is why management of liquidity risk has become one of major success factors. In order to capture the benefits that well organized financial system can bring, institutions have to be able to control their stability and manage risks (Crowe, 2009). In the SACCO subsector, liquidity risk management is an essential component of the overall risk management framework (Majid, 2003). As financial institutions, SACCOs should manage the demand and supply of liquidity in an appropriate manner in order to safely run their business, maintain good relations with the stakeholders and avoid liquidity problem. Well-managed SACCOs should have a well-

defined mechanism for the identification, measurement, monitoring and mitigation of liquidity risk. A well-established system helps the SACCOs in timely recognition of the sources of liquidity risk to avoid losses in both cases – undervalued liquidity risk and overvalued liquidity risk (Ismal, 2010).

1.1.2 Financial Performance

Financial services sector plays a critical role in economic development through provision of better intermediation and investment options between savings and investments. Specifically, services provided by SACCOs are/will play a crucial role in improving accessibility of financial services. This, however, is realizable only when the SACCOs' financial stability is guaranteed. According to Kinuthia (2007), SACCOs need to generate income which is adequate to cover all of their operational costs, inherent risks, and to enhance institutional capital, dividends and rebates. In this regard, financial practice should be based on sound financial stewardship, solid capital structure, and prudent funds allocation strategy. Schenk (2007) argues for the SACCOs' financial stability on the basis of their comparatively lower fees than other types of commercial banks, which not only helps to increase access of the poor to credit, but also reduces the cost of remittance transfers.

There is empirical evidence that over time SACCOs' financial performance is on the gradual rise. In 2008, for instance, savings in SACCOs across Sub-Sahara Africa grew by an average of 31.9 per cent, which is comparable to average saving growth rates for previous years. Loans grew at an average of 12 per cent, which was lower than growth rates of previous years (World Council of Credit Unions [WOCCU], 2009). Further, in

the year 2007, loans issued by SACCOs grew by 35.3 per cent while in 2006 loans grew by 21.2 per cent. Growth in new membership has been steady. This also suggests that SACCOs across Africa may be exercising caution in responding to the loan requests of members (WOCCU, 2009).

SACCOs in Kenya, however, faced stiff competition from other players in the financial services sector like commercial banks, micro-finance institutions, shylocks, pyramid schemes and investment groups. Out of the country's approximated population of 39 million, a significant 24.6 million people (63%) participated either directly or indirectly in SACCO enterprises. However, despite the significant government initiative to support cooperative movements through legislation, a significant 3457 (51%) of the registered SACCOs by late 2013 were not operational (Kiaritha et al., 2014). This high failure rate of SACCOs contributed in frustrating millennium development goals and vision 2030 objectives of increasing financial inclusion, hence justification for this study.

1.1.3 Effect of Liquidity Risk Mitigation on Financial Performance

There is a close association between liquidity and solvency. Sound liquidity mitigation reduces the probability of financial institutions becoming insolvent (Assaf, 2003). Chandra (2001) explains that normally a high liquidity is seen as a sign of financial strength. According to Assaf (2003), the greater the amount of funds invested in current assets, the lower the profitability, and at the same time the less risky is the working capital strategy. In this situation, the returns are lower in the case of a greater financial slack, in comparison to a less liquid working capital structure. Conversely, a smaller amount of net working capital, while sacrificing the safety margin of the company, by

raising its insolvency's risk, positively contributes to the achievement of larger return rates, since it restricts the volume of funds tied up in assets of lower profitability. This risk-return behaves in a way that no change in liquidity occurs without the consequence of an opposite move in profitability (Assaf, 2003).

Walt (2009) investigated that profitability is more important because profit can usually be turned into a liquid asset, and that liquidity is also important but does not mean that the company is profitable. Don (2009), while acknowledging the relative importance of both, submits that liquidity is more important because it has to do with the immediate survival of the company. Dilemma in liquidity management is to achieve desired tradeoff between liquidity and profitability. Eljelly (2004) evaluated the relation between profitability and liquidity, as measured by current ratio and cash gap (cash conversion cycle) on a sample of joint stock companies in Saudi Arabia. The study found significant negative relation between the firm's profitability and its liquidity level. At the industry level, however, the study found that the cash conversion cycle or the cash gap is of more importance as a measure of liquidity than current ratio that affects profitability (Eljelly, 2004).

Nocco and Stulz (2006) stress the importance of good risks management practices to maximize firms' value. Smith (2005) asserts that prudent risk management practices reduce the volatility in financial performance, namely operating income, earnings, firm's market value, share return and return on equity. In addition, Schroeck (2002) proposes that ensuring best practices through prudent risk management result in increased earnings. Angbazo (1997) offers another dimension of analyzing the relationship between risk management and financial performance by testing the influence of risk factors in

determining banks' profitability. The study by Saunders and Schumacher (2000) provides further support to the importance of controlling liquidity risks to financial performance. The study finds that liquidity management has a positive significant impact on the financial sector profitability.

1.1.4 Savings and Credit Co-operative Societies

Savings and Credit Co-operative Societies (SACCOs) have solid bases of small saving accounts constituting a stable and relatively low-cost source of funding and low administrative costs. They are, moreover, able to advance loans at interest rates lower than those charged by other financial providers (Branch, 2005). Further, SACCOs have the ability and opportunity to reach clients in areas that are unattractive to major financial intermediaries like commercial banks. Effectively, therefore, this has made SACCOs more attractive to customers, thus deeply entrenching themselves in the financial sectors of many countries (Munyiri, 2006). The core objective of SACCOs is to ensure member empowerment through mobilization of savings and disbursement of credit (Ofei, 2001).

According to Ng'ombe and Mikwamba (2004), the first SACCO Society in Africa was introduced in Ghana in 1959, which was intended to assist villagers improve their economic conditions. Later, in the 1960s, most of the nations in Africa started appreciating SACCOs with a major influx into SACCO community experienced in the 1970s (Munyiri, 2006). The formation of SACCO in Africa grew tremendously to the extent that African countries formed a continental association of SACCOs, Africa Confederation of Cooperative Society Savings and Credit Association (ACCOSSCA), in

1965 with the principal objective of promoting SACCO principles, insurance, and member education (Ng'ombe and Mikwamba, 2004).

In Kenya, after independence, the Government recognized co-operatives as suitable vehicles with appropriate framework to achieve citizen aspirations and wider participation in economic development. Accordingly, steps were taken by the Government which saw the rapid growth and expansion of the SACCOs movement in the country (Gardeklint, 2009). By the year 2010, Kenya had over 5,000 registered SACCOs with a membership of about 7 million and mobilized savings of over Ksh.200 billion (Ndung'u, 2010). The largely growing financial subsector is regulated by the SACCO Societies Act of 2008, enacted to provide for the licensing, supervision, and promotion of savings and credit co-operatives through the instrument of SACCO Societies Regulatory Authority (SASRA) (Wanyama, 2012). Among other Counties in Kenya, Kisumu stands out as one of the SACCO high-concentration areas with a registered population of 183 spread widely both in informal and formal sectors (SASRA, 2014). Notably, however, the number of active SACCOs, defined by formal affiliation to Kenya Union of Savings and Credit Cooperative Societies (KUSCCO), slims down to 62. This active bracket caters for an aggregate membership of 158,720 (KUSCCO, 2014).

1.2 Research Problem

A financial institution needs to hold liquid assets to meet the cash requirements of its customers. Inability to meet its customers' demands leaves the institution exposed to a run and more importantly a systemic lack of confidence (Moore, 2009). In Kenya, Vision 2030 strategy required, among others, financial services sector to play a critical role in

mobilizing savings and investments for development by providing better intermediation between savings and investments. The subsector was further expected to assist the mobilization of investment funds required to implement the projects of Vision 2030. SACCOs were among the financial services strategies to be implemented in improving the reach and access of financial services which were a reserve for a paltry 19% of Kenyans (Ndung'u, 2010). However, there were a number of notable challenges in promoting quality financial management in Kenyan SACCOs, thus cumulatively weakening their focal commitment.

Ademba (2010) postulated that SACCOs in Kenya were faced with such problems as poor governance and lack of members' confidence, among others, while Ndung'u (2010), found that the SACCOs were encompassed by mismanagement and poor investment decisions. Earlier, Thabo et al. (2003) noted that SACCO societies had problems generating wealth due to poor financial stewardship, under-capitalization of co-operative enterprises, high cost of funds, and delayed member payments. Munyiri (2006) said that such challenges would hinder the achievement of the said objectives and even lead to decline in growth of SACCOs' wealth. Further, Munyiri (2006) found that Kenya SACCOs were not able to grow their wealth sufficiently through accumulation of enough institutional capital to finance non-withdrawable capital funded assets, provide cushion to absorb losses and impairment of members' savings. The Kisumu County case of 66% SACCO inactivity further attested to myriad challenges the financial institutions faced.

The challenges aforementioned seemed to have impaired the SACCOs' ability to offer timely services such as credit advancement and processing of refunds to member. While

commercial banks processed their customers' loan applications within an average of three days, SACCOs stretched the time to a minimum of three months. This situation was worsened by the Financial Sector Deepening (FSD, 2013) finding that only a paltry 3.4% of Kenya SACCOs met the requirement of maintaining a minimum liquidity level of 10% of the savings deposits as provided for in rule 53 (3b) of the Cooperatives Societies Rules (2004), even when it was less than the 15% minimum recommended by the World Council of Credit Unions (WOCCU). By extension, therefore, there seemed to be a cause-effect relationship between SACCO's inherent risks and mitigation processes, and their performance. In Kisumu County, out of the 183 registered SACCOs only 62 of them showed operational stability based on records obtained from KUSCCO. To what extent then did liquidity risk mitigation approaches affect financial performance of SACCOs in Kisumu County?

1.3 Research Objective

The objectives of the study were to:

- (i) Determine the effect of liquidity risk approaches on SACCOs' financial performance.
- (ii) Establish the relationship between liquidity risk mitigation on liquidity levels and financial performance

1.4 Value of the Study

Results from the study were expected to be useful in theory-building relating to prudent investment and efficiency in the management of the members' worth. Through this, it

was expected that efficiency in financial practice of the SACCOs' equity would be improved, and thus lead to members' satisfaction and trust in the societies. As a consequence, SACCOs were expected to be on the right track in the achievement of their goals as stipulated in their official and policy documents.

Further, the findings were expected to be meaningful to policy-makers both in the concerned government agencies such as SASRA, Vision 2030 secretariat, and SACCOs, especially in strengthening policy considerations in the subsector. Such policy improvement would be handy in enhancing the guidelines on how to improve the performance and effectiveness of SACCOs in an effort to enhance their efficiency in risk mitigation for the benefit of the members and economic growth in general.

The study, moreover, was expected to be a springboard to efficiency in SACCO management through adoption of its recommendations. Further, the findings would empower managers on existing risk mitigation opportunities in quest of enriching the SACCOs' movement in Kenya or any other field related to risk mitigation. Close to this, the low-income groups with interests in the SACCOs would benefit from anticipated disseminations on risk preparedness and capital accumulation, serving the purpose of independent audit on SACCO performance and sustainability.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter reviews literature relating to the study's thematic areas. It has been organized in sub-sections which include the theoretical framework underlying the study; liquidity risks mitigation practices, effect of liquidity risk on financial performance and empirical studies.

2.2 Theories Underpinning the Research Study

Commercial Loan (Traditional) Theory and Liquidity simply states that liquidity would be assured as long as the assets were held in short term loan that would be liquidated in the normal course of business. Such financing of the movement would be termed inventory or working capital loans (Ngwu, 2006). A critical underlying assumption of the theory held that short-term commercial loans were desirable because they would be repaid with income resulting from the commercial transaction financed by the loan (Casu et al., 2006). However, the theory became obsolete both because of its conceptual flaws and its impracticality. The assumptions would certainly not hold during a general financial crisis even if credit portfolios did conform to theoretical standards, for in most commercial transactions the purchaser of goods sold by the original borrower had to depend to a significant extent on credit. Moreover, the practice of continually renewing short- term notes for the purpose of supporting long-term capital projects proved unacceptable (Casu et al., 2006).

The Shiftability Theory of Liquidity replaced the commercial loan theory and was supplemented by the doctrine of anticipated income theory. Formally developed by Harold G. Moulton in 1915, the shiftability theory held that lenders could most effectively protect themselves against massive deposit withdrawals by holding, as a form of liquidity reserve, credit instruments for which there existed a ready secondary market. Included in this liquidity reserve were commercial paper, prime bankers' acceptances and, most importantly as it turned out, Treasury Bills. Under normal conditions all these instruments meet the tests of marketability and because of their short terms to maturity, capital certainty is assured (Allen & Gale, 2004). A major defect in the shiftability theory, according to Casu et al. (2006), is that in times of general crisis the effectiveness of secondary reserve assets as a source of liquidity vanishes for lack of a market.

More so Anticipated Income Theory of Liquidity of commercial bank holds the view that liquidity can be estimated and met if scheduled payments are based on the income of the borrowers. It emphasizes on relating loan repayment to income rather than relying heavily on collaterals. It also holds that, liquidity can be influenced by the maturity pattern of the loans and investment portfolios, short-term business and customer installment loans which would have more liquidity than those secured by real estate (Ngwu, 2006). According to Crowe (2009), the doctrine of anticipated income embodies the ideas and equates intrinsic soundness of term loans with appropriate repayment schedules adapted to the anticipated income or cash flow of the borrower. As a result, the credit demands of business are well accommodated under this system of banking policy, and the use of loan commitments is freely pursued. Changing economic conditions, however, have placed extra demands on the banking system and probably resulted in a

new approach to balance sheet. Under this emerging state of affairs, credit commitment policies would come to play a more important part in the credit process (Crowe, 2009).

Credit Line theory of corporate liquidity management uses credit lines provided by financial institution to firms as a form of monitored liquidity insurance. Institutional monitoring and resulting credit line revocations help control illiquidity-seeking behavior by firms. Firms with high liquidity risk are likely to use cash rather than credit lines for liquidity risk management because the costs of monitored liquidity insurance increases with liquidity risk (Sufi, 2009). Tirole (2008) suggests the main difference between a credit line and standard debt is that a credit line allows the firm to access pre-committed debt capacity. This pre-commitment creates value for credit lines as a corporate liquidity management tool, in that they help insulate the corporation from negative shocks that could hinder access to capital markets. In particular, credit lines can be an effective and likely cheaper substitute for corporate cash holdings. Nevertheless, the results in Lins, Servaes and Tufano (2010) challenge the notion that credit lines have perfect commitment. Access to credit lines is often restricted precisely when the firm needs it most, that is, following negative profitability shocks that cause contractual covenant violations. In addition, institutions not only use credit lines as precautionary savings against negative profitability shocks, but also to help fund future growth opportunities.

2.3 Liquidity Risk Mitigation Approaches

Liquidity risk management is an essential component of the overall risk management framework of the financial services industry, concerning all financial institutions (Majid, 2003). Ideally, a well-managed financial institution should have a well-defined

mechanism for the identification, measurement, monitoring and mitigation of liquidity risk. In this study, a model by Pandy (2005) is adopted. The model measures an entity's liquidity risk mitigation by adopted efficiencies in cash conversion cycle, operating cash flow management, accounts payables, and accounts receivable management. The cash conversion cycle (CCC) is used as an overall measure of working capital management (WCM) as it shows the gap between expenditure for purchases and collection of sales (Padachi, 2006). Nobanee, Abdullatif and AlHajjar (2011) concluded that CCC is the most important aspect in WCM since it tells about the investment and credit decisions in the customer, inventory and suppliers, which show average number of days started from the date when the firm starts payments to its suppliers and the date when it begins to receive payments from its regulars. Deloof (2003) found a significant negative relationship between gross operating income and number of days of inventory, accounts receivable and accounts payable of Belgian firms. These results suggest to managers to create value for their shareholders by reducing the number of day accounts receivable and inventories to a reasonable minimum. Uyar (2009) examined the impact of CCC with firm size and performance for firms listed at Istanbul Stock. The Results showed that there is a considerable negative association between CCC and the firm performance. Gill, Biger and Mathur (2010) find significant association between the CCC and performance calculated through gross operating profit.

According to Torre (2007), treasury (cash) management is another set of techniques that act on the short-term liquidity of a company, and at the same time affect those factors and processes that translate immediately into cash, with the ultimate aim of increasing both the liquidity and profitability of the company. Cash in excess of what is required need to

be invested in short term securities pending when it is required. However, James and Van (2002) note that most businesses do not have the ability to determine the minimum cash level requirements. Businesses attempt to meet up with sales target and competition by adopting various business strategies to maintain good relationship with their customers. In the context of financial institutions and specifically the SACCO subsector, lending is one of strategies of rendering services to its clients, and as such management needs to have viable debt policies to enhance the collectability of the principal amounts and interests thereof to boost company's liquidity and to reduce the risk of bad debt. Receivable policy can be viewed as written guidelines that set the terms and conditions for recovering an entity's debtors (Eljelly, 2004). According to Amalendu and Sri (2011), the objective of managing accounts receivable is to collect receivable without losing sales from high-pressure collection techniques.

Account payables are the opposite of account receivables, instead of giving a credit, a firm receives. According to Leach and Melicher (2009), when a firm receives credit, it incurs an obligation to pay according to the terms given by the lender. Until the cash is paid, the obligation to pay is recorded in accounts payables. Deloof (2003) sees account payables as a short term loan, or in other words, a source of funding. Instead of a source of funding, account payables or in other words using the trade credit term of a supplier can also be used to assess product quality (Deloof, 2003). Sharma and Kumar (2011) have found a negative relation between account payables and profitability. The first reason for this could be that more profitable firms pay earlier than less profitable firms, which in turn would affect the profitability and not the other way round. An alternative reason is given by Deloof (2003), arguing that if a firm waits too long to pay their bills

they have to pay without a discount. By speeding up these payments a firm could receive this discount and which will increase the profitability.

2.4 Liquidity Risk Mitigation and Financial Performance

Minimizing the liquidity risk is one of the most important aspects of lenders' asset and liability management. In essence, the objective of liquidity risk management is to mitigate the impact of the maturity mismatch on the lenders' statement of financial position. This requires the understanding of how cash flows are moving within an organization, identifying the existence and location of cash flow strains by measuring emerging liquidity pressures, and taking corrective actions to prevent these pressures from growing (Schroeck, 2002).

Schroeck (2002) and Nocco and Stulz (2006) stress the importance of good risks management practices to maximize firms' value. Schroeck (2002) draws the link between good risk management practices with improved financial performances. In particular, the author proposes that prudent risk management practices reduce the volatility in the business entity's financial performance, namely operating income, earnings, firm's market value, share return and return on equity. In addition, Schroeck (2002) proposes that ensuring best practices through prudent risk management result in increased earnings.

Drzik (2005) reports that bank investment in risk management during 1990s helped reduces earnings and loss volatility during the 2001 recession. Pagach and Warr (2009) argue that the more leveraged the firms are, the more volatile are their earnings. Angbazo (1997) argues that default risk is a determinant of banks' net interest margin (NIM) and

the NIM of super regional banks and regional banks are sensitive to interest rate risk as well as default risk. Schroeck (2002) provides further support to the importance of controlling risks to financial performance.

2.5 Empirical Literature

Ahmed, Ahmed and Naqvi (2011), in a study on a sample of six Pakistani banks, show that there is no significant relationship between liquidity risk, profitability and size, while underlining a significant relationship between liquidity risk and leverage and the measure of bank tangibility. Giannotti, Gibilaro and Mattarocci (2010), in a study on a sample of 675 Italian banks, also find that larger banks have lower liquidity exposure. The authors highlight that there is no significant difference in terms of liquidity risk exposure between banks specializing in real estate lending and other banks.

Nguyen, Skully and Perera (2012), in a study on a sample of 47684 banks in 113 different countries, analyze the relationship between liquidity risk and bank market power. They also find that listed banks usually hold more liquid assets than non-listed banks. In contrast with these literature evidences, Vadovà (2011) finds that bigger banks present a lower liquidity; that in line with the “too big to fail” theory, where it would seem that bigger banks are less motivated to hold liquidity since they rely on government intervention in case of shortages. Ajanthan (2013) investigated the relationship between liquidity and profitability of trading companies in Sri Lanka. The study covered 108 listed trading companies over a period of past 5 years from 2008 to 2012. Correlation and regression analysis and descriptive statistics were used in the analysis and findings

suggest that a significant relationship exists between liquidity and profitability among the listed trading companies.

Mbaabu (2004) found that poor management of SACCO businesses, delays in approval, financing, and lending not based on security affected growth of their wealth. Lari (2005) in his study found that unavailability and inadequacy of credit was a major problem to SACCOs in Nairobi. Moreover, loan repayment and amount of money borrowed were significant variables that influenced saving patterns; and fund borrowed significantly influenced investment patterns. This led to the recommendation that saving and investment level could be enhanced if loans were adequately made available and proper supervision and monitoring of funds was put in place. The study by Kaloi (2004) identified lack of technical expertise in SACCOs' financial management and poor stewardship as the challenges to growth of wealth.

2.6 Chapter Summary

Liquidity risk has become a serious concern and challenge for the modern era characterized by high competition for consumer deposits and capital markets with technological advancements and as a result, lenders should be equipped to deal with the changing monetary policy that shapes the overall liquidity trends and the transactional requirements and repayment of short term borrowing. Though several studies had been carried out as far as the risk management practices of financial institutions is concerned especially in the developed countries, there were few studies looking at the liquidity risk and its effect on the financial performance among SACCOs. The focal study area for

most past studies had been the commercial banking sub-sector, yet SACCOs constituted majority of membership in Kenya. There was no related study done in Kisumu County, thus making existing generalizations contextually non-comprehensive. A severe liquidity crisis would cause massive drowning in form of bankruptcies and SACCO failure leading to a drastic financial crisis. This study, thus, sought to fill in the literature gap by looking at liquidity risk mitigation and financial performance from the SACCOs perspective in the context of Kisumu County.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

The chapter discusses the various components of research methodology that was used in achieving the intended study objectives. These components included research design, population, data collection, and data analysis framework.

3.2 Research design

The study adopted a cross-sectional research design. Gay (2006) defines a cross-sectional design as a descriptive study in which a phenomenon was measured simultaneously in a given population. Through this design, a study provided a snapshot of the frequency and characteristics of an event in a population at a particular point in time. Further, Gay (2006) asserts that the descriptive component in the cross-sectional design enabled collection of data in order to answer questions concerning the current status of the subject under study.

Creswell (2002) stated that cross-sectional description was used to allow researchers to gather information, summarize, present and interpret for the purpose of clarification. The design was preferred in this study because it guaranteed breadth of information and in-depth analysis of liquidity risk in the context of SACCOs and application of mitigation approaches to form basis for wider inferences.

3.3 Population

The targeted population for the study constituted all SACCOs in Kisumu County. Inclusion in the population was determined by time of registration and operational

activeness. Thus, all SACCOs that were in existence from the year 2009 and formally registered with KUSCCO constituted the study population. In this bracket, there were 62 population units spread across the seven sub-counties in Kisumu County. From each of the SACCO, finance managers and managing directors were selected and participated by completing a copy of questionnaire to supplement secondary data obtained from the retrieved financial statements.

3.4 Data collection

The study made use of both secondary and primary data. Secondary data, both in numeric and non-metric forms, were drawn from audit accounts such as income statements and balance sheets of the SACCOs over a 5-year period between the year 2009 and 2013. Referring directly from the SACCOs' audited statements, the data obtained were considered reliable. Nevertheless, necessary cross-checking and editing were done while scanning information and data from the secondary sources were used to enhance content validity. For further clarifications and detailed disseminations, required data were collected by administration of a semi-structured questionnaire focusing on awareness of liquidity risks, mitigation approaches and implications on corporate financials.

3.5 Data Analysis

Collected and refined data were analyzed depending on type and source. Thus, numeric and scale data from the SACCO's annual reports were analyzed by multiple regression analysis to show relationships and impact of liquidity risk parameters on financial performance.

Generally, the model took the form of:

$Y = f(X_1, X_2, X_3, X_4)$; Y is Financial Performance measured by ROA; X_1, X_2, X_3, X_4 are liquidity measures (defined as below).

The actual model was stated as follows:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

Where;

Y = Return on Assets

β_0 = Constant term

$\beta_1, \beta_2, \beta_3, \beta_4$ = Regression co-efficients of independent variables

X_1 = Cash Conversion Cycle

X_2 = Operating Cash Flow Ratio

X_3 = Credit Payment Period

X_4 = Debtors Collection Period

ε = Stochastic error term

The F-test was run to test the cumulative significance (for all $F \leq 0.05$) of independent variables on financial performance. Moreover, the t-test was conducted to determine individual independent variable significance (for all $t \leq 0.05$) on the SACCOS' financial performance.

Primary quantitative data were analyzed using descriptive statistics such as mean scores, percentages, and standard deviation. All the quantities in the study were generated with the help of computer software, Statistical Package for Social Sciences (SPSS) Version 20. In the end, all findings were presented using tables, models and graphs/charts.

CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSIONS

4.1 Introduction

This chapter presents the results and findings of the study based on the research purpose and objectives. The results are presented in the form of summary tables and figures. Regression and correlation analyses are also used to determine the extent of variable effect and relationships.

4.2 Demographic Data Analysis

Prior to detailed analysis of the study's thematic areas, two preliminary sets of demographic data were considered. Firstly, the study sought to obtain a description of the candidate SACCOs in terms of their service coverage and clientele approaches, and secondly, the SACCO sizes were established on the basis of membership and subscription.

The crosstab 4.1 cumulatively presents the two typical forms of SACCO Front office services activities and non- front office services activities (FOSA or NON-FOSA) and the two approaches adopted in recruiting members.

Table 4.1: Target Clientele * Type of SACCO Cross-tabulation

Count

		Type of SACCO		Total
		FOSA	NON-FOSA	
Clientele Approach	Closed	4	47	51(82%)
	Open	4	7	11(18%)
Total		8(13%)	54(87%)	62

Source: Kisumu County SACCOs (2014)

Table 4.1 The table gives a summary of the type of Sacco in terms of their service coverage (FOSA/NON-FOSA) and the approaches adopted in recruiting members established on the basis of membership and subscription. The table illustrates that 13% of the SACCOs in Kisumu County had been licensed to operate the Front Office Service Activity (FOSA) while the majority (87%) remained Non-Fosa operated. Further, the study established that 82% of the SACCOs admitted substantive members strictly from within the sponsoring firms, leaving a paltry 18% recruiting members from outsider institutions. Most respondents said that the restriction was set to guarantee the SACCOs' asset security.

Table 4.2 The grouped distribution. The table presents the variations that existed in SACCOs in relation to membership strength in terms of registered and active number of members.

Table 4.2: Registered and Active Number of Members (Binned)

Membership Groups	Frequency	Percent	Valid Percent	Cumulative
				Percent
<= 56	7	11.3	11.3	11.3
57 - 112	27	43.5	43.5	54.8
113 - 168	7	11.3	11.3	66.1
169 - 224	6	9.7	9.7	75.8
225 - 280	6	9.7	9.7	85.5
281 - 336	6	9.7	9.7	95.2
393 - 448	2	3.2	3.2	98.4
617+	1	1.6	1.6	100.0
Total	62	100.0	100.0	

Source: Kisumu County SACCOs (2014)

From the above table, the highest populated SACCO in terms of membership had a size of 650 registered and active subscribers. Cumulatively, there were only 14.5% SACCOs with membership sizes above 225, and these were predominantly from the sugar sector SACCOs which had the highest recruitment and sponsorship bases. The modal class of members – in an interval of 56 members – was 57 – 112 with a stand-alone proportion of 43.5%, while the smallest SACCO had only 34 subscribers.

The SACCO membership size was found to be highly significant due to its direct relationship with the firms' asset base.

Table 4.3: This table illustrates the correlation between SACCO membership and annualized firm assets. The use of Pearson’s correlation was applicable to find out the relationship between the two variables.

Table 4.3: Correlations between Membership and Asset Base

			Average	Total
			Registered and Active Assets	(Ksh.
			'000,000')	
			Number of Members	
Registered and Active Number of Members	Pearson Correlation	1	.765**	
	Sig. (2-tailed)		.000	
	N	62	62	
Average Total Assets (Ksh. '000,000')	Pearson Correlation	.765**	1	
	Sig. (2-tailed)	.000		
	N	62	62	

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

Source: Kisumu County SACCOs (2014)

The Pearson’s correlation coefficient was found to be significant at +0.765, implying that the higher the membership size the SACCO had, the higher its asset potential. By extension, therefore, the large SACCOs were equally expected to yield higher returns in financial performance.

4.3 Financial Performance of Saccos

The SACCOS' financial performance (dependent variable) was measured by ROA whose calculation was based on the firms' net income after tax, interest expenses as annual asset base (ref Appendix I)

Table 4.4: Return on Assets (Binned)

ROA	Frequency	Percent	Valid Percent	Cumulative Percent
<= .04	1	1.6	1.6	1.6
.05 - .08	17	27.4	27.4	29.0
.09 - .13	16	25.8	25.8	54.8
.14 - .17	14	22.6	22.6	77.4
.18 - .21	6	9.7	9.7	87.1
.22 - .25	4	6.5	6.5	93.5
.26 - .29	2	3.2	3.2	96.8
.30 - .34	1	1.6	1.6	98.4
.43 - .46	1	1.6	1.6	100.0
Total	62	100.0	100.0	

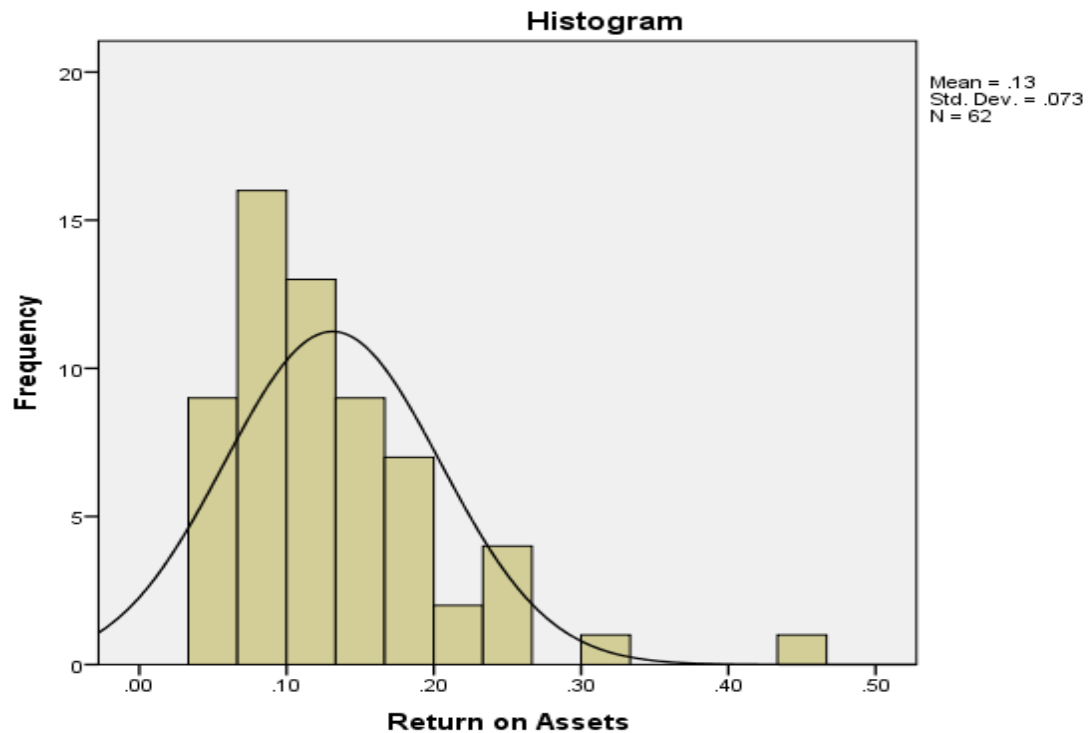
Source: Kisumu County SACCOS (2014)

The ROAs obtained from the 62 selected firms were summarized and grouped as presented in Table 4.4.

Table 4.4 The table illustrates the measure of the ROA based on the frequency of the firms' net income after tax, interest expenses as annual asset base shows the lowest performing SACCO with a Return on Assets (ROA) equivalent to 0.04 or 4% while the highest recorded return was 46%. Further, the distribution indicates that majority of the SACCOS (27.4%) had ROA ranging from 5% to 8%. This cluster of SACCOs was followed by another of 25.8% membership with 9% to 13% ROA. Close to this category, there were 22.6% of the SACCOs with 14% to 17% ROA.

The mean ROA among the selected 62 SACCOs was found to be 0.13 Or 13% and having a standard deviation of 7.3% as further illustrated by Fig. 4.1.

Fig. 4.1: Histogram showing Distribution of ROA among SACCOs



Source: Kisumu County SACCOs (2014)

Fig. 4.1 illustrates a positively skewed distribution with a high concentration of ROA between 4% and 20%. To the extreme right, there were exceptionally few SACCOs. This implied that despite the known heterogeneity of SACCOs due to asset bases and membership differences, among other factors, sub-sector returns were rather more uniform and inclined to a smaller return bracket.

4.4 Operating Cash Flows among Saccos

Operating cash flow is a measure of how well current liabilities are covered by the cash flow generated from a company's operations. In the study, the least operating cash flow was recorded at Ksh.1 million and the highest at Ksh.210 million.

Table 4.5 shows in details the distribution of the SACCOs' operating cash flows averaged between 2009 and 2013 operational periods. The distribution table shows wide variations among SACCOs in terms of their ability of covering current liabilities.

Table 4.5: Operating Cash Flows (Ksh. '000,000') (Binned)

Operating Cash Flows (Ksh. '000,000')	Frequency	Percent	Valid Percent	Cumulative Percent
<= 21	26	41.9	41.9	41.9
22 - 42	11	17.7	17.7	59.7
43 - 63	11	17.7	17.7	77.4
64 - 84	5	8.1	8.1	85.5
85 - 105	4	6.5	6.5	91.9
106 - 125	4	6.5	6.5	98.4
189 - 210	1	1.6	1.6	100.0
Total	62	100.0	100.0	

Source: Kisumu County SACCOs (2014)

The study found a whopping range of Ksh.209 million between the highest and least cash flow abilities. The majority of the SACCOs had their cash flows capped at Ksh.21 million (41.9%) while only one SACCO had over Ksh.125 million operating cash flows.

The mean operating cash flow among the selected SACCOs was estimated and presented as shown in Table 4.6. The table illustrates the operating cash flow descriptive statistics

Table 4.6: Operating Cash Flow Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Operating Cash Flows (Ksh. '000,000')	62	1	210	40.92	39.049
Valid N:	62				

Source: Kisumu County SACCOs (2014)

Among the 62 SACCOs in Kisumu County, the mean operating cash flow was Ksh.40.9 million and having a standard deviation of Ksh.39.05 million. These compare fairly with the mean current liabilities of Ksh.27.4 millions and standard deviation of Ksh.27.3 million. Thus, the operating cash flow ration (OCFR) was found to 1.49 (Ksh.40.9 millions/Ksh.27.3 million), implying that SACCOs' liquidity was adequate to meet the short term obligations when they fell due.

4.5 Debtors Collection Periods among Saccos

The debtor's collection period is the average amount of days it takes for the business to receive the money it is owed from its customers. If debtors pay quickly, it helps cash flow and reduces the risk of customers not paying the money they owe and thus improves liquidity and investment, which in turn influences financial performance. In this study, the debtors' collection periods were binned and presented as illustrated in Table 4.7.

Table 4.7: Debtors Collection Period (Days) (Binned)

Debtors Period	Collection Frequency	Percent	Valid Percent	Cumulative Percent
359.5 - 718.8	6	9.7	9.7	9.7
718.9 - 1078.2	10	16.1	16.1	25.8
1078.3 - 1437.6	13	21.0	21.0	46.8
1437.7 - 1797.0	11	17.7	17.7	64.5
1797.1 - 2156.4	7	11.3	11.3	75.8
2156.5 - 2515.8	7	11.3	11.3	87.1
2515.9 - 2875.2	2	3.2	3.2	90.3
2875.3 - 3234.6	3	4.8	4.8	95.2
3234.7 - 3594.0	1	1.6	1.6	96.8
3594.1 - 3953.4	2	3.2	3.2	100.0
Total	62	100.0	100.0	

Source: Kisumu County SACCOs (2014)

The fastest SACCO realized its debt averagely in 415.4 days while the longest delay was 3,650 days. The majority SACCOs (21%) had average collection periods between 1,078 and 1,438 days. Table 4.8 presents the mean and standard deviation of the debtors' collection period.

Table 4.8: DCP Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Debtors Collection Period (Days)	62	415.4	3650.0	1,660.313	807.9080
Valid N:	62				

Source: Kisumu County SACCOs (2014)

The mean debtors' collection period was calculated to be 1,660.3 days and with a standard deviation magnitude 807.9 days. The longer time period taken by the members to repay the debt was found to be a strategic tool implemented by SACCOs in making membership and subscription more attractive.

4.6 Creditors Payment Period among Saccos

The creditors' payment period examines the relationship between credit purchases and payments for them. The period measures the average number of days it takes an entity to meet its debt obligations. In the study, all the SACCOs' payment periods were studied and presented as in Table 4.9.

Table 4.9: Credit Payment Period (Binned)

Creditors Payment Period	Frequency	Percent	Valid Percent	Cumulative Percent
<= 54.8	6	9.7	9.7	9.7
54.9 - 109.5	18	29.0	29.0	38.7
109.6 - 164.3	16	25.8	25.8	64.5
164.4 - 219.0	7	11.3	11.3	75.8
219.1 - 273.8	7	11.3	11.3	87.1
273.9 - 328.5	2	3.2	3.2	90.3
328.6 - 383.3	2	3.2	3.2	93.5
383.4 - 438.0	1	1.6	1.6	95.2
438.1 - 492.8	1	1.6	1.6	96.8
492.9 - 547.5	2	3.2	3.2	100.0
Total	62	100.0	100.0	

Source: Kisumu County SACCOs (2014)

The least credit payment period was established to be zero, meaning that some SACCOs settled their debts instantly. On the higher extreme, some SACCO(s) took an average of 547.5 days to make payments to creditors. The majority (29%) settled their debts between 55 to 109 days, closely followed by those who preferred settlement between 109 to 164 days.

For purposes of generalization, the mean credit payment period adopted by the SACCOs was estimated and presented as in Table 4.10.

Table 4.10: Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Credit Payment Period	62	.0	547.5	162.746	121.5223
Valid N:	62				

Source: Kisumu County SACCOs (2014)

Given the minimum and maximum periods of 0.0 and 547.5 days respectively, the mean settlement duration was found to be 162.7 days with a realized deviation of 121.5 days.

4.7 Cash Conversion Cycle among Saccos

Cash conversion cycle is a metric that expresses the length of time, in days, that it takes for a company to convert resource inputs into cash flows. In this study, the metric looks at the amount of time needed to collect receivables and the length of time the company is afforded to pay its bills without incurring penalties.

Table 4.11 presents the findings.

Table 4.11: Cash Conversion Cycle (Binned)

Cash Conversion Cycle (Days)	Frequency	Percent	Valid Percent	Cumulative Percent
<= 354.5	3	4.8	4.8	4.8
354.6 - 709.0	6	9.7	9.7	14.5
709.1 - 1063.5	13	21.0	21.0	35.5
1063.6 - 1418.0	10	16.1	16.1	51.6
1418.1 - 1772.5	9	14.5	14.5	66.1
1772.6 - 2126.9	7	11.3	11.3	77.4
2127.0 - 2481.4	6	9.7	9.7	87.1
2481.5 - 2835.9	2	3.2	3.2	90.3
2836.0 - 3190.4	3	4.8	4.8	95.2
3190.5 - 3544.9	3	4.8	4.8	100.0
Total	62	100.0	100.0	

Source: Kisumu County SACCOs (2014)

Table 4.11 shows that majority of the SACCOs (21%) averagely converted resources into cash within a period of 709 and 1,063 days. This was followed by conversions of

between 1,064 to 1418 days from 16% of the SACCOs. The lengthiest conversion pace was between 3,191 and 3,545 days which was occupied by about 5% of the SACCOs. The longer CCCs were a result of slower debt collection pace and fastened payment of SACCO obligations.

Table 4.12 This table illustrates the minimum, maximum, mean CCC and standard deviation for all the 62 SACCOs under study.

Table 4.12: CCC Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Cash Conversion Cycle	62	-40.9	3504.0	1497.561	827.7805
Valid N:	62				

Source: Kisumu County SACCOs (2014)

Table 4.12 It shows that some SACCOs had negative CCCs, implying that their credit payment periods were far above the maximum number of days they took to realize their receivables. Generally, the study established a mean CCC of 1,498 days associated with a standard deviation of 823 days.

4.8 Regression Modeling

The OLS model adopted all the four predictor variables simultaneously which included operating cash flows (X_1), debtor collection period(X_2), credit payment period(X_3), and cash conversion cycle(X_4). ROA was set as the dependent variable as shown in the model below.

$$Y = a + \beta_1x_1 + \beta_2x_2 + \beta_3x_3 + \beta_4x_4 + \mu$$

Table 4.13 shows that Adjusted R Square of 83.8%, which is interpreted as the magnitude of ROA in the model explained by the four predictor variables. This implies that, other variables not included in the study accounted for 16.2% of the SACCOs' financial performance.

Table 4.13: Regression Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.923 ^a	.852	.838	9.6377

a. Predictors: (Constant), Operating Cash Flows, Debtor Collection Period, Creditor Payment Period, Cash Conversion Cycle

Source: Kisumu County SACCOs (2014)

Table 4.14 reports on ANOVA which assesses the model's overall significance. Given that $F \geq 2.0$ and $p \leq 0.05$, the model meets the significance.

Table 4.14: Regression ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	21.429	4	5.357	2.223	.000 ^b
1	Residual	180.771	75	2.410		
	Total	202.200	79			

a. Dependent Variable: Return on Assets

b. Predictors: (Constant), Operating Cash Flows, Debtor Collection Period, Creditor Payment Period, Cash Conversion Cycle

Source: Kisumu County SACCOs (2014)

In Table 4.15, the standardized beta coefficients give a measure of the contribution of each variable to the model. A large value indicates that a unit change in the predictor variable has a large effect on the criterion variable. The t and Sig (p) values give a rough indication of the impact of each predictor variable; a bigger absolute t value and smaller p value suggests that a predictor variable is having a large impact on the criterion variable.

Table 4.15: Regression Coefficients^a

Model	Unstandardized		Standardize d	t	Sig.
	Coefficients				
	B	Std. Error	Beta		
(Constant)	6.701	1.421		4.715	.000
Operating Cash Flow	.143	.219	.023	1.197	.004
1 Debtor Collection Period	.088	.246	.176	1.577	.003
Creditor Payment Period	-.457	.250	.205	2.831	.000
Cash Conversion Cycle	-.545.	.286	.217	2.906	.000

a. Dependent Variable: Return on Assets

Source: Kisumu County SACCOs (2014)

From the regression analysis of the variables, the econometric model is estimated as follows (ref.Appendix 1):

$$\text{ROA} = 6.701 + 0.143\text{CCC} + 0.038\text{OCFR} - 0.457\text{CPP} - 0.545\text{DCP}$$

The model shows that operating cash flow was the leading contributor to financial performance of SACCOs at a magnitude of 0.143 per unit variation. Moreover, despite their lengthened durations, debt collection periods had a significant positive contribution to financial performance of SACCOs at 0.088/unit input. On the reverse, credit payment period and cash conversion cycle liquidity practices adopted by SACCOs significantly

compromised the wealth maximization object of the SACCOs with -.457 and -.545 contributions per unit respectively.

In assessing the relationship between the dependent and predictor variables, the OLS model adopted all the four predictor variables simultaneously which included operating cash flows (X_1), debtor collection period(X_2), credit payment period(X_3), and cash conversion cycle(X_4). The financial performance (measure by ROA) was set as the dependent variable and the regression modeling determined as follows:

$$Y = 6.701 + 0.143x_1 + 0.038x_2 - 0.457x_3 - 0.545x_4$$

In the model, ROA variations were explained at 83.8% by the included predictor variables. Using ANOVA the model's overall significance was confirmed given that $F \geq 2.0$ and $p \leq 0.05$. With specificity, the model shows that operating cash flow was the leading contributor to financial performance of SACCOs at a magnitude of 0.143 per unit variation while debt collection periods had a significant positive contribution at 0.088/unit input.

CHAPTER FIVE:SUMMARY,CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the study's summary of findings in chapter four, and conclusions drawn based on such findings and recommendations. The objective of the study was to determine the effects of liquidity risk approaches and to establish the relationship between liquidity risk mitigation on liquidity levels on Sacco's financial performance. The study targeted 62 SACCOs in Kisumu County registered by KUSCCO from the year 2009 to 2013. Data was collected and analyzed in tables and graphs. This chapter has three sub-sections namely; the first section that deals with summary and conclusion, the second is limitations of the study and lastly recommendations and suggestions for further research.

5.2 Summary of Findings

The study found that 13% of the SACCOs had been licensed to operate the Front Office Service Activity (FOSA) while the remaining 87% remained Non-Fosa operated. Moreover, the study established that 82% of the SACCOs had memberships restricted to firms or business entities sponsoring the SACCO; only 18 % of the SACCOs admitted members from outsider institutions. Regarding membership sizes, the highest populated SACCO had membership strength of 650 registered and active subscribers. Notably, however, there were only 14.5% SACCOs with membership sizes above 225. The modal class of members – in an interval of 56 members – was 57 – 112 with a stand-alone proportion of 43.5%, while the smallest SACCO had only 34 subscribers. The Pearson's correlation coefficient between membership and asset base was found to be significant at

+0.765, implying that the higher the membership size the SACCO had, the higher its asset potential, hence higher probable ROA.

The SACCOs' financial performance (dependent variable) was measured by ROA whose calculation was based on the firms' net income after tax, interest expenses as annual asset base. The lowest performing SACCO had a Return on Assets (ROA) equivalent to 0.04 or 4% while the highest recorded return was 46%. Further, majority of the SACCOs (27.4%) had ROA ranging from 5% to 8%. This cluster of SACCOs was followed by another of 25.8% membership with 9% to 13% ROA. Close to this category, there were 22.6% of the SACCOs with 14% to 17% ROA. The mean ROA among the selected 62 SACCOs was found to be 0.13 Or 13% and having a standard deviation of 7.3%.

There were wide variations among SACCOs in terms of their ability of covering current liabilities. The study found a whopping range of Ksh.209 million between the highest and least cash flow abilities. The majority of the SACCOs had their cash flows capped at Ksh.21 million (41.9%) while only one SACCO had over Ksh.125 million operating cash flows. Among the 62 SACCOs in Kisumu County, the mean operating cash flow was Ksh.40.9 million with a standard deviation of Ksh.39.05 million. These compared fairly with the mean current liabilities of Ksh.27.4 millions and standard deviation of Ksh.27.3 million. Thus, the operating cash flow ratio (OCFR) was found to 1.49 (Ksh.40.9 millions/Ksh.27.3 million), implying that SACCOs' liquidity was adequate to meet the short term obligations.

Owing to the fact that SACCOs predominantly existed to issue loan products to their members, the debtors' collection periods were virtually lengthened. The fastest SACCO

realized its debt averagely in 415.4 days while the longest recovery took 3,650 days. The majority SACCOs (21%) had average collection periods between 1,078 and 1,438 days. The mean debtors' collection period was calculated to be 1,660.3 days and with a standard deviation magnitude 807.9 days. The reverse to this, the least credit payment period was established to be zero, meaning that some SACCOs settled their debts instantly. On the higher extreme, some SACCO(s) took an average of 547.5 days to make payments to creditors. The majority (29%) settled their debts between 55 to 109 days, closely followed by those who preferred settlement between 109 to 164 days. The mean settlement duration was found to be 162.7 days with a realized deviation of 121.5 days. Comparatively, therefore, the SACCOs took less time duration to meet their obligations while it took their debtors longer to amortize their obligations.

Finally, the cash conversion cycle was used to express the length of time, in days, that it took SACCOs to convert resource inputs into cash flows. The study found that majority of the SACCOs (21%) averagely converted resources into cash within a period of 709 and 1,063 days. This was followed by conversions of between 1,064 to 1418 days from 16% of the SACCOs. The lengthiest conversion pace was between 3,191 and 3,545 days which was occupied by 5% of the SACCOs. Some SACCOs had negative CCCs, implying that their credit payment periods were far above the maximum number of days they took to realize their receivables. Generally, the study established a mean CCC of 1,498 days associated with a standard deviation of 823 days.

5.3 Study Conclusion

SACCOs in Kisumu County had a significant bearing on their financial performances. Firstly, the SACCOs established a more cautious position in their current liabilities which ensured that operating cash flows were sufficient to cover the short terms obligations entered by the firms. Notably, however, the coverage ratio was not optimal given the weak contribution realized from the operating cash flows on ROA which meant that liquidity was more regarded than profitability (which is realizable on investment in long term options).

Secondly, the study concludes that debtor collection periods were obviously longer than optimality despite the fact that they were strategically intended to sweeten voluntary membership. The expanded collection of receivables mean that SACCOs were denied funds to invest in both the short term and long term options to enhance standing on both liquidity and profitability. Though a positive contribution by the receivables period was realized, SACCOs had a contractionary option they would adopt in ensuring speedy asset realizations and subsequent increase in investment outlays.

Thirdly, the SACCOs were either unjustifiably constraining their creditor payment periods or were conditioned to do so., but to their detriment. Despite their long receivables realization periods, their payables periods were shorter; a situation which would potentially compromise the institutions' liquidity positioning. Finally, owing to wider disparities between the payables and receivables periods, the cash conversion cycles were obviously lengthened. This implied that resources took longer to be

converted into cash, hence limiting the firms' liquidity potential. The net effect was a negative quantitative contribution to the financial performance of the SACCOs.

Previous studies have fully proved that liquidity risk mitigation and management practices thereof have a significant bearing in financial performance of business entities. Pegged on this, therefore, profit-oriented institutions are obligated to deploy efficient systems that seek to strengthen control fundamentals. From this perspective, it is therefore, imperative that SACCOs are guided towards adopting liquidity risk systems that are able to establish an optimality which neither compromises nor exaggerates the amount of liquidity held. SACCOs should have policies guiding them on asset and liability management so that precautionary measures are undertaken on appropriate amounts of current liabilities to accept.

Similarly important, SACCO management need to be sensitized on both payables and receivables periods so that they strike the most yielding mark. Ideally, they needed relook at their strategies on shortening debt collection (to avoid default risks) while lengthening credit payment period (to allows payables transformation into a business financing source). By extension, the cash conversion cycle will self-correct itself once the payables and receivables periods are optimized.

5.4 Limitations of the Study

The study was conducted among the SACCOs registered and active in Kisumu County, but was largely delimited to availed financial disclosures, and respondent views and opinions. The research was, hence, not able to proceed into verifying the disseminated and available information. Also, the participant options effectively locked out

indispensable contributions from other primary stakeholders such as the members and regulators. Moreover, there is a possibility that their views would be more inclined to portraying themselves and their entities as financially and technically sound.

Owing to wider fundamental variations detected in the SACCOs, obtained data sets were prone to over-generalizations thus depicting a misleading deduction, especially for the outlier firms. In addition, most SACCOs were on transition and hence the findings may not be elongated for a long application period. Therefore, application of these findings would only be applied with caution and within similar study situations. Lastly, the indicator options adopted in the study were at the discretion of the research, implying that different studies on similar conceptual and contextual orientations may be dissimilar in generalization.

5.5 Recommendations for Further Study

Suggestions for future research are made based on the inherent limitations of this study. First, it is suggested that a more detailed study targeting all the SACCO stakeholders is made to derive a comprehensive model explaining the quantitative relationship between financial performance of SACCOs and their respective liquidity risk management practices.

Second, cyclical study is suggested to fit the various short-term variations into the model. This will be of help in developing a comprehensive liquidity risk surveillance tool to aid SACCOs and other financial institutions in measuring their investments' net worth and subsequently making financially sound decisions.

Last, future researchers are advised to adopt other sets of liquidity indicators to test how respective risk practices influence the companies' financial performance. This will significantly make contributions towards establishing a comprehensive scholarly opinion relating to corporate finances and liquidity dynamics.

REFERENCES

- Agénor, P-R., Aizenman, J. & Hoffmaister, A.W. (2004). The Credit Crunch in East Asia: What Can Bank Excess Liquid Assets Tell Us? *Journal of International Money and Finance*, 23: 27-49.
- Ahmed N., Ahmed Z. & Naqvi I. H. (2011). Liquidity Risk and Islamic Banks: Evidence from Paki-stan. *Interdisciplinary Journal of Research in Business*, 1(9): 99-102.
- Ajanthan. A. (2013) A Nexus Between Liquidity & Profitability: A Study Of Trading Companies In Sri Lanka. *European Journal of Business and Management*, 1905: 5(7).
- Akhtar, S. (2007). Changing risk management paradigm – perspective of the regulator, ACCA Conference – CFOs: The Opportunities and Challenges. Available on: <http://www.bis.org/review/r070423c.pdf>.
- Allen, F., & Carletti, E. (2008). Mark-to-Market Accounting and Liquidity Pricing. *Journal of Accounting and Economics*, 3: 358-378.
- Allen, L. & A. Gale (2004), Bank size, collateral, and net purchase behavior in the federal funds market: empirical evidence, *Journal of Business*, 62(4): 501-15.

Amalendu, B.I & Sri, B.B (2011). Importance of Liquidity Management on Profitability.

Asian Journal of Business Management, 3(2): 108-117.

Angbazo, L. (1997). Commercial Bank Net Interest Margins, Default Risk, Interest-Rate

Risk, and Off-Balance Sheet Banking. *Journal of Banking and Finance*, 21: 55-87.

Arif, A.; Nauman, A. 2012. Liquidity risk and performance of banking system, *The*

Journal of Financial Regulation and Compliance 20(2): 182–195.

Bhunia, A., Khan. I & Mukhuti, S (2011) A Study of Managing Liquidity. *Journal of*

Management Research, 3(2): 116-124.

Bordo, M., Eichengreen, B., Klingebiel, D., and Martinez-Peri, M. (2001). Is the Crisis

Problem Growing More Severe? *Economic Policy*, April 2001, 16(32): 51-82.

Branch, K. (2005). Detecting abnormal credit union performance. *Journal of Banking*

and Finance, 32: 573-586.

Casu, B., Girardone, C. and Malyneux, P. (2006) Introduction to Banking, Harlow,

England, Pearson Education Limited.

- Crowe, K. (2009), Liquidity risk management – more important than ever, Financial Solutions, Harlow.
- Deloof, M. (2003). Does Working Capital Management Affect Profitability of Belgian Firms? *Journal of Business, Finance and Accounting*, 30(3): 573-587.
- Eljelly. A. (2004) Liquidity-Profitability Tradeoff: An empirical Investigation in An Emerging Market, *International Journal of Commerce & Management*, 14(2): 48 – 61.
- Falconer, O. M. (2001), Measurement of liquidity risk in the context of market risk calculation, working paper, Institute for Monetary and Economic Studies, Bank of Japan, Tokyo.
- Gardeklint, A. (2009). Facts about the Co-operative movement. Nairobi, Kenya National Federation of Co-operatives.
- Gatev, E. and Strahan, P.E. (2003), Banks' advantage in hedging liquidity risk: theory and evidence from the commercial paper market, working paper, The Wharton Financial Institutions Centre, Chestnut Hill, MA.

- Giannotti C., Gibilaro L. & Mattarocci G. (2010). Liquidity Risk Exposure for Specialized and Unspecialized Real Estate Banks: Evidence from the Italian Market. *Journal of Property Investment and Finance*, 29(2): 98-114.
- Gijselinckx, C. & Develtere, P. (2007). The co-operative trilemma. Cooperatives between market, state and the civil society. Research Paper, Catholic University, Leuven, Belgium.
- Gill, A, Bigger, N & Mathur, N (2010). The Relationship Between Working Capital Management And Profitability, *Business and Economics Journal*, 4(2): 1-19.
- Guglielmo, M.R. (2008), Managing liquidity risk, *Bank Accounting & Finance*, Vol. 8.
- James, C. & Van, H. (2002). Financial Management and Policy, Prentice hall of India Private Limited, New Delhi.
- Jenkinson, N. (2008). Strengthening regimes for controlling liquidity risk, Euro Money Conference on Liquidity and Funding Risk Management, Bank of England, London.
- Kaloi, J.M. (2004). Factors contributing to liquidity problems on saving credit co-operatives. MA thesis, Moi University, Eldoret, Kenya.

- Kashyap, A.K., Rajan, R. and Stein, J.C. (2002), Banks as liquidity providers: an explanation for the coexistence of lending and deposit-taking, *Journal of Finance*, 57(1): 33-73.
- Kiaritha, H, Gekara, M. & Mung'atu, J. (2014). Effect of operating costs on the financial performance of SACCOs in the banking sector in Kenya, *Prime Journal of Business Administration and Management*, 4(2): 1359-1363.
- King, R. and R. Levine (2003). Finance and growth: Schumpeter might be right, *The Quarterly Journal of Economics*. 3: 12 – 34.
- Kinuthia, P.M. (2007). Management of loan default problems in SACCOs in Nairobi province. MBA Thesis, Jomo Kenyatta University of Agriculture and Technology, Juja, Kenya.
- Lari, L. (2008). The Power of Financial Ratios in Detecting Fraudulent Financial Reporting: The Case of SACCOs in Kenya. Nairobi, Kenya, KUSCO.
- Lazaridis I. & Tryfonidis, D. (2006). Relationship between Working Capital Management and Profitability of Listed Companies in the Athens Stock Exchange, *Journal of Financial Management and Analysis*, 19(1): 32-59.

- Leach, J.C. & Melicher, R. W. (2009). *Finance for Entrepreneurs*. (Jack W. Calhoun, Alex von Rosenberg and Mike Reynolds, Eds.). 3th edition, South-Western.
- Lins, K., Servaes, H., Tufano, P. (2010). What drives corporate liquidity? International survey of strategic cash and lines of credit, *Journal of Finance Economics*, 98 (1): 160–176.
- Majid, A.R. (2003). Development of liquidity management instruments: challenges and opportunities, International Conference on Islamic Banking: Risk Management, Regulation and Supervision, Jakarta – Indonesia.
- Mathuva, D. M. (2010). The Influence of Working Capital Management Components on Corporate Profitability: A Survey on Kenyan Listed Firms. *Research Journal of Business Management*, 4(1): 1 – 11.
- Mbaabu, A.M. (2004). Determinants of loan non performers in commerical banks in Eldoret. MBA thesis, Moi University, Eldoret, Kenya
- Moore, W. (2009). How do financial crises affect commercial bank liquidity? Evidence from Latin America and the Caribbean. MPRA Paper 21473, University Library of Munich.

- Mudibo, E. K. (2005). Corporate Governance in Co-operatives the East African Experience. Pan-African Consultative Forum on Corporate Governance 2005, Dakar, Senegal.
- Munyiri, C. (2006). Study visit on the role of women in development of microfinance in Africa. *Digest* 3(3): 1-6.
- Ndung'u, G. (2010). Orderly movement. *Business Post*, 1: 28-30.
- Ng'ombe, B. W. & Mikwamba, E. (2004). Know More About SACCO. A Handbook for SACCO study Circle Programme. MUSCCO, Lilongwe, Malawi.
- Nguyen M., Skully M. & Perera S. (2012). Bank Market Power and Liquidity, Evidence from 113 Developed and Developing Countries.
- Ngwu, T.C. (2006). Bank Management. Owerri: Bob Publishers.
- Nobanee, H, Abdullatif, M & AlHajjar, M. (2011). Cash conversion cycle and firm's performance of Japanese firms, *Asian Review of Accounting*, 19(2): 147-156.
- Nocco, B. W. and R. M. Stulz (2006). Enterprise Risk Management: Theory and Practice. *Journal of Applied Corporate Finance*, 18(4): 8-20.

Ofei, K.A. (2001). Retooling credit unions: The case of credit union association of Ghana. Research Paper, International Labour Organization, University of Ghana, Legon

Ombado, G. (2010). Identifying and maximizing SACCO's potential. *ACCOSA Newsletter*. 2(2): 2-6.

Padachi, K (2006). Trends in Working Capital Management and its Impact on Firms' Performance: An Analysis of Mauritian Small Manufacturing Firms, *International Review of Business Research Papers*, 2(2): 45-58.

Pagach, D. and R. Warr (2009). Corporate Reputational Risk and Enterprise Risk Management: An Analysis from the Perspectives of Various Stakeholders, Society of Actuaries.

Puneet.S & Parmil.K. (2012). Liquidity and Profitability Trade Off. *International Journal of Advanced Research in Management and Social Science*. 1(3): 77-84.

Rajan, R. and L. Zingales (1999). Financial Dependence and Growth, *American Economic Review*, 1999.

Saunders, A. (2003). *Financial institutions management: A risk management approach*.
Boston: McGraw-Hill/Irwin 2003.

Schenk M (2007). *Commercial Banks and Credit Unions: Facts, Fallacies, and Recent Trends*, Credit Union National Association, available at: <http://advice.cuna.org/>

Schroeck, G. (2002). *Risk Management and Value Creation in Financial Institutions*,
John Wiley & Sons, Inc., Hoboken, New Jersey.

Sharma, A.K. & Kumar, S. (2011). Effect of Working Capital Management on Firm Profitability: Empirical Evidence from India. *Global Business Review*, 12(1): 159 – 173.

Sufi, A., 2009. Bank lines of credit in corporate finance: an empirical analysis. *Journal of Finance Studies*, 22: 1057–1088.

Tirole, J. (2009). Illiquidity and All Its Friends. 8th BIS Annual conference Financial Systems and Macroeconomic Resilience: Revisited. Lucerne: Bank of International settlements.

- Uyar, A (2009). The Relationship of Cash Conversion Cycle with Firm Size and Profitability: An Empirical Investigation in Turkey, *International Research Journal of Finance and Economics*, 24: 186-193.
- Vodovà P. (2011). Liquidity of Czech Commercial Banks and its Determinants. *International Journal of Mathematical Models and Methods in Applied Sciences*, 6(5): 1060-1067.
- Wanyama, F. O. (2009). Surviving liberalization: The co-operative movement in Kenya. Working Paper No.10. Dar es Salaam, Tanzania: International Labour Organization.
- World Council of Credit Unions (WOCCU) (2009). Statistical report, World Council of Credit Unions, Washington D.C.

APPENDIX I: STUDY VARIABLES

Measuring Financial Performance:

Return on Assets expresses the net income earned by a company as a percentage of the total assets available for use by that company.

$$\text{Return on Assets (ROA)} = \frac{\text{Net Income After Tax + Interest Expense}}{\text{Average Total Assets During the Year}}$$

Measuring Liquidity Risk Approaches:

The liquidity of a company is measured with use of some financial ratios referred to as liquidity ratios. They include Operating Cash-Flow Ratio (OCFR); Debtor Collection Period (DCP); Creditor Payment Period (CPP); Cash Conversion Cycle (CCC).

Operating Cash Flow Ratio (OCFR):

Operating Cash Flow Ratio = Cash Flow from Operations / Current Liabilities.

Debtors Collection Period (DCP):

Debtors Collection Period (DCP) = Current Assets/Interest Income x 365

Credit Payment Period (CPP):

Credit Payment Period (CPP) = Short-Term Debt/Interest Expenses x 365

Cash Conversion Cycle (CCC):

Cash Conversion Cycle = Debtors Collection Period – Creditors Payment Period

APPENDIX III: QUESTIONNAIRE

Dear respondent,

This questionnaire is intended to collect data relating to liquidity risk mitigation approaches and extent of influence on SACCOs’ financial performance in Kisumu County. You have been selected as one of the resource persons and kindly requested to participate by way of completing this questionnaire. You are assured that any information provided in the course of this study will only be utilized for the sake of this study and not any other unintended purpose.

<p><u>Completion Consent</u></p> <p><i>I agree to participate in this study under the terms mentioned or agreed with the administrator:</i></p> <p>Respondent Sign:..... Date:.....</p>
--

1. For how long have you served in the current SACCO?

.....

2. Were you serving in the same position before? [] Yes [] No

3. Does the SACCO have a risk mitigation strategy? [] Yes [] No

If No, what guide do you apply?

.....

.....

4. To What extent would you agree that liquidity risk is a major challenge in the SACCO subsector?

1	2	3	4	5
---	---	---	---	---

Lowest Extent → Highest Extent

5. How would you rank preference of the following approaches in mitigating liquidity risk? (Use 1-Highest Rank to 4- Lowest Rank)

- Cash conversion cycle []
- Credit payment []
- Debtor collection []
- Operating cash flow []

6. What near-cash investments does the SACCO currently operate?

.....

7. About how long does the SACCO take to process credit?

- In a day
- In one week
- In one month
- More than one month

8. What average maximum duration do you allow for repayment of salary advances?

- In one month
- less than 6 months
- less than 1 year
- More than 1 year

9. Do you lend to non-members?

Yes No

What informs your lending decision?

.....
.....
.....

10. What is your current debt ratio?

.....

11. The shortest debt (if any) took the SACCO how much to repay?

.....

12. What would be your opinion on improving liquidity mitigation in the SACCO subsector?

.....
.....
.....

APPENDIX: IV –LIST OF ACTIVE SACCOS IN KISUMU COUNTY

KISUMU CENTRAL

NO.	NAME OF SOCIETY	C/S NO.	PHYSICAL ADDRESS	CURRENT ADDRESS	CONTACT TELEPHONE	ACTIVITY	STATUS
1	Child development sacco	11700	6043 Kondele	Manyatta	733360941	Savings	Active
2	Sunep	12350	215 Kisumu	Sunset hotel	718767320	Savings	Active
3	Kibuye juakali	12398	6361 Kisumu	Kibuye	721329685	Savings	Active
4	Kondele traders	12329	4136 Kisumu	Kondele	721444465	Savings	Active
5	K-met	12421	6805 Kisumu	Obunga	710125393	Savings	Active
6	Chis traders	12905	2829 Kisumu	Nyalenda	734840075	Savings	Active
7	Somaline	12945	250 Sondu	Sondu	722274537	Savings	Active
8	Mamboline	12974	1220 Kisumu	Mamboleo	722325634	Savings	Active
9	Lake belt	13037	1589 Kisumu	Bus stage	733711858	Savings	Active
10	Lake region entrepreneurs	13594	4452 Kisumu	Jomokenyatta sports ground	728362990	Savings	Active
11	Jipange na ujichunge	14048	3325 Kisumu	Nyalenda	722691391	Savings	Active
12	Ogra	14185	3050 kisumu	Milimani	723448769	Savings	Active
13	Lolwe housing	3308	625 kisumu	Lolwe estate	722926561	Housing	Active
14	Name	Cs/no	Contacts	Activity	Status	Sacco	Active
15	South Nyakach fcs	694	0723-348136	Coffee	Active	Sacco	Active
16	Nyakach fcs ltd	1315	0719-830655	Cotton	Active	Sacco	Active
17	Nyabondo h.e sacco	6803	0727-700868 0750-680959	Urban sacco	Active	Sacco	Active

18	Nyakach multi-purpose co-op. Soc. Ltd.	12794	0721-338498	Multipurpose	Active	Sacco	Active
19	Gem rae rice farmers co-op. Soc. Ltd.	13406	0722-939215	Rice	Active	Sacco	Active
20	Nyakabo sacco. Soc. Ltd.	13985	0711-523082	Fishermen marketing	Active	Sacco	Active

KISUMU NORTH DISTRICT

No.	Name of society	C/s no.	Phtsical address	Current address	Contact telephone	Activ ity	Status
21	Labda	3704	Mamboleo	3704 kisumu	0714 -835897	Sacco	Active
22	Portable	10768	Otonglo	2131 - kisumu	0722-369552	Sacco	Active
23	Fei	7990	Mamboleo	1326 - kisumu	0737 - 019346	Sacco	Active
24	Necks	12803	Ojola	2104 - kisumu	0725 - 246605	Sacco	Active
25	Kisumu airport	13889	Otonglo	9285 - kisumu	0729 - 819458	Sacco	Active

MUHORONI DISTRICT

No.	Name of society	Cs no.	Physical address/districts/county	Current address	Contact telephone	Activity	Status
26	Chemelil Sacco	1920	Chemelil,	177, Muhoroni	0725-883260	Sacco	Active
27	Nyando Sacco	1998	Muhoroni	224, Muhoroni	020-233559	Sacco	Active

28	Koru Sacco	2381	Koru	Private bag	0721-838658	Sacco	Active
29	Agro - Chem	3829	Muhoroni	94, Muhoroni	0723-643442	Sacco	Active
30	Mutco	10287	Muhoroni	486, Muhoroni	722365318	Sacco	Active
31	Nyando Kdf.r	5355	Chemelil	13, Awasi	717421113	Sacco	Active
32	Muhoroni Fr	9991	Muhoroni	38, Muhoroni	712094730	Sacco	Active
33	Shalom Traders	13261	Muhoroni	328, Muhoroni	72033859	Sacco	Active
34	Kisumu Sugar belt	3849	Chemelil	39, Chemelil	717038336	Union	Active
35	Muhoroni multi	8503	Muhoroni	23, Muhoroni	733961000	Union	Active
36	Chemelil consumers	1927	Chemelil	125, Awasi	722656767	Consumer	„
37	Nyando consumers	5933	Muhoroni	224, Muhoroni	721865591	Consumer	Active
38	Agro-chem hse	9681	Muhoroni	18, Muhoroni	721378231	Housing	Active

KISUMU EAST

	Name of the society	Cs/no	Postal address	Physical address	Telephone	Status	
39	Equabo	3224	780 kisumu	Equator bottlers	722969594	Savings	Active
40	Mek	2078	4661 kisumu	Arina	020 -21223739	Savings	Active
41	Indicose	9319	2490 kisumu	Milimani	0733-330295	Savings	Active
42	Tunza	4904	88 kisumu	Milimani	736953197	Savings	Active
43	Kiwasco	10568	3210 kisumu	Obote road	733579495	Savings	Active
44	United millers	6085	620 kisumu	Obote road	722691982	Savings	Active
45	Joncum	4591	3227 kisumu	Oginga street	734355427	Savings	Active
46	Milimani hospital	11029	441 kisumu	Milimani	572021450	Savings	Active
47	La reco	8581	1763 kisumu	Fomat	721770097	Savings	Active
48	Omega foundation	11044	3246 kisumu	Milimani	721276867	Savings	Active

49	Seafood	7888	2354 kisumu	Sabuni road	722237449	Savings	Active
50	Kite	2757	2073 kisumu	Fomat	572024767	Savings	Active
51	Cent	9923	3069 kisumu	Oginga street	725268797	Savings	Active
52	Stima	7201	4087 kisumu	Oginga strret	722930396	Savings	Active
53	Kimute	2293	1421 kisumu	Kick building	734519768	Savings	Active
54	Dunga fishermen	1945	67 kisumu	Dunga beach	713048958	Savings	Active

KISUMU NORTH DISTRICT

No.	Name of Society	C/s no.	Physical Address	Current address	Contact Telephone	Activity	Status
55	Kit mikayi c.s	12221	Kombewa	209 -kombewa	0722-464375 - Paul Odera	Tourism	Active
56	Seme farmers	12853	Kombewa	16 - kombewa	0715-157029 - Charles Ocholla	Horticulture	Active
57	Asat fishermen	3511	Asat beach	1 kombewa	0717-355335 - peter mwoso	Fishing	Active
58	Jua kali	12657	Paw akuche	5 paw akuche	0711-934799 - anne orembo	Sacco	Active
59	Maseno poultry	14041	Maseno	283 maseno	0722-736582- jacob awitty	Poultry	Active
60	Maendeleo youth	14343	Paw akuche	54 paw akuche	0728 -789058 - philip ogonji	Sacco	Active
61	Ogal fishermen	3564	Ogal beach	90 paw akuche	0723 - 982025 - joseph miumi	Fishing	Active
62	Kaloka fishermen	1861	Kaloka beach	41 paw akuche	0727-817943 - ambrose odhiambo	Fishing	Active