Factors Affecting Liquidity Risk Management Practices in Microfinance Institutions in Kenya

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Abstract

Liquidity is a bank's capacity to fund increase in assets and meet both expected and unexpected cash and collateral obligations at reasonable cost and without incurring unacceptable losses. Liquidity risk is the inability of a bank to meet such obligations as they become due, without adversely affecting the bank's financial condition. Sound liquidity management can reduce the probability of serious problems. The study adopted a survey research design. The target population included all the 128 employees from the 6 selected MFIs in Kenya. A sample of 96 employees were drawn and used in the study. Questionnaires were used to collect data from the field. The raw data collected was analyzed using the Statistical Program for Social Sciences (SPSS) Version 21.0. The hypotheses were tested using multiple regression analysis. The study found out that Micro Finance Institutions internal control systems, policies, Board oversight and risk monitoring significantly affects its liquidity risk management practices. The study recommended that established MFIs document their local strategies applied in liquidity risk management; effective internal control processes be introduced through implementation of computerized financial management systems; institutions should employ effective policies that impacts positively on the overall liquidity risk management functions; the Board should develop initiatives to facilitate review of liquidity management framework and also provide strategic direction to the liquidity risk management function and the MFIs to maintain adequate information systems for measuring, monitoring, controlling and reporting on liquidity risks.

Keywords: Liquidity Risk, Micro Finance Institutions, Board oversight and Institutional internal control

1.0 Introduction

Microfinance institutions consciously take risk as they perform their role of financial intermediation in the economy. Consequently, they are exposed to a spectrum of risks, which include credit risk, interest rate risk, liquidity risk, and operational risk. Managing these risks is essential for their survival and sustainability. Rather than focusing on current or historical financial and operational performance management and regulators now focus on an organization's ability to identify and manage future risks as best predictor of long term success of financial institutions. (NBE, 2010)

The microfinance constitutes a diverse range of practitioners, practices and body of knowledge. From this perspective the commonly accepted definition of microfinance as "the means of providing a variety of financial services to the poor based on market-driven and commercial approaches" (Christen, 1997). Microfinance is the provision of convenient financial services and products to the poor, low-income households and micro and small enterprises (Central Bank of Kenya, 2007).

In Africa in general, the microfinance industry is quite young and less developed compared to Latin America and Asia. In Kenya, MFIs play a great role in providing credit facilities to the poor. The Association for Microfinance Institutions (AMFI) observes that 60% of the Kenyan population is out of the scope of the formal banking services. At least 35.2% are in need of financial services and unable to access the formal financial services and another 30.2% are entirely excluded from accessing financial services. As a result of this, the number of MFIs has been increasing over time. As of June 2003, the Central Bank of Kenya reported the existence of 3,460 legal microfinance service providers including 3,397 savings and credit co-operatives (SACCOs) and co-operative-like community-based intermediaries, 56 MFIs, 4 commercial banks (K-Rep, Equity, Post Bank and Co-operative Bank), 2 building societies, and the Kenya Post Office Savings Bank. By 2007, there were 5122 registered SACCOs, 45 banking institutions, 42 of which were commercial banks, 2 mortgage finance companies and 1 non-banking financial institution. Liquidity is a bank's capacity to fund increase in assets and meet both expected and unexpected cash and collateral obligations at reasonable cost and without incurring unacceptable losses. Liquidity risk is the inability of a bank to meet such obligations as they become due, without adversely affecting the bank's financial condition. Effective liquidity risk management helps ensure a bank's ability to meet its obligations as they fall due and reduces the probability of an adverse situation developing.

The market turmoil that began in mid-2007 re-emphasized the importance of liquidity to the functioning of financial markets and the banking sector. In advance of the turmoil, asset markets were buoyant and funding was readily available at low cost. The reversal in market conditions illustrated how quickly liquidity can

evaporate and that illiquidity can last for an extended period of time. The banking system came under severe stress, which necessitated central bank action to support both the functioning of money markets and, in a few cases, individual institutions. The financial crisis highlighted the critical importance of liquidity risk management for both corporate and financial institutions. (Elyse Weiner, 2008) Microfinance institutions should properly manage its liquidity taking into account the complex aspects of sound asset and liability management. The purpose of liquidity management is to ensure that every microfinance institution is able to meet fully its contractual commitments. Indeed, the importance of liquidity transcends the individual microfinance institution, since a liquidity shortfall at a single microfinance institution can have system-wide repercussions. (NBE, September 2010).

The problem with bank liquidity management is that when banks get it wrong, there can be drastic consequences for the economy. This can be seen from the continuing effects of what started in 2007. The economy is still in a rut and although Gross Domestic Product (GDP) has once again begun to pick up, unemployment remains at the extremely high levels (Bureau of Labor Statistics, 2010).

In February 2008 the Basel Committee on Banking Supervision published Liquidity Risk Management and Supervisory Challenges. The study outlined that many banks had failed to take account of a number of basic principles of liquidity risk management when liquidity was plentiful. Many of the most exposed banks did not have an adequate framework that satisfactorily accounted for the liquidity risks posed by individual products and business lines, and therefore incentives at the business level were misaligned with the overall risk tolerance of the bank. Therefore this study sought to assess the factors that affect liquidity risk management practices. It examined the effect of the MFIs internal controls, Policies, Board/management oversight and risk monitoring strategies on liquidity risk management practices by MFIs operating in Kenya. This research aimed at testing the following hypothesis.

1. H_0: Micro Finance Institutions internal control system has no effect on its liquidity risk management practices.
   H_1: Micro Finance Institutions internal controls system significantly affects its liquidity risk management practices.
2. Ho: Micro Finance Institutions policies have no effect on its liquidity risk management practices.
   H_1: Micro Finance Institutions policies significantly affect its liquidity risk management practices.
3. H_0: Micro Finance Institutions Board/ management oversight role has no effect on its liquidity risk management practices.
   H_1: Micro Finance Institutions Board/ management oversight role significantly affects its liquidity risk management practices.
4. Ho: Micro Finance Institutions risk monitoring strategies have no effect on its liquidity risk management practices.
   H1: Micro Finance Institutions risk monitoring strategies significantly affects its liquidity risk management practices

2.0 Literature
2.2 Theoretical Review
This study was guided by two theories. The first being, Stakeholder theory is a theory of organizational management and business ethics that addresses morals and values in managing an organization. (Edward Freeman1984). The theory identifies and models the groups which are stakeholders of a corporation, and describes and recommends methods by which management can give due regard to the interests of those groups. In the traditional view of the firm, the shareholder view, the shareholders or stockholders are the owners of the company, and the firm has a binding fiduciary duty to put their needs first, to increase value for them. However, stakeholder theory argues that there are other parties involved, including governmental bodies, political groups, trade associations, trade unions, communities, financiers, suppliers, employees, and customers. Aw11a

Different stakeholders in the firm may care about the firm's cash balances. Suppliers and customers may prefer to do business with companies that are cash rich because cash holdings are interpreted as a sign that the company is in good health and will be around in the future. Similarly, employees may feel more confident that they will get paid when the firm has more money in the bank. In the case of banking institutions and specifically MFIs the management therefore must ensure that the interests of all stakeholders are taken in consideration in performing their oversight role. They must formulate liquidity risk management strategies that will ensure the going concern concept of the institution is not threatened. This will ensure that all stakeholders have confidence in the management of the Bank. Specifically customers will be assured of the security of their savings; creditors and suppliers will be confident that the institution will be able to meet its financial obligations; regulators will be assured that the institutions are adhering to the laid down regulations; while the shareholders will be assured of the safety of their investment.

The second theory was Liquidity Preference theory which states that short term bonds are more favorable than long term bonds for two reasons. Investors generally prefer short term bonds to long-term securities because such securities are more liquid in the sense that they can be converted to cash with little danger of loss of principal. At the same time borrowers react in exactly the opposite way. Generally borrowers prefer long term debt because short-term debt exposes them to the risk of having to repay the debt under adverse conditions. Accordingly borrowers are willing to pay higher rate, other things held constant for long-term process than short term ones. Taking together this two sets of preferences implies that under normal conditions, a positive maturity risk premium exist which increases with maturity thus the yield curve should be upward sloping. Liquidity preference theory, as a theory of balance sheet determination, allows us not only to portray banks' decision problems in a more precise way but also to understand the nature of the changes that are taking place in this industry. Its starting point is that every asset offers a mix of expected monetary returns and a liquidity premium in opposition to the traditional approach in which an asset gives only monetary returns and the other only liquidity. On the other hand, each mix of liabilities implies a different combination of costs of servicing debts and of risks of being unable to roll   them over if needed. Liquidity preference determines which mix of assets and liabilities is acceptable to each individual agent, be it a person or an institution, like a bank. Therefore, liquidity preferences will be shown in the collection of assets an agent chooses, their market values and his/her collection of liabilities. So a bank's decision problem is how to distribute the resources they create or collect among these different items that offer specific combinations of expected monetary returns and liquidity premier, instead of just choosing between reserves and loans or of passively supplying whatever amount of credit is demanded. Banks' liquidity preferences describe their balance sheet strategies, not their demand for money, not even their demand for outside money. On the other hand, banks with liquidity preferences will not accommodate passively the demand for credit but will compare expected returns and liquidity premier of all purchasable assets (Kregel, 1997).

2.3 Liquidity Management Policies
The process of liquidity management begins with the stipulation of liquidity management policies by the BOD as the ultimate guidance for all entities in the organization. For this purpose, there are at least three requirements for BOD to carry out ; (a) the BOD has to understand the bank's liquidity risk profile and the internal and external business environment and stipulate the liquidity risk tolerance; (b) the BOD has to determine and approve the strategies, policies, and practices of liquidity risk management; (c) and the BOD has to disseminate, communicate, and guide the senior managers to manage liquidity effectively (BIS, 2008)
The policies must contain the specific goals and objectives of managing liquidity, including the short-term and long-term strategies of managing liquidity. The policies determine the roles and responsibilities of the bodies involved in the liquidity management process, including asset and liability management policies, and the relationship with other financial institutions and regulators. When preparing and formulating the liquidity management policies, BOD may consider and incorporate ideas from the bodies in charge of managing liquidity risk such as the Chief Executive Officer (CEO) and heads of risk management departments (divisions). In particular, input from banking regulators and stakeholders are also very important to be taken into account in the policies. This intensive integrative cooperation and coordination will ensure that the board fully understands the realities of the internal and external business environments in order to be able to formulate applicable liquidity management policies (BIS, 2008).

Following the liquidity management policies and, the roles of the Asset liability committee and their counterparts, the effective information system comes next to support the liquidity management process (BIS, 2008). This system enables banks to monitor, report, and controls the liquidity risk exposure and determines the funding needs inside and outside the organization. In general, the effective information system concerns two players, namely; the decision makers of liquidity management and the decision followers on the operational level. Practically, upon receiving the commands on managing liquidity from the decision makers, the senior managers assign and monitor their subordinates, and ask them to report the implementation of liquidity management. The decision makers receive a special internal report about any liquidity risk problem, and the internal and external liquidity management information from senior managers. In some cases, the bank management publishes reports about the implementation of liquidity management for public disclosure to enable market participants to make an informed judgment about the soundness of the bank's liquidity risk management framework and liquidity position (BIS, 2008).

In order to maintain the soundness of the liquidity management process, the banks should have an internal control system to comply the process conducted by the decision followers with the one stipulated by the decision makers (BIS, 2008). This internal control system can be assigned to ALCO as a representative of BOD to bridge the gap between decision makers and decision followers. However, the regular functions of the internal control system are to comprehensively audit the liquidity management process, to evaluate the liquidity position, and, when necessary, to propose revision or enhancement of the liquidity management process to the BOD

(decision makers).

2.4 Empirical Literature Review

Ernst and Young, (2010) in a survey conducted on behalf of the Institute of International Finance the second to gauge progress across the industry since the IIF's 2008 report highlights the emphasis being placed on risk management. The survey was conducted from October through December 2010. They conducted the survey using two methods; an online quantitative questionnaire which was distributed to the top IIF member firms by asset size; and telephone interviews with CROs and senior risk executives of the firms serving on the IIF Steering Committee on Implementation. Sixty-two financial services firms participated in the study either online and/or via telephone, which resulted in 60 online survey responses and 35 interviews. Most organizations reported that boards of directors are now playing a more prominent role and senior managers together with the boards are setting a clearer direction. The firms surveyed emphasized that the power and authority of Chief Risk Officers and their teams has been elevated, notably in such key areas as business strategy and planning, risk appetite definition and management, product development and compensation. The survey, found that 83% of respondents reported an increase in board oversight of risk – with 42% indicating a significant increase in board involvement. The majority stated that their boards are more actively engaged and involved in risk policy setting and governance, spending more focused, higher-quality time on risk issues. This is seen as the most significant area of change. In addition, 89% indicated that the role of their CRO has been strengthened since the crisis. About 88% of respondents viewed the need to focus more on liquidity-risk management as the single largest lesson learned from the crisis. Not surprisingly, the results of the study indicated that banks are indeed addressing the liquidity problem. 92% of respondents report that, post -crisis, they have made changes to managing and controlling liquidity risk, an increase from 61% in the 2009 survey. 92% have strengthened management of liquidity risk, from fundamental shifts in philosophy and governance particularly for banks most impacted by the crisis to more focused efforts to refine specific practices.

Simplice A. Asongu, (2013) did a research on Post-crisis bank liquidity risk management disclosure. The purpose of his paper was to investigate post-crisis measures banks had adopted in a bid to manage liquidity risk. It was based on the fact that the financial liquidity market was greatly affected during the recent economic turmoil and financial meltdown. During the crisis, liquidity risk management disclosure was crucial for confidence building in market participants. The study investigated if Basel II pillar 3 disclosures on liquidity risk management were being applied by 20 of top 33 world banks. Bank selection was based on information availability, geographic balance and comprehensiveness of the language in which information was provided. This information was searched from the World Wide Web, with a minimum of one hour allocated to "content search", and indefinite time for "content analyses". The findings indicated that only 25 per cent of sampled banks provided publicly accessible liquidity risk management information, a clear indication that in the post-crisis era, many top ranking banks still did not take Basel disclosure norms seriously, especially the February 2008 pre-crisis warning by the Basel Committee on Banking Supervision.

Ismal, Rifki, (2010) carried out a research, analyzing the practices of managing liquidity in Islamic banks and gaining real information about the perception of banking depositors and Islamic bankers. The research used a quantitative research methodology to analyze and gather all relevant information on liquidity risk management and to construct the main output of the research. It analyzed primary data from direct surveys to depositors and Islamic banks and employed secondary data to make econometric models and analyze the performance of the industry. The Survey questionnaire to both Islamic bankers and depositors were done through an online system. The study found out that conventional banks, Islamic banks face a number of risk areas, which affect their performance and operations. One of such risk areas was liquidity risk, which showed additional features in the case of Islamic banks. Both the international banking standards and the *Sharia* guidance suggested that banks should have: robust liquidity risk management policies, a responsive asset and liability committee, effective information and internal control systems and, methods for managing deposits to reduce on-demand liquidity, to manage liquidity risk.

The study concluded that in their operations, banks might face liquidity risk as a result of asset-liability imbalance and maturity mismatch risks. In order to manage liquidity risk, the banks should conduct liquidity management processes which consist of determining liquidity management policies, establishing asset liability committees (ALCOs), having an effective information system and internal control, and preparing techniques to mitigate liquidity risk. The study recommended that banking regulators, Islamic banks, depositors, business partners, and all related parties should improve the current practice of liquidity risk management.

The board/management are responsible for approving and reviewing the liquidity risk management strategy and policies of the microfinance institution. Each microfinance institution should develop a strategy that sets the objectives of ensuring that it has adequate levels of liquidity to meet its operational needs and adopt the necessary policies and procedures to achieve this objective.

Policies are written statements of the institution's commitment to pursue certain objectives and results.

Policies often set standards (e.g. of risk tolerance) and recommends courses of action. They also express the institution's underlying mission, values and principles. Procedures refer to step by step processes, programs and practices that impose order on the institution's pursuit of its objectives, defining how daily activities are to be carried out. Liquidity measurement involves assessing all of a microfinance institution's cash inflows against its outflows to identify the potential for any net shortfalls going forward. Monitoring of liquidity refers to developing reporting systems that identify adverse changes in the risk profiles of significant products, services and activities and monitoring changes in controls that have been put in place to minimize adverse consequences. Internal control is a process, effected by an organization's people and information technology (IT) systems, designed to help the organization accomplish specific goals or objectives. It is a means by which an organization's resources are directed, monitored, and measured. A microfinance institution should have an adequate system of internal controls over its liquidity risk management process.

3.0 Methodology

This study adopted a survey research design. A survey research design involves the selection of a sample of respondents and administering questionnaires or conducting interviews to gather information on variables of interest (McMillan & Schumacher, 1993). Since this study seeks to obtain descriptive and self-reported information from the MFIs' management and Employees on the factors affecting liquidity risk management practices in MFIs, the survey design was the most appropriate. The target population was the employees of the 6 registered and operating MFIs in Kenya. The current total number of employees working in the 6 MFIs is 128. The study assumed that all employees are involved either directly or indirectly in execution of the micro finance institution liquidity risk management practices. Proportionate stratified sampling was used to select 96 employees from the 6 MFIs. In addition, the employees to represent each MFI were selected using simple random sampling; and the two managers in charge of the MFI branch in the study area i.e. Branch and Operations manager. In total, the study used a sample of 96 including 84 employees and 12 managers.

Primary data was collected using self-structured questionnaires targeting all the employees. The questionnaires were used in both pilot and the main study. The questionnaires consisted of mainly closed-ended items which were assessed in the form of a five-point Likert-scale.The researchers collected data through non-verbal method of questioning where closed and open ended questions were issued to the respondents. A pilot study was conducted in KWFT and SMEP Eldoret Branches to pretest the validity of questionnaires and then the researchers personally distributed the questionnaires to the respondents. The completed questionnaires were then verified and collected from the respondents.

The raw data was collected and analyzed using the Statistical Program for Social Sciences (SPSS) Version 17.0 for Windows. This was done using descriptive and inferential statistics. Descriptive statistics (percentages and frequencies) presented in tables and charts (pie charts) were used to summarize and organize data and to describe the characteristics of the target population.

The hypothesis was tested using regression analysis. The regression model used was $y_i = \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_{3+} \beta_4 x_4 + \varepsilon$

Where y is the dependent variable (liquidity risk management practice), x_1 – institutions internal controls, x_2 – institutions policies, x_3 – Board/management oversight

x_4 – institutions risk monitoring strategies and ε – constant (intercept). β, β_2, β_3 & β_4 are coefficients.

4.0 Results And Discussions
4.1 Internal Control Systems

The aim of the first objective of the study was to assess the internal control systems in place for the management of liquidity risks in MFIs. This section thus presents the findings on the internal systems applied and the extent of their application. The first question sought to know from the staff the adequacy of IC systems in place. Majority of the MFI staff were of the opinion that the IC systems in place were adequate to address liquidity risks. First the study sought to know whether the MFIs had adequate processes for identifying and evaluating liquidity risks for necessary actions. Majority of the staff 37.4% were not sure of the adequacy of the risk identification and evaluation process in their MFIs, 32.5% agreed while 30.1% disagreed that the risk identification procedure in their institution was adequate. This implies a mixed opinion on whether the process was adequate. Eastern Caribbean Central Bank (2006) advises that at its basics, each finance institution should establish a process for the ongoing measurement and monitoring of net funding requirements. Liquidity measurement involves assessing all of a bank's cash inflows against its outflows to identify the potential for any net shortfalls going forward. Secondly the study sought to know whether there were internal mechanisms to ensure strict adherence to the liquidity risk management policies as presented on the findings on Table 4.6.

The findings revealed the presence of conducive internal environment which ensures strict adherence to the liquidity risk management policies in place. This was cited by 74.7% of the respondents who agreed and 4.8% who strongly agreed. Those of the contrary opinion were few, that is, 18.1% who disagreed.

An important element of the liquidity management framework is a management information system designed to provide the board of directors, senior management and other appropriate personnel with timely information on the liquidity position of the bank. The study therefore sought to establish the information systems for real time processing and transmission of data on the various determinants of liquidity position of MFIs. Table 4.7 presents findings on the assessment of IS systems. The IT systems in place were rated moderate since 61.4% agreed that their systems provided real time information on the liquidity position of their organizations, however, 25.3% disagreed.

As part of assessment of the internal controls in place, the study sought to determine whether the MFIs had provisions for the review to determine whether their organizations complied with the liquidity risk management policies and procedures in place. The findings show that majority of the MFI staff were in agreement that their organizations ensured that there were periodic reviews on organizations compliance with its liquidity risk policies and procedures, 20.5% were however not sure while 10.8% disagreed. This implies that MFIs were also conscious on the systems of assessing internal controls related to liquidity risk management. This practice is also highly emphasized by Basel I framework which states that periodic reviews should be conducted to determine whether the organization complies with its liquidity risk policies and procedures. Positions that exceed established limits should receive the prompt attention of appropriate management and should be resolved according to the process described in approved policies (Basel Committee on Banking Supervision, 2000).

This study sought to know whether the internal audit department included in their audits the liquidity risk management process. Majority 59.0% agreed that the periodic review by the internal audit department also included the evaluation of the liquidity risk management process to identify any weaknesses or problems in the system. As part of the internal control systems, internal control charter is key, therefore the study sought to establish whether MFIs in Kenya has IC charters. The staff identified that indeed there were IC charters in 71.1% of the organization surveyed, however 28.9% of the staff indicated that their MFIs did not have IC charters. This means that ICs were widely observed, however, those without IC could be struggling to balance internal operations.

Finally staff were asked to indicate their opinions on whether the IC systems affected management of liquidity practices and indeed in most of the MFIs (94.0%) the staff agreed, only a few 6% cited that IC did not affect liquidity management. The implication in this study therefore is that there is need for strong internal controls in order to enhance liquidity management in MFIs.

The study sought to test the below hypotheses:

H_0: Micro Finance Institutions internal controls system has no effect on its liquidity risk management practices.

H_1: Micro Finance Institutions internal controls system significantly affects its liquidity risk management practices.

This was tested by establishing the relationship between internal controls and liquidity risk management practice using regression analysis. First, the data set was subjected to four assumptions of linear regression analysis. The test for linearity using scatter plot showed that the independent variable had linear relationship with the dependent variable. The second assumption tested was that the error term (ε_i) was normally and identically independently distributed with mean zero and constant variance σ^2 (Homoscedasticity). Scatter plot showed a concentration of the variance of the error term along the line of best fit. Hence the data did not suffer from heteroscedasticity and instead was homoscedastic. The third assumption was that there were no significant outliers in the data set. The study adopted the use of descriptive statistics in examining the existence of outliers since the variables were measured on a five point scale.

The fourth assumption of normal distribution of the residuals was undertaken. The study used a Kolmogorov-Smirnov test for normality. Since the Sample size was below 2000, Shapiro-Wilk results were used to determine the normality. The p-value was greater than 0.05 implying that the variables fulfilled the normality condition for regression analysis. The predicted model relating internal control practices and liquidity risk management practice was presented using the linear regression model below.

$y_i = \beta_l x_{il} + \varepsilon_i$

where yi = Liquidity risk management practice

   β_l = Coefficient

   ε_i = Constant (intercept)

The test results are shown on Table 4.1 below:

Table 4.1: Regression analysis between IC on Liquidity

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.858[a]	.735	.732	.39766

a. Predictors: (Constant), Internal Controls

ANOVA[b]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	35.607	1	35.607	225.174	.000[a]
	Residual	12.809	81	.158		
	Total	48.416	82			

a. Predictors: (Constant), Internal Controls

b. Dependent Variable: Liquidity risk management practice

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.018	.251		-.071	.944
	Internal Controls	.854	.057	.858	15.006	.000

a. Dependent Variable: Liquidity risk management practice

From the model summary the R^2 value indicates that 82.5% of the variations in risk management practice can be explained by the model. The ANOVA test results show that the F-value $(1, 81)$ was = 225.174 and its sig. value = 0.000. Therefore the model was significant (p-value< 0.05) at 0.05 level in explaining the linear relationship between internal controls and liquidity risk management practices.

The fitted model of this relationship is presented below;

$y_i = 0.854x_1 - 0.18$

Therefore liquidity risk management practice is a function of internal controls put in place. The study therefore rejected H_0: and accepted H_1: that Micro Finance Institutions internal controls system significantly affects its liquidity risk management practices. This is in agreement with Basel I framework which outlines on importance of internal controls in managing banks liquidity. The framework clearly outlines that banks should have adequate internal controls to ensure the integrity of their liquidity risk management process (Basel Committee on Banking Supervision, 2000). The internal controls should be an integral part of the bank's overall system of financial management.

4.2 Institutions Policies

The second objective of the study sought to assess the institutions policies and liquidity risk management practices. Policies provide a guiding framework for operations and decision making in organizations. The findings are presented on the following discussions.

First the study sought to know whether there were specific policies on liquidity risk management. From the findings, 81.9% confirmed the presence of liquidity risk management policies in their MFIs while 18.1% revealed a lack of these policies. Further the research sought answers on the policies in place. The policies were rated highly on proper establishment of asset liability management committee whose duties and responsibilities are well outlined at $\mu = 4.28$, with $\sigma = 0.83$. This was followed by the policies articulation of contingency measures to ensure that the microfinance institutions have access to adequate liquidity in times of crisis rated at $\mu = 3.70$, with $\sigma = 0.74$. The presence of risk management policy was rated moderate at a $\mu = 3.39$, with $\sigma = 0.68$ followed by adherence to Liquidity risk management policies in place at a $\mu = 3.39$, with $\sigma = 0.96$. The least ranked was the articulation of tolerance limits for liquidity risk established by the board which was rated at $\mu = 3.34$, with $\sigma = 0.85$. Overall this implies moderate rating on liquidity risk management policies.

To determine how institution policies affected the management of liquidity risks in MFIs, the staff were first asked to indicate their opinion on whether the policies affected liquidity generally.

Majority of the staff of MFIs agreed (68.7%) that policies affected management of liquidity risks in their organization, 9.6% strongly agreed while 21.7% were undecided. This implies that having a coherent policy influenced the risk management practice in MFIs through guidance on specific operations on liquidity risk management.

Liquidity risk management involves actions and distribution of responsibilities to persons of different positions in the organization. Thus this section sought to know whether policies guided distribution of

responsibility to enable smooth implementation liquidity risk management practices.

Over half of the MFI staff (56.6%) agreed that the policies established clear distribution of responsibilities which enabled better liquidity risk management. However, 30.1% were not sure while 13.3% disagreed. This implies that having policies in place enabled MFIs to clearly distribute responsibilities which enhanced the efficiency of liquidity risk management. Indeed the Liquidity risk management policies provided step by step guide in the management of institutions liquidity risk according to 56.5% of the staff who agreed, 27.7% were not sure while 15.7% disagreed.

The study sought to test the following hypothesis:

H_o: Micro Finance Institutions policies have no effect on its liquidity risk management practices.

H_1: Micro Finance Institutions policies significantly affect its liquidity risk management practices.

These were tested by establishing the relationship between institutions policies and liquidity risk management practice using regression analysis. The predicted model relating the MFI policies and liquidity risk management practice was presented using the linear regression model below.

$y_i = \beta_1 x_{i1} + \varepsilon_i$

where yi = Liquidity risk management practice

β_1 = Coefficient

ε_i = Constant (intercept)

The test results are shown on Table 4.2:

Table 4.2: Regression between Institutions Policies on Liquidity Risk Management Practices

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.840[a]	.706	.702	.41914

a. Predictors: (Constant), institutional policies

ANOVA[b]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	34.186	1	34.186	194.599	.000[a]
	Residual	14.230	81	.176		
	Total	48.416	82			

a. Predictors: (Constant), institutional policies

b. Dependent Variable: Liquidity risk management practice

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	-.024	.270		-.088	.930
	Institutional policies	1.088	.078	.840	13.950	.000

a. Dependent Variable: Liquidity risk management practice

The model summary revealed $R^2 = 0.706$ implies that 70.6% of the variations in risk management practice can be explained by the model. Further ANOVA test revealed $F (1, 81) = 194.599$, p = 0.000. This implies that the model was significant (*p*-value < 0.05) at 0.05 therefore relevant in predicting the linear relationship between institution policies and liquidity risk management.

Therefore the fitted model of this relationship was; $y_i = 1.088x_1 - 0.024$

This model implies that liquidity risk management practice was a function of institutional policies based on the relationship. The study therefore rejected H_0 and accepted H_1: Micro Finance Institutions policies significantly affect its liquidity risk management practices. Liquidity management policies determine the structure of identifying, reporting, monitoring, and reviewing the bank's liquidity conditions. The policies set the limit of liquidity risk and prepare a contingency plan to handle and mitigate liquidity pressures. The policies determine the roles and responsibilities of the bodies involved in the liquidity management process, including asset and liability commitees, and the relationship with other financial institutions and regulators (Holmström and Tirole, 1998). As a result properly articulated and inclusive liquidity risk management policies enhance performance in liquidity management.

4.3 Board Oversight on Liquidity Risk management

The board provides strategic direction on critical matters of the organization, therefore in regard to liquidity risk management, the board would provide direction to inform actions on liquidity risk management. In this section, the study sought to establish the practices by the MFI boards which influence the risk management practice.

Among the interventions by the board that have an impact on liquidity risk management, clarity in delegation of authority in liquidity management function was rated highest at μ = 4.28 with σ = 0.65. Followed by the initiatives by the board to ensure review of liquidity management framework which was rated at μ = 3.94 with σ= 0.94 and the guidance in the setting of tolerance levels on parameters related to liquidity riskμ = 3.63 with σ = 0.74.Overall boards provision of strategic direction was rated moderate at μ = 3.48 with σ = 0.80. The least ranked was the Board/management dissemination of new strategies and policies for managing liquidity riskμ = 3.46 with σ = 0.9

The boards' requisite knowledge and skills on liquidity risk management would determine their emphasis on the certain aspects of liquidity risk management therefore the study sought information on the rating of the boards' knowledge from the staff. Majority 78.3% indicated that the board members had requisite knowledge and skills to provide oversight on the liquidity risk while 21.7% indicated that their board did not have requisite knowledge. A cross tabulation on the boards support based on the knowledge revealed that (33.3%) of the staff who cited lack of liquidity management knowledge among the board of directors also indicated poor support by the management, on the other hand 36.9% of the staff who rated their board very good in support also cited that the board was knowledgeable on liquidity risk management. This implies that knowledge on liquidity risk management translated to better support by the board.

The third hypothesis of the study was:

H_0: Micro Finance Institutions Board/ management oversight role has no effect on its liquidity risk management practices.

H_1: Micro Finance Institutions Board/ management oversight role significantly affects its liquidity risk management practices.

To test this hypothesis, relationship between MFI board/ management oversight role and liquidity risk management practice was established using regression analysis. This was tested on a predicted model relating the MFI Board/ management oversight role and liquidity risk management practice which was presented using the linear regression model below.

$y_i = \beta_l x_{il} + \varepsilon_i$

where yi = Liquidity risk management practice

β_l = Coefficient

ε_i = Constant (intercept)

The test results are shown on Table 4.3:

Table 4.3: Board Oversight on Liquidity Risk management

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.585[a]	.343	.335	.62680

a. Predictors: (Constant), board management oversight

ANOVA[b]

Model	Sum of Squares	Df	Mean Square	F	Sig.
1 Regression	16.592	1	16.592	42.232	.000[a]
Residual	31.824	81	.393		
Total	48.416	82			

a. Predictors: (Constant), board management oversight

b. Dependent Variable: Liquidity risk management practice

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	1.271	.379		3.355	.001
Board/management oversight	.662	.102	.585	6.499	.000

a. Dependent Variable: Liquidity risk management practice

The results on the model summary reveal R^2 = 0.343 which implies that the model explains 34.3% of the variations in risk management practice. ANOVA to establish the model significance revealed $F_{(1, 81)}$ = 42.232, p = 0.000 which is an indicator that the model was significant (*p*-value < 0.05) at 0.05 therefore relevant in predicting the linear relationship between the board/management oversight and liquidity risk management. The resulting fitted model on the relationship revealed

$y_i = 0.662x_1 + 1.271$

Thus liquidity risk management practice is a function of board/management support. The study therefore rejected H_0 and accepted H_1 Micro Finance Institutions Board/ management oversight role significantly affects its liquidity risk management practices. Rifki, (2010) clearly states that, the BOD has the sole responsibility for putting in place the bank liquidity management policies in cooperation with ALCOs and the heads of risk management departments/divisions. Basel Committee on Banking Supervision (2008) emphasizes that the strategy should include specific policies on liquidity management, such as: the composition and maturity of assets and liabilities; the diversity and stability of funding sources; the approach to managing liquidity in different currencies, across borders, and across business lines and legal entities; the approach to intraday liquidity management; and the assumptions on the liquidity and marketability of assets.

4.4 Liquidity Risk Monitoring

An efficient risk management system entails a sound system for identifying measuring and monitoring liquidity risk. This study therefore sought to establish the liquidity risk monitoring structures in place in MFIs in Kenya.

Timely generation of reports on liquidity risk monitoring was the most adopted strategy in MFIs rated at a $\mu = 4.20$ with $\sigma = 0.99$. The second most common strategy was that MFIs also maintained adequate information systems for measuring, monitoring, controlling and reporting on liquidity risks $\mu = 3.88$ with $\sigma = 1.03$. MFIs have also invested in competent teams for assessment and reporting on the liquidity risks in their organizations this was rated third on application where $\mu = 3.73$ with $\sigma = 0.98$. Liquidity monitoring strategies are effective and affect the liquidity risk management. The risk monitoring strategies in place also specify the risk tolerance limits as a strategy to ensure proper guidance in the implementation of liquidity risk management $\mu = 3.61$ with $\sigma = 0.66$. The least ranked strategies are the specification of risk monitoring and tolerance limits $\mu = 3.58$ with $\sigma = 0.86$, while the adoption of strong management information system was the least adopted strategy $\mu = 3.37$ with $\sigma = 1.00$.

4.6.2 Frequency of Cash flow Projections in Monitoring Liquidity Risks

Cash flow projections help organizations to understand their future cash inflows and outflows therefore plan ahead. The study therefore sought to understand the frequency at which cash flow projections were done in MFIs in Kenya. Some of the respondents identified that cash flow projections were made very frequent with some MFIs making projections on daily basis (25.3%), weekly (18.1%), monthly (24.1%) and semiannually (24.1%). The variations in frequency imply that the practice was varied across and so was the liquidity risk management practice.

Respondents were asked to identify whether the monitoring strategies in place affected liquidity risk management. Majority of the staff (39.8%) agreed while 37.3% strongly agreed that the liquidity risk monitoring strategies in place affected the efficient management of liquidity, however, 13.3% were not sure.

The fourth and last hypothesis of the study was

Ho: Micro Finance Institutions risk monitoring strategies have no effect on its liquidity risk management practices.

H1: Micro Finance Institutions risk monitoring strategies significantly affects its liquidity risk management practices

The hypothesis was tested by computing the relationship between MFI risk monitoring strategies and liquidity risk management practice using regression analysis. The predicted model relating two variables was as shown.

$y_i = \beta_1 x_{i1} + \varepsilon_i$

where yi = Liquidity risk management practice

β_1 = Coefficient

ε_i = Constant (intercept)

Table 4.4: Regression between Liquidity Risk Monitoring and risk management practice

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.794[a]	.631	.627	.46952

a. Predictors: (Constant), liquidity risk monitoring

ANOVA[b]

Model	Sum of Squares	Df	Mean Square	F	Sig.
1 Regression	30.559	1	30.559	138.618	.000[a]
Residual	17.857	81	.220		
Total	48.416	82			

a. Predictors: (Constant), liquidity risk monitoring

b. Dependent Variable: Liquidity risk management practice

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
1 (Constant)	1.455	.197		7.385	.000
Liquidity monitoring	.684	.058	.794	11.774	.000

a.   Dependent Variable: Liquidity risk management practice

From the model it can be seen that $R^2 = 0.631$ which implies that the model explains 63.1% of the variations in risk management practice. ANOVA test to establish the model significance revealed $F (1, 81) = 138.618$, $p = 0.000$ this implies that the model was significant (p-value < 0.05) at 0.05 therefore it could be used in explaining relationship between liquidity monitoring and liquidity risk management.

The resulting fitted model on the relationship revealed.

$y_i = 0.684x_1 + 1.455$

Thus liquidity risk management practice is a function of liquidity risk monitoring. Therefore the study rejected H_0: and accepted H_1: Micro Finance Institutions risk monitoring strategies significantly affects its liquidity risk management practices. Proper monitoring and regulation of liquidity risk is associated with systemic risk and with stability of the financial system. If institutions do not measure liquidity risk adequately and if it is not well regulated, financial institutions could see their positions affected by a liquidity shock. (Basel Committee on Banking Supervision, 2000).

4.5 Liquidity risk management practice in Place

The study aimed at assessing the factors that affect liquidity risk management practice. Previous sections focused on the contributing factors while the current one evaluates MFIs level of control and management of liquidity risks. First the study sought to determine whether the management was in full control of liquidity risks in their MFIs.Majority of the staff (74.70%) were of the view that their management was in full control of the liquidity risks in their MFIs, 25.30% were of the contrary opinion which means that the staff had confidence in the manner in which risks were managed.

Further the MFI staff were asked to rate their organization on the various indicators of liquidity risk management to determine the level of risk management practice. The MFIs were rated highly on their ability to meet obligations on daily business operations rated at $\mu = 4.28$ with $\sigma = 0.55$ which is the main indicator of liquidity. Second on the rating was the ability of the micro finances to continuously fund the purchase of assets for the $\mu = 3.93$ with $\sigma = 0.91$ and the ability able to raise funds required especially in adverse conditions$\mu = 3.67$ with $\sigma = 1.03$. The least rated was the MFIs ability to maintain a sound asset and liability balance$\mu = 3.36$ with $\sigma = 0.65$. Generally it can be concluded that MFIs were rated high on the liquidity risk management.

4.6 Overall Regression Analysis

The study at this point sought to establish the combined effects of the internal controls, MFI policies, board/management oversight and liquidity monitoring on the liquidity risk management practice using multiple regression analysis.

Table 4.6: Overall Regression Analysis Results

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.919[a]	.844	.836	.31098

a. Predictors: (Constant), liquidity monitoring, board management, institutional policies, Internal Controls

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	40.872	4	10.218	105.658	.000[a]
	Residual	7.543	78	.097		
	Total	48.416	82			

a. Predictors: (Constant), liquidity monitoring, board management, institutional policies, Internal Controls
b. Dependent Variable: Liquidity risk management practice

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.252	.226		-1.114	.269
	Internal Controls	.285	.115	.287	2.480	.015
	Institutional policies	.497	.107	.384	4.647	.000
	Board management	.015	.079	.013	.191	.849
	Liquidity monitoring	.290	.056	.337	5.159	.000

a. Dependent Variable: Liquidity risk management practice

The model summary shows $R^2 = 0.844$ which implies that the four factors combined explained 84.4% of the variations in liquidity risk management practice. A further ANOVA test revealed $F(4, 78) = 105.658$, p = 0.000 meaning that the model was significant p=0.05. Therefore this model could be used in explaining the factors affecting liquidity risk management in MFIs in Kenya.

The resulting fitted model on the relationship revealed $y_i = 0.285x_1 + 0.497x_2 + 0.015x_3 + 0.290x_4 - 0.252$

Thus liquidity risk management practice = 0.285 Internal Controls + 0.497 Institutional policies + 0.015 Board management $_+$ 0.290 Liquidity monitoring - 0.252.

5.1 Summary of Findings

The study found out that majority of the MFI staff were of the opinion that the internal control systems in place were adequate to address liquidity risks. The findings also revealed the presence of conducive internal environment which ensured strict adherence to the liquidity risk management policies in place. The IT systems in place were rated moderate, majority of the MFI staff were in agreement that their organizations ensured that there were periodic reviews on organizations compliance with its liquidity risk policies and procedures, reviews also included evaluation of the liquidity risk management process to identify any weaknesses or problems in the system.

Majority of the respondents confirmed the presence of liquidity risk management policies in their MFIs. The policies were rated highly on proper establishment of asset liability management committee whose duties and responsibilities were well outlined followed by the policy articulation on contingency measures to ensure that the microfinance institutions had access to adequate liquidity in times of crisis, the presence of risk management policy, adherence to Liquidity risk management policies in place while the least ranked was the articulation of tolerance limits for liquidity risk established by the board. The risk management policies provided step by step guide in the management of institutions liquidity risk. Liquidity risk management practice was a function of institutional policies based on the relationship

Among the interventions by the board that have an impact on liquidity risk management, clarity in delegation of authority in liquidity management function was rated highest Followed by the initiatives by the board to ensure review of liquidity management framework, board's provision of strategic direction while the least ranked was the Board/management dissemination of new strategies and policies for managing liquidity risk. In monitoring liquidity, timely generation of reports on liquidity risk monitoring was the most adopted strategy followed by the maintenance of adequate information systems for measuring, monitoring, controlling and reporting on liquidity risks. MFIs were found to have invested in competent teams for assessment and reporting on liquidity risks in their organizations. This was rated third on application. The risk monitoring strategies in place also specified the risk tolerance limits as a strategy to ensure proper guidance in the implementation of liquidity risk management. The least ranked strategies were the specification of risk monitoring and tolerance limits.

5.2 Conclusion

Liquidity risk management practice was highly upheld in micro finance institutions in Kenya which could be one of the main reasons for the accelerated growth of MFIs in Kenya. The liquidity risk management practice was a function of internal controls put in place. These ensured proper establishment and operation of internal systems that enhance minimization of liquidity related risks.

Liquidity risk management practice was also affected by the Microfinance Institutional policies. These provide a guiding framework within which each player in the organization operates to optimize liquidity risk management. Strategic directions by the board and the cascading of the same through the top management to the operational level is key in enhancing efficiency in liquidity risk management practice. Thus liquidity risk management practice is a function of board/management support. Micro Finance Institutions Board/ management oversight role significantly affects its liquidity risk management practices.Continuous risk monitoring and real time transmission of liquidity information is an appropriate strategy that enables staff in all operational areas to make informed decisions geared to the overall MFI goals on liquidity. The monitoring strategies adopted significantly affect the liquidity risk management practices.

5.3 Recommendations

This study therefore recommends the following actions:

First, established MFIs should document the local strategies applied in liquidity risk management to guide upcoming MFIs and Microcredit organizations accelerate their growth.

Effective internal control processes should be introduced through implementation of computerized financial management systems. The micro finance management should ensure presence of conducive internal environment which enables strict adherence to the liquidity risk management policies in place.

The organization should employ effective policies that impacts positively on the overall liquidity risk management functions. MFIs should ensure that there are periodic reviews on organizations compliance with its liquidity risk policies and procedures. The policies should clearly articulate on contingency measures to be taken to ensure that the microfinance institutions had access to adequate liquidity in times of crisis.The Board should come up with initiatives to facilitate review of liquidity management framework and also provide strategic direction to the liquidity risk management function. The Board should ensure clarity in delegation of authority in liquidity management function and effectively disseminate new strategies and policies for managing liquidity risk.

The MFIs should maintain adequate information systems for measuring, monitoring, controlling and reporting on liquidity risks. They should ensure timely generation of reports on liquidity risk monitoring to guide the actions and strategies that are to be adopted in managing the risks.

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