

## WORKING CAPITAL MANAGEMENT AND FINANCIAL PERFORMANCE OF MICROFINANCE INSTITUTIONS IN KENYA

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### ABSTRACT

This study investigates the relationship between working capital management and the financial performance of 13 microfinance institutions (MFIs) in Kenya over the period 2015 to 2024. Microfinance institutions are instrumental in advancing financial inclusion and poverty alleviation, serving approximately 45% of Kenya's informal sector. Despite notable improvements in liquidity — rising from 38% in 2019 to 81% in 2022 — many MFIs have continued to record weak financial performance, with negative average Return on Assets (ROA) figures, including -6% in 2024. These trends, particularly among large MFIs with a dominant market share, raise concerns regarding institutional sustainability and their ability to support long-term development goals. The study focused on four core components of working capital management: liquidity management, and loan portfolio management to explore how they affect financial performance (measured in terms of ROA). A mixed research design, combining cross-sectional and longitudinal (panel data) approaches, was employed. Secondary data was obtained from audited financial statements of the 13 selected MFIs over the ten-year period. The study variables were measured based various indicators. Liquidity management was assessed using the ratio of cash and cash equivalents to total assets. Loan portfolio management was evaluated using loan loss coverage ratio while financial performance was measured in terms of ROA. The data was analyzed based on descriptive statistics (mean, standard deviation, skewness and kurtosis) as well as inferential statistics (correlation and regression analysis). Findings revealed a positive but insignificant relationship between liquidity management, with financial performance. However, there was a significant negative relationship between loan portfolio management and financial performance. The study concluded that liquidity management, has insignificant positive effect on financial performance, while loan portfolio management has a significant negative effect. The insignificant positive effect is attributed to poor liquidity management, while poor loan portfolio management is considered the cause of its significant negative effect. The study therefore provides several recommendations to streamline each of them towards enhancing performance including hiring qualified financial analysts and proficient credit management professionals among other measures.

**Key Words:** Working Capital Management, Financial Performance, Microfinance Institutions (MFIs), Liquidity Management, Loan Portfolio Management, Kenya

## Background of the Study

There has been a perception that microfinance institutions (MFIs) have been typically linked to developing countries but this notion has changed in recent years where MFIs have spread to developed countries as well (Tim, 2018). This is primarily due to the important role that MFIs play in an economy. The estimated client outreach of MFIs in developing countries is estimated at 80 million households with about 20,000 MFIs serving the poor in Latin America, Africa, Asia, and the developing countries in Europe (Chauhan, 2021).

In recent times, micro-financing has started to appeal to developed nations too because of the ability of MFIs to reach the socially and financially excluded segments of the population (Kim, 2018). Microfinance institutions mainly focus on offering financial services, especially in the form of loans to low-income earners mostly farmers and small business owners (Shkodra, 2019). For such institutions, effective working capital management is fundamental as it provides crucial insights into the state of an organization in terms of its financial fitness (Nyamweno & Olweny, 2014). As asserted by Al-Zararee, Almasria and Alawaqleh (2021), working capital management is a fundamental element of financial management in a business whose primary focus is the liabilities, liquidity components, and current assets.

Conventionally, working capital has been considered as simply entailing current assets and current liabilities of a company (Kimani et al., 2014). However, according to Lyngstadaas (2020), working capital management should be understood from an operational perspective and a financial perspective. Operational working capital management focuses on working capital components like inventory, accounts payable, and accounts receivable. On the other hand, financial working capital management focuses on working capital components like cash and short-term investments (Lyngstadaas, 2020). Irrespective of the dimension of working capital in question, Wambia and Jagongo (2020) indicated that working capital management influences the performance of an organization while underscoring that robust working capital management is critical in achieving the balance between performance and the risk of failing to meet financial obligations. This study sought to assess working capital management and financial performance of MFIs in Kenya.

## Statement of the Problem

Microfinance institutions (MFIs) play a crucial role in poverty alleviation and enhancing financial inclusion by providing financial services across economies (Fadikpe et al., 2022). In Kenya, it is estimated that MFIs extend loans to 45% of the informal sector (AMFI, 2022). Furthermore, approximately 2.9% of Kenyan banks are affiliated with MFIs, underscoring their contribution to financial inclusion (FinAccess, 2019). Despite the above contribution, Deposit Taking MFIs in Kenya have reported poor financial performance in recent years. From profitability perspective; these institutions reported combined losses before tax amounting to: Kshs. 3.531 billion in 2024, Kshs. 2.391 billion in 2023, Kshs. 980 million in 2022, Kshs. 877 million in 2021, Kshs. 2.2 billion in 2020, Kshs. 399 million in 2019, Ksh.1.4 billion in 2018, Ksh.622 million in 2017, Kshs. 377 million in 2016 and a profit of Ksh. 592 million in 2015 (CBK, 2024,2023, 2022, 2021, 2020, 2019, 2018,2017,2016 & 2015). The poor performance of MFIs is further evidenced by negative Return on Assets (ROA) over recent years, with combined ROA figures of -6% in 2024, -4% in 2023, -1% in 2022, -1% in 2021, -3% in 2020, and -0.4% in 2019.

Unaddressed financial weaknesses in Kenyan DTMs threaten financial stability, inclusion, and economic equity. Further, it should be noted that: working capital management in financial institutions is not just about managing short-term finances; it's about ensuring the institution's stability, regulatory compliance, operational efficiency, profitability, and ultimately, its survival and stability of the broader financial system. Otieno, Nyagol, and Onditi, (2016) find that effective working capital management is essential for minimizing liquidity risk. The challenge being how to maintain a healthy level of working capital; for excessive working

capital incurs costs, while insufficient working capital makes it difficult to meet current financial obligations (Al-Zararee, Almasria, & Alawaqleh, 2021).

A wide range of studies have been undertaken on the effect of working capital management on financial performance. However, most of these have been restricted to manufacturing concerns. Kamau and Ayuo (2014) investigated the effect of working capital management on the performance of manufacturing firms in Eldoret municipality. Nyamweno and Olweny (2014) assessed how working capital management affected the performance of 27 listed firms in the Nairobi Securities Exchange (NSE). However, this study measured performance in terms of gross operating profit only which is too limited to reflect the performance of an organization or its impact on it as opposed to the current study that uses ROA,

This study sought to fill: contextual, conceptual, theoretical and knowledge gaps. In existing studies little is known of the effect of working capital on financial performance of Deposit Taking Microfinance Institutions as collectively measured by the financial institution based working capital management variables as independent variables. This study further sought to fill a theoretical gap given that existing theories offer different lenses through which to analyze working capital management and its impact on the financial performance of DT-MFIs. A comprehensive understanding likely requires drawing insights from multiple theories to capture the multifaceted nature of WCM and its relationship with financial performance; the knowledge gaps the study aimed to fill.

### **General Objective**

The general objective was to assess the working capital management and financial performance of microfinance institutions in Kenya.

### **Specific Objectives**

The research intended to achieve the following specific objectives:

- (i) To ascertain the effect of liquidity management on the financial performance of MFIs in Kenya
- (ii) To determine the effect of loan portfolio management on the financial performance of MFIs in Kenya.

### **Research Questions**

In line with the objectives of the research, the study sought to answer the following questions:

- (i) How does liquidity management affect the financial performance of MFIs in Kenya?
- (ii) How does loan portfolio management affect the financial performance of MFIs in Kenya?

## **LITERATURE REVIEW**

### **Theoretical review**

#### **Free Cash Flow (FCF) Theory**

The FCF theory was developed by Michael Jensen (Jensen, 1986). According to the theory, there is a surplus of capital after financing successful businesses (Odhowa & Mutswenje, 2022). According to Jensen (1986), having large free cash flow creates conflicts within the firm, i.e. between the interests of managers and shareholders, thereby negatively affecting its performance. The argument is predicated on the idea that the management of companies with significant free cash flows is more inclined to take on initiatives that would lower the firm's value (Odhowa & Mutswenje, 2022). According to Sindhu (2014), the free cash flow theory implies that dividends are paid out to shareholders to prevent managers from building unnecessary empires in their narrow interests.

Entrenched managers tend to invest free cash flow in size-increasing but non-profitable projects while shareholders prefer to see an increase in dividend payout that would reduce the free cash flow available to the managers (Sindhu, 2014). According to Hau (2017), several empirical studies that have been done to test the FCF theory have revealed that corporate profits are negatively correlated with business free cash flow, especially for firms without good investment opportunities. The free cash flow theory therefore implies that managers prefer to hold cash within firms rather than increase payouts to shareholders especially when the firm has poor investment opportunities since holding extra cash allows managers to make investments without costly external finance. However, Hau (2017) cautions that this may negatively impact corporate performance.

A major weakness of the FCF theory as articulated by Darek (2012) is that it assumes that managers' determination to improve the company growth is exclusively motivated by enhancing shareholders' wealth. Besides, an increase in cash flow may not always mean that there are more resources at the manager's disposal. The FCF theory was useful in this study in the assessment of liquidity management.

### **Merton's Credit Risk Model**

Merton (1974) developed a credit risk model. The credit risk model posits that in a financial transaction involving credit, there is a possibility of the lender suffering a financial loss resulting from potential decline in the borrower's creditworthiness (Liu, Mirzaei & Vandoros, 2014). Merton therefore proposed a model for evaluating and quantifying the potential damages associated with a borrower defaulting. The aim is to analyze and quantify the probability of default (PD) and the loss given default (LGD). The PD is the probability of the borrower defaulting on the entire or part the loan amount while LGD is the anticipated loss the lender will suffer in case the default actually happens (Shamsi & Mahazi, 2025). These are crucial in management of the loan portfolio of a financial institution.

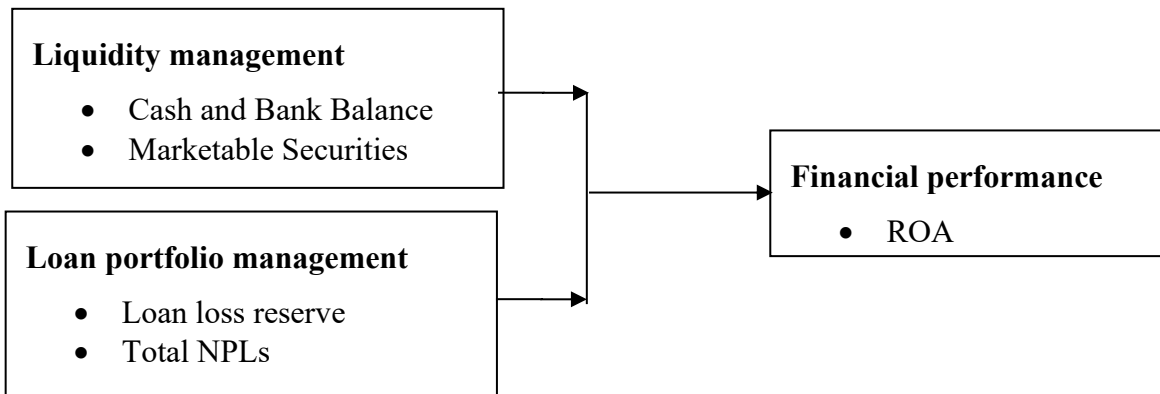
The Merton's credit risk model was thus relevant in this study for providing useful insights to understanding and assessing loan portfolio management in MFIs. Based on the model, MFIs were thus expected to be able to predict and quantify the possible loan defaults in their loan portfolio management. Hence, they were expected to be able to make informed decisions to ensure they effectively manage their loan portfolios through appropriate measures like maintaining adequate capital barriers, effectively regulating lending through effective borrower screening to minimize the rate of non-performing loans as well as establishing adequate provisions for potential loan impairment.

### **Conceptual Framework**

A conceptual framework according to Smyth (2004) is an illustration clarifying the probable links between variables as investigated in a given study. In this research, the link investigated was between working capital management and the financial performance of MFIs. In this regard, two aspects of financial institution based working capital management including liquidity management and loan portfolio management, and their probable link with the financial performance of MFIs was investigated. The relationship between the variables is illustrated in Figure 2.1 including the key indicators that were used to measure each variable.

**Independent variables**

**Dependent variable**



**Figure 2.1: Conceptual framework**

**Cash and Cash Equivalent Management**

From the accounting perspective, liquidity management evaluates a firm’s competence to cover obligations with cash flows (Laghari, Ahmed & Lopez, 2023), as uncertainty about cash flow increases the risk of collapse in most regions, industries, and other subsamples (Wang, Lee & Wu, 2023). There are two extents: static or dynamic views, through which corporate liquidity can be inspected. The balance sheet data at some given point in time is a basis for a static view. This comprises traditional ratios such as current ratios and quick ratios, to evaluate a firm’s ability to fulfill its obligations through assets liquidation. The static approach is commonly used to measure corporate liquidity (Laghari et al., 2023).

Financial institutions like banks are considered liquid if they are able to store sufficient cash and liquid assets (cash equivalents) which strengthens their capacity for raising funds quickly in order to ensure they can timely meet their payment obligations and commitments (Augustine, Ukpong & Ewah, 2024). Therefore, to this end, Cash and Cash Equivalent Management is a continuous process which is geared towards ensuring that cash needs are met at reasonable costs for the institution to maintain required reserve levels with their respective central banks and still meet expected and contingency cash needs (Shekhar & Jena, 2020).

While there are different measures of corporate Cash and Cash Equivalent Management with their importance varying among different stakeholders. Some of the most common metrics include the current ratio, quick ratio and cash ratio (Augustine, Ukpong & Ewah, 2024). Current ratio considers the total current assets (both liquid and illiquid) relative to the total current liabilities of a company, and is thus computed by dividing the total current assets by the total current liabilities. Quick ratio (also called acid-test ratio) is similar to the current ratio and serves a similar purpose but excluding inventories hence is computed by dividing the sum of cash, market securities and receivables by the total current liabilities (Augustine, Ukpong & Ewah, 2024). Cash ratio (also called cash asset ratio) is a more conservative measure of liquidity and is preferred in bank institutions because it only considers cash and cash equivalents, the most liquid assets of the bank (Fagboyo, Adeniran & Adedeji, 2018). The ratio more or less indicates the cash held by a bank hence shows the ability to pay short term liabilities with highly liquid assets and is computed by dividing the sum of cash and marketable securities by the total current liabilities (Augustine, Ukpong & Ewah, 2024).

For the purpose of this study, the cash and cash equivalents to Total Assets ratio was utilized as a key measure of bank liquidity. This ratio captures the proportion of a bank’s total assets held in highly liquid forms—such as physical cash, demand deposits, Treasury bills, and other short-term investments—and reflects the institution’s capacity to meet short-term obligations and absorb liquidity shocks without liquidating long-term assets. A higher ratio signifies a stronger liquidity position and greater financial stability. Previous studies, including those by

Kassa (2021) and Tegene (2023), underscore the relevance of this metric in evaluating liquidity risk management practices and sustaining operational resilience in commercial banks.

### **Loan Portfolio Management**

Loan portfolio management is basically the control of risks inherent in the credit process especially of financial institutions (Uwimabera, 2021). Thus, as Wamalwa and Jagongo (2018) explained, it involves loan portfolio planning, customer screening and credit risk control. Loan portfolio planning involves the careful strategic determination and estimation of appropriate loan sizes and their related risks. Customer screening entails the investigation and evaluation of how financially sound a loan applicant is including their capacity of benefiting from and repaying the loan. Credit risk control is basically taking measures to minimize bad debts and over-holding (Wamalwa & Jagongo, 2018).

When loan portfolio management is poor, it adversely affects the loan portfolio quality due to high loan loss provisions (provision for non-performing or impaired loans) as well as high loan recovery and supervision cost (Lamichhane, 2023). Poor loan portfolio management often leads to insolvency (Yuksel, Dincer & Karakus, 2020) mostly attributed to non-performing loans (NPLs) and loan loss provisioning (Assifua-Nunoo, 2023). Thus, loan loss coverage ratio (LLCR) has emerged as one of the crucial metrics to assess the soundness of a bank (or any other financial institution involved in lending) in managing and covering the risks associated with their loan portfolios (Alessi, Bruno, Carletti & Neugebauer, 2020). To determine LLCR, the amount of loan loss provisions is divided by the amount of NPLs. High and subsequent increase in NPLs adversely affects capital buffer and can cause lower credit supply (Chiesa & Mansilla-Fernandez, 2020). Therefore, the higher the LLCR, the lower the potential loss and impact on capital in case the loss materialize (Alessi et al., 2020).

### **Financial Performance**

Metcalf and Tetrad (2015) refer to financial performance as the degree to which financial objectives have been accomplished or it is used as a general measure of a firm's overall financial health over a given period and can be used to compare similar firms across the same industry or to compare industries or sectors in aggregation. Financial performance indicates the performance of an organization quantified in monetary terms and reveals the general health in sustaining its operations (Gartenberg, Prat & Serafeim, 2019).

Financial performance is ascertained by analyzing an organization's financial statements and records for a given period. It requires a well-developed financial management plan to achieve the organization's underlying objectives (Owuor, Agusioma & Wafula, 2021). In the various areas of strategic management and business, scholars have concentrated their work on the traditional indicators of financial performance. According to Bulle (2017), the traditional indicator of organizational success has often been measured through various financial matrices and indicators. However, according to Tudose et al. (2022), the common indicators that have been used to measure financial performance of organizations include: profit margin, profit growth rate, return on assets (ROA), return on equity (ROE), return on investment (ROI), and added shareholders' value.

Return on assets is the most widely used in measuring a firm's performance whereby a high ROA indicates a high efficiency of the firm in utilizing its resources and funds to generate profits (Siahaan, Sadalia & Silalahi, 2021). To calculate ROA, the net income is divided by the average total assets. The main advantage of using ROA is that it is easy to compute and interpret and hence often considered a useful tool for assessing and monitoring the financial performance of a firm including trend analysis, cross-sectional analysis, and comparative analysis in an industry (Sebastian & Siauwijaya, 2021).

## **Empirical Review of Related Literature**

### **Liquidity Management and Financial Performance**

Zimon, Nakonieczny, Chudy-Laskowska, Wojcik-Jurkiewicz and Kochanski (2022) explored the financial Cash and Cash Equivalent Management strategy in construction companies in Podkarpackie Province in Poland. The study covered a group of 10 construction companies in the province including 8 large enterprises and 2 small enterprises. The study used secondary data collected from the financial statements of the companies focusing on the period 2017-2019. The data was analyzed based on Mann-Whitney U-test, cluster analysis and Ward's method. The results indicated that there were significant differences in Cash and Cash Equivalent Management policies between large and small enterprises. Moreover, there was an inverse relationship between Cash and Cash Equivalent Management and profitability of the enterprises. However, the findings may not be applicable to MFIs since the research was based in construction companies whose Cash and Cash Equivalent Management may differ from financial institutions because of the difference in the nature of their operations.

Adesina and Adewumi (2022) did ex post-facto research investigating how financial performance of deposit money banks in Nigeria was affected by their liquidity management. The sample comprised of 5 purposively selected deposit money banks authorized by the Central Bank of Nigeria. The study used secondary data obtained from the banks' audited annual reports and statements of accounts for the period 2017-2021. Descriptive statistics, correlation analysis and multiple regression analysis were applied to analyze the data. The findings revealed that Cash and Cash Equivalent Management (measured as a ration of liquid assets to total assets) had a positive but insignificant effect on the financial performance in terms of return on capital employed (ROCE). The findings only indicate the impact on performance measured in terms of ROCE only. This therefore cannot be generalized to be the impact on performance measured in terms of other metrics like ROA which will be considered in this study.

Yimer (2024) assessed Cash and Cash Equivalent Management and its impact on the viability of MFIs in Ethiopia. The study was based on 10-year panel data (2005-2014) analyzed using descriptive statistics, correlation analysis and multiple linear regression analysis. The data was collected from 12 MFIs selected based on purposive sampling. The proxies used for Cash and Cash Equivalent Management included deposit-to-loan ratio, debt-to-equity ratio and deposit-asset ratio while ROA was used for profitability. Findings revealed that deposit-to-loan ratio had a significant negative impact. Similarly, debt-to-equity ratio had a negative impact but it was not statistically significant. Deposit-to-asset ratio had a significant positive impact on profitability. The results however are based on data that is relatively too old (2005-2014) which may not reflect the current state of Cash and Cash Equivalent Management as well as performance in MFIs due to the dynamic nature of business environment and hence management.

Matunda, Miroga and Otinga (2024) studied Cash and Cash Equivalent Management and financial performance of commercial banks in Kenya. The study was based on descriptive research design where secondary data was exclusively used. Cash and Cash Equivalent Management was assessed based on capital adequacy ratio, NPLs and interest rates while performance was based on ROA. The data was collected from 35 banks and analyzed using descriptive statistics, correlation analysis and panel data regression model. The findings from the regression model revealed that Cash and Cash Equivalent Management (as collective influence of the variables considered) significantly impacted performance. From correlation analysis, there was a positive association between high capital adequacy ratio and improved ROA. On the other hand, high NPLs were found to be detrimental to ROA. The research however relied on capital adequacy ratio and NPLs to determine Cash and Cash Equivalent

Management which are not sufficient indicators of Cash and Cash Equivalent Management making the findings unreliable to generalize.

### **Loan Portfolio Management and Financial Performance**

Gkoumas, Leledakis, Pyrgiotakis and Androutsopoulos (2025) assessed the interplay between loan portfolio concentration, bank competition and stock price crash risk in the US banking industry while interrogating the role of ambiguity in financial reporting. The study was based on secondary data from the banks financial data reports where the sample consisted of 6,981 bank-year observations from 711 banks. Using regression analysis, a significant positive link was found between loan portfolio concentration, market competition and stock price crash risk. The study further found that banks that have poor loan portfolio diversification were more likely to have abnormally high provisions for loan loss particularly in highly competitive states/markets.

Assifua-Nunoo, (2023) studied the loan portfolio management and its effect on performance of banks in Ghana using explanatory cross-sectional survey research design. The researcher used the census survey approach covering 23 universal banks. The study used secondary data which was exclusively quantitative and analyzed using correlation analysis and multiple regression analysis. The findings indicated that loan portfolio management had a significant effect on performance in terms of ROA and ROE.

Matika, Potwana, Ogunsola and Dlamini (2024) analyzed how performance of commercial banks is affected by loan portfolio management models in Zimbabwe. Descriptive research design was applied where using a questionnaire, primary data was collected from 406 employees working in 14 commercial banks. The employees were particularly risk specialists selected through purposive sampling where 29 participants were selected from each of the 14 banks. Data analysis was done using descriptive and inferential statistics. The results revealed that loan portfolio management model used can affect efficacy where a negative correlation was found between some models and credit risk. Inadequacy of some parameters in the portfolio management models was found to result into NPLs.

Shamsi and Mahazi (2025) carried out a study investigating how loan portfolio management affected the financial performance of Access Bank in Rwanda. The research was based on descriptive and correlational research design. The sample size was 157 employees comprising of loan officers, finance and administration, portfolio department and corporate department staffs. Data was collected from the respondents using a questionnaire. Using regression analysis, the study found that loan portfolio management assessed in terms of loan origination, credit risk management and loan collection recovery had a significant positive effect on financial performance.

Nasongo, Fwamba and Kirwa (2024) assessed loan portfolio management particularly debt recuperation technique and financial efficacy in listed Kenyan commercial banks. Descriptive research design was used and a census approach applied where all 12 listed commercial banks as of 2023 were studied. A structured data was used to collect data from senior managers in credit risk departments of the banks. Using regression analysis, debt recuperation techniques were found to significantly influence financial efficacy where loan recovery procedures, legal action and collateral realization emerged as significant predictors.

### **RESEARCH METHODOLOGY**

Research design refers to the overall strategy that integrates the different components of a study in a coherent and logical manner to effectively address the research problem (Grover, 2015). This study adopted a longitudinal research design, utilizing panel data to examine the relationship between liquidity management, loan portfolio management, and financial performance of microfinance institutions (MFIs) in Kenya over time. The longitudinal design is appropriate as it enables the analysis of variations in financial performance across institutions

and over multiple periods, thereby improving the robustness and reliability of the findings. The study covered a ten-year period from 2015 to 2024, allowing for trend analysis and control of time-specific effects.

A population refers to the complete set of units sharing common characteristics relevant to a research problem (Mugenda & Mugenda, 2003). The study population comprised all licensed microfinance banks in Kenya, totaling 14 institutions as reported by the Central Bank of Kenya (CBK, 2023). A census approach was adopted since the population size is small and manageable. This ensured comprehensive coverage and enhanced the generalizability of the study findings within the microfinance banking sector.

The study relied on secondary data, which refers to data previously collected and documented for purposes other than the current research (Saunders et al., 2009). Data were obtained from audited financial statements of microfinance banks and publications from the Central Bank of Kenya. The data collection process involved retrieving income statements and statements of financial position for each institution over the study period (2015–2024). Relevant financial indicators relating to liquidity management, loan portfolio management, and financial performance were extracted and organized into a panel dataset for analysis.

Prior to analysis, data were examined for completeness and consistency. Financial variables exhibited positive skewness due to differences in institutional size and the magnitude of financial figures. To address this, natural logarithmic transformation was applied to liquidity management and loan portfolio management variables to stabilize variance, reduce skewness, and improve linearity (Bates et al., 2009; Aktas et al., 2015). Liquidity management (LM), proxied by cash and cash equivalents relative to total assets, was log-transformed to account for scale variations across institutions. Similarly, loan portfolio management (LPM), measured using the ratio of loan loss reserves to non-performing loans, was transformed into natural logarithms to minimize the influence of extreme values. Return on Assets (ROA), the dependent variable, was not log-transformed because it may take zero or negative values, and maintaining it in levels allows for meaningful interpretation (Wooldridge, 2016).

Descriptive statistics, including mean, standard deviation, skewness, and kurtosis, were used to summarize the data. Inferential statistics involved correlation analysis to examine the strength and direction of relationships, and panel regression analysis to estimate the effect of liquidity management and loan portfolio management on financial performance.

The empirical model was specified as follows:

$$Y_{it} = \beta_0 + \beta_1 \ln(LM_{it}) + \beta_2 \ln(LPM_{it}) + \epsilon_{it}$$

Where:

$Y_{it}$  = Financial performance (ROA) for institution  $i$  at time  $t$

$\beta_0$  = Constant term

$\ln$  = Natural logarithm

$LM_{it}$  = Liquidity management

$LPM_{it}$  = Loan portfolio management

$\beta_1, \beta_2$  = Coefficients of independent variables

$\epsilon_{it}$  = Error term

**Table1: Operationalization of Variables**

Variable	Construct	Operationalization	Measurement
Independent Variable	Liquidity Management	Cash and Cash Equivalents, Total Assets	(Cash + Cash Equivalents) / Total Assets
Independent Variable	Loan Portfolio Management	Loan Loss Reserve, Non-Performing Loans	Loan Loss Reserve / Total NPLs
Dependent Variable	Financial Performance	Return on Assets (ROA)	Net Income / Average Total Assets

**DATA ANALYSIS, FINDINGS AND DISCUSSION**

Thirteen of the fourteen microfinance banks investigated had complete data covering the entire ten-year period from 2015 to 2024. Muungano Microfinance Bank was excluded from the final analysis because it obtained its operating license in October 2019 (CBK, 2020) and therefore did not have data for the full study period. Consequently, the analysis was based on 13 MFIs with complete records, representing approximately 93% of the original sample. Although there is no universally accepted benchmark for response rates, Sataloff and Vontella (2021) note that rates between 40% and 70% are generally considered adequate across many fields. Accordingly, the study’s 93% response rate is regarded as more than sufficient. Consistent with panel data methodology, which defines the total number of observations as the product of the number of cross-sectional units and the number of time periods, the study generated 130 observations from the 13 MFIs observed over a ten-year period (Gujarati & Porter, 2009).

**Descriptive Statistics Analysis**

The descriptive statistical analysis was conducted after all relevant variables were first transformed into natural logarithms to address skewness and scale differences. The analysis centered on examining at the log-transformed variables' mean, standard deviation, skewness, and kurtosis. This approach offered a clearer understanding of the trends and distributional characteristics of the working capital management indicators and financial performance of MFIs over the study period. The descriptive statistics were analyzed as per the research objectives based on how each of the variables was operationalized. The results are presented in Table 2.

**Table 2: Descriptive statistics**

Descriptive Statistics						
Variable	N	Mean (Ln)	Actual Mean (e <sup>x</sup> )	Std. Deviation	Skewness	Kurtosis
LN-LM	130	-1.58	0.206	0.696	-0.659	1.258
LN-LPM	130	-0.248	0.78	1.809	1.815	3.36
ROA	130	-9.167*	-9.167*	14.411	-1.674	2.161

*\*ROA is not log-transformed; therefore, the actual mean equals the reported mean.*

Notations

ROA - Return on Assets;

LN-LM – Natural Log of Cash and cash Equivalent to Total Asset Ratio

LN-LPM -Natural Log of Loan Portfolio Management.

**Liquidity Management**

Liquidity management was assessed using the ratio of cash and cash equivalents to total assets. The resulting values were transformed using the natural logarithm to improve distributional

normality and minimize the influence of extreme observations, as recommended in statistical literature (Osborne, 2010; Tabachnick & Fidell, 2019; Hair et al., 2019).

LN-LM (Cash and Cash Equivalents/Total Asset) had a mean of -1.580 (SD = 0.696), indicating that the log-transformed cash balances were typically marginally below zero. The variable's distribution was almost normal, as evidenced by its moderate kurtosis (1.258) and mild negative skewness (-0.659). This implies that LN-LM may be included in regression analysis.

### Loan Portfolio Management

The ratio of Total Non-Performing Loans to Loan Loss Reserves/Provisions was used to assess loan portfolio management. This metric indicates the institution's ability to withstand possible credit losses as well as how well-provisioned it is in relation to the amount of non-performing loans.

The variable revealed a moderate dispersion in loan portfolio management practices across institutions, with a mean of -0.248 (SD = 1.809). The relatively high standard deviation indicates sporadic extreme observations which is further buttressed by moderately heavy tails (kurtosis = 3.360). This is probably due to high levels of non-performing loans relative to provisions. The mild positive skewness (1.815) indicates a slight concentration of the values on the lower end implying low coverage ratios in most of them. By using the natural log transformation, these distributional irregularities were minimized, symmetry was strengthened, and normality was increased, making LN-LPM more appropriate for regression analysis.

### Financial Performance

On financial performance, since it was measured based on return on assets (ROA), descriptive statistics were computed for ROA. ROA (Return on Assets / Financial Performance) had a mean of -9.167 (SD = 14.411), with strong negative skewness (-1.674) and slightly flat kurtosis (2.161). This indicates that ROA values are widely dispersed and substantially non-normal. This non-normality is consistent with microfinance trends (Cull et al., 2009; Gutiérrez-Goiria et al., 2017). Furthermore, the observed left-tailed distribution is frequently caused by significant downward shifts in earnings due to income volatility and regulatory provisioning requirements (Mersland & Strøm, 2010).

### Correlation Analysis

Correlation analysis was based on Pearson Correlation coefficient analysis. The correlation between the dependent variable (financial performance) and each of the independent variables (liquidity management,

and loan portfolio management) was analyzed. The findings were as presented in Table 4.8.

**Table 3: Correlation analysis**

		LN-LM	LN-LPM	ROA
LN-LM	Pearson Correlation	1	.236**	0.092
	Sig. (2-tailed)		0.007	0.299
LN-LPM	Pearson Correlation	.236**	1	-.375**
	Sig. (2-tailed)	0.007		0.000
ROA	Pearson Correlation	0.092	-.375**	1
	Sig. (2-tailed)	0.299	0.000	

Correlation coefficient between liquidity management and financial performance was 0.092. The correlation was insignificant statistically since its p-value (Sig. = 0.299) was greater than 0.05. This is an indication that liquidity management has an insignificant correlation with financial performance in the MFIs. This differs from the findings by Matunda, Miroga and Otinga (2024) who found a positive association between liquidity management and financial performance.

Loan portfolio management and financial performance had a negative correlation of  $-0.375$ , which was statistically significant since the p-value (.001) was less than .05. These findings imply that there is a significant negative relationship between loan portfolio management and financial performance. The results counter with the study by Shamsi and Mahazi (2025) which found a significant positive relationship between loan portfolio management and financial performance.

This implies that working capital practices have no direct impact on the financial performance of the chosen MFIs at the bivariate level. Regression analysis can be used to investigate any combined or indirect effects that these variables may still have.

**Regression Analysis**

A multiple regression analysis was conducted to determine whether liquidity management (LM), and Loan Portfolio Management (LPM) predict Return on Assets (ROA).

**Table 4: Model Summary for the Regression Predicting ROA**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	Change Statistics			Sig. F Change
						F Change	df1	df2	
1	.426 <sup>a</sup>	0.182	0.155	13.244	0.182	6.932	4	12	0.000
								5	

a. Predictors: (Constant), LN-LPM, LN-LM

A relatively positive correlation between the set of predictors and ROA is indicated by the R value of 0.426 in the model summary (Table 4.9). After adjusting for possible errors in fitting, the adjusted R<sup>2</sup> of 0.115 indicates that the model explains roughly 15.5% of the variation in ROA, whereas the R<sup>2</sup> of 0.182 indicates that the model explains 18.2% of the variation in ROA. The standard error of the estimate (0.13244) indicates the average deviation of the observed ROA values from the predicted values, reflecting a reasonable level of accuracy.

**Table 5: ANOVA Summary for the Regression Model Predicting ROA**

ANOVA <sup>a</sup>						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4864.191	2	1216.048	6.932	.000 <sup>b</sup>
	Residual	21927.071	127	175.417		
	Total	26791.262	129			

a. Dependent Variable: ROA

b. Predictors: (Constant), LN-LPM, -LM

The model is statistically significant ( $F(4, 125) = 6.932, p < 0.001$ ), according to the ANOVA results (Table 4.10), demonstrating that the independent variables taken together have a significant impact on ROA. The regression sum of squares was 4,864.19, and the residual sum of squares was 21,927.07, indicating that the model explains a meaningful portion of the total variance in financial performance. This demonstrates that the independent variables significantly contribute to the explanation of changes in ROA and that the model presents a better fit than a null model.

**Table 6: Multiple Regression Coefficients Predicting ROA**

Model	Coefficients <sup>a</sup>					95.0% Confidence Interval for B	
	Unstandardized Coefficients		Standardized Coefficients		Sig.	Lower Bound	Upper Bound
	B	Std. Error	Beta	t			
1 (Constant)	-25.122	24.023		-1.046	0.298	-72.667	22.423
LN-LM	3.435	1.836	0.166	1.870	0.064	-0.200	7.069
LN-LPM	-3.184	0.683	-0.400	-4.664	0.000	-4.535	-1.833

a. Dependent Variable: ROA

The regression coefficients indicate the individual contribution of each predictor to financial performance (ROA). Liquidity management (LN-LM) had a positive but marginally non-significant effect on ROA when the other variables were controlled for ( $B = 3.44$ ,  $SE = 1.84$ ,  $\beta = 0.166$ ,  $t = 1.87$ ,  $p = .064$ ), indicating that a one-unit increase in LN-LM is linked to a 3.44-unit increase in ROA.

In contrast, loan portfolio management (LN-LPM) had a significant negative effect on ROA ( $B = -3.18$ ,  $SE = 0.68$ ,  $\beta = -.400$ ,  $t = -4.66$ ,  $p < .001$ ), indicating that a one-unit increase in LN-LPM is associated with a decrease of 3.18 units in ROA. The constant was not statistically significant ( $B = -25.12$ ,  $SE = 24.02$ ,  $t = -1.05$ ,  $p = .298$ ).

## Conclusion

### Effect of Liquidity Management and Financial Performance

The study concludes that most microfinance banks in Kenya maintain relatively low cash and cash equivalent to total assets ratio. As such, they lack adequate financial stability to meet short-term obligations and absorb liquidity shocks without having to liquidate their long-term assets. Thus, their liquidity management is weak which may be the cause of its insignificant positive effect on the institutions' financial performance in terms of ROA.

### Loan Portfolio Management and Financial Performance

The study concludes that there is poor loan portfolio management in most of the microfinance banks in Kenya as findings indicated low loan loss coverage ratio (LLCR) in most of the institutions. This is harmful to the firm's performance because with the low LLCR, the higher the potential loss and impact on capital in case the loss materialize from loan impairment. This is a probable situation in most of the MFIs as supported by correlation and regression analysis results that revealed a significant negative relationship between loan portfolio management and performance. In this regard, the study concludes that loan portfolio management has a significant negative effect on the financial performance of MFIs.

## Recommendations

### Liquidity Management and Financial Performance

Deposit taking microfinance institutions in Kenya should improve on their liquidity management by enhancing their cash and cash equivalent to total assets ratio. To achieve this, they need to ensure they increase the level of cash and liquid assets (cash equivalents) they maintain. This will help to strengthen their capacity to raise funds fast in order to enhance their ability to meet their payment obligations and commitments in a timely manner for significant improvement in their performance. They should also consider hiring qualified financial analysts to help in analyzing the financial markets and advise the MFIs on the best cash equivalents to invest in.

## Loan Portfolio Management and Financial Performance

On loan portfolio management, the microfinance banks should take strategic measures to improve on loan loss coverage ratios. This will help minimize the negative impact of losses that materialize from loan impairment on the financial performance of the institutions as revealed in the study findings. Such strategic measures must therefore be capable of cutting down on total NPLs and increase loan loss provisions. In this regard, they can consider measures like enhancing borrowers' screening to avoid giving loans to borrowers without sufficiently proved credit worthiness. They should also be careful to ensure the size of loan given to every borrower matches their creditworthiness to minimize the risk of loan default to reduce impairment losses.

### Suggestion for Further Studies

Since the study findings revealed there were notable variations across the different microfinance institutions in the various aspects assessed, it is necessary that studies be conducted using a case study approach. In this regard, context-specific studies focusing on specific microfinance institutions should be conducted for more in-depth investigation and results compared for more comprehensive conclusions to be deduced.

Given that the study was exclusively based on secondary data, a similar study should be conducted after a span of several years using both primary and secondary data, which should focus on years from 2025 and beyond. This will help to provide more insights on issues or areas that need further improvement in the MFIs with respect to working capital management and financial performance. The findings from the study should then be contrasted with the current study findings for more informative conclusions and recommendations.

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