The Effect of Liquidity Risk on Operational Efficiency: A Study of Some Micro-financial Institutions within Sub-Saharan Region

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ABSTRACT

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| **Aim:** To examine and analyze the relationship between liquidity risk and the operational efficiency of micro-financial institutions (MFIs) in Sub-Saharan Africa.  **Study design:** Mixed method.  **Place and Duration of Study:** MFIs in Sub-Saharan Africa, between August 2024 and March 2025 Methodology: The study targeted MFIs across 12 selected countries in Sub-Saharan Africa, which represent approximately 25% of the region's total countries. A total of 385 participants, including both employees and management from the chosen MFIs, were involved in the study. To select the participants, a combination of stratified random sampling and purposive sampling techniques was employed. Data was collected using both survey and interview methods, allowing for a comprehensive understanding of the impact of liquidity risk on operational efficiency.  **Results:** The survey results reveal that Sub-Saharan MFIs prioritize liquidity management, with a high mean score of 4.71 (standard deviation 0.455) for evaluating liquidity status and 4.63 (standard deviation 0.883) for having effective liquidity risk policies in place. While institutions acknowledge the impact of liquidity constraints on client demands (mean score of 4.33, standard deviation of 0.876), challenges remain in maintaining adequate cash reserves, as reflected by a lower mean score of 3.59 (standard deviation 1.212). The data also suggests room for improvement in operational efficiency, with a mean score of 3.79 (standard deviation 0.606), and in cost-minimalization strategies, with a mean score of 3.56 (standard deviation 1.316). Notably, the study found that higher liquidity levels (mean score of 4.22, standard deviation 0.611) are associated with faster service delivery, highlighting the importance of liquidity in improving operational performance. Interviews with 12 management representatives further reinforced these findings, with an emphasis on the need for MFIs to balance liquidity management with operational efficiency. These results suggest that MFIs could enhance their operational efficiency and customer satisfaction by optimizing liquidity management strategies and improving cash reserve levels, ultimately contributing to the long-term sustainability of the institutions.  **Conclusion:** The study concludes that effective liquidity management plays a crucial role in enhancing operational efficiency within Sub-Saharan micro-financial institutions, particularly by improving service delivery speed and responsiveness. However, challenges remain in balancing liquidity management with cost reduction strategies, highlighting the need for further refinement in operational practices to achieve sustainable growth and efficiency |

***Keywords:*** *cost minimization, liquidity management, liquidity risk, micro-financial institutions, operational efficiency, risk management policies, sub-Saharan Africa.*

1. INTRODUCTION

**1.1 Background of the Study**

Micro-financial institutions (MFIs) are essential in promoting financial inclusion and economic development, particularly in Sub-Saharan Africa, where access to formal banking services remains limited. These institutions offer essential financial services, including savings accounts, loans, and insurance, to underserved populations, such as low-income households and small businesses. However, MFIs in the region face a significant challenge in managing liquidity risk, which refers to their ability to meet short-term financial obligations due to insufficient liquid assets or cash reserves. Liquidity risk is exacerbated by various factors, including limited access to capital markets, political instability, currency fluctuations, and inadequate regulatory frameworks, which can undermine their operational efficiency and financial stability (Onwere, Oke & Ojogbo, 2024). When MFIs experience liquidity shortages, they struggle to provide timely services to clients, leading to delays in loan disbursements, reduced profitability, and a decline in customer satisfaction (Chowdhury, Uddin, Ahmmed, Hassan, & Kabir, 2023).

The operational efficiency of MFIs is directly influenced by their ability to manage liquidity, as poor liquidity management can hinder the institutions' capacity to adapt to market changes and provide consistent financial services. Several studies highlight the relationship between liquidity risk and operational performance in developing countries. For instance, in Bangladesh, Njue (2020) found that MFIs with inadequate liquidity faced difficulties in offering services promptly, which affected their operational efficiency and customer trust. Similarly, in Nigeria, Onwere, Oke and Ojogbo (2024) noted that liquidity risk was a significant impediment to the operational efficiency of MFIs, as those with lower liquidity reserves struggled to meet their financial obligations, resulting in delays and operational disruptions. These challenges were also observed in India, where Song (2024) emphasized the importance of liquidity management for microfinance institutions (MFIs) to ensure service delivery and financial sustainability.

In Zimbabwe, the situation is particularly critical due to prolonged economic instability, including hyperinflation, currency depreciation, and political uncertainty, which have significantly impacted the financial sector. Semwayo (2024) reported that MFIs in Zimbabwe face severe liquidity challenges resulting from both external economic shocks and internal inefficiencies. As a consequence, these institutions often lack the necessary liquidity to meet client demands, leading to higher operational costs, delayed services, and reduced capacity to support small businesses and low-income households. Additionally, while liquidity management is acknowledged as vital for maintaining operational efficiency, many MFIs in Zimbabwe struggle to implement effective liquidity strategies due to limited resources and technical expertise (Semwayo,2024). This highlights the need for stronger liquidity management practices and more robust frameworks that can help MFIs navigate economic uncertainties and improve their service delivery.

The experiences of MFIs in other developing countries, along with the challenges faced by institutions in Zimbabwe, underscore the critical importance of effective liquidity management in enhancing operational efficiency and ensuring the sustainability of micro-financial institutions. As the financial landscape in Sub-Saharan Africa continues to evolve, MFIS must adopt comprehensive liquidity risk management practices to mitigate the adverse effects of liquidity challenges and improve their ability to meet client needs while maintaining financial stability (Nambie, Akrofi & Amoah, 2024).

**1.2 Problem Statement**

The primary concern of the study is the substantial impact of liquidity risk on the operational efficiency of MFIs in Sub-Saharan Africa. The specific problem of the study is that there is insufficient information to develop and manage liquidity risk effectively, thereby hindering the operational efficiency of MFIs in sub-Saharan Africa. While these institutions play a pivotal role in promoting financial inclusion and supporting economic development by providing essential financial services to underserved populations, they often face liquidity challenges that hinder their ability to meet client demands and ensure operational stability. Liquidity risk arises from factors such as limited access to external financing, market volatility, and inadequate cash reserves, leading to delays in service delivery, increased operational costs, and reduced customer satisfaction (Chowdhury et al., 2023; Onwere, Oke, & Ojogbo, 2024). Moreover, studies have shown that while MFIs acknowledge the importance of managing liquidity risks, many struggle to implement effective strategies due to resource constraints and the absence of robust financial management practices (Njue, 2020). In Zimbabwe, the economic instability exacerbates these challenges, with hyperinflation and currency depreciation further complicating liquidity management for MFIs, ultimately impacting their operational efficiency (Semwayo, 2024). This study seeks to explore how liquidity risk affects the operational performance of MFIs in Sub-Saharan Africa, aiming to identify key factors contributing to inefficiencies and suggest strategies for enhancing liquidity management to improve service delivery and institutional sustainability.

**1.3 Research Question**

How does liquidity risk impact the operational efficiency of Sub-Saharan micro-financial institutions?

**1.4 Research Objective**

To analyze how liquidity risk influences operational efficiency within Sub-Saharan micro-financial institutions.

**1.5 Hypothesis of the Study**

**H0.** Liquidity risk has no significant impact on the efficient business performance of micro-financial institutions in Sub-Saharan Africa.

**H1.** Liquidity risk impacts the efficient business performance of Sub-Saharan micro-financial institutions.

**1.6 Justification of the Study**

This study is crucial for several reasons. First, it addresses a significant gap in the literature, as many existing studies focus on individual countries or regions without offering a comprehensive, cross-country analysis of liquidity risk in Sub-Saharan Africa. Despite the importance of liquidity risk management, there is limited research that evaluates the effect of liquidity risk on operational efficiency across a diverse range of countries in the region (Onwere, Oke & Ojogbo, 2024). Second, the mixed-methods approach allows for a deeper understanding of the complex relationship between liquidity risk and operational efficiency by integrating both qualitative insights and quantitative data, thus providing a more nuanced view than previous studies that relied on a single method (Lelgo & Obwogi, 2018; Chanda, 2024). The study’s emphasis on Zimbabwe is particularly timely, given the country’s ongoing economic challenges, which have heightened liquidity risk for MFIs (Chanda,2024). This research will provide practical insights and evidence-based recommendations for MFIs in the region, offering valuable knowledge that can help these institutions effectively manage liquidity risks, enhance operational efficiency, and maintain their financial stability in the face of regional economic uncertainties. Furthermore, this study will inform policymakers, regulatory bodies, and practitioners in Sub-Saharan Africa about the critical importance of liquidity management in promoting financial inclusion and economic development, making it a significant contribution to the field.

**1.7 Conceptual Framework**

The conceptual framework is a visual representation that elucidates the relationships between liquidity risk and its impact on operational efficiency within MFIs in Sub-Saharan Africa. It is designed to illustrate how effective liquidity risk management can improve operational efficiency.

**Figure 1:** *Conceptual Framework*

**Independent Variables Mediating Variable Dependent Variable**

**Liquidity Risks**

**Operational Efficiency**

**Liquidity Risk Management**

* Liquidity Evaluation
* Liquidity Risk Policies
* Diversification of Funding Sources

***Source:*** Author’s configuration

**1.8 Limitations of the Study**

**1.8.1 Geographic and Contextual Limitations:** The study focused on 12 selected countries in Sub-Saharan Africa, representing only about 25% of the region's total countries. This limits the generalizability of the findings to the broader region, as economic, regulatory, and market conditions may vary significantly between countries not included in the study.

**1.8.2 Sample Size and Diversity:** Although 385 participants from various MFIs were involved, the sample may not fully capture the diverse range of MFIs across Sub-Saharan Africa. Smaller institutions or those in more remote regions may not have been adequately represented, which could affect the comprehensiveness of the findings.

**1.8.3 Potential Bias in Participant Selection:** The use of stratified random sampling combined with purposive sampling may introduce bias, as purposive sampling specifically targets certain participants. This could influence the results, especially if the chosen participants have a particular perspective or experience that is not representative of the entire MFI workforce.

**1.8.4 Self-Reported Data:** The study relied heavily on self-reported data from surveys and interviews. While this provides valuable insights, self-reports are subject to biases such as social desirability bias or inaccurate recall, potentially skewing the results.

**1.9 Brief Literature Review**

Liquidity risk is a critical concern for MFIs in Sub-Saharan Africa, as it directly impacts their operational efficiency and overall business performance. Previous studies have explored various dimensions of liquidity risk, focusing on its implications for MFIs’ ability to meet short-term obligations while maintaining sufficient capital for growth and sustainability.

Research by Lelgo and Obwogi (2018)

In their research, Lelgo and Obwogi conducted a comprehensive examination of how liquidity risk impacts the financial sustainability of MFIs in Kenya. Utilizing a mixed-methods approach, they combined qualitative interviews with quantitative data analysis, drawing on information from various MFIs over five years. This methodological triangulation allowed for a nuanced understanding of the challenges faced by these institutions. The findings revealed that inadequate liquidity management significantly contributed to increased operational costs, which in turn hampered the efficiency of service delivery. Specifically, MFIs that struggled with liquidity were often forced to incur higher costs related to borrowing or maintaining reserves, ultimately affecting their ability to serve clients effectively. Despite the valuable insights provided regarding the Kenyan context, the study’s lack of comparative analysis with other countries in Sub-Saharan Africa presents a limitation; without such comparisons, it is challenging to generalize the findings across different economic environments and regulatory frameworks within the region. This gap suggests an opportunity for future research to explore liquidity risk in MFIs across diverse contexts within Sub-Saharan Africa to better understand its broader implications.

Investigation by Adusei, 2021

The investigation conducted by Adusei on Ghanaian MFIs sheds light on the critical relationship between liquidity risk and operational performance, particularly during economic downturns. Their research utilized econometric modeling techniques to quantify the impact of liquidity risk on lending capacity and borrower default rates. The findings indicated that high liquidity risk periods correlate with a significant reduction in the ability of MFIs to extend loans, which is crucial for their operational viability. This decrease in lending capacity can lead to a vicious cycle; as MFIs lend less, borrowers may struggle to meet their financial obligations, resulting in increased default rates. Consequently, this scenario has an adverse impact on the overall efficiency of MFIs, as they struggle with rising non-performing loans and declining revenue streams. While the study effectively highlights these temporal dynamics and their immediate effects on MFIs’ operations, it notably lacks a discussion on long-term strategies that could be employed to mitigate such risks. Addressing this gap is essential for developing robust frameworks that not only enhance liquidity management but also ensure sustainable growth and resilience against future economic shocks.

Study by Hassan, Sheikh, and Rahman (2022)

Hassan, Sheikh and Rahman’s research provides a comprehensive examination of regulatory frameworks' role in managing liquidity risks within MFIs in East Africa. The study employs a comparative analysis across various jurisdictions, revealing that stronger regulatory oversight is positively correlated with enhanced operational efficiencies among MFIs that are grappling with liquidity challenges. This finding underscores the importance of robust regulatory environments in fostering stability and resilience within the microfinance sector, particularly in regions where financial systems may be underdeveloped or vulnerable to external shocks. However, a notable limitation of this study is its narrow focus solely on regulatory aspects, which may overlook other critical external factors that can significantly influence liquidity management. For instance, economic conditions, market competition, and socio-political dynamics could also play pivotal roles in shaping how MFIs navigate liquidity risks. Failing to incorporate these variables into their analysis, the research may present an incomplete picture of the multifaceted nature of liquidity management in East African MFIs.

Research by Naqvi and Pungaliya (2023)

In their recent study, Naqvi and Pungaliya explored the intricate relationship between technology adoption for liquidity management and operational efficiency among MFIs in Sub-Saharan Africa. Their research utilized a comprehensive survey that gathered data from various MFIs across multiple countries in the region. The findings indicated that institutions that embraced advanced technological solutions, such as digital payment systems and automated cash flow forecasting tools, reported significant improvements in their operational efficiencies. Specifically, these technologies enabled better cash flow forecasting capabilities, allowing MFIs to manage their liquidity more effectively. This resulted in reduced transaction costs, which is crucial for enhancing profitability and sustainability in a sector often characterized by limited resources and high operational expenses. However, despite these promising results, Naqvi and Pungaliya (2023) highlighted a critical limitation of their study: the absence of longitudinal data. Without long-term data tracking the impacts of technology adoption over time, it remains challenging to fully assess how these advancements influence operational efficiency in the long run. This gap underscores the need for further research that can provide insights into the sustained effects of technology on MFIs’ performance.

Study by Karanja (2023)

In a recent study conducted by Karanja in Kenya, a mixed-methods approach was used, incorporating both surveys and interviews with MFI managers. The research highlighted that microfinance institutions in Kenya face significant liquidity risks due to ongoing macroeconomic challenges, such as inflation and fluctuating exchange rates. However, the study found that institutions with robust liquidity risk management frameworks were better equipped to handle these challenges, maintaining operational stability and efficiency. The study concluded that strong liquidity management practices, especially those involving diversified funding sources, are essential for mitigating the effects of external economic shocks. Based on these findings, the authors recommended that MFIs focus on building diverse liquidity sources, including international remittances and inter-bank lending, to better shield themselves from macroeconomic volatility.

Study by Salifu (2024)

Similarly, the study by Salifu (2024) conducted in Ghana employed a quantitative survey to analyze the financial data and operational performance metrics of 150 MFIs across the country. Their findings revealed that MFIs with higher liquidity ratios tended to have lower loan default rates and better client retention. Despite this, many MFIs still struggled to maintain optimal liquidity levels due to limited access to capital markets. The study concluded that effective liquidity management is directly linked to operational efficiency and long-term sustainability for MFIs. As a recommendation, the authors suggested that MFIs consider forming strategic partnerships with larger financial institutions, which could provide them with greater access to capital and enhance their liquidity reserves.

Analysis by Chanda (2024)

Chanda’s comprehensive review of liquidity risk management practices among MFIs in Southern Africa provides valuable insights into the operational challenges faced by these entities, particularly in countries like Zimbabwe and Zambia. Their qualitative study utilized case studies to explore how MFIs effectively navigated liquidity challenges, which are critical for maintaining financial stability and meeting client demands. The findings indicated that effective liquidity management strategies enhanced operational efficiency and enabled these institutions to respond swiftly to market fluctuations and customer needs. For instance, MFIs that implemented robust cash flow forecasting and diversified funding sources were better positioned to manage unexpected withdrawals or economic downturns. However, a notable limitation of their research was the reliance on anecdotal evidence rather than robust statistical data. This reliance raises concerns about the generalizability of their conclusions, as anecdotal evidence may not accurately reflect broader trends or provide a comprehensive understanding of liquidity risk management practices across different contexts. Consequently, while their study sheds light on important strategies employed by MFIs, the lack of empirical data could undermine the validity of their findings and suggests a need for further research incorporating quantitative analysis to substantiate their claims.

Study by Akoth (2024)

In Nigeria, Akoth (2024). conducted an econometric analysis of financial data from 100 MFIs over a five-year period to examine liquidity risk. The study found that MFIs in Nigeria experienced considerable liquidity stress, which was exacerbated by regulatory changes and a volatile political environment. However, the research also revealed that MFIs utilizing alternative lending models, such as peer-to-peer lending, were less vulnerable to liquidity constraints. The study concluded that alternative lending models could serve as a useful strategy for mitigating the negative impacts of liquidity risk on operational efficiency. Based on these findings, the authors recommended that Nigerian MFIs explore and implement alternative lending models while also advocating for regulatory reforms that would enhance liquidity management practices.

The studies conducted on liquidity risk management within MFIs in Sub-Saharan Africa underscore the essential nature of effective strategies to enhance operational efficiency. These studies reveal that MFIs, which often operate in volatile economic environments, face significant challenges related to liquidity risk. Effective liquidity management is crucial for these institutions as it directly impacts their ability to meet short-term obligations and maintain financial stability. However, a notable limitation of existing research is its restricted geographical scope, often focusing on specific countries or regions without considering the broader context of diverse economic conditions across Sub-Saharan Africa. Furthermore, many studies rely heavily on qualitative data, which may lack the statistical rigor necessary to draw definitive conclusions about the relationship between liquidity risk and operational efficiency. While existing studies, such as those by Lelgo and Obwogi (2018) and Adusei (2021), emphasize the relationship between liquidity risk and operational efficiency within specific countries, there is a lack of cross-country analyses that explore how different economic environments shape liquidity management practices across the region. Moreover, many studies rely on qualitative data, which may not offer the statistical rigor needed for comprehensive generalizations.

Despite these contributions, there remains a considerable gap in comprehensive cross-country analyses that can provide insights into how varying economic contexts influence liquidity risk management practices among MFIs. Longitudinal studies are particularly lacking; such research could assess the long-term impacts of effective liquidity management on business performance and sustainability within these institutions. The current study aims to address this gap by examining 12 countries across the region. This study will incorporate quantitative data analysis alongside qualitative insights, allowing for a more robust understanding of how different economic environments affect liquidity risk management strategies and their subsequent impact on operational efficiency. This research will contribute significantly to the literature by providing evidence-based recommendations tailored to various contexts within Sub-Saharan Africa.

**1.5 Scope**

The study encompasses an analysis of the effect of liquidity risk on the operational efficiency of MFIs) across 12 selected countries in Sub-Saharan Africa. These countries were selected to represent a diverse range of economic environments, ensuring that the research considers the varying economic, regulatory, and cultural factors that influence liquidity management in the region. The study focuses on MFIs of different sizes, from small community-based institutions to larger organizations, to capture a comprehensive view of liquidity risk management practices. The research employs a mixed-methods approach, combining both qualitative and quantitative data to offer a thorough analysis. The geographical scope spans countries in Sub-Saharan Africa, with a particular focus on Zimbabwe, where economic instability and liquidity challenges have severely impacted MFIs' operational performance. The findings are expected to provide a regional perspective on liquidity risk and operational efficiency, offering insights into common challenges and effective strategies employed by MFIs in different economic settings.

2. Methodology

This study employed a mixed-methods approach, combining explanatory and descriptive research designs to explore the impact of liquidity risk on the operational efficiency of MFIs in Sub-Saharan Africa. The explanatory design focused on establishing a cause-and-effect relationship between liquidity risk and operational efficiency using quantitative data and statistical analysis. Meanwhile, the descriptive design provided a detailed account of how these risks manifest in the context of MFIs through qualitative methods like interviews and focus groups with key stakeholders, offering rich, contextual insights to complement the quantitative findings (Williams, 2021). This mixed-methods approach allowed for a comprehensive understanding of the financial challenges faced by MFIs and their impact on business performance.

**2.1 Research Population**

The study targeted a representative group of MFIs operating in 12 selected countries across Sub-Saharan Africa, representing 25% of the region’s total countries. Sub-Saharan Africa consists of 48 countries, and the researcher selected 12 countries from three regions: two from West Africa, four from East Africa, and six from Southern Africa. This selection was made to ensure the sample reflected a variety of operational environments, ranging from rural to urban settings and included institutions of different sizes and service types. Considering these factors allowed the study to capture the diverse contexts in which liquidity risk affects MFIs, making the findings relevant and potentially generalizable to other institutions in the region. The approach also ensured that the sample accurately represented the financial risk dynamics, particularly liquidity risk, prevalent across Sub-Saharan Africa’s MFIs.

**2.2 Research Sample**

This study's target population consisted of micro-financial institutions in 12 selected countries in Sub-Saharan Africa, representing approximately 25% of the region's total countries. The selection included two countries from West Africa, four from East Africa, and six from Southern Africa. Given the diversity of micro-financial institutions and their varying operational contexts across these regions, a well-structured sampling procedure was essential to ensure that the data collected is representative and relevant.

To determine the appropriate sample size for the study, the researcher utilized the formula to estimate the sample size when the population is unknown or not fully defined. The formula used is:

 n=

Where:

* n = required sample size
* Z = Z-value (A common confidence level used in social sciences is 95%, corresponding to a Z-value of approximately 1.96).
* p = estimated proportion of the population that has the attribute of interest (if unknown, 0.5 is often used as it provides the maximum sample size)
* E = margin of error (0.05)

n=

n=

n=

n=384.16

Since we cannot have a fraction of a participant, we round up to obtain a sample size of **385**. The formula was chosen because it allows researchers to estimate a sample size without knowing the total population size. This was particularly relevant here since the exact number of MFIs in each country was unknown or difficult to ascertain accurately at this research planning stage. Using p=0.5 ensures that the sample size was sufficient regardless of the actual proportion present in the population, thus providing robustness to our findings.

The study used a combination of stratified random sampling and purposive sampling to select participants. Stratified random sampling divided the population into three regions (West Africa, East Africa, and Southern Africa) ensuring representation across diverse economic, regulatory, and cultural contexts. Random sampling within each stratum-maintained proportionality and inclusivity. Additionally, purposive sampling was used to select 12 key informants, one from each country, based on their expertise and experience in microfinance. Semi-structured interviews with these participants provided qualitative insights into operational practices and regional challenges.

**2.3 Data collection methods**

This study employed both primary and secondary data collection methods to gather comprehensive insights into the financial risks faced by MFIs in Sub-Saharan Africa. Primary data was collected using online surveys and semi-structured interviews. Online surveys, conducted via platforms like Google Forms, offered an efficient and cost-effective way to collect quantitative data from a geographically diverse group of participants, although challenges such as low engagement and varying access to technology were noted (Harding, 2019). Semi-structured interviews, conducted face-to-face or through video conferencing, provided in-depth qualitative insights into participants' experiences with financial risks, although they required skilled interviewers and posed challenges in data analysis (Magaldi & Berler, 2020; Naz, Gulab & Aslam, 2022). Secondary data, including academic journals, government reports, and industry publications, was also utilized to contextualize the study and cross-verify findings, providing a broader understanding of the economic and regulatory factors affecting MFIs (Surbakti et al., 2020). The combination of primary and secondary data strengthened the study's validity and provided a comprehensive view of the financial landscape in Sub-Saharan Africa.

**2.4 Data Analysis**

In the analysis phase of this study, both quantitative and qualitative data were systematically processed. For the quantitative data, SPSS software was used to perform descriptive statistical analysis, including measures like mean, median, and mode, to summarize the financial risks faced by micro-financial institutions in Sub-Saharan Africa (Field, 2018). This provided an overview of the central tendencies related to the impact of financial risks on business performance. Qualitative data from interviews was analyzed using thematic analysis, which involved coding responses to identify recurring themes and patterns in participants’ experiences and strategies for managing financial risks (Braun & Clarke, 2006). The integration of both approaches ensured that the study’s findings were not only numerically grounded but also enriched with detailed, contextual insights, offering a comprehensive understanding of financial risk management in the region (Levitt et al.,2018).

3. Results and discussion

**3.1 Response Rate**

The response rate refers to the proportion of the selected sample that engages with the research tools provided. It is determined by comparing the number of participants who completed the study to the total number of individuals invited. Figure 2 illustrates this response rate.

**Figure 2:** *Response rate of selected sample*

*Source*: Primary data (2024).

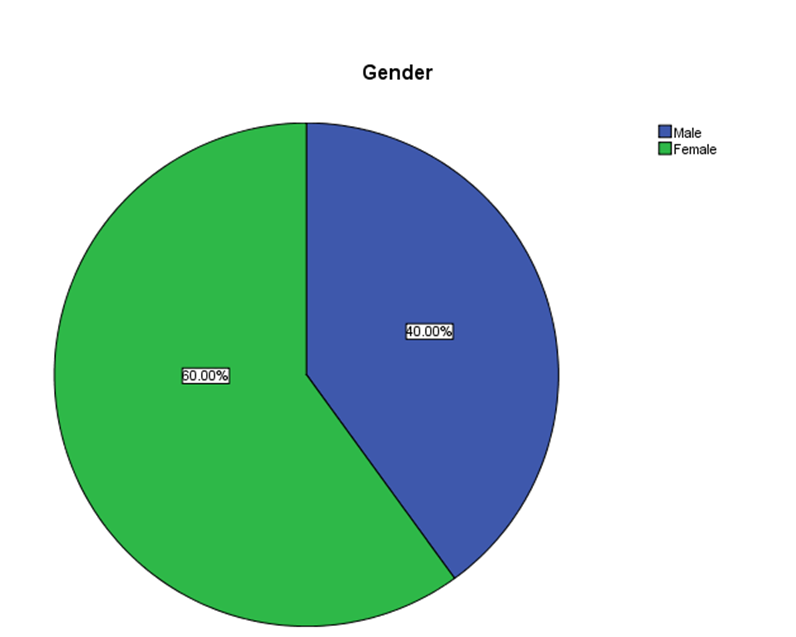
In this study, 385 microfinance employees from 12 Sub-Saharan African countries were surveyed, achieving a 55% response rate with 210 completed questionnaires. This response rate is considered good, as Wu, Zhao, and Fils-Aime (2022) suggest that a 50% response rate is adequate, and 60% is good. The combination of Google Forms and the pick-and-drop method facilitated an efficient data collection process. Additionally, the researcher conducted interviews with 12 participants, achieving a 100% response rate for the qualitative data, which enhances the study's validity and reliability (Bell, Harley & Bryman, 2022). This high level of participation strengthens the study's insights into financial risk management in Sub-Saharan African microfinance institutions.

**3.2 Respondents' demographic profiles**

**Gender**

Gender composition within MFIs is a critical factor that can significantly influence various dimensions of financial management, risk perception, and overall business performance. Understanding this composition involves analyzing the roles and contributions of different genders within these institutions, which can lead to more effective financial inclusion and empowerment strategies. The findings regarding gender distribution are visually represented in Figure 3:

**Figure 3:** *Gender of Respondents*



Source: Primary data (2024).

The study revealed a gender disparity in the workforce of MFIs in Sub-Saharan Africa, with 60% female employees and 40% male employees. This higher female representation reflects broader societal changes and policies promoting gender equality in the workplace (Zhang, 2020). Gender diversity has been linked to improved organizational performance by bringing varied perspectives, which can enhance customer relations, especially with female clients, who are the primary beneficiaries of microfinance services (Hossain, Mia & Dalla Pellegrina, 2024). However, a predominantly female workforce may require tailored training programs and consideration of gender dynamics in management practices to optimize performance and client satisfaction. Future research should examine the impact of gender composition on MFI operations and outcomes.

**Work position**

The researcher obtained valuable insights from participants actively engaged in the microfinance sector across different regions of Sub-Saharan Africa. The findings presented here reflect the job roles of the study participants. Table 1, summarizes the distribution of participants by their work positions.

**Table 1:** *Position within the MFI*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Position within the MFI** | | | | | |
|  |  | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | Executive management | 30 | 14.3 | 14.3 | 14.3 |
| Middle management | 60 | 28.5 | 28.5 | 42.8 |
| Operational staff | 90 | 42.9 | 42.9 | 85.8 |
| Support staff | 30 | 14.3 | 14.3 | 100 |
| Total | 210 | 100.0 | 100.0 |  |

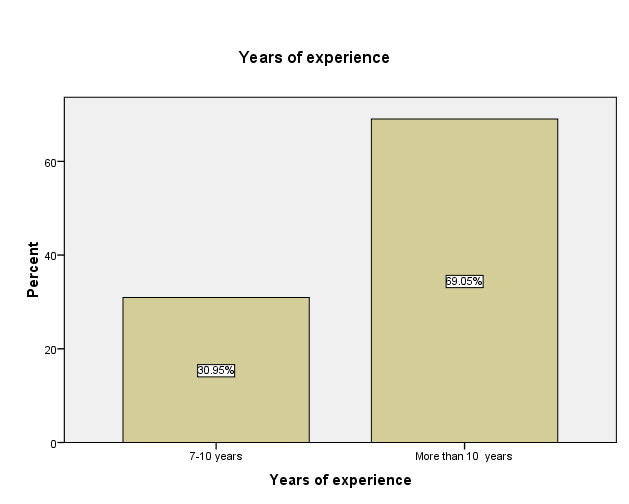
*Source:* Primary data (2024).

The study’s participant distribution shows a significant representation from operational staff (42.9%), which is crucial for understanding the practical implications of financial risk management in MFIs. Middle management also holds a substantial share (28.6%), providing insights into the link between executive decisions and operational execution. However, executive management and support staff account for a smaller proportion (14.3% each), suggesting that operational insights may offer more actionable data for improving business performance. Previous research highlights the importance of including diverse perspectives to capture a comprehensive view of organizational challenges, as operational staff often have valuable insights not visible to higher management (Tang, Quayes & Joseph, 2020; Tadele, 2021).

**Work Experience**

Work experience refers to an individual's time in a professional environment, typically measured in years. It encompasses the skills, knowledge, and competencies a person acquires through their employment history. Experienced employees are often better equipped to navigate complex financial landscapes, make informed decisions and implement strategies that enhance organizational resilience. The study participants' work experience results are presented in Figure 4.

**Figure 4:** *Work experience of respondents*

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*Source: Primary* data (2024).

The study's findings reveal that 69.09% of participants have over 10 years of experience, suggesting a highly experienced workforce within microfinance institutions in Sub-Saharan Africa. Experienced employees are likely to contribute to more effective risk management frameworks, tailored to local conditions. Previous research supports this, highlighting that human capital and experienced teams positively impact organizational performance through better problem-solving and decision-making (Guo & Chen, 2022; Carmeli et al., 2021).

**3.3 Descriptive statistics**

**Liquidity risk and operational efficiency of MFIs within Sub-Saharan Africa**

The study aimed to analyze the influence of liquidity risk on operational efficiency within Sub-Saharan MFIs. The findings, presented through descriptive statistics (Table 2), provide insight into how liquidity management practices affect various operational aspects of these institutions.

**Table 2: *Liquidity risk and operational efficiency***

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Descriptive Statistics** | | | | | |
|  | **N** | **Minimum** | **Maximum** | **Mean** | **Std. Deviation** |
| Our institution conducts regular evaluations of its liquidity status. | 210 | 4 | 5 | 4.71 | .455 |
| We have implemented comprehensive policies aimed at effectively managing liquidity risks. | 210 | 2 | 5 | 4.63 | .883 |
| Our ability to meet client demands is significantly affected by liquidity constraints. | 210 | 2 | 5 | 4.33 | .876 |
| Our institution maintains adequate cash reserves to address unforeseen circumstances. | 210 | 2 | 5 | 3.59 | 1.212 |
| We operate with a high level of efficiency given the current market conditions we face. | 210 | 3 | 5 | 3.79 | .606 |
| Due to our effective resource management practices, we can swiftly adjust our services in response to changing customer needs. | 210 | 3 | 5 | 3.80 | .601 |
| Increased liquidity levels contribute positively to the speed of our service delivery. | 210 | 3 | 5 | 4.22 | .611 |
| Our strategies for managing liquidity are designed to minimize operational costs effectively. | 210 | 1 | 5 | 3.56 | 1.316 |
| Valid N (listwise) | 210 |  |  |  |  |

*Source*: Primary data (2024).

The findings from the survey indicate a nuanced understanding of how liquidity levels impact operational efficiency within Sub-Saharan MFIs. The mean score of 4.71 (std deviation 0.455) indicates that institutions place a high emphasis on regularly evaluating their liquidity status. With a mean score of 4.63 (std deviation 0.883), the data indicates that institutions have established comprehensive policies aimed at managing liquidity risks effectively. The mean score of 4.33 (std deviation 0.876) reflects a significant recognition among institutions that their ability to meet client demands is adversely affected by liquidity constraints. The mean score for maintaining adequate cash reserves was lower at 3.59 (std deviation 1.212), suggesting variability in how well institutions feel they can address unforeseen circumstances through cash reserves alone.

A mean score of 3.79 (std deviation 0.606) suggests that while institutions perceive themselves as operating efficiently given current market conditions, there remains room for improvement. a mean score of 3.80 (std deviation 0.601) indicates that effective resource management practices enable institutions to adapt services swiftly according to changing customer needs. The mean score of 4.22 (std deviation 0.611) suggests that increased liquidity levels are perceived to enhance the speed of service delivery, reflecting a strong correlation between liquidity management and operational responsiveness. Conversely, the mean score of 3.56 (std deviation 1.316) for strategies aimed at minimizing operational costs indicates that while liquidity management is recognized as important, there may be challenges in effectively translating these strategies into cost reductions. This divergence suggests that although MFIs acknowledge the importance of liquidity in facilitating efficient operations, they may struggle to implement cost-effective measures consistently.

To further elucidate these findings, interviews with 12 top management representatives from various MFIs revealed several key themes regarding liquidity risk and operational efficiency. One manager stated,

*“Our ability to respond quickly to client needs has improved significantly since we enhanced our liquidity position.”*

Echoing the survey’s finding on service delivery speed. Another noted,

*While we have policies in place for managing liquidity, the challenge remains in balancing these with our operational costs.*

which aligns with the lower mean score regarding cost minimization strategies. A third interviewee emphasized,

*“Liquidity is not just about having cash; it is about how we manage it to ensure we can serve our clients without incurring unnecessary expenses.”*

These direct quotations reinforce the survey results by highlighting both the positive impacts of increased liquidity on service delivery and the ongoing challenges faced by MFIs in managing operational costs effectively. The convergence between survey results and interview responses underscores a consistent narrative found in existing literature regarding liquidity management’s role in enhancing operational efficiency within MFIs. For instance, a study by Ghenimi, Chaibi, and Omri (2021) highlighted a significant positive correlation between higher liquidity levels and improved operational efficiency, indicating that MFIs with robust liquidity management are better positioned to sustain operations. Similarly, Lelgo and Obwogi's (2018) research in Kenya found that inadequate liquidity management led to increased operational costs, thus impeding service delivery efficiency. In contrast, research by Chanda (2024) in Zimbabwe and Zambia suggested that effective liquidity management strategies contributed to enhanced operational efficiency, enabling institutions to respond quickly to market changes. However, while these studies reveal common challenges in liquidity management across the region, they also underscore regional differences. For instance, in Kenya, the focus has been more on managing liquidity to reduce operational costs, while in Zimbabwe and Zambia, the emphasis was on ensuring liquidity to adapt to market fluctuations and external shocks.

Divergence in findings is observed when examining the effectiveness of cost-minimization strategies linked to liquidity management. While many studies suggest a strong correlation between liquidity and operational efficiency, Zhang (2020) notes that many MFIs struggle with limited resources and market volatility, which may hinder their ability to implement cost-effective liquidity strategies consistently. This discrepancy highlights the need for further exploration into how MFIs can align liquidity management with operational cost efficiencies while maintaining high service standards. These findings contribute valuable insights into the complex interplay between liquidity risk and operational efficiency within Sub-Saharan MFIs. The study not only adds to the understanding of how liquidity management influences operational outcomes but also points out areas needing attention, such as balancing liquidity with cost-minimization strategies. This study contrasts with and extends existing research by providing a more regionally inclusive view, covering 12 countries across Sub-Saharan Africa, and offering a comprehensive approach that combines both qualitative and quantitative data. Furthermore, it underscores the critical need for MFIs in the region to adopt more refined liquidity management practices, specifically in balancing liquidity with cost management, to enhance operational efficiency and sustainability.

**3.4 Inferential Statistics**

To examine the hypotheses concerning the impact of liquidity risk on the operational efficiency of Sub-Saharan MFIs, regression analysis was employed. The study assessed how the independent variable influences the dependent variable.

**Table 3: Regression model Analysis results**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Variable** | **Coefficient** | **Std. Error** | **Beta** | **t-Statistics** | **Sig.** | **Tolerance** | **VIF** |
| **(Constant)** | 2.196 | .578 |  | 3.797\*\* | .215 |  |  |
| **Liquidity risk** | .346 | .099 | .330 | 3.500\*\* | .001 | 0.708 | 1.413 |

1. Dependent Variables: Operational efficiency

*Source* :Primary Data (2024).

Research demonstrates that liquidity risk has a significant impact on the operational efficiency of MFIs in Sub-Saharan Africa. The regression analysis reveals that the estimated coefficient for liquidity risk is β1 = 0.330, with a p-value of 0.001, which is below the 5% significance level (α = 0.05). Hypothesis testing was conducted at a significance level of 5%, and the null hypothesis was rejected when the p-value for the test statistic was less than 0.05, indicating a statistically significant relationship between liquidity risk and operational efficiency. Based on this result, the hypothesis is accepted, suggesting that for each unit increase in liquidity risk, there is a corresponding increase of 0.330 units in operational efficiency. Additionally, the t-test value for liquidity risk is 3.500, indicating that the standard error associated with this parameter is smaller than the parameter’s effect size. This study extends the findings of previous research on the relationship between liquidity risk and operational efficiency in MFIs within Sub-Saharan Africa. While earlier studies, such as those by Lelgo and Obwogi (2018) and Adusei (2021), have demonstrated the significant impact of liquidity risk on operational performance, they primarily focused on specific countries or regions. This paper offers a cross-country analysis by looking at 12 nations in West Africa, East Africa, and Southern Africa. This analysis offers fresh perspectives on how different regulatory frameworks and economic conditions affect liquidity management methods and how those strategies affect operational efficiency. Furthermore, unlike many past studies that relied on qualitative data, this research incorporates quantitative regression analysis, ensuring statistical rigor and enhancing the generalizability of the findings across diverse Sub-Saharan African contexts.

Previous research, such as that by Hassan et al. (2022), Naqvi and Pungaliya (2023), and Salifu (2024), has emphasized the role of liquidity management in improving operational efficiency, but often lacked a comprehensive, comparative approach. By addressing this gap, this study contributes valuable evidence for MFIs operating in different economic environments, offering practical recommendations for enhancing liquidity risk management strategies across the region. This research thus builds on and expands the existing body of knowledge, providing a more nuanced understanding of liquidity risk’s impact on MFIs' operational performance in Sub-Saharan Africa.

**3.4 Summary of Findings**

The study reveals that MFIs in Sub-Saharan Africa place a strong emphasis on liquidity management, with regular evaluations and comprehensive risk management policies in place. While increased liquidity is seen to enhance service delivery speed and adaptability to customer needs, challenges persist in minimizing operational costs effectively, despite the recognition of liquidity's role in operational efficiency. Survey results show variability in how institutions maintain cash reserves for unforeseen circumstances and there is room for improvement in operational efficiency. Qualitative insights from interviews align with these findings, emphasizing both the positive impact of liquidity on service responsiveness and the difficulty of balancing liquidity management with cost reduction. The findings are consistent with existing literature, highlighting the importance of liquidity for operational stability, but also pointing to ongoing barriers related to resource limitations and market volatility, suggesting a need for further exploration on aligning liquidity management with cost-efficiency practices.

4. Conclusion

The study provides a detailed analysis of how liquidity risk affects the operational efficiency of MFIs in Sub-Saharan Africa. The findings from both the survey and interviews underscore the critical importance of liquidity management in enhancing operational efficiency. The survey results indicate that MFIs prioritize regular liquidity evaluations and have established comprehensive policies to manage liquidity risks. However, the lower score for maintaining adequate cash reserves highlights a gap in the ability to address unforeseen circumstances, suggesting that MFIs still face challenges in building sufficient liquidity buffers.

Furthermore, while institutions perceive improved service delivery speed with better liquidity levels, they struggle with cost minimization strategies despite recognizing their importance. This divergence aligns with previous research that highlights the difficulties many MFIs face in balancing liquidity management with operational cost efficiency. Interviews with top management further emphasized these themes, revealing that while liquidity improvements have enhanced responsiveness, there remains a significant challenge in aligning liquidity practices with effective cost management.

The study contributes to existing literature by reinforcing the positive relationship between liquidity management and operational efficiency. However, it also identifies the need for further exploration of how MFIs can better integrate liquidity management with cost-effective operations, given the constraints they face in resource management and market volatility. Although MFIs in Sub-Saharan Africa have made progress in strengthening liquidity management, the results indicate that there is still need to improve cost-efficiency procedures and adjust to the changing market conditions they face. Future research should focus on developing strategies that can bridge this gap and ensure that liquidity management supports both operational efficiency and financial sustainability.

**Recommendations**

To effectively address the impact of liquidity risk on the operational efficiency of MFIs in Sub-Saharan Africa, it is recommended that institutions implement comprehensive liquidity management frameworks that are specifically tailored to the region's unique economic challenges. This should include the development of robust liquidity risk management policies that prioritize the establishment of adequate liquidity reserves and the adoption of advanced forecasting tools to better predict cash flow needs under varying economic conditions. For instance, MFIs could adopt systems similar to those used by successful institutions in East Africa, where predictive models for cash flow management have significantly improved liquidity preparedness and helped mitigate operational disruptions during market volatility.

MFIs should also focus on diversifying their funding sources to reduce their dependence on informal and unstable financing methods, thereby enhancing their financial flexibility. For example, partnerships with larger banks or international remittance providers have enabled some institutions to tap into more stable sources of capital, ensuring smoother liquidity flows. Moreover, collaborating with micro-insurance providers and impact investors could allow MFIs to access additional capital during times of liquidity strain, as seen in some regions of Nigeria and Kenya, where such collaborations have buffered institutions during periods of heightened economic uncertainty (Onwere, Oke & Ojogbo, 2024).

Additionally, capacity-building initiatives focused on improving financial management skills, especially in liquidity and cash flow management, would help institutions better navigate economic instability. This includes training staff on best practices for financial forecasting, budgeting, and scenario planning. Institutions that have invested in such training have shown marked improvements in their ability to manage cash flows effectively, reducing their vulnerability to liquidity crises (Chowdhury et al., 2023).In regions like Zimbabwe, where external economic shocks can severely impact liquidity, MFIs could collaborate with regulatory bodies and international donors to create financial buffers, such as contingency funds or liquidity support mechanisms, to stabilize operations during crises. For example, during the recent economic downturns in Zimbabwe, some MFIs formed alliances with government bodies and international financial organizations to access special funding lines specifically designated for liquidity relief, ensuring continued service delivery in the face of financial pressures.

Moreso, leveraging technology could play a critical role in enhancing operational efficiency and improving liquidity management. MFIs can promptly detect liquidity shortages and take preventative action by implementing digital platforms for automated risk assessments and real-time liquidity monitoring. Institutions in countries like Kenya have successfully implemented mobile banking and automated transaction monitoring systems, which have enabled them to address liquidity gaps in real-time, thus minimizing operational disruptions (Song, 2024).From a policy perspective, governments and regulatory bodies should prioritize the creation of enabling environments for effective liquidity risk management by offering incentives for MFIs that adopt sound liquidity practices. This could include regulatory support for liquidity buffers or access to low-interest loans in times of crisis. Policymakers should also promote cross-border collaboration among MFIs in Sub-Saharan Africa to share best practices and resources, fostering a more resilient microfinance sector across the region.

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Author(s) hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc.) and text-to-image generators have been used during the writing or editing of this manuscript.

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Abbreviations

|  |  |
| --- | --- |
| MFI | Micro Finance Institutions |
| SPSS | Statistical Package for the Social Sciences |

APPENDIX

APPENDIX-1

Questionnaire

**Section A: Demographic Information**

**Instructions:** Please fill in the following with the appropriate response to questions asked.

|  |  |  |
| --- | --- | --- |
| **Variable** | **Category** | **Mark** |
| **1.Gender/Sex** | **Male** |  |
| **Female** |  |
| **2.Position within the MFI** | **Executive Management (e.g., CEO, CFO)** |  |
| **Middle Management (e.g., Department Head, Branch Manager)** |  |
| **Operational Staff (e.g., Loan Officer, Customer Service Representative)** |  |
| **Support Staff (e.g., Administrative Assistant, IT Support)** |  |
| **3.Years of experience** | **Less than 1 year** |  |
| **1-3 years** |  |
| **4-6 years** |  |
| **7-10 years** |  |
| **More than 10 years** |  |

**Section B: Liquidity Risk Assessment**

Please indicate your level of agreement with the following statements regarding liquidity risk using a scale from 1 (Strongly Disagree) to 5 (Strongly Agree):

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Statement** | **1** | **2** | **3** | **4** | **5** |
| Our institution conducts regular evaluations of its liquidity status. |  |  |  |  |  |
| We have implemented comprehensive policies aimed at effectively managing liquidity risks. |  |  |  |  |  |
| Our ability to meet client demands is significantly affected by liquidity constraints. |  |  |  |  |  |
| Our institution maintains adequate cash reserves to address unforeseen circumstances. |  |  |  |  |  |

**Operational Efficiency Evaluation**

Please indicate your level of agreement with the following statements regarding operational efficiency:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Statement** | **1** | **2** | **3** | **4** | **5** |
| We operate with a high level of efficiency given the current market conditions we face. |  |  |  |  |  |
| Due to our effective resource management practices, we can swiftly adjust our services in response to changing customer needs. |  |  |  |  |  |
| Increased liquidity levels contribute positively to the speed of our service delivery. |  |  |  |  |  |
| Our strategies for managing liquidity are designed to minimize operational costs effectively. |  |  |  |  |  |

Appendix 2: Interview Guide

**Background Information**

1. Can you provide a brief overview of your role within the micro-financial institution?
2. How long have you been working in this sector, and what has been your experience with financial risk management?

**Liquidity Risk and Operational Efficiency**

1. How would you define liquidity risk in the context of your institution?
2. In what ways do you believe liquidity risk impacts operational efficiency?
3. Can you provide specific examples or instances where liquidity challenges affected operations?
4. What strategies does your institution employ to manage liquidity risk effectively?
5. How do these strategies influence day-to-day operations and overall efficiency?