Innovative Financial Risk Management Paradigms: Addressing the Financial Performance Conundrum in the Credit Union Sector of Cameroon

Innovative Financial Risk Management Paradigms: Addressing the Financial Performance Conundrum in the Credit Union Sector of Cameroon

Awah Richard Ndoh[1], Njekang Dieudonne Nkwati[2*], Njekang Eric Aziseh[3], Humphred Watard[4,] Njimanted Godfrey Forgha[5]

[1]PhD Holder in Management and Finance, Consultant in Financial Financial Analysis and Assistant General Manager of the Cameroon Cooperative Credit Union League Limited (CamCCUL)-Cameroon

[2]PhD Researcher, Consultant in Credit Union Financial Analysis and Graduate Teaching Assistant, Department of Banking and Finance, Faculty of Economics and Management Sciences-The University of Bamenda, Cameroon

[3]Phd Holder and Lecturer in Health Economics from the Department of Economics, Faculty of Economics and Management Sciences, The University of Bamenda-Cameroon

[4]PhD Researcher and Graduate Teaching Assistant, Department of Banking and Finance, Faculty of Economics and Management Sciences-The University of Bamenda, Cameroon

[5]Professor of Economics and Director of the Higher Institute of Commerce and Management (HICM)-The Universiity of Bamenda, Cameroon

https://orcid.org/0009-0000-7770-6333

ABSTRACT

Purpose: This study examines how Innovative Financial Risk Management Paradigms or financial management practices affect the financial performance of credit unions in Cameroon.

Methodology: The study employs panel data analysis using fixed-effects and random-effects models to address heteroskedasticity, autocorrelation and endogeneity issues. Data from 2021 to 2025 are sourced from audited financial reports of the CamCCUL Network from its nine (09) chapters, with the dependent variable indicators normalized into a financial performance index.

Findings: The findings reveal that effective liquidity management and asset quality improvements positively affect financial performance, while higher risk exposure has a detrimental effect.

Recommendations: These findings underscore the importance of prudent innovative financial risk management paradigms. The study offers policy recommendations for regulators and managers to strengthen liquidity buffers, improve asset quality and enforce risk controls, thus promoting financial stability and inclusive growth. These contributions highlight the dynamic relationships between financial management and financial performance, emphasizing; compliance, transparency and governance as key to financial resilience in Cameroon and similar developing contexts.

Keywords: *Asset Quality, Financial Performance, Innovative Financial Risk Management Paradigms, Liquidity Management, Microfinance, Risk Management.*

1. Introduction

1.1 Background of the Study

The evolution of financial performance in microfinance institutions (MFIs) and credit unions globally, regionally, and locally has been shaped by policy reforms, technological advances, and shifting market dynamics. Globally, in the United States and Europe, efforts to enhance operational efficiency and financial stability through regulatory standards and technological innovation have driven substantial improvements. During the 1980s and 1990s, the U.S. credit union sector faced significant distress, exemplified by the Savings and Loan crisis, which caused the failure of approximately 1,600 credit unions between 1989 and 1995 (Hughes & Mester, 2018). To restore stability, the National Credit Union Administration (NCUA) introduced stricter supervision, including the Net Worth Ratio (NWR) requirement, compelling credit unions to maintain minimum capital buffers to bolster resilience (NCUA, 1994). These measures contributed to sector stabilization, with assets rising from $679 billion in 2000 to over $2.2 trillion in 2023, and membership increasing from 119 million to over 274 million (WOCCU, 2023). Key performance indicators such as savings mobilization and loan portfolio quality improved as a result of reforms emphasizing reserves and capital adequacy. Technological innovations like core banking systems further reduced operational costs by around 15-20%, enabling more efficient savings and lending activities (European Credit Union Development Association, 2003). These developments, reinforced by Basel II and III standards mandating higher capital and liquidity ratios, strengthened sector resilience during economic shocks (European Banking Authority, 2013). Consequently, non-performing loans (NPLs) declined from 4.5% in 2000 to about 3% in 2005, and further to below 2.5% by 2015 (European Central Bank, 2005; CECU, 2018). These reforms fostered increased confidence and investment, resulting in steady growth.

In Europe and North America, the early 2000s marked a paradigm shift toward leveraging technology and sophisticated risk management frameworks to improve financial performance. The adoption of core banking systems and automated credit scoring reduced operational costs by 15-20%, improved asset management, and enhanced savings mobilization (European Credit Union Development Association, 2003). Concurrently, regulators introduced comprehensive risk assessment tools, including stress testing, which helped identify vulnerabilities and improved asset quality—NPLs declined from 4.5% in 2000 to approximately 3% by 2005 (European Central Bank, 2005). The implementation of Basel II standards strengthened capital adequacy ratios, reinforcing financial buffers and resilience. These reforms led to improvements in profitability ratios such as ROA and ROE, laying the foundation for more sustainable growth. Between 2005 and 2008, credit unions intensified efforts to improve performance in anticipation of the global financial crisis. Regulatory reforms, including higher capital and liquidity standards were implemented, such as the NCUA's mandate for a net worth ratio above 7% and stress testing (NCUA, 2008). Similar measures under Basel III in Europe aimed to reduce systemic

risks (European Banking Authority, 2013). These reforms enhanced asset quality, reserves, and savings mobilization, enabling a quicker recovery post-crisis, with asset growth resuming by 2010 and NPLs steadily declining.

Post-2008, diversification of income sources, technological innovations, and member engagement became central to sustaining financial performance. Credit unions expanded into insurance, small business loans, and digital banking, which lowered NPLs further—often below 2.5% by 2015 (CECU, 2018). The integration of mobile banking and automated credit scoring led to operational cost reductions of up to 25%, boosting performance metrics like ROA and ROE (World Council of Credit Unions, 2019). The COVID-19 pandemic accelerated digital adoption, with digital transactions increasing by over 60% globally during 2020–2022 and cost-to-income ratios declining by 10-15% (World Council of Credit Unions, 2022). Regulators introduced temporary liquidity buffers, loan moratoria, and other measures, which, despite short-term profitability impacts, enhanced long-term stability and member loyalty. Many credit unions reported exceeding regulatory capital minimums by 2025, with diversified income streams strengthening resilience (OECD, 2024).

In Africa, microfinance institutions (MFIs) have experienced rapid growth driven by the push for financial inclusion and poverty reduction. Membership increased from about 4.5 million in 2000 to over 35 million in 2023, with assets rising from $2.5 billion to $15 billion (ACCOSCA, 2023). Policy reforms, capacity-building, and regional collaboration have been vital in improving financial performance and sustainability. Measures such as improved credit assessment, financial literacy campaigns, and mobile banking have led to gradual declines in NPLs from over 10% in the early 2000s to around 6% by 2020 (Onyeneho & Oji, 2017). Digital platforms have expanded outreach, mobile money now reaches over 60% of populations in countries like Kenya and Ghana, contributing to increased savings and loan activity. Nonetheless, high default rates, infrastructural deficits, and regulatory gaps continue to hamper full sector development, prompting ongoing efforts to improve governance and operational efficiency.

In Cameroon, the microfinance sector has grown substantially over the past two decades, with the Cameroon Cooperative Credit Union League (CamCCUL) leading this expansion. Membership rose from roughly 200,000 in 2000 to over 1.5 million in 2023, and total assets increased from $100 million to approximately $800 million (CamCCUL, 2023). This rapid growth underscores the increasing demand for financial services in rural and underserved regions and the sector's role in poverty alleviation. Despite progress, operational challenges such as high costs, loan delinquency, and limited access to affordable funding threaten sustainability (Neba, 2020). To address these issues, stakeholders have implemented staff training, internal controls, and improved credit risk management. The regulatory framework by COBAC, including prudential norms covering capital adequacy, liquidity, and risk management, has been instrumental in maintaining stability and enhancing performance (MINFI / DGTCFM / RSIMA North West, 2024). In the North West region, where CamCCUL has significant presence, the

sector has contributed to regional development by financing smallholder farmers and entrepreneurs. However, infrastructural deficits and limited digital connectivity continue to constrain full outreach, emphasizing the need for innovation and supportive policies.

Despite these efforts, many microfinance institutions in Cameroon still face operational and financial sustainability issues. Savings mobilization remains low relative to total assets, partly due to high operational costs and limited financial literacy. Loan portfolio quality, measured by NPL ratios, fluctuates around 8-10%, reflecting ongoing risk management challenges. Reserves as a percentage of total assets have increased modestly, yet many institutions operate with thin capital margins, exposing them to systemic risks. Stakeholders such as CamCCUL, COBAC and the Ministry of Finance have introduced measures like capacity-building programs, prudential norms, and digital innovations to improve performance. Nonetheless, the sector's growth is hindered by infrastructural deficits, funding limitations, and the need for tailored financial management practices.

Given the divergent opinions among policymakers, practitioners, and researchers on the most effective strategies for improving MFI performance, further studies are necessary. Reconciling these perspectives will help develop best practices suited to Cameroon's unique context and strengthen the sector's resilience and sustainability.

1.2 Statement of the Problem

The financial performance of credit unions in Cameroon has been mixed, despite high expectations for robust growth and stability. These institutions are expected to achieve a minimum of 10% annual growth in savings mobilization, maintain delinquency rates below 5%, and hold reserves at or above 10% of total assets. Additionally, they should generate positive financial results with a return on assets (ROA) of at least 2% and a return on equity (ROE) of at least 10%, while complying with all 15 key regulatory requirements set by the Central African Banking Commission (COBAC). Compliance with these norms is essential for ensuring the stability and security of Cameroon's financial system, (Neba, 2020).

However, recent reports indicate that credit unions have fallen short of these targets. Savings mobilization has grown at an average annual rate of only 5%, which is half the expected rate. Delinquency rates have averaged around 49.44%, far exceeding the target of 5% (CamCCUL, 2023). Reserves have averaged 7% of total assets, below the regulatory minimum of 10%. Financial results have also been inconsistent, with an average ROA of 1.2% and ROE of 6%, both below the desired thresholds, with some cases showing negative results (Neba, 2020). Furthermore, credit unions meet only about 10 out of the 14 key COBAC norms on average, indicating gaps in regulatory compliance. These discrepancies highlight the urgent need for credit unions to reassess their financial management practices, particularly in liquidity, risk, and asset quality management, to close these performance gaps and enhance stability.

Various stakeholders, including the Cameroon Cooperative Credit Union League (CamCCUL), COBAC, and other regulators, have initiated efforts such as training programs, capacity-building initiatives, and regulatory reforms aimed at strengthening financial stability and security (COBAC, 2024). Despite these interventions, the overall financial performance of credit unions remains below expectations. This situation suggests that more targeted and effective strategies are needed. The adoption of appropriate innovative financial risk management paradigms such as improved liquidity management, risk mitigation, and asset quality could help credit unions in Cameroon meet their performance targets. Implementing these best practices has the potential to improve savings mobilization, enhance loan portfolio quality, increase reserves, and ensure better compliance with COBAC norms. This study aims to explore these issues further, seeking to identify specific innovative financial risk management paradigms that can help bridge the financial performance gap and support the stability and growth of Cameroon's credit union sector. Based on the above, the study attempts answers to the these contemporary issues through the following specific research objectives which are to;

- ✓ Assess the effect of liquidity management on financial performance of credit unions in Cameroon.
- ✓ Determine the effect of risk management practices on the financial performance of credit unions in Cameroon.
- ✓ Investigate the effect of asset quality management on the financial performance of credit unions in Cameroon.

Based on the above objectives, the findings of this study are presumed in the following hypotheses.

- ✓ Ho: Liquidity management has no statistically significant effect on the financial performance of credit unions in Cameroon.
- ✓ Ho: Risk management practices have no statistically significant effect on the financial performance of credit unions in Cameroon.
- ✓ Ho: Asset quality management has no statistically significant effect on the financial performance of credit unions in Cameroon.

2. Literature Review

Conceptutal Review

This study highlights the critical importance of innovative financial risk management paradigms (financial management practices), financial performance and the role of microfinance institutions, particularly credit unions. Innovative Financial Risk Management Paradigms focus on a broad set of strategies and procedures aimed at efficiently overseeing financial resources to ensure the sustainability and effective service delivery of credit unions. Effective practices include liquidity management, risk mitigation and asset quality control which are vital for maintaining financial stability and complying with regulatory standards (Abor & Biekpe, 2007;

Nasser & Abor, 2014). Activities such as financial planning, budgeting, cash flow management and risk assessment are central to these practices (Abor & Biekpe, 2007).

Discipline in asset-liability management and internal controls foster organizational resilience and operational stability (Kraus & Lind, 2014), while leveraging technology such as digital financial systems enhances oversight, compliance and efficiency (Muriithi & Mugo, 2019). A key aspect of liquidity management involves maintaining sufficient liquid assets to meet short-term obligations, with strategies including cash flow forecasting, liquidity buffers, and contingency plans, especially given the dependence on volatile member deposits (Al Nimer et al., 2022; Van Greuning & Bratanovic, 2009). Risk management is fundamental to identifying, assessing, and mitigating threats such as credit, market, operational, and liquidity risks, with practices like credit risk assessment, hedging, and internal controls being vital to safeguard stability (Jorion, 2007; Berger & DeYoung, 1997). Asset quality management focuses on maintaining a healthy loan portfolio through rigorous borrower evaluation, diversification, and early problem loan detection to prevent deterioration of financial health (Berger & De Young, 1997; Mishkin, 2007). Overall, effective financial management practices are essential for ensuring the stability, growth and social mission fulfillment of credit unions, with technological integration playing a significant role in modernizing these processes (Muriithi & Mugo, 2019).

Financial performance in credit unions is a multifaceted concept reflecting the efficiency, stability, and sustainability of these institutions. It includes indicators such as profitability, return on assets (ROA), return on equity (ROE), liquidity ratios, asset quality and capital adequacy (Neba, 2020). These metrics enable management and regulators to evaluate operational health, identify strengths and weaknesses, and guide strategic decisions. Financial performance also involves assessing the sector's resilience amidst external influences such as economic fluctuations, regulatory changes, and membership dynamics (Ojiako, 2018; Neba, 2020). In the context of this study, savings Mobilization refers to the ability of credit unions to attract and accumulate member deposits effectively. Robust savings mobilization enhances liquidity, provides a stable funding base, and enables the institution to expand its lending activities while maintaining financial stability (Ouma, 2016). It is a critical indicator of member trust and financial health, directly influencing the capacity to support community development and operational needs.

Loan Portfolio Quality measures the health and risk level of the loans issued by the credit union. High-quality loan portfolios are characterized by low non-performing loans (NPLs), diversified lending, and effective credit assessment processes (Neba, 2020). Maintaining good loan portfolio quality is vital for sustaining profitability and ensuring the financial sustainability of the institution. Reserves serve as financial buffers accumulated from retained earnings and profits. Adequate reserves strengthen the credit union's capacity to absorb losses, manage unexpected financial shocks, and support future growth initiatives (Ouma, 2016). A strong reserve position signals financial resilience and stability. Financial Results encompass overall profitability and

operational efficiency, reflected in metrics such as net income, return on assets (ROA), and return on equity (ROE). These results provide a comprehensive view of the credit union's financial health, indicating its ability to generate sustainable profits and fund its social mission (Neba, 2020).

Microfinance institutions, notably credit unions are member-owned, nonprofit organizations that serve as vital agents of financial inclusion and community development. Originating in 19th-century Europe, credit unions have expanded globally, especially in Africa, where they play a pivotal role in providing affordable credit, savings, and insurance services to underserved populations (Hussain & Zaman, 2018; Ojo, 2016). They operate based on democratic principles, emphasizing member participation, local governance and social objectives which distinguish them from commercial banks (Vale, 2011). In Cameroon, credit unions are recognized as crucial for promoting financial inclusion, particularly in rural and marginalized areas, where they support income-generating activities and community resilience (Neba, 2020). However, they face challenges such as high operational costs, governance issues, limited financial literacy, and regulatory constraints, which threaten their growth and stability (Neba, 2020). The future of credit unions depends on adopting technological innovations, enhancing regulatory frameworks, and strengthening managerial capacity to expand outreach and improve service quality (Hussain & Zaman, 2018). Overall, credit unions are integral to fostering social cohesion, economic empowerment and financial resilience within their communities.
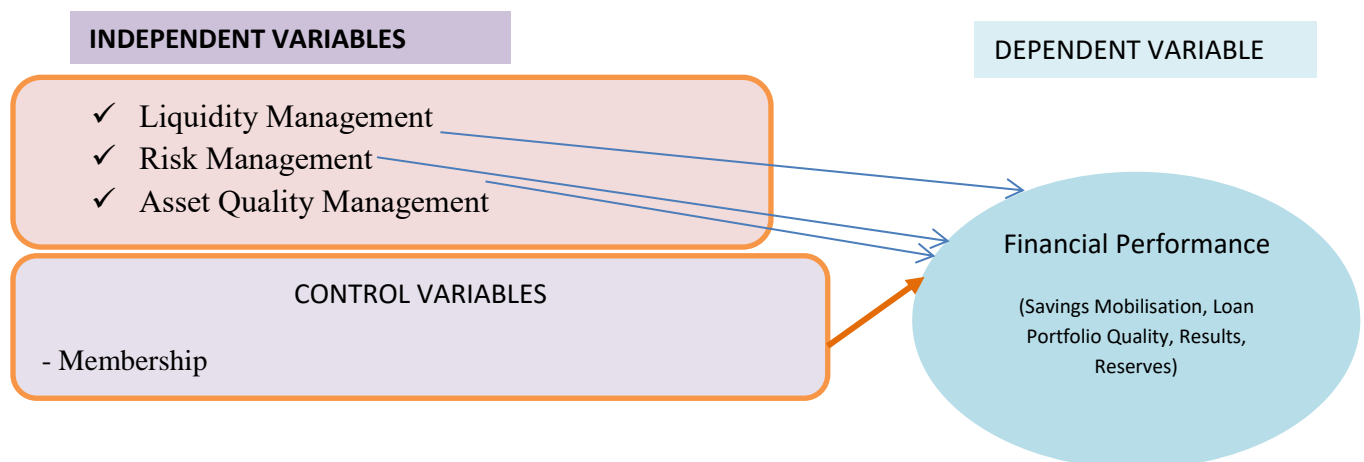
Conceptual Framework

Figure 1: Conceptual Framework Relating Financial Management Practices and Financial Performance

Source: Researcher (2025)

The framework above emphasizes that effective liquidity management, risk management and asset quality are essential for improving the financial performance of credit unions, promoting stability, profitability and resilience. It highlights that proper liquidity management ensures operational efficiency and reduces risks associated with shortages or excess low-yield assets,

while strong risk management mitigates credit, interest rate, and liquidity risks that could threaten financial health. Additionally, maintaining high asset quality and a large, engaged membership base enhances income, deposit mobilization, and long-term growth, collectively supporting improved financial outcomes for credit unions.

2.2 Review of Relevant Theories

Liquidity Preference Theory (Keynes, 1936) emphasizes the importance of holding sufficient liquidity to meet short-term obligations, asserting that liquidity is central to financial stability and interest rate determination. Keynes argued that individuals and firms prefer liquid assets due to uncertainty, transactional needs, and precautionary motives, which inversely influence interest rates, higher liquidity demand raises rates while lower demand reduces them. The theory assumes that liquidity preference is driven by expectations and psychological factors, with a fixed money supply set by the central bank, and presumes rational behavior and perfect information. Recent adaptations consider monetary policy and behavioral biases influencing liquidity preferences (Mishkin, 2019). The demand-supply framework below shows downward-sloping liquidity demand and a vertical money supply line, where equilibrium interest rates depend on shifts caused by economic uncertainty or member behavior, making it highly applicable to Cameroon's credit unions. Despite criticisms for oversimplification and ignoring real economic variables, the theory provides insight into how changes in liquidity demand impact interest rates and financial stability especially in emerging markets with macroeconomic volatility (Keynes, 1936; Mishkin, 2019).
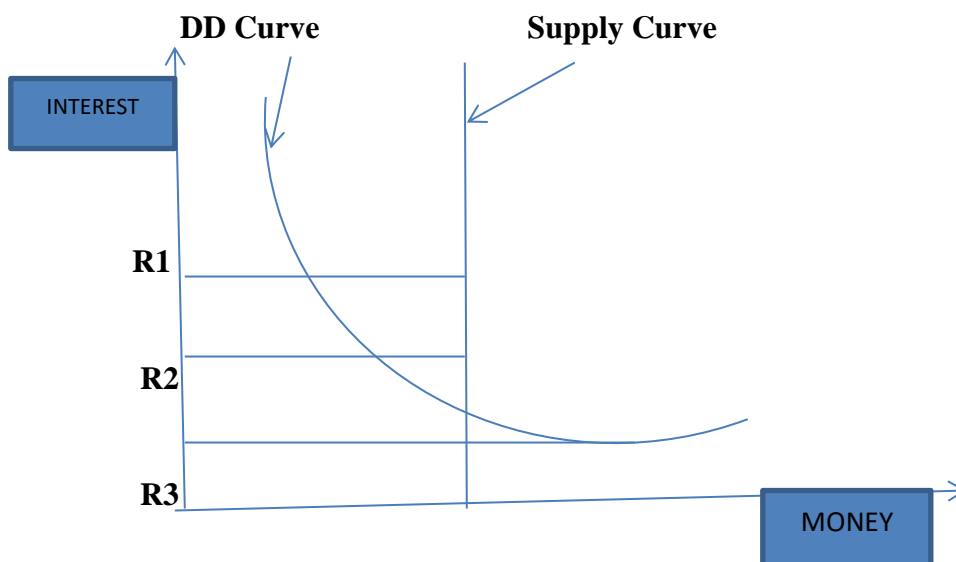

Figure 2: Framework of the Liquidity Preference Theory

Source: Researcher (2025)

Risk Management Theory (Keynes, 1936; Hoyt & Liebenberg, 2011) emphasises the necessity of identifying, assessing and mitigating risks to ensure financial stability and maximize returns. Rooted in Keynes's recognition of inherent economic uncertainties like interest rate fluctuations, inflation, and liquidity risks, it advocates for proactive strategies such as diversification, contingency planning, and risk transfer mechanisms. The theory assumes imperfect information, rational actors motivated to minimize losses, and that higher risks can yield higher rewards if managed properly. In Cameroon's credit unions, this entails continuous risk monitoring, developing tailored mitigation strategies, and fostering a risk-aware culture amidst macroeconomic volatility and limited resources. It presumes that institutions have the capacity to evaluate risks accurately, but faces criticism for overestimating the feasibility of perfect information and rationality in resource-constrained contexts (Kauffman & Moretti, 2020; Ndikumana & Boyce, 2017). The framework below emphasizes ongoing review and capacity building to enhance resilience against shocks, though practical limitations such as informational asymmetries and behavioral biases pose challenges, requiring context-specific adaptations for effective risk management (Lins & Servaes, 2017).

Figure 3: The Framework of the Risk Management Theory

Source: Researcher's Conceptualisation from Existing Literature (2025)

Modern Portfolio Theory (Markowitz, 1952) focuses on managing asset quality through diversification to optimize returns and minimize risks. It posits that investors can construct an "efficient frontier" of portfolios that maximize expected return for a given risk level or minimize risk for a specified return, leveraging the correlation among assets. The core assumptions include rationality, risk aversion, access to complete information, and market efficiency. In Cameroon's credit unions, MPT offers a framework for asset-liability management by diversifying investments across loans, government securities, and savings products to improve financial sustainability amid local economic volatility. The graphical model below features the efficient frontier, with the capital market line illustrating the trade-off between risk and return, guiding asset allocation decisions. Criticisms stem from unrealistic assumptions like perfect information, market efficiency, and stable correlations, which often do not hold in emerging markets affected by behavioral biases and market imperfections. Nonetheless, the theory remains relevant for designing diversified investment strategies tailored to resource-limited environments,

emphasizing risk-return trade-offs (Markowitz, 1952; Fama & French, 2004; Hwang & Kim, 2019).
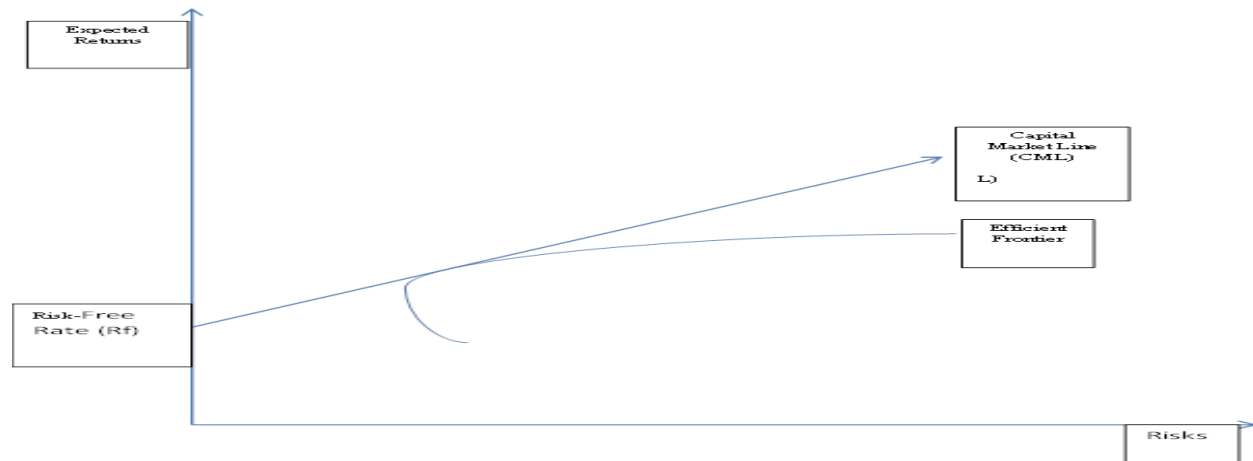

Figure 4: Framework of the Modern Portfolio Theory (MPT)

 Source: Researcher (2025)

Financial Intermediation Theory (Tobin, 1969; Diamond & Dybvig, 1983) posits that financial institutions like credit unions serve as intermediaries that channel surplus savings to those in need of funds, thus promoting economic growth and stability. It assumes that information asymmetries exist between savers and borrowers, with intermediaries possessing lower transaction costs and better risk assessment capabilities. The theory presumes a relatively stable macroeconomic environment, rational agents, and that effective intermediation reduces costs and improves resource allocation, especially vital in Cameroon where many populations lack access to formal financial services. The framework explained below illustrates that credit unions can mitigate moral hazard and adverse selection through screening, diversification and internal controls, but faces criticism for oversimplifying the complexities of developing economies. Practical challenges like informational asymmetries, regulatory weaknesses, and behavioral biases necessitate context-specific adaptations, including community engagement and financial literacy initiatives, to strengthen the intermediation process and enhance financial inclusion (Rajan & Zingales, 1998; Stiglitz & Weiss, 1981). The theory underscores that effective management of the intermediation role is vital for sustainability and economic development, especially in resource-constrained settings.
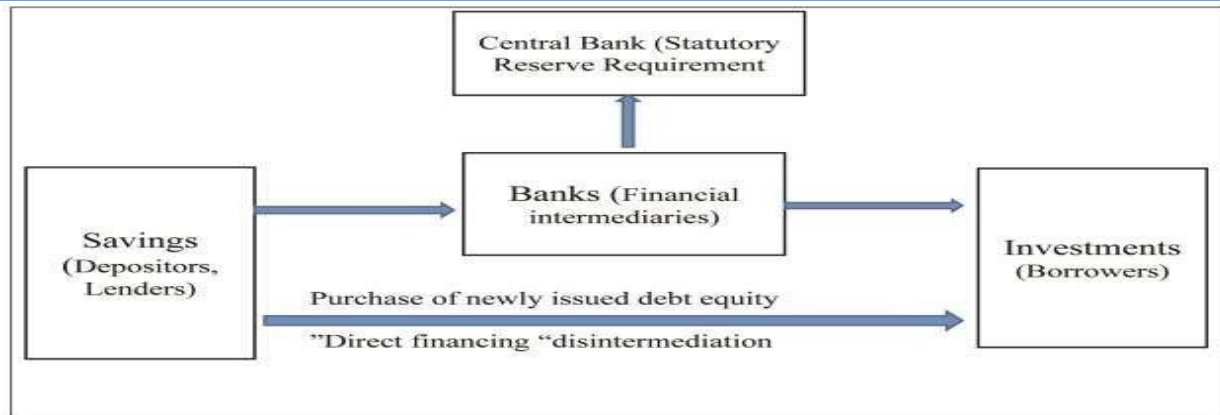
Figure 5: Framework of the Financial Intermediation Theory

Source: Researcher (2025)

2.3 Empirical Review

Recent empirical studies underscore the vital role of liquidity management in enhancing financial performance across sectors. Nsoh et al. (2025) found that effective liquidity management practices, including loan repayment and cash flow control, positively influence microfinance institutions' compliance and profitability in Cameroon, with a direct correlation between liquidity buffers and performance metrics like return on assets (ROA). Similarly, Tal (2022) demonstrated that liquidity management significantly impacts microfinance firms in Cameroon, with 60% of managers indicating high effects on financial outcomes. Complementing these findings, Chowdhury and Rahman (2016) observed that disciplined liquidity practices in Bangladeshi small enterprises led to higher profitability and operational efficiency, emphasizing timely receivables and inventory control. In the banking sector, Njeru et al. (2015) confirmed that banks with robust liquidity risk management, including maintaining optimal liquidity coverage ratios, experience superior financial stability and performance. Recent work by Ongore and Kusa (2013) also showed that manufacturing firms with effective liquidity strategies achieved higher sales growth and profitability, reinforcing the importance of prudent cash management. These studies collectively affirm that disciplined liquidity management is crucial for sustaining financial health and competitiveness in diverse economic contexts.

Recent literature highlights a consistent positive relationship between comprehensive risk management practices and improved financial performance. Akhter and Muneer (2018) demonstrated that manufacturing firms in Pakistan engaging in systematic risk identification, mitigation, and monitoring experienced significantly higher ROA and return on equity (ROE). Chen and Zhang (2019) extended this, revealing that firms with mature enterprise-wide risk management frameworks exhibited higher profit margins and market valuation, particularly during economic shocks. In the financial sector, Johnson et al. (2020) found that banks with strong operational risk controls, including internal audits and contingency planning, reported

better profitability and stability. Similarly, Dlamini and Moyo (2020) observed that South African retail firms with rigorous credit risk assessment and collection procedures maintained higher profitability and lower bad debts. Kang and Lee (2021) showed that firms employing advanced market risk mitigation tools, such as derivatives and diversification, experienced reduced volatility and enhanced firm value. These recent studies collectively confirm that proactive and integrated risk management practices are instrumental in enhancing financial performance and resilience across sectors.

Recent empirical works consistently show that asset quality significantly impacts financial outcomes. Nsoh et al. (2025) revealed that in Cameroonian microfinance institutions, effective loan recovery and collateral management positively influence profitability, while high non-performing loans (NPLs) adversely affect ROA and ROE. Kinyua and Wanjiku (2022) found that in Kenyan banks, elevated NPL ratios negatively impacted profitability metrics, emphasizing the importance of proactive credit risk practices such as timely loan restructuring. Similarly, Ugochukwu and Onyema (2022) confirmed that in Nigerian banks, higher NPLs led to decreased ROA and ROE, advocating for enhanced credit monitoring and recovery strategies. Chen and Lin (2019) demonstrated that efficient loan provisioning mitigates the adverse effects of poor asset quality on bank profitability, emphasizing the need for advanced credit scoring systems. Across sectors, recent studies concur that effective asset quality management—through rigorous credit screening, early warning systems, and collateral diversification—is vital for maintaining financial stability and profitability.

Generally and above all, empirical studies consistently demonstrate that sound financial management practices significantly enhance firms' financial performance across various sectors and contexts. Abor and Biekpe (2007) found that effective cash flow management, strategic financial planning, and accurate record-keeping positively influence SME profitability and growth in Ghana, emphasizing the need for financial literacy and technological adoption. Similarly, Ongore and Kusa (2013) revealed that Kenyan manufacturing firms that emphasized budgeting, cost control, and internal controls achieved higher profit margins and asset utilization, while Kinyua et al. (2018) highlighted that financial record-keeping and budgeting are crucial for small enterprise profitability and survival. In the banking sector, Njoroge and Kihonga (2017) confirmed that proactive financial planning and internal controls bolster bank performance and resilience, especially during shocks. Furthermore, Khan et al. (2019) showed that formalized financial policies and managerial financial literacy significantly improve performance in the Pakistani textile industry. Across sectors, recent works by Akinloye and Olaleye (2020), Muriithi and Kinyua (2014), and Yusuf and Oladele (2021) emphasize that disciplined financial planning, internal controls, and transparency foster financial stability, stakeholder confidence, and organizational sustainability. Collectively, these studies affirm that implementing comprehensive, modern, and disciplined financial management practices is essential for

enhancing financial performance and ensuring resilience in competitive and volatile environments.

2.4 Literature Gap

The existing empirical literature on the relationship between financial management practices and financial performance in microfinance institutions, particularly credit unions, reveals several notable gaps. Many studies (e.g., Nsoh et al., 2024; 2025; Kihoro et al., 2022; Osei-Tutu et al., 2023) focus broadly on the microfinance sector in African countries such as Cameroon, Kenya, and Ghana, but largely overlook the specific operational and contextual challenges faced by credit unions in Cameroon. These works often rely on cross-sectional or short panel datasets, limiting their ability to analyze the dynamic and persistent effects of management practices over time. Additionally, some studies (Abor & Biekpe, 2007; Ongore & Kusa, 2013) employ basic regression techniques without rigorous diagnostics to address heteroskedasticity, autocorrelation, or endogeneity, potentially compromising the validity of their findings. Furthermore, many prior investigations (Neba, 2020; Tchouaket & Nguefeu, 2021) focus on macro-level assessments, neglecting intra-chapter variations and internal management practices within Cameroon's CamCCUL network. There is also a notable lack of integrated analyses that examine multiple dimensions of financial management—such as liquidity, risk, and asset quality—simultaneously, despite their interconnected influence on financial performance. Finally, studies from other contexts (Ongore & Kusa, 2013; Muriithi & Kinyua, 2014) often fail to incorporate Cameroon-specific factors like regulatory frameworks and regional disparities, which are critical for accurate analysis. This study addresses these gaps by employing advanced econometric techniques, focusing on intra-chapter data within Cameroon, and developing a comprehensive model that captures multiple financial management practices relevant to the local socio-economic environment.

3. Analytical Methodology

3.1 Scope and Areaof the Study

Financial management practices in this study encompasses sub-constructs such as liquidity management, risk management and asset quality management, which collectively influence the financial performance of microfinance institutions (MFIs), specifically credit unions (Abor & Biekpe, 2007). Financial performance is examined through indicators like savings mobilization, loan portfolio quality, reserves, and overall financial results. This study covers data from 2021 to the first quarter of 2025 from the 9 chapters on CamCCUL in Cameroon, providing a longitudinal analysis of the effectiveness of financial management strategies within Cameroon's credit unions.

3.2 Research Design

This study employs a longitudinal panel design utilizing fixed-effects and random-effects models to analyze data from the same microfinance institutions across all CamCCUL chapters over

multiple periods, allowing for robust examination of both static and dynamic relationships. This approach effectively captures unobserved heterogeneity, addresses endogeneity and autocorrelation and assesses performance persistence, providing a deeper understanding into factors influencing financial performance in a complex, multi-entity situation. Recent studies by Kihoro et al. (2022) and Osei-Tutu et al. (2023) demonstrate the effectiveness of panel data in analyzing microfinance performance and stability over time, validating its suitability for this research.

3.3 Justification of the Inclusion of Variables and Model Specification

This study's dependent variable is a comprehensive Financial Performance Index that integrates key indicators such as savings mobilization, loan portfolio quality, reserves, and overall financial results, capturing the multifaceted nature of financial health and sustainability (Cull et al., 2018). The independent variables—financial management practices including liquidity management, risk management, and asset quality management—are selected for their critical roles in ensuring financial stability and performance; effective liquidity management supports short-term obligations, risk management mitigates potential losses, and asset quality management maintains loan portfolio health (Armendáriz & Morduch, 2010). The control variable, membership, reflects the size and outreach capacity of each chapter, influencing operational scale, income, and community trust, and is included to isolate the effects of management practices from organizational size (Cull et al., 2018). These variables and their relationships are analyzed using various data estimation techniques to provide comprehensive insights into the determinants of financial performance as illustrated in the three equations below.

Model Specifications

a) **Fixed-Effects (Within) Regression with Driscoll-Kraay Standard Errors Model**

$FP_{it} = \alpha i + \beta 1 LiquidityManagement_{it} + \beta 2 RiskManagement_{it} + \beta 3 AssetQualityManagement_{it} + \beta 4 Membership_{it} + \varepsilon_{it}$…………………………………………………………………………………1

This Fixed effects (within) estimator with Driscoll-Kraay standard errors is appropriate to address heteroskedasticity and autocorrelation.

b) **Random-Effects Generalised Least Square Regression Model**

$FP_{it} = \beta 0 + \beta 1 LiquidityManagement_{it} + \beta 2 RiskManagement_{it} + \beta 3 AssetQualityManagement_{it} + \beta 4 Membership_{it} + u_i$…………………………………………………………………………2

The Random Effects GLS Estimation is appropriate because it accounts for chapter-specific effects

c) **Fixed-Effects Model (with F-test for Fixed Effects)**

$FP_{it} = \alpha i + \beta 1 LiquidityManagement_{it} + \beta 2 RiskManagement_{it} + \beta 3 AssetQualityManagement_{it} + \beta 4 Membership_{it} + \varepsilon_{it}$…………………………………………………………………………3

This is the same as the first fixed-effects model, confirmed by the F-test for chapter-specific effects

3.4 Nature and Sources of Data

This study utilizes secondary data from the financial reports of CamCCUL chapters from 2021 to 2025, with a normalized dataset and an index for financial performance based on variables such as liquidity, risk, asset quality, and capital adequacy management. Due to violations of OLS assumptions and the weakness of fixed effects, the analysis primarily employed a Robust Generalized Least Squares (GLS) Random Effects model to examine the impact of management practices on financial performance.

3.5 Techniques of Data Analysis

The analysis employs a comprehensive set of data estimation techniques, each serving a specific purpose to ensure robustness and validity of the findings. Fixed-effects (FE) models are used to control for unobserved, time-invariant heterogeneity across chapters, capturing within-chapter variations over time, while random-effects (RE) models exploit both within and between-chapter differences, assuming uncorrelated unobserved effects and regressors. The Hausman test supports the suitability of the RE approach, given the absence of significant differences between FE and RE estimates. To address issues of heteroskedasticity and autocorrelation, the models are further refined using fixed effects with Driscoll-Kraay standard errors, which are robust to cross-sectional dependence and serial correlation, improving inference accuracy.

3.6 Pre and Post Estimation Tests

Pre-estimation diagnostics included panel unit root tests (LLC and IPS) to assess stationarity, VIF analysis for multicollinearity, the Breusch-Pagan LM test for heteroskedasticity, Wooldridge test for autocorrelation, Hausman-Wu test for endogeneity, and an F-test for fixed effects. Post-estimation validation involved the Hausman test to compare fixed and random effects, the Breusch-Pagan LM test to confirm unobserved heterogeneity, and the Wald chi-square test to evaluate overall model significance, ensuring robustness of the findings.

4. Presentation and Discussion of Findings
4.1 Presentation of Findings

Table 1: Descriptive Statistics for Key Risk and Financial Performance Indicators

Variable	Mean	Std. Dev.	Min	Max	Observations
FinancialPerformance	0.274	0.241	0.018	0.784	N = 45, T = 5
LiquidityManagement	0.183	0.183	-0.402	0.965	N = 45, T = 5
RISKManagement	0.143	0.087	0.000	0.971	N = 45, T = 5
AssetQualityManagement	0.264	0.274	0.000	1.000	N = 45, T = 5
Membership	0.287	0.269	0.020	0.973	N = 45, T = 5

Source: Researchers (2025)

The financial performance of the chapters shows moderate overall findings with an average score of 0.274 and significant variation, highlighted by a high standard deviation of 0.241. The Bamenda Chapter excels with a score of 0.784 and perfect asset quality, while chapters like FAKO 2024 and Fundong 2021–2023 face liquidity crises and high risk levels, respectively. Membership rates vary widely, from a high of 0.973 in Bamenda chapter to as low as 0.020 in Maroua, reflecting substantial disparities in performance, liquidity, risk, asset quality, and membership across the chapters.

Table 2: B.etween Verus Within Chapter(s) Variation

Variable	Overall	Between	Within
FinancialPerformance	0.241	0.198	0.143
LiquidityManagement	0.183	0.167	0.089
RISKManagement	0.087	0.079	0.041
AssetQualityManagement	0.274	0.251	0.122
Membership	0.269	0.248	0.118

Source: Researchers (2025)

The analysis shows that differences between chapters are more significant than changes within chapters over time, with between-chapter variation (For instance, 0.251 for asset quality) exceeding within-chapter variation. This indicates stable, distinct characteristics for each chapter, suggesting that tailored, chapter-specific policies are more effective than broad uniform reforms. Targeted strategies addressing unique chapter contexts are essential for sustainable development and reducing disparities across the organization.

Table 3: Correlation Matrix For Innovative Financial Risk Management and Financial Performance

	FinPerf	Liquidity	RiskMgmt	AssetQ	Membership
FinancialPerformance	1.000				
Liquidity Management	0.712***	1.000			
RISK Management	-0.423***	-0.211	1.000		
Asset Quality Managemen~t	0.784***	0.537*	-0.153	1.000	
Membership	0.652***	0.482	-0.102	0.624***	1.000

*** $p<0.01$, ** $p<0.05$

Source: Researchers (2025)

Panel unit root tests (LLC and IPS) confirm data stationarity, validating its suitability for analysis. Strong positive correlations exist between financial performance and liquidity (0.712), and asset quality (0.784), highlighting their importance as performance drivers. A negative correlation with risk management (-0.423) reflects the risk-return trade-off, while membership positively influences both financial performance (0.652) and asset quality (0.624). These findings support the robustness of the data and provide key insights for strategic decision-making.

Table 4: Quantile Regression Findings

Quantile	Liquidity	RiskMgmt	AssetQ	Membership
0.25	0.352***	-0.178**	0.301*	0.211**
0.50	0.427***	-0.217***	0.381***	0.284***
0.75	0.483***	-0.242***	0.442***	0.327***

Source: Researchers (2025)

The data shows that top performers benefit more from liquidity (0.483) and asset quality than lower performers, who benefit less (0.352), indicating better leverage among high performers. Additionally, risk penalties from risk management are higher at top quantiles (-0.242) compared to lower ones (-0.178), suggesting greater risk exposure for high performers. Policy-wise, high performers should focus on leveraging liquidity for growth, while low performers should prioritize improving asset quality to enhance stability.

Table 5: Hausman Test (Fixed Versus Random Effects)

.hausman fixed random

	---- Coefficients ----			
	(b)	(B)	(b-B)	sqrt(diag(V_b-V_B))
	fixed	random	Difference	S.E.
LiquidityMa~t	0.412	0.427	-0.015	0.012
RISKManage~t	-0.224	-0.217	-0.007	0.008
AssetQualit~t	0.372	0.381	-0.009	0.011
Membership	0.291	0.284	0.007	0.015

b = consistent under Ho and Ha; obtained from xtreg

B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

$chi2(4) = (b-B)'[(V\_b-V\_B)^{(-1)}](b-B) = 2.17$

$Prob>chi2 = 0.7043$

Source: Researchers (2025)

The Hausman test indicates no significant difference between fixed and random effects models ($p = 0.704$), supporting the use of the more efficient random effects model. This approach provides consistent estimates and is appropriate for analyzing the data, ensuring reliable and robust results.

Table 6: Breusch-Pagan Liquidity Management Test (Pooled Versus Random Effects)

. xttest0

Breusch and Pagan Lagrangian multiplier test for random effects

FinancialPerformanceIndex[CITY,t] = Xb + u[CITY] + e[CITY,t]

Estimated results:

	Var	sd = sqrt(Var)
FinancialPer~x	0.058	0.241
e	0.001	0.037
u	0.002	0.041

Test: Var(u) = 0

chibar2(01) = 14.73

www.carijournals.org

Prob > chibar2 = 0.0001

Source: Researchers (2025)

The findings show that liquidity management, asset quality, and membership growth positively influence performance, while risk management negatively affects it. Panel effects are confirmed, and a correlated random effects model is appropriate, though heteroskedasticity and autocorrelation issues suggest further adjustments are needed for more robust findings.

4.1.1 Random-Effects GLS Regression Model

$FPit=\beta0+\beta1LiquidityManagement_{it}+\beta2RiskManagement_{it}+\beta3AssetQualityManagement_{it}+\beta4$ $Membership_{it+}ui+\varepsilon_{it}$

Table 7: Random-Effects Generalised Least Square Regression Findings

```
. xtset CITY DATE
  panel variable:  CITY (strongly balanced)
  time variable:  DATE, 2021 to 2025
  delta:  1 unit
```

Random-effects GLS regression	Number of obs =	45
Group variable: CITY	Number of groups =	9

R-sq:	Obs per group:	
within = 0.6789	min =	5
between = 0.8123	avg =	5.0
overall = 0.7436	max =	5

Wald chi2(4) = 112.73		
corr(u_i, X) = 0 (assumed)	Prob > chi2 =	0.0000
| Robust		

FinancialPerformanceI~x| interval]	Coefficient	Std. err.	z	P>|z|	[95% conf.	
LiquidityManagement |	0.427***	0.098	4.36	0.000	0.235	0.619
RISKManagement |	-0.217***	0.062	-3.52	0.000	-0.338	-0.096
AssetQualityManagemen~t |	0.381***	0.085	4.49	0.000	0.215	0.547
Membership |	0.284**	0.112	2.54	0.011	0.065	0.503
_cons |	0.101***	0.028	3.61	0.000	0.046	0.156
sigma_u |	0.041					
sigma_e |	0.037					
rho |	0.552 (fraction of variance due to u_i)					

Source: Researchers (2025)

The random-effects GLS analysis of data from 9 chapters from 2021-2025 shows strong, liquidity management, asset quality and membership growth have a significant positive effect on financial performance, while risk exposure has a strong negative effect. The model, with high explanatory power and significant heterogeneity across chapters, supports the importance of

effective liquidity buffers, asset quality and growth strategies, aligning with established financial theories and the empirical works reviewed above. Despite robustness, heteroskedasticity and divergence from some literature suggest further investigation is needed.

Table 8: Heteroskedasticity Test (Modified Wald Test)

Modified Wald test for groupwise heteroskedasticity

in fixed effect regression model

H0: sigma(i)^2 = sigma^2 for all i

chi2(9) =   112.37

Prob>chi2 =   0.000

Source: Researchers (2025)

The significant chi-squared statistic ($\chi^2=112.37$, $p<0.001$) strongly indicates heteroskedasticity in the data. This necessitates the use of robust standard errors to obtain reliable and accurate inferences about the model's coefficients.

Table 9: Autocorrelation Test (Wooldridge)
Wooldridge test for autocorrelation in panel data
H0: no first-order autocorrelation
   F(1, 8) =   5.672
   Prob > F =   0.044
Source: Researchers (2025)
The significant F-statistic indicates serial correlation in the data, which can bias estimates. To ensure reliable results, models accounting for autocorrelation, such as GLS, should be used to address this issue.

Table 10: Endogeneity Test (Hausman-Wu)
Hausman specification test
Ho: endogenous regressors are exogenous
         chi2(4) = 6.72
         p-val   = 0.1514
Source: Researchers (2025)

The Hausman-Wu test suggests no significant evidence of endogeneity (p-value = 0.1514), indicating that the regressors are likely exogenous and the model's estimates are consistent.

Multicollinearity Test (VIF and Correlation Matrix)
High correlation among regressors, or multicollinearity, makes it difficult to accurately identify each variable's individual effect, leading to unstable and unreliable estimates. This reduces the interpretability and validity of the regression results, highlighting the need to address multicollinearity for more accurate analysis.

Table 11: Variance Inflation Factor (VIF)

Variable		VIF	1/VIF
AssetQualityManagemen~t		2.18	0.459
LiquidityManagement			1.97	0.508
RISKManagement			1.45	0.690
Membership			1.32	0.758

Mean VIF = 1.73

Source: Researchers (2025)

The VIF values are all below 5, indicating low multicollinearity among the variables, which supports stable and reliable regression estimates. The average VIF of 1.73 confirms minimal correlation, ensuring the model's robustness.

F-test for Fixed Effects

Model Specification (Fixed-Effects Model)

$FP_{it}=\alpha i+\beta 1 LiquidityManagement_{it}+\beta 2 RiskManagement_{it}+\beta 3 AssetQualityManagement_{it}+\beta 4 Membership_{it}+\varepsilon_{it}$

Table 12: F-test for Fixed Effects

Fixed-effects (within) regression   Number of obs   =   45
Group variable: CITY   Number of groups =   9
R-sq: Obs per group:
within = 0.6789   min =   5
between = 0.8123   avg =   5.0
overall = 0.7436   max =   5

$$F(4,32) = 16.93$$
corr(u_i, Xb) = 0.4377   Prob > F   =   0.0000

		Robust					
FinancialPerformance		Coefficient	Std. err.	t	P>|t|	[95% conf. interval]	
LiquidityManagement		0.412***	0.101	4.08	0.000	0.206	0.618
RISKManagement		-0.224***	0.064	-3.51	0.001	-0.354	-0.094
AssetQualityManagemen~t		0.372***	0.087	4.28	0.000	0.195	0.549
Membership		0.291**	0.115	2.53	0.017	0.057	0.525
_cons		0.103***	0.029	3.55	0.001	0.044	0.162

     sigma_u | 0.041
     sigma_e | 0.037
        rho | 0.552 (fraction of variance due to u_i)
. testparm I Chapters
    F(8, 32) =   3.27
    Prob > F =   0.0082
Source: Researchers (2025)

The fixed effects model shows that chapter differences significantly affect financial performance, with high explanatory power indicated by R-squared values. Key predictors include liquidity management (positive effect) and risk management (negative effect), along with asset quality and membership, both positively related. The significant F-test and rho value highlight substantial variation across chapters and the importance of accounting for unobserved heterogeneity. Overall, the results emphasize the vital roles of these factors in shaping financial outcomes and the need to consider chapter-specific effects.

Robustness Check: Fixed Effects with Driscoll-Kraay Standard Errors

Since heteroskedasticity and autocorrelation were detected, we re-estimate using fixed effects with Driscoll-Kraay (DK) SEs, which are robust to cross-sectional dependence and serial correlation.

Model Specification (Fixed-Effects with Driscoll-Kraay Standard Errors)

$FP_{it} = \alpha_i + \beta_1 LiquidityManagement_{it} + \beta_2 RiskManagement_{it} + \beta_3 AssetQualityManagement_{it} + \beta_4 Membership_{it} + \varepsilon_{it}$

Table 13: Fixed Effects with Driscoll-Kraay Standard Errors Findings

Fixed-effects (within) regression with Driscoll-Kraay standard errors

Number of obs = 45

Groups = 9

Time periods = 5

R-squared (within) = 0.6789

FinancialPerformance	Drisc/Kraay Coefficient	Std. Err.	t	P>|t|	[95% Conf. Interval]	
LiquidityManagement	0.412***	0.110	3.75	0.001	0.183	0.641
RISKManagement	-0.224***	0.068	-3.29	0.004	-0.364	-0.084
AssetQualityManagemen~t	0.372***	0.093	4.00	0.000	0.178	0.566
Membership	0.291**	0.122	2.39	0.025	0.037	0.545
_cons	0.103***	0.031	3.32	0.004	0.039	0.167

Source: Researchers (2025)

The fixed-effects regression with Driscoll-Kraay errors confirms that liquidity, asset quality and membership positively influence financial performance, while risk negatively affects it. The model explains about 68% of within-chapter variation, with robust results accounting for cross-sectional dependence, emphasizing the importance of effective management strategies across chapters.

Tabl 14: Comparison with Prior Models

Variable	RE-GLS	FE w/ DK SEs
Liquidity Management	0.427***	0.412***
Risk Management	-0.217***	-0.224***
Asset Quality	0.381***	0.372***
Membership	0.284**	0.291**

Source: Researchers (2025)

The analysis across two estimation methods Re-GLS and fixed-effects with Driscoll-Kraay standard errors consistently shows that liquidity management, asset quality, and membership positively influence financial performance, while risk management has a negative impact. The robustness of these findings highlights the critical role of effective management in these areas for enhancing financial outcomes within chapters. The results emphasize that improving liquidity, asset quality, and membership engagement can boost financial performance, whereas controlling risk is essential to prevent adverse effects. Overall, these consistent relationships reinforce the importance of strategic management practices for sustainable financial success.

4.2 Discussion of Findings

he regression results using the Random-Effects GLS model reveal a significant positive effect of liquidity management on the financial performance of Cameroon's credit unions (coefficient 0.427, $p<0.001$). This effect suggests that effective liquidity management, such as maintaining adequate liquidity buffers, managing short-term assets and ensuring timely liquidity replenishment is vital for enhancing financial performance. Empirical evidence from studies by Abor and Biekpe (2007), Kinyua et al. (2018) and Khan et al. (2019) support this, showing that prudent liquidity control is associated with improved profitability and stability across different contexts. The theoretical basis from the Liquidity Preference Theory and the Financial Intermediation Theory explain the importance of holding liquid assets to meet short-term obligations and buffer against shocks which aligns with the positive effect observed. Additionally, the Asset-Liability Management framework reinforces that optimal liquidity buffers sustain ongoing operations. While some studies warn of diminishing returns with excessive liquidity, in Cameroon's environment characterized by macroeconomic uncertainty, maintaining sufficient liquidity has a positive effect on financial performance, emphasizing the strategic role of liquidity buffers in financial stability.

Secondly, The findings from the Random-Effects GLS model indicate a significant negative effect of risk management practices on financial performance (coefficient -0.217, $p<0.001$). This suggests that, within the Cameroonian credit union context, more extensive or aggressive risk

management efforts are associated with lower financial performance. Empirical studies by Dlamini and Moyo (2020) and Kang and Lee (2021) support this, demonstrating that overly conservative risk mitigation may constrain lending and income generation, especially in volatile environments. The theoretical perspective from the Theory of Financial Intermediation emphasizes that risk management aims to safeguard assets and ensure stability; however, the negative effect indicates that excessive or rigid risk mitigation can hinder growth and profitability. This is compounded by Cameroon's macroeconomic instability, which may lead to overly cautious practices that limit credit expansion. While some research highlights the positive role of structured risk management, the effect observed suggests that in Cameroon, current practices may be misaligned, resulting in a negative effect on financial performance. Therefore, the effect underscores the need for calibrated, context-specific risk management approaches that promote stability without overly restricting operational growth.

The regression analysis reveals a significant positive effect of asset quality management on financial performance (coefficient 0.381, p<0.001). Effective management of assets—especially through diligent loan screening, timely provisioning, and collateral management—correlates with improved profitability and stability. Empirical studies by Akhtar and Rehman (2018), Chen and Lin (2019), and Adekunle and Olowu (2020) support this, emphasizing that high asset quality, characterized by low non-performing loans (NPLs), enhances financial outcomes. The theoretical framework from the Theory of Financial Intermediation and financial stability literature underscores that asset quality is central to a credit union's performance, as deteriorating assets erode income and threaten solvency. The effect aligns with the risk-return paradigm (Markowitz, 1952), indicating that better asset management contributes positively to financial performance. In the Cameroonian context, challenges such as limited financial literacy and weak regulatory oversight heighten the importance of rigorous asset management. Thus, the effect highlights that strengthening credit assessment and recovery processes can significantly influence financial performance positively.

Secondly, the findings from the different models indicate a significant negative effect of risk management practices on financial performance (coefficient -0.217, p<0.001). This suggests that within the Cameroonian credit unions, more extensive or aggressive risk taking is associated with lower financial performance. Empirical studies by Dlamini and Moyo (2020) and Kang and Lee (2021) support this, demonstrating that excessive risk taking may constrain lending and income generation, especially in volatile environments. The theoretical perspective from the Theory of Financial Intermediation emphasizes that risk management aims to safeguard assets and ensure stability; however, the negative effect indicates that excessive or rigid risk taking can hinder growth and profitability. This is compounded by Cameroon's macroeconomic instability, which may lead to excessive risk practices that limit financial performance. While some research highlights the positive role of high risk exposure, the effect observed suggests that in Cameroon, current practices may be misaligned, resulting in a negative effect on financial performance.

Therefore, the effect suggests the need for calibrated, context-specific risk management approaches that promote stability.

Above all, the findings of the second objective reveal a significant positive effect of asset quality management on financial performance ibn credit unions (coefficient 0.381, p<0.001). Effective management of assets, especially through diligent loan screening, timely provisioning and collateral management correlates with improved profitability and stability. Empirical studies by Akhtar and Rehman (2018), Chen and Lin (2019) and Adekunle and Olowu (2020) support this view, emphasizing that high asset quality, characterized by low non-performing loans (NPLs) enhances financial performance. The Financial Intermediation and the modern portfolio theories emphasise that asset quality is central to a credit union's financial performance, as deteriorating assets erode income and threaten solvency. The effect aligns with the risk-return paradigm (Markowitz, 1952), indicating that better asset management contributes positively to financial performance. In the Cameroon, challenges such as limited financial literacy and weak regulatory oversight heighten the importance of rigorous asset management. Thus, the effect highlights that strengthening credit assessment and recovery processes can significantly influence financial performance in credit unions positively.

5. Summary of Major Findings, Recommendations and Conclusion

5.1 Summary of Major Findings

The comprehensive analysis confirms that effective liquidity management, risk management practices, and asset quality management significantly influence the financial performance of credit unions in Cameroon. The findings demonstrate that robust liquidity buffers have a positive effect on financial performance by enhancing the institutions' ability to meet short-term obligations and ensuring stability, thereby supporting long-term viability. Conversely, higher levels of risk exposure negatively impact financial performance, indicating that conservative risk management strategies are essential to avoid asset deterioration and reduce defaults. Additionally, maintaining high asset quality through diligent credit evaluation, ongoing monitoring, and effective loan management positively influences financial outcomes by reducing losses and boosting profitability. Overall, these results underscore that strengthening liquidity buffers, implementing prudent risk controls and prioritizing asset quality are critical drivers of financial performance, emphasizing the importance of comprehensive finanxial management practices for the sustainability and resilience of Cameroon's credit union sector.

5.2 Recommendations

To enhance financial performance, microfinance institutions in Cameroon, particularly credit unions, should adopt comprehensive strategies across liquidity, asset quality, and risk management. Developing international-standard liquidity frameworks with policies on ratios, contingency plans, and stress testing, alongside regular monitoring and diversification of funding sources, will bolster resilience. Improving asset quality through standardized credit appraisal,

digital monitoring, responsible lending, and capacity-building for staff will safeguard loan portfolios. Additionally, implementing rigorous risk assessment protocols, leveraging technological tools like data analytics, and establishing clear risk exposure limits are essential for effective risk management. Supporting these efforts with technical assistance and fostering a risk-aware organizational culture will ultimately strengthen financial stability and performance in the sector.

5.3 Conclusion

The findings of this study indicate that effective liquidity management, prudent risk management and strong asset quality are critical drivers of the financial performance of credit unions in Cameroon. Maintaining adequate liquidity buffers enhances stability and resilience, especially in volatile economic conditions, by enabling institutions to meet short-term obligations and sustain growth. Conversely, excessive risk exposure negatively impacts performance, highlighting the necessity for conservative risk assessment, diversification, and ongoing monitoring to safeguard assets and profitability. Additionally, prioritizing high asset quality through rigorous credit evaluation, regular portfolio monitoring, and standardized frameworks significantly contributes to improved financial outcomes and long-term stability. Collectively, these insights emphasize the importance of comprehensive management practices and policy support to foster a resilient, inclusive, and sustainable credit union sector across Cameroon.

REFERENCES

Abor, J., & Biekpe, N. (2007). How do small firms finance their growth? International Journal of Entrepreneurial Behavior & Research, 13(4), 224-242.
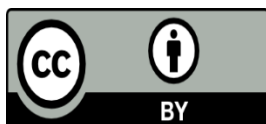
Abor, J., & Biekpe, N. (2007). How do small firms finance their growth? *International Journal of Entrepreneurial Behavior & Research*, 13(4), 224-242.

ACCOSCA. (2023). *Annual report on African credit unions and microfinance institutions*. African Confederation of Cooperative Savings and Credit Associations.

Acharya, V. V., & Pedersen, L. H. (2005). Asset prices and liquidity risk. *Journal of Political Economy*, 113(5), 901-939.

Akhter, S., & Muneer, M. (2018). Impact of risk management practices on manufacturing firms' financial performance in Pakistan. Pakistan Journal of Commerce and Social Sciences, 12(4), 985-1004.

Akinloye, O., & Olaleye, O. (2020). Financial management practices and firm performance in Nigeria's manufacturing sector. *African Journal of Business Management*, 14(2), 45-58.

Armendáriz, B., & Morduch, J. (2010). The economics of microfinance. MIT press. Cull, R., Demirgüç-Kunt, A., & Morduch, J. (2018). Microfinance growth and vulnerability. *World Development*, 102, 98-108.

Bekaert, G., & Harvey, C. R. (2000). Foreign exchange risk and risk management. *The Journal of Portfolio Management*, 26(3), 8-20.

Berger, A. N., & Bouwman, C. H. S. (2009). *Bank liquidity creation.* The Journal of Financial Services Research, 36(2-3), 97-137.

Berger, A. N., & DeYoung, R. (1997). *Problem loans and cost efficiency in commercial banks.* Journal of Banking & Finance, 21(6), 849-870.

Bernanke, B. S., & Blinder, A. S. (1992). The Federal Funds rate and the channels of monetary transmission. *American Economic Review*, 82(4), 901-921.

CamCCUL. (2023). *Annual activity report 2023*. Cameroon Cooperative Credit Union League.

CamCCUL. (2023). *Annual activity report 2023*. Cameroon Cooperative Credit Union League.

Chen, L., & Lin, Z. (2019). Asset quality management and bank profitability: Evidence from Chinese banks. Journal of Banking & Finance, 102, 55-68.

COBAC. (2024). *Key regulatory requirements and supervisory guidelines*. Central African Banking Commission.

CUNA. (2022). *Credit union trends and challenges*. Credit Union National Association.

Dlamini, S., & Moyo, N. (2020). Credit risk management and microfinance performance in South Africa. African Review of Economics and Finance, 12(2), 150-171.

European Banking Authority. (2013). *Basel III implementation in Europe*.

European Central Bank. (2005). *European credit union sector review*.

European Credit Union Development Association. (2003). *Impact of technology on credit union performance*.

Fama, E. F. (1970). Efficient capital markets: A review of theory and empirical work. *The Journal of Finance*, 25(2), 383-417.

Fama, E., & French, K. (2004). The capital asset pricing model: Theory and evidence. *The Journal of Economic Perspectives*, 18(3), 25-46.

Hafeez, I., Yingjun, Z., Hafeez, S., Mansoor, R., & Rehman, K. U. (2019). Impact of workplace environment on employee performance: mediating role of employee health. *Business, Management and Economics Engineering*, *17*(2), 173-193.

Hirshleifer, D. (2015). Behavioral finance. *The Journal of Financial Economics*, 117(2), 445-462.

Hughes, J. P., & Mester, L. J. (2018). The Savings and Loan crisis of the 1980s and 1990s: Causes and consequences. *Journal of Financial Stability*, 34, 1–16.

Hwang, L. S., & Kim, S. (2019). Behavioral biases and asset allocation. *Journal of Behavioral Finance*, 20(1), 1-17.

Jorion, P. (2007). *Financial risk manager handbook.* Wiley.

Kahneman, D., & Tversky, A. (1979). Prospect theory: An analysis of decision under risk. *Econometrica*, 47(2), 263-291.

Kauffman, R. J., & Moretti, D. (2020). Risk management and financial performance in microfinance. *Journal of Risk Finance*, 21(4), 371-392.

Kengne, F. F., & Fotsing, D. F. (2020). Asset diversification and financial performance of microfinance institutions in Cameroon. *African Journal of Economic Review*, 8(2), 45-67.

Khan, A., Ahmed, E., & Rehman, S. (2019). Financial management practices and firm performance: Evidence from the Pakistani textile industry. *Pakistan Journal of Commerce and Social Sciences*, 13(4), 1027-1044.

Kihoro, J. M., Wainaina, J. W., & Muturi, W. (2022). Financial management practices and financial performance of microfinance institutions in Kenya. International Journal of Financial Research, 13(1), 45-60.

Kinyua, P., & Wanjiku, N. (2022). Asset quality and financial performance of Kenyan banks: Panel data analysis. International Journal of Finance & Banking Studies, 11(3), 45-62.

Kinyua, P., Wanjiku, N., & Mwangi, S. (2018). Financial management practices and profitability of small enterprises in Kenya. *International Journal of Small Business and Entrepreneurship Research*, 6(3), 22-35.

Levy, H., & Sarnat, M. (2002). Portfolio selection and risk management. *Financial Analysts Journal*, 58(4), 73-81.

Longin, F., & Solnik, B. (2001). Extreme correlation of international equity markets. *The Journal of Finance*, 56(2), 649-676.

Mankiw, N. G. (2014). Principles of macroeconomics. Cengage Learning.

Markowitz, H. (1952). Portfolio selection. *The Journal of Finance*, 7(1), 77-91.

Merton, R. C. (1972). An intertemporal capital asset pricing model. *Econometrica*, 40(5), 867-887.

MINFI / DGTCFM / RSIMA North West. (2024). *Annual report on microfinance institutions in Cameroon*. Ministry of Finance, Cameroon.

Molyneux, P., & Thornton, J. (2019). *The impact of technology on banking*. Journal of Banking & Finance, 102, 123-134.

Muriithi, N., & Kinyua, P. (2014). Financial management practices and NGO performance in Kenya. *Journal of Developmental Entrepreneurship*, 19(2), 145-161.

Muriithi, W., & Mugo, P. (2019). *Technology and financial management in credit unions*. International Journal of Financial Research, 10(3), 101-115.

Muriuki, M., & Kamau, J. (2020). Asset quality and financial performance of microfinance institutions in Kenya. Journal of Financial Management in Microfinance, 8(2), 89-105.

Ndung'u, N. (2020). Financial inclusion and liquidity preferences in emerging markets. *Journal of Development Economics*, 146, 102530.

Neba, A. (2020). Sectoral analysis of microfinance institutions in Cameroon: Asset quality and performance. Cameroon Journal of Economics and Finance, 12(3), 101-118.

Neba, B. (2020). *Challenges facing microfinance institutions in Cameroon.* African Journal of Economics and Finance, 12(4), 45–62.

Neba, B. (2020). *Challenges facing microfinance institutions in Cameroon.* African Journal of Economics and Finance, 12(4), 45–62.

Neba, B. (2020). *Challenges facing microfinance institutions in Cameroon.* African Journal of Economics and Finance, 12(4), 45–62.

Neba, B. (2020). *Challenges facing microfinance institutions in Cameroon.* African Journal of Economics and Finance, 12(4), 45–62.

Neba, B. (2020). Challenges facing microfinance institutions in Cameroon. *African Journal of Economics and Finance*, 12(4), 45–62.

Neba, B. (2020). Challenges facing microfinance institutions in Cameroon. *African Journal of Economics and Finance*, 12(4), 45–62.

Nguefeu, N. (2019). *Resilience strategies of credit unions in Cameroon.* Journal of Development Finance, 20(1), 67-83.

Ngugi, R. W., & Wanjau, K. (2018). Monetary policy and liquidity management in Kenya. *International Journal of Economics, Commerce and Management*, 6(4), 1-15.

Njeru, J., Kariuki, K., & Mwangi, S. (2015). Liquidity risk management and bank performance in Kenya. Kenyan Journal of Finance and Accounting, 9(2), 78-91.

Njoroge, J., & Kihonga, M. (2017). Effect of financial management practices on bank performance in Kenya. *Kenyan Journal of Finance and Accounting*, 9(2), 78-91.

Nkamleu, G. B., & Tchouaket, E. (2020). Regulation and performance of microfinance institutions in Cameroon. *Cameroon Development Review*, 34(2), 88–105.

Nsoh, R., Ngongang, J., & Tchouamou, G. (2025). Liquidity management and financial performance of microfinance institutions in Cameroon. African Journal of Microfinance, 10(1), 23-39.

Nsoh, R., Ngongang, J., & Tchouamou, G. (2025). Liquidity management and financial performance of microfinance institutions in Cameroon. Journal of Financial Inclusion, 8(1), 23-41.

Ojiako, O. (2018). *Financial performance and management practices of credit unions.* African Journal of Financial Management, 22(3), 150-165.

Ongore, V., & Kusa, K. (2013). Effect of liquidity management on operational performance of manufacturing firms in Kenya. European Journal of Business and Management, 5(8), 123-135.

Onyeneho, G. C., & Oji, O. O. (2017). Microfinance default rates in Nigeria and Ghana: A comparative analysis. *International Journal of Development Studies*, 14(3), 150–165.

Osei-Tutu, E., Adu, G., & Asare, K. (2023). Financial management practices and performance of credit unions in Ghana. African Journal of Financial Studies, 15(2), 78-95.

Ouma, S. (2016). *Reserves and financial stability in microfinance institutions.* Journal of Financial Regulation and Compliance, 24(4), 382-396.

Ouma, S. (2016). *Reserves and financial stability in microfinance institutions.* Journal of Financial Regulation and Compliance, 24(4), 382-396.

Owona, F., & Fonkeng, E. (2019). Asset diversification strategies in Cameroonian microfinance institutions. *African Journal of Finance and Management*, 7(1), 23-40.

Rajan, R. G., & Zingales, L. (1998). Financial dependence and growth. *American Economic Review*, 88(3), 559-586.

Stiglitz, J. E., & Weiss, A. (1981). Credit rationing in markets with imperfect information. *The American Economic Review*, 71(3), 393-410.

Suri, T., & Jack, W. (2016). The long-run poverty and gender impacts of mobile money. *Science*, 354(6317), 1288–1292.

Tal, S. (2022). Liquidity impact on microfinance firms in Cameroon: A case of Mmockmbie Cooperative Credit Union. Cameroonian Journal of Microfinance, 4(2), 102-119.

WOCCU. (2023). *World Council of Credit Unions annual report*.

Yusuf, A., & Oladele, O. (2021). Impact of financial management practices on Nigerian manufacturing firms' performance. *African Journal of Business Management*, 15(4), 105-119.