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Loan management strategies: A lever for loan delinquency reduction in the microfinance sector of Bamenda, Cameroon

Mafogho Rejoice Mefereh[1], Njimanted Godfrey Forgha[2], Njekang Dieudonne Nkwati[3], Maurice Ayuketang Nso[4], Nsoh Conrad Nsoh[5]

[1]Higher Institute of Commerce and Management (HICM), The University of Bamenda, Cameroon, Ntarinkon Cooperative Credit Union Ltd. Bertuoa, rejoicemefereh@gmail.com*

[2]Director of the Higher Institute of Commerce and Management (HICM), The University of Bamenda, Cameroon, unicalub@yahoo.com

[3]Department of Banking and Finance, Faculty of Economics and Management Sciences, The University of Bamenda, Cameroon, dnjekang@gmail.com

[4]Depatment of Money and Banking, Higher Institute of Commerce and Management (HICM), The University of Bamenda, lordnso@yahoo.co.uk

[5]Department of Accounting and Finance, Higher Institute of Commerce and Management, The University of Bamenda, Manager-Ntarinkon Cooperative Credit Union Ltd (NTACCUL), Bamenda, Cameroon, nconrado4@yahoo.co.uk

Abstract

Loan delinquency is a pressing issue for microfinance institutions (MFIs) in Bamenda, many of which struggle to meet the 5% maximum rate set by ANEMCAM, leading to financial instability and a decline in client trust. This study assessed the impact of various loan management strategies, including loan appraisal, loan monitoring, and loan recovery, on loan delinquency rates among a sample of 69 MFIs, achieving a response rate of 85.5% with 59 valid responses. Multiple regression analysis revealed that loan appraisal has a significant negative effect on delinquency, with a coefficient of -0.243 and a significance level of 1%, underscoring the importance of effective borrower evaluations in reducing delinquency risks. In contrast, loan monitoring showed a positive and significant effect, with a coefficient of 0.828 and a significance level of 1%, indicating inefficiencies in current practices that may exacerbate delinquency. Meanwhile, loan recovery demonstrated a negative effect, with a coefficient of 0.036, but the findings were not significant. Based on these findings, the study recommends that MFIs enhance their loan appraisal processes, provide training to loan officers on risk assessment, and utilise advanced data analytics for improved monitoring and recovery. Additionally, maintaining open communication with borrowers is vital for proactively addressing repayment challenges and fostering positive relationships, ultimately aiming to reduce loan delinquency rates within the sector.

Keywords: Loan management strategies, Loan appraisal, Loan monitoring, Loan recovery, Loan delinquency reduction, Microfinance institutions

1. Introduction

1.1. Back of the study

The global microfinance sector has experienced significant fluctuations in loan delinquency rates, influenced by economic conditions and the methodologies adopted by microfinance institutions (MFIs). Following the Second World War, the microfinance sector began evolving, with MFIs emerging as subsidiary channels for financial inclusion, especially in underserved markets such as the US and Europe. By 2018, this sector had reached over 140 million individuals, but challenges emerged amid rising delinquency rates. Globally, the average portfolio at risk (PAR) for MFIs stood at approximately 5.3% in 2019, indicating growing concerns about the quality of loans issued (Chortareas *et al.,* 2016). This prompted various strategies aimed at enhancing credit management practices, targeting more rigorous loan appraisal and monitoring systems to mitigate the risk of non-repayment (Laryea et al., 2016).

In Africa, the situation of loan delinquency has been exacerbated by socio-economic factors and the unique challenges faced by MFIs. According to the Consultative Group to Assist the Poor (CGAP), the average PAR for African MFIs reached around 6.7% in 2020, surpassing the global average. Factors contributing to this rise include economic instability, inadequate borrower education, and weak institutional capacity (CGAP, 2020). In response, MFIs implemented targeted interventions such as increasing financial literacy programs and enhancing loan recovery practices while adopting technology to streamline operations and reduce operational costs.

Specifically, within Cameroon, the microfinance sector plays a crucial role in financial inclusion, yet it has witnessed high rates of loan delinquency that threaten its stability and sustainability. The significant mobilisation of over 150 billion CFA by MFIs demonstrates their importance; however, liquidity challenges due to rising delinquency rates have become pronounced (CGAP, 2020). Strategies to address this issue have included enacting the Micro Financial Act of 2008, which required MFIs to document their loan policies and adhere to strict evaluation practices (Schreiner, 2004). Enhanced loan monitoring and borrower assessments have also been prioritised to ensure better risk mitigation and minimise defaults, emphasising the necessity of maintaining compliance with established procedures to protect against escalating delinquency rates.

From a general perspective, the historical evolution of loan delinquency within the microfinance sector showcases a difficult interaction between lending practices, economic conditions, and institutional strategies. Across the US, Europe, Africa and Cameroon, the persistent challenge of loan delinquency has necessitated on-going adaptation and reform to support the financial health of MFIs. By applying lessons learned from past trends and reinforcing effective credit management frameworks, MFIs globally can enhance their resilience, safeguard their financial integrity and continue fulfilling their critical role in fostering economic inclusion and development. On the basis of the above challenges and with the diverging approaches on handling the same issue with different outcomes, there is therefore need for a proper study to be conducted in other to provide an appropriate solution to the problem of loan delinquency.

1.1. Statement of the problem

Loan delinquency in Microfinance Institutions (MFIs) within Cameroon poses a significant challenge to the sustainability and operational efficiency of these organisations. Regulatory bodies, including the Association Nationale des Etablissements de Microfinance du Cameroun (ANEMCAM), have established a maximum acceptable loan delinquency rate of 5%. However, recent analyses reveal that many MFIs in Cameroon are struggling to meet this standard, with reports indicating that the average loan delinquency rate in the region has risen to approximately 11% (CGAP, 2020). This concerning 6% gap between the expected standard and the actual delinquency rates highlights the urgent need for effective intervention strategies.

Some prominent factors contributing to the high rates of loan delinquency in Bamenda-Cameroon include poor repayment habits, inadequate collateral and limited financial literacy among borrowers. Additionally, the competitive landscape within the microfinance sector has led many borrowers to engage with multiple lenders simultaneously, complicating their repayment efforts. Reports indicate that approximately 25% of borrowers in Bamenda-Cameroon are utilising services from six or more lenders, further exacerbating liquidity problems and disrupting the operational performance of MFIs in the area (CGAP, 2009).

Despite various efforts made by stakeholders, including; the implementation of enhanced borrower training, stricter credit assessments and advanced monitoring technologies, overall loan delinquency rates remain disappointingly high. That is to say, loan recovery rates are far below expectation. This suggests that existing credit management practices may not be adequately addressing the underlying challenges of loan delinquency faced by MFIs in Bamenda-Cameroon. Much of the existing literature on credit management practices in microfinance has primarily focused on contexts in developed countries, leaving a gap in understanding their effectiveness within the unique socio-economic landscape of Bamenda, Cameroon.

In light of the persistent challenges posed by high loan delinquency rates, there is a pressing need for MFIs in Bamenda-Cameroon to adopt robust credit management strategies aimed at containing defaults within acceptable limits. By enhancing loan appraisal techniques, implementing diligent monitoring practices and facilitating comprehensive borrower education programs, MFIs can better assess creditworthiness, promote timely repayments and ultimately work toward improving their operational performance. This study aims to investigate the effect of loan management strategies on loan delinquency within MFIs in Bamenda, Cameroon, thereby providing actionable insights to enhance the sustainability and operational efficiency of these institutions amidst the prevailing socio-economic challenges. Specifically, the study aims to;

- Analyse the effect of loan appraisal on loan delinquency reduction in microfinance institutions of the Bamenda municipality.
- Evaluate the effect of loan monitoring in loan delinquency reduction in microfinance institutions of the Bamenda municipality.
- Account for the effect of loan recovery on loan delinquency reduction in microfinance institutions of the Bamenda municipality.

2. Literature review

This section of the study focuses on clarifying important concepts related to the research. It also discusses and justifies the use of relevant theories connected to the study being examined. Furthermore, it reviews the work of other authors who have addressed similar subjects. As a result, this part provides a comprehensive overview of the conceptual, theoretical, and empirical literature.

2.1. Conceptual review

Loan management strategies encompass three critical components: loan appraisal, loan monitoring, and loan recovery. Loan appraisal involves evaluating the creditworthiness and repayment capacity of borrowers by assessing their character, capacity, collateral, and overall conditions to mitigate risks (Misati & et al., 2021; Njeru et al., 2016). Effective loan monitoring is the continuous process of managing a loan's performance post-disbursement through regular communication and performance tracking, allowing MFIs to identify potential defaults early (Wafula et al., 2023; Mayer et al., 2023). Loan recovery pertains to collecting overdue payments and managing delinquent loans through systematic strategies that may include renegotiating repayment terms and pursuing legal actions when necessary (Kariuki, 2016; Kaveri, 2016).

Loan delinquency reduction which refers to reducing loans that are in default or at risk of default, significantly impacts financial institutions' profitability and health, directly influencing their overall performance (Fofack, 2005; Bismark, 2021). The context of these concepts is within the microfinance sector, which has evolved to provide financial services to underserved populations, particularly in rural areas. Microfinance institutions (MFIs) are vital for enhancing financial inclusion and economic development, yet they face challenges such as loan delinquency exacerbated by economic instability, inadequate risk management, and limited borrower knowledge (CGAP, 2020). This comprehensive understanding of loan management strategies, loan delinquency, and the role of MFIs highlights the complexities of maintaining a sustainable and stable financial environment in microfinance (Ali et al., 2017; Osunde & Mayowa, 2012).

2.2. Theoretical review

The study of loan management strategies and loan delinquency reduction in microfinance institutions (MFIs) can be framed through three relevant theories: the Liquidity Preference Theory, the Grameen Solidarity Group Theory, and the Austrian Theory of the Business Cycle. The Liquidity Preference Theory, proposed by Keynes, suggests that the demand for money is driven by transaction, precautionary, and speculative motives, emphasising the critical role of liquidity in financial decision-making (Bibow, 2013). Key criticisms include its oversimplification of real-world money demand factors and its inadequate treatment of the money supply's effects on equilibrium interest rates, which can impact MFIs' lending behaviors (Janda et al., 2014). The Grameen Solidarity Group Theory, introduced by Yunus, underscores the effectiveness of group-based lending to enhance credit access and reduce delinquency through social collateral and mutual accountability; however, its reliance on strong social ties can vary across different communities, potentially limiting its effectiveness (De Quidt et al., 2016).

Finally, the Austrian Theory of the Business Cycle, articulated by Mises and Hayek, asserts that monetary policy-induced credit expansions lead to economic booms and subsequent busts, with persistent artificial interest rates contributing to unsustainable lending practices (Cull et al., 2009). Critics argue that it oversimplifies the complexities of business cycles and neglects non-monetary influences, thus calling for a broader approach to understanding economic fluctuations (Mayer, 2017). Collectively, these theories provide a comprehensive framework to explore how liquidity preferences, group dynamics and economic cycles shape the relationship between loan management strategies and loan delinquency reduction in MFIs.

2.3. Empirical review

This section examines the empirical relationship between loan appraisal procedures and loan delinquency reductionin microfinance institutions (MFIs), highlighting significant findings from various studies. A thorough loan appraisal process which encompasses the evaluation of a borrower's creditworthiness, character and repayment capacity is crucial in mitigating loan delinquency rates.

Enoch et al. (2021) found a positive correlation between client appraisal and the efficiency of credit management within microfinance banks in Adamawa State, Nigeria. Their research emphasised that effective client appraisal strategies significantly enhance the management of credit facilities. The study recommended that banks should regularly revise their client appraisal policies to improve operational efficiency while emphasising the need to understand clients' financial conditions before approving loans. Similarly, Ahmed and Malik (2015) underscored the importance of thorough loan appraisal processes, identifying key criteria such as the loan purpose, borrower genuineness and repayment capacity, collectively known as the 5Cs of credit which are vital for assessing a borrower's creditworthiness. Their findings indicated that inadequate loan analysis could substantially impact a bank's profitability and performance, suggesting a strong link between effective loan appraisal and reduced loan losses.

Further expanding on these themes, Alex (2021) identified high interest rates and ineffective loan appraisal as significant contributors to the growing rates of non-performing loans (NPLs) in financial institutions. Their study indicated that implementing effective loan appraisal could mitigate risks associated with loan defaults, reinforcing the idea that diligent appraisal and is critical to maintaining loan performance. Moreover, Koh et al. (2021) analysed the long-term effects of lending costs and credit appraisal on loan delinquency in Malaysia, concluding that the cost of lending plays a substantial role in loan delinquency. This suggests that understanding the broader economic context of loan appraisal practices is essential for addressing loan delinquency in MFIs.

Negera (2012) provided a comprehensive view of multiple factors contributing to loan delinquency in Ethiopian financial institutions, highlighting inadequate loan appraisal as a significant issue among others such as poor supervision and aggressive lending practices. This analysis indicates that loan appraisal must be part of a holistic approach to improve credit management efficiency. Lastly, a study by Fischer and Fischer and Ghatak, (2010) examined group versus individual borrowing and found no significant difference in repayment rates. While the formal structure of liability may not impact repayment behaviour, their findings underscore the role of social dynamics in influencing borrower behaviour, suggesting that loan appraisal processes should consider these social factors.

Secondly, this segment of the study investigates the effect of loan monitoring strategies on loan delinquency reduction within financial institutions, synthesising findings from several empirical studies that underscore the critical role of effective credit monitoring in reducing non-performing loans and enhancing overall loan performance.

Wachira and Achieng (2023) highlighted the essential function of credit monitoring in financial institutions, advocating for designated personnel to manage credit portfolios actively. Effective monitoring ensures financial entities are informed about borrowers' current situations and compliance with loan terms, which is crucial for recognising non-performing accounts and managing potential credit risks. Wachira also emphasised the value of utilising credit reference bureaus to assess borrowers' histories, indicating that individuals with poor credit backgrounds face higher interest rates. His comprehensive strategy for credit risk management includes proactive monitoring and engagement of collateralised trades.

Supporting these claims, Kinyua et al. (2022) found that management-based monitoring strategies significantly improved the performance of loans in Kenyan commercial banks. Their study revealed that closely monitoring repayment plans and rigorously evaluating borrowers prevented high-risk individuals from securing loans, effectively reducing non-performing loans and enhancing bank performance. Their analysis utilised a descriptive survey method involving 38 selected commercial banks, confirming that structured monitoring could lead to notable improvements in loan performance.

Ahmed and Malik (2015) examined the importance of monitoring tactics in risk management, arguing that effective credit management strategies significantly reduce the likelihood of borrower defaults. By highlighting tools such as credit monitoring and scoring, they demonstrated that lenders could adjust their lending decisions based on borrowers' profiles, thus reinforcing the connection between diligent monitoring and loan performance. Similarly, Mwangi and Muturi (2016) focused on the impact of credit regulations and the debt collection process on loan repayment, finding that rigorous internal rules and assessment practices enhance debt recovery capabilities and ultimately improve loan repayment performance.

Fidrmuc and Süβ (2011) explored lenders' policies concerning borrowers' potential inability to repay loans, pointing out that clear criteria based on the five Cs of credit; character, capacity, capital, collateral and conditions greatly enhance lending success. Njeru (2011) assessed how non-performing loans affect commercial banks in Kenya, recommending government support for the private sector to foster productivity that could alleviate public debt concerns affecting borrowers' capacities.

Lastly, English and Liang (2020) highlighted the necessity of robust credit analysis in maintaining sound lending policies, identifying crucial questions regarding borrower creditworthiness and loan structure. Conversely, Mwaura (2023) noted that many manufacturing firms failed to implement prudent credit policies, which negatively impacted their performance, suggesting a pressing need for improved credit management practices across sectors through proper loan monitoring.

This last section of empirical review explores the effect of loan recovery strategies on loan delinquency reduction, drawing upon various empirical studies that examine how effective recovery strategies can enhance repayment rates and reduce non-performing loans across different contexts.

Godquin (2004) studied microfinance loan repayment performance in Bangladesh, focusing on the impact of group lending, non-financial services and dynamic incentives on loan repayment rates. The research employed instrumental variables to address potential biases and provided a comparative analysis of determinants influencing repayment and loan size. The findings underscored the importance of these factors in improving the effectiveness of microfinance institutions' (MFIs) loan allocation and repayment strategies.

Similarly, Derban et al. (2005) examined loan repayment performance in Community Development Finance Institutions (CDFIs) in the UK, highlighting how loan recovery practices can influence loan loss rates. Their research challenged the conventional view that primarily attributes poor loan performance to borrower characteristics, demonstrating that effective loan recovery prcatices significantly impacted repayment outcomes. This finding emphasises the need for a dual focus on both borrower and loan recovery factors to enhance loan recovery rates.

Bhatt and Tang (2002) addressed the determinants of repayment in microcredit programs within the United States, revealing that specific social and institutional factors play vital roles in influencing repayment rates. Their study indicated that higher loan recovery efforts positively affected loan repayment performance. Notably, they highlighted that putting in place effective loan recovery policies with effective implementation strategies and context are essential in understanding repayment dynamics, thus reducing loan delinquency.

Karanja and Simiyu (2022) specifically investigated loan management practices within Kenyan microfinance organisations, assessing factors such as loan recovery policy, customer assessment, payment terms, credit situations and risk management on loan performance. Their study indicated that effective loan recovery practices led to improved repayment rates, with credit analysts playing a crucial role in assessing client creditworthiness prior to loan approval. The research concluded that a structured loan recovery strategy and robust risk management practices are significant in improving loan performance, establishing a clear correlation between loan recovery practices and delinquency rates.

The identified literature gap in the study of loan management strategies on loan delinquency reduction within the microfinance sector in Cameroon highlights several critical areas for further investigation. Primarily, existing research overlooks the unique socio-political and security challenges faced by microfinance institutions in crisis-affected regions, particularly in the North West area. There is a lack of clear operationalisation of key concepts like "loan management strategies" and "loan delinquency," while prevalent theoretical frameworks do not adequately incorporate factors relevant to these contexts. Furthermore, studies often focus on populations outside of crisis zones, resulting in a limited representation of borrower experiences, and predominantly employ quantitative methods, neglecting qualitative approaches that could better capture borrower perceptions. Addressing these gaps will enhance the understanding of how socio-political instability influences loan management and delinquency in Cameroonian MFIs.

3. Analytical method

This part of the research outlined the boundaries and geographic emphasis of the study, detailing the methods used for data collection, the population considered, and the sample drawn from that population. Subsequently, we identified the analytical models applied in the evaluation and explained the rationale for including particular variables in the research. Lastly, we reviewed the analytical methods used to analyse the data gathered, aligning them with the chosen models.

3.1. Scope and area/population and sample

This study investigates the effect of loan management strategies on loan delinquency reduction in Microfinance Institutions (MFIs) within Bamenda, North West Region of Cameroon, covering the period from November to December 2024. The study involves examining appraising, monitoring, and recovery strategies as independent variables against loan delinquency as the dependent variable, with a focus on the 83 MFIs operating in the North West Region of Cameroon (MINFI, 2024) (Tenyiyim, 2024). Bamenda, serving as the North West Region's capital, is characterised by a rich cultural heritage and a population of approximately 615,000 residents, facing challenges due to the ongoing Anglophone Crisis since 2016, which has adversely affected its economy and infrastructure. A causal research design was employed to assess how independent variables influence dependent variables. The data was collected primarily through questionnaires utilising a Likert scale, targeting senior staff members from selected MFIs using purposive and convenient sampling techniques to ensure in-depth insights. To determine an appropriate sample size, Taro Yamane's formula was applied, yielding a sample of approximately 69 MFIs, deemed sufficient for representative analysis, aligning with Katwalo & Asienga, (2015) recommendation that 10% is a fair sample size for yielding meaningful results.

3.2. Justification of inclusion of variables and techniques of data analysis

This study shall seek to establish the effects of loan management practices on loan delinquency; the case of Microfinance Institutions in Bamenda. This study mandates the researchers to take specific steps in the exploration of loan management startegies and loan delinquency in Microfinance Institutions through a mathematical and econometric explanation. This empirical model shall make use of the multiple linear regression technique. This model therefore expresses the loan management practices (loan appraisal, loan monitoring and loan recovery) on loan delinquency. This functional relationship model was adopted by Sabri et al., (2022). This is expressed under the section on model specification below.

3.2.1. Model specification

$LD = f(LA, LM, lR,)$ ……………………………………………………………………………….3.1

The above functional relationship can therefore be put in the linearised econometric model as follows;

$LD_i = \alpha_0 + \alpha_1 LA_i + \alpha_2 LM_i + \alpha_3 LR_i + \varepsilon_i$ ……………………………………………………………… 3.2

Where $\alpha_0$the constant is term, $\alpha_1, \alpha_2, \alpha_3,$ are the parameters to be estimated, ε is the error term component that captures all the omissions and errors committed in the process of analysing the data.

Introducing some demographic characteristics ((Size of the Institution (SI), Age of the Institution (AI), and number of branches NOB)) to be used as control variables in the model, the model becomes as follows:

$LD_i = \alpha_0 + \alpha_1 LA_i + \alpha_2 LM_i + \alpha_3 LR_i + \alpha_4 SI_i + \alpha_5 AI_i + \alpha_6 NOB + \varepsilon_i$ ……………………… 3.3

The a priori expectation of the above model is that $\alpha_0 \neq 0, \alpha_1 \geq 0, \alpha_2 \geq 0, \alpha_3 \geq 0, \alpha_4 \geq 0, \alpha_5 \geq 0, \alpha_6 \geq 0$

Where:

LD: Loan Delinquency Reduction

LA: Loan Appraisal

LM: Loan Monitoring

LR: Loan Recovery

SI: Size of the institution in terms of number of staff

AI: Age of the institution

NOB: Number of Branches

$\alpha_0, \alpha_1, \alpha_2, \alpha_3, \alpha_4, \alpha_5$ and α_6 are the coefficients to be estimated.

And: ε_i is the error term.

3.2.2. Technique of estimation

The estimation technique for this study involved several systematic steps to ensure reliable data analysis. Initially, the researcher prepared the data through editing, coding, and tabulation before applying both qualitative and quantitative analysis methods using descriptive and inferential statistics, specifically simple linear regression via the Statistical Package for Social Sciences (SPSS). Data cleaning was performed to maintain accuracy, followed by testing for essential regression assumptions: normality was assessed to confirm the dataset aligns with a normal distribution; linearity checked for a linear relationship among variables; multicollinearity was evaluated using the Variance Inflation Factor (VIF), with values of 2.5 or greater indicating potential issues, and over 15 suggesting serious concerns; and homoscedasticity was verified to ensure the significance of variance among variables, preventing erroneous standard error estimations. These methodological steps culminated in the application of the ordinary least squares estimation technique, ensuring the validity and reliability of the findings.

4. Data analysis

4.1. Descriptive statistics

A summary of the descriptive characteristics of the variables such as the mean, variance, minimum, maximum values, skewness and kurtosis values are presented in the table 1 below.

Table 1: Descriptive statistics

	N	Min	Max	Mean	Std. Dev.	Skewness	Kurtosis
Loan Appraisal	59	1.00	3.00	1.5763	.67475	.758	-.507
Loan monitoring	59	1.00	3.00	2.1525	.73844	-.252	-1.103
Loan recovery	59	1.00	5.00	3.7288	1.12695	-.261	-1.045
Loan delinquency Reduction	59	1.00	5.00	2.3051	1.13341	.541	-.566
Age of Institution	59	1.00	5.00	1.9492	1.02425	1.101	1.035
N° of branches	59	1.00	5.00	1.8983	.95943	1.300	2.093
Size of MFI	59	1.00	5.00	1.6949	1.20708	1.715	1.671

Source: Author (2024)

The descriptive statistics for the various attributes related to loan management strategies in microfinance institutions reveal important insights into their operational characteristics. This section illustrates that loan appraisal processes have a mean score of 1.5763, indicating a generally positive perception, though with a relatively low maximum score of 3.00, suggesting limited variability in responses. In contrast, loan monitoring shows a higher mean of 2.1525, reflecting a more favourable view of monitoring practices. The loan recovery procedure has a mean of 3.7288, indicating a strong belief in the effectiveness of recovery efforts, while the loan delinquency rate averages 2.3051, suggesting some concerns about repayment issues.

The age of the institution and number of branches has means of 1.9492 and 1.8983 respectively. Lastly, the size of MFI has a mean of 1.6949, suggesting that many these institutions may be smaller in scale. The skewness and kurtosis values across these attributes indicate varying degrees of distribution symmetry and tail behaviour, with some attributes showing positive skewness, suggesting a concentration of responses towards the lower end of the scale, while others exhibit negative skewness, indicating a tendency towards higher ratings. Overall, these statistics highlight the strengths and areas for improvement in loan management practices within these institutions.

4.2. Correlation analysis

The pair-wise correlation was used to ascertain the relationship between the variables used in the model and it was also used as a pre-test for multicollinearity. The correlation coefficient expresses the degree of relationship existing between variables. The values of the correlation coefficient always range from +1 to -1. The sign in the correlation matrix indicates the direction and the degree of the relationship. The pair-wise correlation table is as presented below:

Table 2: Correlation Matrix

Variables	LA	LM	LR	LD	Age	Branches	Size
Loan Appraisal	1.0000						
Loan monitoring	-0.0970	1.0000					
Loan Recovery	.275*	-0.1181	1.0000				
Loan delinquency reduction	0.0778	0.1761	-0.2524	1.0000			
Age of the Institution	.304*	0.2121	-0.1379	.455**	1.0000		
Branches	-0.0571	-0.2238	0.2216	0.1802	-0.0757	1.0000	
Size (number of staff)	-0.1564	-.313*	0.0357	-0.1892	-0.2444	0.1956	1.0000

*. Correlation is significant at the 0.05 level (2-tailed).
**. Correlation is significant at the 0.01 level (2-tailed).

Source: Author (2024)

Table 2 shows findings of the correlation matrix which provides insights into the relationships between various attributes related to loan management in microfinance institutions. There is a positive correlation ($r = 0.275$, $p < 0.05$) between loan appraisal and loan recovery, suggesting that micrifinance institutions with better appraisal processes tend to have more effective recovery practices. Additionally, a significant positive correlation ($r = 0.304$, $p < 0.05$) exists between loan appraisal and age of Institution, indicating that older institutions may have more established and effective loan appraisal processes though the relationship is not significant.

In terms of loan delinquency reduction, a strong positive correlation ($r = 0.455$, $p < 0.01$) with Age of Institution suggests that older institutions may experience higher delinquency rates, potentially due to a larger portfolio or less stringent monitoring over time. Conversely, there is a negative correlation ($r = -0.252$, $p < 0.05$) between loan recovery and loan delinquency reduction, indicating that institutions with effective recovery procedures tend to have lower delinquency rates.

When examining the relationship between loan monitoring and size of MFI, a significant negative correlation ($r = -0.313$, $p < 0.05$) suggests that larger institutions may struggle with effective monitoring practices, possibly due to the complexities of managing a larger borrower base. Furthermore, a negative correlation ($r = -0.2238$) exists between the number of branches and loan monitoring, indicating that institutions with more branches may face challenges in maintaining consistent monitoring practices across locations.

4.3. Test of reliability

Reliability is the accuracy and precision of empirical measurement procedure. In the study, credit risk hedging is used in assessing the degree to which the indexes reflect the concept being measured. The result of the Cronbach Alpha is presented in Table 3 below.

Table 3: Reliability Test Using Cronbach Alpha

Cronbach's Alpha	N of Items
.791	28

Source: Author (2024)

The Cronbach's Alpha value of 0.791 for the 28 items indicates a good level of internal consistency among the items in the scale. This value suggests that the items are reliably measuring the same underlying construct, as it exceeds the commonly accepted threshold of 0.7 for acceptable reliability. A higher Cronbach's Alpha indicates that the items have a strong interrelatedness, which enhances the overall reliability of the scale. Therefore, the results imply that the instrument used is effective for measuring the intended variables, making it suitable for further analysis or application in research.

4.4. The test for multicollinearity

In multiple regression analysis, it is assumed that the predictors are not perfectly correlated. Collinearity refers to bivariate correlations among independent variables, complicating the estimation of regression coefficients. Researchers commonly use the Variance Inflation Factor (VIF) and tolerance to assess this aspect. VIF measures how much the variance of a regression coefficient increases when predictors are correlated, while tolerance is its reciprocal. Perfect collinearity exists when tolerance is 0.000, making it challenging to separate the effects of individual regressors, which can lead to overestimated standard errors and depressed t-values. In this research, VIF was calculated for each explanatory variable to evaluate their correlations with others in the model. A high coefficient of determination (R^2) close to 1 indicates the presence of multicollinearity, resulting in large VIF values, whereas an R^2 of 0 suggests independence among variables, leading to a VIF of 1. According to Ofir & Khuri (1986), a VIF of 10 or greater indicates significant multicollinearity among explanatory variables. The findings in Table 4 also show the VIF result which is used to measure the degree of collinearity.

Table 4: Collinearity Statistics

Variable	VIF	Tolerance
(Constant)		
Loan_Appraisal	4.111	.243
Loan_Monitoring	5.863	.171
Loan_Recovery	4.884	.205
Age=6-10	3.388	.295
Age=11-15	2.965	.337
Branch=0-5	4.667	.214
Branch=above 10	4.884	.205
Size=1-5	1.875	.533
Size=6-10	2.749	.364
Size=16-20	3.595	.278
Size=above 20	3.800	.263

Source: Author (2024)

Table 4 presents the Variance Inflation Factor (VIF) and Tolerance statistics used to assess multicollinearity in regression models. In this analysis, none of the variables exceed the threshold of 10, indicating no highly collinear variables in the model. This absence of significant multicollinearity suggests that the regression coefficients are stable and interpretable, allowing for reliable conclusions without concerns of instability due to multicollinearity. Overall, the model maintains a healthy level of independence among its predictor variables.

4.5. Verification of Hypotheses

Table 5: Model Fit Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.892[a]	.7961	.7537	.35343
a. Predictors: (Constant), loan_apraisal, Loan_monitor, Loan_Recov, Age=6-10, Age=11-15, Branch=0-5, Branch=above 10, Size=1-5, Size=6-10, Size=16-20, Size=above 20				
b. Dependent Variable: Loan_Delinquency Reduction				

Source: Author (2024)

The model summary in table 5 above indicates a strong relationship between the predictors and the dependent variable, loan delinquency. The correlation coefficient (R) is 0.892, suggesting a very strong positive correlation between the independent variables and loan delinquency reduction. The R^2 value of 0.796 means that approximately 79.6% of the variance in loan delinquency reduction can be explained the loan management strategies. The Adjusted R^2 of 0.754 accounts for the number of predictors in the model, indicating that even after adjusting for the number of variables, the model still explains a significant amount of variance in loan delinquency reduction accounted for by the loan management approaches

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4.6. ANOVA findings

Table 6: ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	91.271	11	8.2974	17.040	.000[b]
	Residual	23.373	48	0.4869		
	Total	114.644	58			

a. Dependent Variable: Loan_Delinquency Reduction

b. Predictors: (Constant), Loan_apraisal, Loan_monitor, Loan_Recov, Age=6-10, Age=11-15, Branch=0-5, Branch=above 10, Size=1-5, Size=6-10, Size=16-20, Size=above 20

Source: Author (2024)

The F-statistic in the ANOVA table is 17.040, which indicates a strong relationship between the independent variable indicators and the dependent variable-loan delinquency reduction. The F-statistic of 17.040 is significantly large, which implies that the independent variable indicators collectively have a statistically significant effect on loan delinquency reduction. This is further supported by the associated p-value of 0.000, which is well below the conventional alpha level of 0.05. Therefore, we can reject the null hypothesis, concluding that at least one of the predictors in the model is significantly related to loan delinquency delinquency. This strong F-statistic reinforces the effectiveness of the regression model in explaining variations in the dependent variable-loan delinquency reduction.

4.7. Presentation and discussion of regression findings

Table 7: Regression Coefficients

	Unstandardised Coefficients		Standardised Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	.301	.776		.388	.701
Loan_Appraisal	-.243	.097	-.468	-2.499	.019
Loan_Monitoring	.828	.233	.796	3.559	.001
Loan_Recovery	-.036	.100	-.073	-.358	.723
Age=6-10	.430	.175	.418	2.456	.021
Age=11-15	-.152	.262	-.092	-.581	.566
Branch=0-5	.536	.247	.433	2.169	.039
Branch=above 10	-.036	.100	-.073	-.358	.723
Size=1-5	.401	.488	.104	.822	.418
Size=6-10	-.133	.236	-.086	-.563	.578
Size=16-20	.504	.233	.380	2.167	.039
Size=above 20	-.078	.187	-.075	-.418	.679
Dependent Variable: Loan_Delinquency Reduction					

Source: Author (2024)

From table 4.7 above, the coefficient for loan appraisal is 0.301, suggesting that for every one-unit increase in the loan appraisal score, loan delinquency reduction is expected to improve by 0.301 units. However, the unstandardised coefficient is -0.243, indicating that for each unit increase in loan appraisal, loan delinquency reduction increases by 0.243 units (standard error = 0.097). The standardised coefficient (Beta) is -0.468, with a t-value of -2.499 and a p-value of 0.019, indicating statistical significance at the 0.05 level. Thus, effective loan appraisal is associated with higher loan delinquency reduction (reduction in loan delinquency rate), leading to the rejection of the null hypothesis that loan appraisal has no significant effect.

For loan monitoring, the unstandardized coefficient is 0.828 (standard error = 0.233), implying that each unit increase in loan monitoring reduces loan delinquency by 0.828 units (that is, there is improvement in loan delinquency reduction). The standardised coefficient is 0.796, with a t-value of 3.559 and a p-value of 0.001, indicating strong statistical significance. This suggests that effective loan monitoring practices correlate with higher loan delinquency reduction, resulting in the rejection of the null hypothesis regarding loan monitoring's effect.

For loan recovery, the unstandardised coefficient is -0.036 (standard error = 0.100), indicating a slight expected decrease in loan delinquency reduction (slight increase in loan delinquency) by 0.036 units. The standardised coefficient is -0.073, with a t-value of -0.358 and a p-value of 0.723, indicating it is not statistically significant. Hence, we fail to reject the null hypothesis for loan recovery's effect on loan delinquency reduction.

Additionally, institutions with 0-5 branches show a statistically significant positive effect on loan delinquency reduction (coefficient = 0.536, p = 0.039). The 6-10 and above 10 branches showed no significant correlations with coefficients of -0.036 and p-values of 0.723. Institutions aged 6-10 years have a statistically significant positive effect on loan delinquency reduction (coefficient = 0.430, p = 0.021), compared to the 5-6 range. The Age=11-15 category shows no significant effect (coefficient = -0.152, p = 0.566).

5. Findings and discussion

The regression findings on loan appraisal procedures support the views of Enoch et al. (2021) and Ahmed and Malik (2015) who emphasise that effective client appraisal significantly reduces loan delinquency. This is further reinforced by Alex (2021) who indicates that thorough appraisals can mitigate default risks. However, contrasting perspectives from Negera (2012) suggest that inadequate loan appraisal is just one of several factors influencing loan delinquency reduction, indicating that issues such as poor supervision may also play critical roles, potentially underestimating the singular impact of appraisal processes as indicated in the regression findings.

In evaluating loan monitoring, the regression's findings are consistent with Wachira & Achieng (2023) and Kinyua et al. (2022), both of whom assert that effective monitoring strategies enhance loan performance and reduce non-performing loans. This agreement reinforces the critical role of active credit management. Nevertheless, it is essential to consider Mwaura's (2023) findings, which point out that many institutions fail to implement adequate credit policies, possibly skewing the effectiveness of monitoring. This is an aspect that the regression model may not fully capture, highlighting a potential gap in the analysis.

Regarding loan recovery practices, the regression outcomes align with Karanja and Simiyu (2022) and Bhatt and Tang (2002), supporting the assertion that robust recovery efforts lead to improved loan repayment rates. Derban *et al.* (2005) however advocate for a comprehensive understanding arguing that both borrower characteristics and recovery strategies significantly affect loan repayment outcomes. This dual approach suggests that the regression analysis may overly simplify the relationship, focusing primarily on recovery without adequately addressing how borrower-specific factors interact with recovery efforts.

Overall, while the regression findings largely correlate with existing empirical literature, the criticisms from Negera (2012) and Derban et al. (2005) invite a more complete interpretation that recognises the complex nature of loan delinquency beyond the direct impacts of appraisal, monitoring, and recovery processes. Theoretically and based on the regression findings, the role of liquidity as described by the Liquidity Preference Theory aligns with the observed need for effective loan management strategies to reduce delinquency in MFIs, as higher liquidity can support borrowers in meeting their repayment obligations. However, the criticisms regarding the theory's oversimplification of real-world factors highlight the need for more considerations in practice. The Grameen Solidarity Group Theory's emphasis on social collateral appears to be substantiated by the regression results, indicating that strong group dynamics can enhance repayment rates; yet, the variability of social ties across communities raises questions about the universality of this approach. Finally, while the Austrian Theory of the Business Cycle underscores the potential for credit expansion to lead to poor lending practices, the regression findings suggest that while such cycles may be relevant, many MFIs manage to maintain robust loan recovery strategies despite these economic fluctuations, indicating that other factors may play a more significant role in influencing loan delinquency reduction than the theory suggests. Thus, while some findings support these theories, there are notable limitations that must be addressed for a more comprehensive understanding.

6. Contribution of the study

To enhance operations and reduce loan delinquency, microfinance institutions (MFIs) should implement comprehensive loan appraisal frameworks, including best practices like the 5Cs to assess borrower creditworthiness and collateral value. It is essential to establish ongoing training programs for loan officers on appraisal techniques and risk assessment, ensuring staff can identify borrower distress early. Additionally, MFIs need to develop targeted loan monitoring strategies that prioritise high-risk borrowers while avoiding over-monitoring pitfalls. Engaging borrowers through regular check-ins and financial education will foster collaboration and help mitigate potential repayment issues. Utilising advanced data analytics for accurate loan appraisals and monitoring, along with predictive analytics for forecasting defaults, will enhance decision-making. Regular evaluations of loan recovery strategies should focus on borrower support, exploring flexible repayment plans and debt restructuring options. Lastly, ongoing research and development collaborations with academic or industry experts are vital for staying updated on lending trends and improving risk management practices.

7. Implications of the study

A study on loan management strategies in Bamenda's microfinance sector could yield practical improvements across multiple objectives. For instance, enhanced risk assessment and appraisal processes, focusing on factors specific to the local context like agricultural cycles and seasonal employment, could significantly reduce loan defaults. This, in turn, would improve the financial health of microfinance institutions (MFIs) by increasing their loan portfolio quality and profitability. Reduced defaults would also allow MFIs to lend more responsibly, potentially reaching more deserving clients. Streamlined loan disbursement and collection procedures, potentially incorporating mobile technology for digital record-keeping and payments, could lower administrative costs by a substantial margin. This efficiency gain could free up MFIs' staff to focus on client relationship management, providing more personalized financial guidance and support, and expanding outreach to underserved communities. Further, the study could identify specific recommendations for tailored loan terms, factoring in the varying needs of different client demographics, such as women-owned businesses or farmers. Improved financial literacy programs, tailored to the local culture and language, could empower borrowers with the knowledge and skills to effectively manage their loans, reducing the risk of default and promoting sustainable entrepreneurship. Ultimately, a well-designed study could provide actionable insights for MFIs to enhance their operations, leading to better service delivery, increased access to credit for vulnerable populations, and a more robust and sustainable microfinance sector in Bamenda.

8. Conclusion

Based on the empirical findings, this study emphasises the critical role of rigorous credit evaluation and dynamic monitoring processes in mitigating loan defaults within micro-finance institutions in Bamenda, Cameroon. The significant negative association between comprehensive loan appraisal and delinquency highlights the necessity of robust assessment tools, such as the 5Cs, to accurately gauge borrower creditworthiness and collateral adequacy. Conversely, the positive correlation between intensified loan monitoring and reported delinquencies suggests that heightened oversight may serve more as an early warning mechanism rather than a direct indicator of borrower insolvency, emphasising the importance of targeted risk-based surveillance. The minimal impact of loan recovery strategies on delinquency levels aligns with literature indicating that internal factors such as high interest rates and monitoring deficiencies are more pivotal in influencing repayment behaviour. Consequently, fostering a proactive risk management framework that integrates advanced analytics, continuous capacity building, and borrower engagement is paramount for enhancing portfolio quality and ensuring the financial sustainability of micro-finance operations in emerging markets.

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