

Influence of Digital Loan Applications on Loan Performance of Microfinance Banks in Kenya

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Abstract

Microfinance banks play a critical role in promoting financial inclusion by serving underserved populations. However, the sector continues to experience high levels of non-performing loans, which stood at 32.9% as of 30 June 2023. This has prompted many microfinance banks to adopt digital innovations, such as digital loan applications, to improve loan performance. The objective of this study was to examine the influence of digital loan applications on the loan performance of microfinance banks in Kenya. The study adopted an ex post facto research design guided by the pragmatism research philosophy. The target population comprised 348 loan officers drawn from the 13 licensed microfinance banks in Kenya. Proportionate stratified sampling was used to determine the sample size. Both primary and secondary data were utilized in the study. Primary data were collected using semi-structured questionnaires, while qualitative data were analyzed using thematic analysis. Quantitative data were analyzed using descriptive and inferential statistics with the aid of SPSS version 28. Descriptive statistics included means and standard deviations, whereas inferential statistics comprised Pearson correlation and logistic regression analysis. The findings revealed that digital loan applications had a strong and statistically significant positive relationship with loan performance ($r = 0.695$, $p < 0.05$). Regression results further established that digital loan applications significantly and positively influenced loan performance among microfinance banks in Kenya ($\beta = 3.884$, $p < 0.05$), leading to the rejection of the null hypothesis. Qualitative findings indicated that the ease of access to digital lending increases the risk of borrower over-indebtedness, as clients often obtain multiple loans from different platforms with minimal assessment of repayment capacity, thereby increasing default rates. The study recommends that microfinance banks enhance their digital loan platforms to support seamless applications, faster approvals, timely disbursements, user-friendly interfaces, and accessible customer support services.

Keywords: *Microfinance, Digital Loans, Applications, Loan Performance, Disbursements*

IJPP 14(4): 1- 11

1.0 Introduction

Microfinance banks (MFBs) are financial institutions that offer financial services to small enterprises and people who typically have no access to conventional financial services. However, in the last one decade, microfinance banks have been experiencing low performance, characterized by increasing non-performing loans (Raji, 2020). Globally, COVID-19 worsened non-performing loans (NPLs) in microfinance banks serving low-income populations. World Bank (2021) reported the global MFB NPL ratio rose from 8.5% in 2010 to 12.2% in 2020. In Myanmar, NPLs increased from 9.6% in 2020 to 28% in 2022. In Uganda, Tier 2 and 3 institutions saw a 9% annual NPL increase versus 2% in commercial banks (Bank of Uganda, 2023). These trends show MFIs' vulnerability due to economic shocks and weak risk management.

Recently, as a way to deal with poor loan performance, microfinance institutions have integrated technology into their financial services, revolutionizing micro-lending by streamlining loan applications and approvals for quicker decision-making (Dorfleitner, 2022; Forcella, 2022; Nguyen, 2022). Digital loan applications allow borrowers to submit required information and documents online, reducing paperwork and eliminating the need for multiple branch visits. These platforms often feature user-friendly interfaces, making the process accessible even to clients with limited digital literacy (Ayaz & Yanartaş, 2020). Automated credit assessment tools analyze borrower data instantly, enabling faster and more objective lending decisions. Integrated messaging systems provide real-time updates on application status, improving transparency and communication between lenders and clients.

Digital loan applications have emerged as a transformative tool in enhancing loan

performance within microfinance institutions globally. In Vietnam, digital channels enable real-time communication with borrowers, timely reminders, and collection notices, thereby reducing defaults and improving repayment engagement (Dorfleitner et al., 2022). In Africa, automated systems in countries like Nigeria and Tanzania allow continuous monitoring of borrower behavior, significantly boosting loan performance (Raji, 2020). In Kenya, the rapid adoption of digital lending has expanded access to credit, especially in rural areas, while lowering transaction costs and simplifying repayments. However, despite these advancements, there is limited empirical evidence on the specific relationship between digital loan applications and loan performance in microfinance banks, which this study seeks to address.

Problem Statement

Microfinance banks promote financial inclusion by serving small enterprises and low-income clients, often lending without collateral (Ayaz & Yanartaş, 2020). While relying heavily on deposits, they face high default risks due to clients' repayment challenges and limited recovery options, increasing exposure to non-performing loans. Loan performance in microfinance banks has faced a lot of pressure; recent data shows the gravity of this issue. The Kenya Microfinance Industry Report (2023) indicates that while industry performance stayed strong in the financial year 2022 and the first half of 2023, it has faced an increase in repayment defaults because of numerous macroeconomic shocks, leading to higher non-performing loans (NPLs). As of June 30, 2024, non-performing loan (NPL) ratios for microfinance banks increased to 38.1% from 32.9% in 2023, while credit-only microfinance institutions recorded 11.6% and wholesale microfinance institutions 6.2%. In comparison, commercial banks reported a lower gross NPL

ratio of 14.5% as of the third quarter of 2023 (Central Bank of Kenya [CBK], 2023; Central Bank of Kenya, 2024). This shows the unique challenges faced by these microfinance banks catering for low-income borrowers who may be more susceptible to financial vulnerabilities and economic hardships. Little is known on digital loan applications and loan performance among Kenyan microfinance banks. Therefore, this research examined the influence of digital loan applications on loan performance among Kenyan MFBs.

“The study found out that digital loan applications have a significant and positive impact on loan performance”

The study tested the following null hypotheses;

H₀₁: Digital loan applications have no statistical significant influence on loan performance of MFBs in Kenya

Literature Review

Theoretical Review

Unified Theory of Acceptance and Use of Technology was formulated by Venkatesh et al. (2003) as a comprehensive framework aimed at explaining the elements that influence users' use of technology and acceptance. This theory identifies 4 core constructs: facilitating conditions, social influence, effort expectancy and performance expectancy. UTAUT was utilized in this research to explain the influence of digital loan applications on loan performance of Kenyan microfinance banks. In the case of digital loan applications, performance expectancy is the perceived advantages that loan officers and customers derive from using technology to process loans efficiently (Ayaz & Yanartaş, 2020).

Effort expectancy emphasizes the ease of use of these digital platforms, ensuring that both customers and staff can navigate the systems without extensive training, which further promotes adoption and effective utilization (Raji, 2020). Social influence plays a substantial role in shaping attitudes toward the adoption of digital loan applications in microfinance banks. In Kenya, where mobile banking system is rapidly evolving, the availability of reliable internet access and supportive regulatory frameworks can enhance the adoption of digital loan applications. By integrating these constructs, UTAUT explains how increased adoption and effective utilization of digital loan applications can enhance credit assessment, monitoring, and repayment processes, thereby improving loan performance in microfinance banks.

Empirical Review

In India, Ruchi (2023) examined the link between digital transformation, including digital loan applications, and women's empowerment through microfinance. Findings showed digital loan applications improved access to financial services for women in Muzaffarpur by reducing travel time and costs, enabling easier loan tracking, repayment management, and real-time notifications. This boosted financial literacy, control, and business growth. In Kenya, Josephat (2021) investigated digital loan applications and loan performance in microfinance banks, finding a significant positive relationship. Digital platforms improved accessibility, monitoring, risk assessment, and efficiency, leading to timely repayments, faster disbursement, reduced paperwork, and objective automated credit scoring. Chege and Njeru (2025) studied the influence of electronic loan repayment systems on Kenyan MFIs loan performance using mixed methods. They found these systems enhanced repayment tracking, provided timely reminders,

minimized manual errors, and improved borrower convenience.

Conceptual Framework

Figure 1

Conceptual Framework

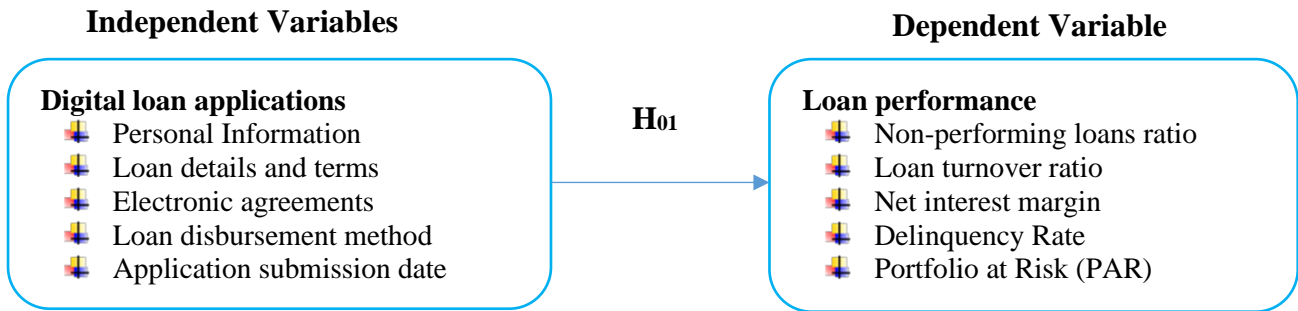


Figure 2.1 reveals the link between the predictor study variable (digital loan applications) and the response variable (loan performance).

2.0 Materials and Methods

Pragmatism research philosophy was adopted in this research since it allowed the use of both quantitative as well as qualitative methods. Ex post facto study or after-the-fact research was used as the research design. The unit of analysis was all the 13 MFBs in Kenya that have been in existence for the past 5 years as Central Bank of Kenya (CBK, 2023). The unit of observation was loan officers in the 13 Kenyan MFIs. The target population was 348 loan officers in the 13 microfinance banks in Kenya, distributed across

116 branches. Proportionate stratified random sampling was used in choosing the sample size. The strata in this research were the 13 MFBs in Kenya. The sample size was determined using Slovin’s formula;

$$n = \frac{N}{1 + N(e)^2}$$

Where: n = no. of samples; N = total population; and e = error margin / margin of error (0.05)

$$n = \frac{348}{1 + (348 * (0.05^2))} = 186.7$$

Table 1

Sample Size Distribution

Microfinance Bank	Loan Officers	Sample Size (n=187)
Caritas Microfinance Bank	21	11
Choice Microfinance Bank	3	2
Daraja Microfinance Bank	3	2
Faulu Microfinance Bank	117	63
Kenya Women Microfinance Bank	93	50
Rafiki Microfinance Bank	51	27
Lolc Kenya Microfinance Bank	6	3
SMEP Microfinance Bank	21	11
Sumac Microfinance Bank	21	11
U&I Microfinance Bank	3	2
Salaam Microfinance Bank	3	2
Maisha Microfinance Bank	3	2
Muongano Microfinance Bank	3	2
Total	348	187

Both secondary and primary data was employed in this research. Primary data was gathered using semi-structured questionnaires. The questionnaire comprised both closed-ended and open-ended questions, including statements on digital loan applications and loan performance measured using a 5-point Likert scale. Secondary data was derived from yearly annual bank supervision reports by the Central Bank of Kenya. Thematic analysis was used in analyzing qualitative data while both descriptive and inferential statistics were utilized to analyze quantitative data with the assistance SPSS version 28. Descriptive statistics comprised standard deviation and mean. Inferential statistics involved Pearson correlation and binary logistic regression analysis. Before conducting logistic regression analysis, the study employed diagnostic tests to test for regression assumptions. The following diagnostic tests were used; multi-collinearity test, Goodness-of-fit test and the Likelihood-ratio-test. Loan performance was categorized into binary outcomes in terms of “performing” vs. “non-performing” loans. Since the study employed a 5-point Likert scale to measure loan performance, mean scores ranging from 1.00 to 3.49 were classified as non-performing loans, while mean scores ranging from 3.50 to 5.00 were classified as performing loans. The logic regression model was presented as follows:

$$\text{Log} \left(\frac{P(\text{Loan Performance})}{1 - P(\text{Loan Performance})} \right) = \beta_0 + \beta_1 DLA + \varepsilon$$

Whereby; $\text{Log} \left(\frac{P(\text{Loan Performance})}{1 - P(\text{Loan Performance})} \right)$ = the natural log of the odds of loan performance (whether a loan is performing = 1 or not performing = 0); LP = Loan performance; β_0 = Constant; β_1 =Coefficients of determination; DLA = Digital loan applications; ε = Error term

3.0 Results and Discussions

The sample size for this study comprised 187 loan officers from 13 microfinance banks in Kenya. The study achieved an impressive response rate of 97.33%, which indicates a high level of participation and strong engagement from the respondents. According to Latwal (2020), a 50 % response rate is considered sufficient for analysis.

Descriptive Analysis of the Study Variables

Digital Loan Applications

Table 2 shows respondents agreed clients feel comfortable sharing personal information via digital loan platforms (mean =4.093), the information required is essential for accurate assessment (mean =4.016), and systems safeguard privacy and security (mean =4.159).

Table 2

Personal Information

Statements	Mean	Std. Deviation
Clients feel comfortable sharing personal information through our digital loan application platform.	4.093	.798
The personal information required in digital loan applications is essential for accurate loan assessment.	4.016	.701
Our digital loan application system ensures the privacy and security of clients' personal information.	4.159	.744

Table 3 shows respondents agreed clients can easily review loan terms before applying (mean =4.038), digital platforms communicate key

details like interest rates and repayment periods effectively (mean =4.115), and clients are

generally aware of conditions before finalizing applications (mean =4.071).

Table 3

Loan details and terms

Statements	Mean	Std. Deviation
Clients can easily review the loan terms before submitting their applications digitally.	4.038	.849
The digital loan application platform effectively communicates important loan terms, such as interest rates and repayment periods.	4.115	.875
Clients are aware of the loan conditions before finalizing their applications through the digital platform.	4.071	.885

Table 4 shows respondents agreed clients easily understand electronic agreements (mean =4.087), which streamlines approvals and

improves efficiency (mean =4.065), and that platforms provide clear instructions for electronic signing (mean =4.044).

Table 4

Electronic agreements

Statements	Mean	Std. Deviation
Clients find it easy to understand the electronic agreements in the digital loan application process.	4.087	.816
Electronic agreements streamline the loan approval process and improve efficiency.	4.065	.755
Our digital loan platform provides clear instructions on electronically signing agreements.	4.044	.726

Table 5 shows respondents agreed clients have convenient loan disbursement options (mean =4.038), can choose preferred methods for

receiving funds (mean =4.093), and benefit from fast, efficient disbursement through digital platforms (mean =4.126).

Table 5

Loan disbursement method

Statements	Mean	Std. Deviation
Clients have convenient options for loan disbursement in the digital application process.	4.038	.767
The digital loan system allows clients to select their preferred method for receiving loan funds.	4.093	.784
The digital platform ensures a fast and efficient loan disbursement process.	4.126	.821

Table 6 shows respondents strongly agreed clients receive immediate confirmation of application submission dates (mean =4.241),

which are clearly recorded and accessible (mean =4.131), helping clients track application status (mean =4.192).

Table 6

Application Submission Date

Statements	Mean	Std. Deviation
Clients receive immediate confirmation of their application submission date in the digital process.	4.241	1.086
The application submission date is clearly recorded and accessible for clients through the digital platform.	4.131	.716
Knowing the submission date helps clients track the status of their digital loan application.	4.192	.706

The participants were asked to comment on other issues concerning digital lending and loan performance of microfinance banks (MFBs) in Kenya. One of the most prominent one was the risk of borrower over-indebtedness due to easy access to digital loans. Participants noted that digital lending platforms allow borrowers to access multiple loans simultaneously, often with minimal assessment of repayment capacity. This has led to an increase in defaults, as many

clients borrow from several platforms without fully understanding the cumulative debt burden.

Loan Performance (LP)

Table 7 shows respondents agreed their institutions monitor non-performing loan ratios to maintain financial health (mean =3.879), moderately agreed low ratios indicate effective lending practices (mean =3.637), and implement strategies to reduce NPLs (mean =3.752).

Table 7

Non-Performing Loans Ratio

Statements	Mean	Std. Deviation
Our institution actively monitors the non-performing loans ratio to ensure financial stability.	3.879	.938
We believe that a low non-performing loans ratio reflects our effective lending practices.	3.637	.997
Our team regularly implements strategies to reduce the non-performing loans ratio.	3.752	.980

Table 8 shows respondents agreed their institutions track the loan turnover ratio to assess lending efficiency (mean =3.708), view high ratios as indicators of borrower attraction

and retention (mean =3.791), and use it to identify service delivery improvements (mean =3.807).

Table 8

Loan Turnover Ratio

Statements	Mean	Std. Deviation
We track the loan turnover ratio to assess our lending efficiency.	3.708	.933
A high loan turnover ratio indicates our ability to attract and retain borrowers effectively.	3.791	.922
Our institution uses the loan turnover ratio to identify areas for improvement in service delivery.	3.807	.975

Table 9 shows respondents agreed their institutions analyze the net interest margin to assess profitability (mean =3.648), view a healthy margin as evidence of effective interest

management (mean =3.791), and work to improve it through competitive pricing strategies (mean =3.731).

Table 9

Net Interest Margin

Statements	Mean	Std. Deviation
We closely analyze the net interest margin to evaluate our profitability from lending activities.	3.648	1.012
A healthy net interest margin indicates our effective management of interest income and expenses.	3.791	1.013
Our institution consistently seeks ways to improve the net interest margin through competitive pricing.	3.731	.968

Table 10 shows respondents agreed their institutions work to keep delinquency rates below industry standards (mean =3.753), view low rates as evidence of effective engagement

and repayment strategies (mean =3.675), and regularly review rates to refine credit policies (mean =3.785).

Table 10

Delinquency Rate

Statements	Mean	Std. Deviation
We actively work to keep our delinquency rate below industry standards.	3.753	1.050
A low delinquency rate signifies our successful client engagement and repayment strategies.	3.675	1.002
Our institution regularly reviews delinquency rates to refine our credit policies and procedures.	3.785	.942

Table 11 shows respondents agreed their institutions use the PAR metric to assess loan portfolio quality (mean =3.714), view low PAR

as a sign of effective risk management (mean =3.714), and routinely analyze it to guide lending decisions (mean =3.719).

Table 11

Portfolio at Risk (PAR)

Statements	Mean	Std. Deviation
We use the portfolio at risk metric to assess the overall quality of our loan portfolio.	3.714	.955
A low PAR indicates that our risk management strategies are effective in mitigating potential losses.	3.714	.978
Our institution routinely analyzes the PAR to make informed decisions about lending practices.	3.719	.988

Correlation Analysis

From the results, digital loan applications demonstrated a significant positive relationship ($r = 0.695$, $p = 0.000$), indicating that the use of digital loan application systems supports better

loan performance. The findings match with past studies done by Vakkapatla (2024) who observed that digitized application systems improve operational efficiency and borrower targeting.

Table 12
Correlation Analysis Results

		Loan Performance	Digital Loan Applications
Loan Performance	Pearson Correlation	1	
	Sig. (2-tailed)		
	N	182	
Digital Loan Applications	Pearson Correlation	.695**	1
	Sig. (2-tailed)	.000	
	N	182	182

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

Hypothesis Testing

H₀₁: Digital loan applications have no statistically substantial influence on loan performance of MFBs in Kenya

Table 13 indicates that digital loan applications account for a moderate portion of the variance

in loan performance. The values 0.294 and 0.397 show that digital loan applications explain between 29.4% and 39.7% of the changes in loan performance. The findings show that digital loan application systems play a notable and fair role in affecting loan outcomes for microfinance banks.

Table 13
Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	181.788 ^a	.294	.397

a. Estimation terminated at iteration number 6 because parameter estimates changed by less than .001.

The results shown in Table 14 show that digital loan applications had a statistical significant effect on loan performance. The coefficient (β) was 3.884, with a Wald statistic of 24.987 and a p-value of 0.000, confirming statistical significance. With these results, the null hypothesis (H_{04}) was therefore rejected at $p = 0.05$ and it was confirmed that digital loan

applications have a statistically substantial influence on loan performance of Kenyan MFBs. The results match with Josephat (2021) observation that digital application platforms improve operational efficiency and borrower convenience, leading to higher loan uptake and repayment rates.

Table 14
Coefficients for Digital Loan Applications and Loan Performance

	B	S.E.	Wald	df	Sig.	Exp(B)
Step 1 ^a Digital Loan Applications	3.884	.777	24.987	1	.000	48.642
Constant	-15.688	3.245	23.369	1	.000	.000

a. Variable(s) entered on step 1: Digital Loan Applications.

4.0 Conclusions

In conclusion, while digital applications improve operational performance, they require stricter credit assessment to prevent borrower over-indebtedness. digital loan applications have a significant and positive impact on loan

performance. Automated application processes streamline data capture, reduce human error, and accelerate loan approvals, thereby improving client satisfaction and institutional efficiency. The use of digital platforms for loan applications also enables better tracking, faster

turnaround times, and a more inclusive lending environment.

5.0 Recommendations

The recommendation derived from this study is that microfinance banks should enhance the efficiency of their digital loan application systems. This involves upgrading their digital platforms to allow seamless loan applications, quick approvals, and timely disbursements.

Microfinance banks should invest in user-friendly interfaces and ensure customer support services are readily available to guide borrowers through the digital application process. Policymakers should promote the adoption of

secure, automated digital loan application platforms to streamline processing, enhance accuracy, and improve accessibility for underserved borrowers.

Further Research

Since this study was limited to microfinance banks in Kenya, future research should explore the same variables across other financial institutions, such as commercial banks, SACCOs, and fintech companies, to provide comparative insights on how digital loan applications affect loan performance in different contexts. Further studies could also investigate the long-term effects of digital loan applications on loan sustainability and borrower welfare.

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