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Effect of Credit Risk Management on Financial Performance of Mobile-Based Lenders in Nakuru County, Kenya

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Abstract: *The rapid growth of mobile-based lending in Kenya has brought diverse financial risks potentially affecting the lenders' financial performance. The current study examined the effect of credit risk management on the financial performance of mobile-based lenders. The research was anchored by credit risk theory. A quantitative research design was adopted. The study's target population comprised 7 Mobile-based lenders in Nakuru County while the unit of analysis was 64 credit officers and debt collectors. Due to the limited number of respondents, a census technique was preferred, where all the credit officers and debt collectors were involved. Data collection was done through structured questionnaires. Data was analyzed using IBM SPSS software, employing descriptive and inferential methods. The study's descriptive research findings established credit risk management affected the mobile-based lenders' financial performance. As per the results of the correlation analysis, the correlation coefficient was (r=0.414**; p=0.002). This implied that the relationship between credit risk management and financial performance was significant. As such, credit risk management affected the financial performance of mobile-based lenders. Additionally, the results of regression analysis indicated a coefficient of determination (R^2=0.171), signifying that 17.1% of the variation in mobile-based lenders' financial performance was explained by credit risk management. These findings highlight the critical importance of implementing effective credit risk management practices among mobile-based lenders to enhance their financial performance. Moreover, the study emphasizes the integration of risk management into the strategic decision-making processes of lending institutions. The study will help policymakers and regulators focus more on sound risk management in the mobile-based lending sector, fostering desirable financial performance and stability.*

Key Words: *Credit Risk Management, Financial Performance, Mobile-based Lenders*

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1. Introduction

Credit risk management encompasses the assessment of the probability of borrowers defaulting on their financial obligations (Yanenkova, Nehoda, Drobyazko, Zavhorodnii, & Berezovska, 2021). Its primary objective is to minimize a lender's vulnerability to losses stemming from non-payment, thereby ensuring the stability and adequate financial performance of the lending institution. This comprehensive approach incorporates in-depth credit evaluations and the implementation of strategies to mitigate risk. According to Pandey and Bandhu (2022), the ultimate aim of credit risk management is to enhance the financial well-being and viability of lending institutions while promoting prudent lending practices. Mobile-based lenders apply data-driven techniques to determine the creditworthiness of borrowers by utilizing information garnered from digital channels to make well-informed lending choices (Gallati, 2022). Additionally, they employ credit scoring models and algorithms to evaluate the risk associated with individual borrowers, define suitable interest rates, and establish credit limits. Kathambi (2020) noted that continuous monitoring of borrower behavior is imperative for identifying early indicators of potential default and adapting risk mitigation strategies as necessary.

In Kenya, mobile lending utilizes digital technology platforms to offer swift and easily accessible loans to a broad spectrum of consumers (Njeru, 2018). This model enables individuals to request and obtain loans via their mobile devices, often with minimal documentation and the absence of traditional credit assessments, rendering it an exceptionally convenient and inclusive financial service. The growth of mobile lending in Kenya has been substantial, underpinned by factors such as the existence of mobile money platforms like M-PESA, which facilitate both loan disbursement and repayment (Ngunjiri & Ndirangu, 2021). This has increased access to credit, especially for the unbanked sections of the society thus remaining an integral component of the nation's financial landscape, creating avenues for financial inclusion and economic empowerment. Mobile-based lenders often grapple with managing credit risks in their lending operations (Kathambi, 2020). Additionally, the absence of effective robust regulatory oversight and uniform industry standards leaves the lenders vulnerable to uncertainties.

According to a recent report from the Digital Financial Services Association of Kenya (DFSAK), digital lenders have disbursed more than KES.500 billion in mobile loans to small businesses and households in Kenya over the past eight years, benefiting over eight million Kenyans, with around 70% seeking financing for business purposes. With Kenya's fintech start-ups nearly doubling in value, reaching KES 72.3 billion in 2022 from KES 36.4 billion in 2021, DFSAK is also looking to introduce new digital financial services like digital insurance, savings plans, and investment platforms, alongside enhancing financial literacy levels and overseeing the licensing of additional service providers. This underscores the vital importance of implementing effective credit risk management practices to ensure the financial stability and prosperity of mobile-based lenders. Despite the critical role of credit risk management in the mobile-based lending sector, the existing research has predominantly focused on the overall impact of financial risk management on financial performance, without a specific examination of individual risk management strategies. Consequently, a research gap exists concerning the evaluation of the effectiveness of credit risk management in enhancing the financial performance of mobile-based lenders in Kenya, particularly within Nakuru County. The current study assessed the effect of credit risk management on the financial performance of mobile-based lenders in Nakuru County, Kenya.

2. Objective of the Study

The objective of the study was to assess the effect of credit risk management on the financial performance of mobile-based lenders in Nakuru County, Kenya.

3. Literature Review

Credit risk management incorporates credit risk assessment and monitoring, loan appraisal processes, and the management of credit concentration (Liu, 2022). The assessment and continuous monitoring of credit risk are crucial for appraising the creditworthiness of borrowers and identifying potential default, enabling lenders to make well-informed lending decisions. Wibowo and Subakti (2023) opined that loan appraisal procedures establish structured guidelines for a thorough evaluation of loan applications, ensuring uniformity and impartiality in lending decisions while mitigating risks. Additionally, credit concentration management involves the diversification of the loan portfolio to limit excessive exposure to specific sectors or regions. This ultimately reinforces the lender's resilience against economic fluctuations and unforeseen events (Pandey & Bandhu, 2022). These elements collectively establish the cornerstone of effective credit risk management, allowing lending institutions to strike a proper balance between extending credit and safeguarding their financial well-being. Merton's credit risk theory, developed in 1974 by Robert Merton, serves as a foundational framework for credit risk management by emphasizing the identification of the fundamental causes of potential loan defaults. It underscores the essential principle of achieving a delicate equilibrium between the costs associated with loan management and those transferred to borrowers to prevent encouraging loan defaults.

Merton's theory offers predictive capabilities and insights into risk management practices (Wibowo & Subakti, 2023). It highlights the importance of managing credit risk by assessing the likelihood of loan default, considering capital and liability proportions, and understanding the balance between loan management costs and those passed on to borrowers, which is critical for effective credit risk management in various financial contexts. Empirical studies relating to credit risk management have been reviewed. Nzioki (2019) assessed the influence of credit risk control on the Ezzy loans' performance at Equity Bank, Kenya. The research was conducted in the northern and central rift regions of Equity Bank, involving 27 credit officers and 54 credit managers responsible for the Ezzy loans payment infrastructure. The study employed a descriptive research design and utilized primary data. The results of the study indicated that the performance of mobile loans at Equity Bank is closely related to credit risk control practices. The level of performance was determined by quantifying credit risks, individual risk control, and portfolio risk control. It is important to note that this study was restricted to a single financial institution, Equity Bank. However, the current study involved a survey that covered various mobile-based lenders, including Eazzy Loan from Equity Bank, Timiza from Absa, Whizz from Housing Finance, Loop from NCBA, Vooma from KCB, MCo-Op Cash from Coop Bank, and Pesa Pap from Family Bank.

Sitotaw (2020) analyzed fraud risk management and its effect on credit and saving institutions' performance in Ethiopia. The study conceptualized the management of credit risk as a systematic strategy for addressing the various risks linked to providing credit services to clients. The data collection approach employed a blend of qualitative and quantitative methods. The study identified financial performance difficulties associated with ineffective credit risk management, attributed to shortcomings in credit risk assessment, deficient loan appraisal procedures, and inadequate credit risk monitoring. Furthermore, the research demonstrated that effective credit risk management positively impacts how lenders manage and mitigate credit risk exposures encountered during their operations. In Uganda, Serwadda (2018) undertook a study on the impact of credit risk management practices on commercial banks' financial performance. The researcher collected secondary data from the Central Bank of Uganda, spanning the financial years from 2006 to 2015. The analysis employed panel data regression modeling. The results of the research highlighted that the effectiveness of credit risk management directly affected the commercial banks' financial performance. The study primarily focused on non-performing loans and loan loss provisions, considering them as pivotal elements in credit risk losses. The present research evaluated credit risk through various indicators associated with risk identification, assessment, and monitoring practices.

Asllanaj (2018) examined the role of credit risk management in promoting commercial banks' financial performance in Kosovo. The research employed panel data and utilized a multiple regression model for data analysis. The findings of the study demonstrate that effective credit risk management contributes to increased profitability, financial sustainability, and enhanced efficiency in the utilization of resources by banks in providing loans. Additionally, the study revealed that insufficient credit risk management practices, such as ineffective handling of bad debts, inadequate credit administration, and poor management decisions regarding credit provision, hurt the financial performance of commercial banks. It's worth noting that Asllanaj (2018) limited his research to CAMEL indicators. In the context of the present study, financial performance is directly indicated by net profit margin. Catherine (2020) researched on the effect of credit risk management on the Bank of Africa's financial performance in Uganda. A quantitative research approach was utilized and secondary data. Data analysis involved the application of correlation and regression methods. The results pointed to the significant influence of credit risk management factors, such as credit risk appraisal, risk diversification, and risk control, on commercial banks' financial performance. The specific case examined in this study was the Bank of Africa. The present research encompassed a survey of commercial banks involved in mobile lending operations.

In Ngotho's study (2020) examining credit risk management practices, it was determined that the identification and monitoring of risks, as well as loan collection policies, had an impact on mobile loans. The study was conducted in Nairobi and involved both lenders and borrowers. However, the methodology for participant selection was not clearly outlined, and the study did not provide information on how findings were reconciled between these diverse groups. In contrast, the current research focused on a more homogeneous group, specifically mobile lenders within commercial banks. Mburu, Mwangi, and Muathe (2020) evaluated credit management practices and their influence on Kenyan banks' loans performance. Their findings showed that lending policies and loan collection practices have a significant impact on loan performance, while borrower appraisal had an insignificant effect. The study was limited to the broader scope of credit management rather than specific credit risk assessment. The present study takes a step further by specifically analyzing the practices related to managing credit risks among mobile-based lenders. In Figure 1, the conceptual framework illustrates the relationship between credit risk management (Independent Variable) and financial performance (Dependent Variable).

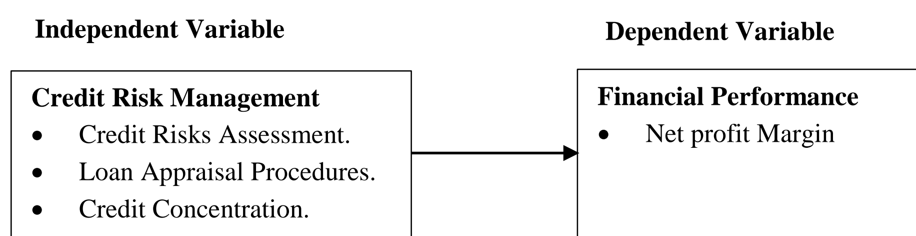

Figure 1: Conceptual Framework

Research gaps were identified from the reviewed studies. They mostly focused on the effect of credit risk management on the financial performance of commercial banks. For instance, Nzioki (2019) conducted research on credit risk control and its influence on the Ezzy loans' performance at Equity Bank. Sitotaw (2020) analyzed the management of fraud risks and their effects on credit and savings institutions' performance in Ethiopia. These studies predominantly concentrated on credit risk management within the context of commercial banks, a focus

that differs from mobile-based lenders in terms of the specific considerations involved in credit risk management practices. While the study by Mburu et al. (2020) examined credit management, the main focus was on the loan performance of the banks. The current research delved deeper by specifically examining the practices associated with the management of credit risks within the realm of mobile lending.

4. Methodology

This study employed a quantitative research design. The target population consisted of mobile-based lenders in Nakuru County, with a specific focus on 28 credit officers and 36 debt collectors. The selected money lenders included Timiza by Absa, Ezzay Pay by Equity Bank, Whizz by Housing Finance, Loop by NCBA, Vooma by KCB, MCo-Op Cash by Coop Bank, and Pesa Pap by Family Bank. They were chosen due to their significance and relevance in the mobile-based lending industry in Kenya. These lenders are also widely recognized and frequently utilized by clients, making them representative of the local mobile-based lending market. The total target population encompassed 64 respondents, and the distribution is detailed in Table 1.

Table 1: Target Population

Mobile-Based Lender	Credit Officers	Debt Collectors	Total
Timiza – By ABSA Bank	2	6	8
Loop by NCBA	3	4	7
HF Whizz	6	6	12
Eazzy by Equity	5	4	9
KCB Vooma	4	4	8
PesaPap by Family bank	4	5	9
MCo-Op Cash by Coop Bank	4	7	11
Total	**28**	**36**	**64**

The census approach was chosen due to the relatively limited and manageable size of the target population. Consequently, all credit officers and debt collectors were included in the study, allowing for comprehensive data collection. This study used questionnaires for data collection, as suggested by Kershner, Hennessy, Wegerif, and Ahmed (2020), who noted their effectiveness in achieving high response rates in surveys. Data was analyzed through descriptive and inferential methods. Descriptive analysis encompassed the use of percentages, standard deviations, and mean responses to provide a concise summary and description of the data. In inferential analysis, correlation and regression methods were employed. The Statistical Package for the Social Sciences (SPSS) aided analysis. The regression model specified for this study was as follows:

$Y = \beta_0 + \beta_1 X_1 + \varepsilon$

Where:

Y= Financial Performance

X_1= Credit Risk Management

ε = Error term

β_0 = Constant Term

β_1= Beta coefficient

5. Results

This section presents the descriptive and inferential results. Among the 64 questionnaires distributed, 55 were successfully filled and collected, yielding a response rate of approximately 85.9% which was adequate for the study.

5.1 Descriptive Statistical Results

The study's objective was to assess the effect of credit risk management on mobile-based lenders' financial performance. The results are presented in Tables 2 and 3.

Table 2: Effect of Credit Risk Management on Financial Performance

	N	SA 5	A 4	U 3	D 2	SD 1	Mean	Std. Dev
The credit risks assessment/monitoring procedures are effective in identifying potential defaulters.	55	54.5%	29.1%	10.9%	5.5%	0%	4.33	0.893
Loan appraisal procedures are comprehensive and sufficient in determining the creditworthiness of borrowers.	55	36.4%	43.6%	12.7%	3.6%	3.6%	4.05	0.989
The loan frauds mitigation policies and strategies are effective in preventing and detecting fraudulent activities.	55	30.9%	34.5%	21.8%	10.9%	1.8%	3.82	1.056
The company provides adequate training to employees on credit risk management practices.	55	27.3%	25.5%	30.9%	10.9%	5.5%	3.58	1.166
The credit risk management policies and procedures are regularly reviewed and updated to reflect changes in the lending environment.	55	38.2%	40%	18.2%	3.6%	0%	4.13	0.840

The descriptive findings established that 83.6% of the respondents agreed (Mean=4.33; Std. Dev.=0.893) that the credit risk assessment/monitoring procedures are effective in identifying potential defaulters. This high level of agreement among respondents shows that credit risk assessment and monitoring procedures vitally help mobile-based lenders identify and manage potential defaulters more efficiently. Effective credit risk assessment and monitoring can lead to sound, lending decisions. Extending loans to customers with lower default risks improves financial performance through the increase in interest income from loans that have a higher likelihood of repayment. 80% of the respondents also agreed (Mean=4.05; Std. Dev.=0.989) that loan appraisal procedures are comprehensive and sufficient in determining the creditworthiness of borrowers. Effective appraisal procedures impact mobile-based lenders' financial performance by mitigating default risks and elevating the overall quality of loans they provide. While 65.4% of the respondents agreed (Mean=3.82; Std. Dev.=1.056) that loan fraud mitigation policies and strategies are effective in preventing and detecting fraudulent activities, 21.8% were unclear and 12.7% disagreed with the same assertion. The findings indicated that fraud mitigation is effective in some mobile-based lenders and ineffective in others.

Similarly, 52.8% of the respondents agreed but 30.9% had differing views (Mean=3.58; Std. Dev.=1.166) that mobile-based lenders provide adequate training to employees on credit risk management practices. The findings suggest the need for improvement and standardization in the training programs regarding credit risk management among mobile-based lenders. Moreover, 78.2% of the respondents agreed (Mean=4.13; Std. Dev.=0.840) that credit risk management policies and procedures are regularly reviewed and updated to reflect changes in the lending environment. This enhances the lender's ability to proactively manage risks and potentially leads to improved financial performance through better risk management practices. According to the findings from descriptive research, mobile-based lenders' financial performance is significantly influenced by credit risk management, as it plays a pivotal role in their ability to assess and address lending risks effectively. Therefore, the implementation of robust credit risk management practices leads to reduced default rates, lower levels of non-performing assets, and increased interest returns, facilitating prudent lending decisions. Conversely, inadequate credit risk management results in elevated default rates and unfavorable financial performance for mobile-based lenders.

Table 3: Financial Performance of Mobile-Based Lenders

	N	SA 5	A 4	U 3	D 2	SD 1	Mean	Std. Dev
Over the past three years, our company has experienced a steady improvement in the return on assets (ROA).	55	56.4%	29.1%	7.3%	7.3%	0%	4.35	0.917
We have consistently achieved better returns on equity (ROE) in the last three years.	55	41.8%	32.7%	25.5%	0%	0%	4.16	0.811
Our net profit margin has shown a consistent upward trend over the past three years.	55	34.5%	38.2%	21.8%	5.5%	0%	4.02	0.892
The company maintains a healthy balance sheet, characterized by low debt levels and adequate reserves.	55	29.1%	49.1%	14.5%	7.3%	0%	4.00	0.861
Our financial performance metrics are regularly reviewed and updated to reflect changes in the operating environment, which has contributed to our overall success.	55	45.5%	32.2%	12.7%	9.1%	0%	4.15	0.970

Based on the findings, 85.5% of the respondents agreed (Mean =4.35; Std. dev.=0.917) that over the past three years, mobile lenders have experienced a consistent improvement in their return on assets (ROA), reflecting an upturn in the financial performance of mobile-based lenders. Furthermore, 74.5% of the participants agreed (Mean=4.16; Std. Dev.=0.811) that mobile lenders have consistently achieved better returns on equity (ROE) over the same three-year period. In addition, 72.7% of the respondents agreed (Mean=4.02; Std. Dev.=0.892) that mobile lenders' net profit margin has exhibited an upward trend during the past three years. Another noteworthy point is that 78.2% of the participants concurred (Mean=4.00; Std. Dev.=0.861) that their respective mobile-based lenders maintain a robust balance sheet, characterized by low debt levels and sufficient reserves. Moreover, 77.7% of the respondents agreed (Mean=4.15; Std. Dev.=0.970) that financial performance metrics are regularly reviewed and updated to align with changes in the operating environment, which has significantly contributed to their overall success. The study findings emphasize the critical role played by effective credit risk management in determining mobile-based lenders' financial performance. It minimizes adverse financial events, reduces potential losses, and ultimately contributes to improved financial performance.

5.2 Inferential Statistical Results

Inferential analysis, comprising correlation and regression analysis, was conducted to determine the relationship between credit risk management and mobile-based lenders' financial performance.

5.2.1 Correlation Statistical Results

The correlation analysis was done to establish the relationship between credit risk management and the financial performance of mobile-based lenders. The pertinent results are shown in Table 4.

Table 4: Correlation between Credit Risk Management and Financial Performance

		Financial Performance
Credit Risk Management	Pearson Correlation	.414**
	Sig. (2-tailed)	.002
	N	55

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

According to the results from the correlation analysis, a statistically significant positive relationship was observed between credit risk management and mobile-based lenders' financial performance, as reflected in the correlation coefficient (r=0.414**; p=0.002). This shows that elements of credit risk management, including credit risk assessment, loan appraisal procedures, and credit concentration, affect mobile-based lenders' financial performance. The positive correlation coefficient indicates that improved effectiveness in credit risk management leads to an enhancement in the financial performance of these lenders.

5.2.2 Regression Statistical Results

The regression analysis examines the relationship between credit risk management and mobile-based lenders' financial performance. The results are presented in Tables 5, 6, and 7, encompassing the model summary, Analysis of Variance (ANOVA), and regression coefficients respectively.

Table 5: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.414[a]	.171	.156	.48245

a. Predictors: (Constant), Credit Risk Management

The model summary shows that the correlation coefficient was R=0.414, with a coefficient of determination of R^2=0.171. This signifies a statistically significant relationship between credit risk management and mobile-based lenders' financial performance. Credit risk management explained 17.1% of the observed variation in financial performance. This implied that credit risk management affected the mobile-based lenders' financial performance.

Table 6: ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.548	1	2.548	10.947	.002[b]
	Residual	12.336	53	.233		
	Total	14.884	54			

a. Dependent Variable: Financial Performance

b. Predictors: (Constant), Credit Risk Management

According to the results, the F-value of 10.947 was significant (p=0.002) at a 95% confidence level, indicating the overall significance of the model. Consequently, credit risk management affected the mobile-based lenders' financial performance. This underscores the importance of considering these practices of credit risk management as an integrated framework for comprehending and enhancing financial performance.

Table 7: Regression Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.875	.386		7.444	.000
	Credit Risk Management	.316	.096	.414	3.309	.002

a. Dependent Variable: Financial Performance

The regression model $Y = \beta_0 + \beta_1 X_1 + \varepsilon$ was interpreted as: $Y = 2.875 + 0.316X_1 + \varepsilon$. As per the coefficients, a one-unit increase in credit risk management contributes to a 0.316-unit increase in financial performance. As such, the enhancement of credit risk management positively affected financial performance. The t-value (t=3.309; p=0.002) was statistically significant at a 95% confidence level. Therefore, credit risk management significantly affected mobile-based lenders' financial performance.

6. Conclusion

In conclusion, the study revealed that credit risk management significantly affects financial performance. Specifically, it was found that various components of credit risk management, including assessment of credit risk, procedures of loan appraisal, and credit concentration, play pivotal roles in enhancing mobile-based lenders' financial performance. This underscores the critical importance of mobile-based lenders implementing robust credit risk management strategies and frameworks to optimize their financial performance. The study highlights the significance of accurate and thorough credit assessments, robust loan appraisal processes, and proactive measures to combat loan fraud in promoting financial performance. In essence, a comprehensive and well-executed approach to credit risk management is essential for improving financial performance and ensuring the sustainability of mobile-based lenders.

7. Recommendation

Mobile-based lenders are recommended to prioritize the enhancement of their credit risk management practices as a means to bolster their financial performance. Lenders should take proactive measures to establish robust credit assessment and monitoring procedures, enabling them to accurately evaluate the creditworthiness and repayment capacity of borrowers. To mitigate credit risk effectively, it is essential for lenders to fortify their risk mitigation strategies, including the formulation of clear loan approval criteria and the implementation of proactive collection methods to minimize instances of non-performing loans and defaults. Additionally, conducting routine portfolio reviews and diligently monitoring loan quality are pivotal steps in identifying potential credit risks and making well-informed decisions to mitigate them. This will improve the mobile-based lenders’ financial performance.

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