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CREDIT RISK MANAGEMENT AND FINANCIAL PERFORMANCE: EVIDENCE FROM COMMERCIAL BANKS IN KENYA

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Abstract

This study investigates the relationship between credit risk management and financial performance of commercial banks in Kenya, addressing a critical gap in the literature amid the evolving banking landscape. Utilizing a descriptive research design, the study analyzes secondary data from 42 commercial banks over a 10-year period (2013–2022), employing panel regression models. The focus is on credit risk management indicators—delinquency rate, value

at risk, and distance to default—and their impact on financial performance. Findings reveal that these indicators significantly affect financial performance, with delinquency rate and value at risk exerting a negative influence, while distance to default shows a positive correlation. The study, grounded in portfolio theory and Merton's default risk theory, provides empirical evidence from the Kenyan banking sector, enriching the understanding of credit risk management's role in financial outcomes. It concludes that robust credit risk management practices are essential for enhancing financial performance, offering actionable insights for bank managers and policymakers to develop tailored risk management strategies. This research highlights the nuanced effects of credit risk indicators, contributing to the broader discourse on banking stability and performance in Kenya.

Keywords: Credit risk management, financial performance, delinquency rate, value at risk, and distance to default

INTRODUCTION

Background

The financial performance of commercial banks heavily relies on effective credit risk management (CRM), as a substantial portion of their revenue comes from loan interest (Bhattarai, 2016). Poor CRM, often indicated by rising Non-Performing Loans (NPLs), destabilizes the credit system and negatively impacts financial performance (Kagoyire & Shukla, 2016). CRM practices, measured through indicators like delinquency rate, value at risk, and distance to default, directly influence how well banks perform financially. As commercial banks globally, including those in Kenya, face evolving financial markets and regulatory demands, upgrading risk management systems becomes essential to mitigate default risks and safeguard financial outcomes (Ogboi & Unuafe, 2013).

This study, rooted in portfolio theory by Markowitz (1952), views CRM as a strategy of diversifying loan portfolios to reduce the adverse effects of NPLs on financial performance. By managing credit risk effectively, banks can minimize losses from defaults, enhancing their financial stability and profitability. Merton's default risk theory (1970) further supports this by aiding credit analysts in assessing debtors' repayment capabilities, thus linking robust CRM to improved financial performance. In Kenya, rising NPL levels over the past decade underscore the urgency for banks to actively monitor and refine CRM practices to meet financial goals (Waithanji, 2016).

Globally, financial performance varies widely, with banks excelling or faltering based on their CRM effectiveness. Tier 1 banks often demonstrate strong performance, while others, like Chase Bank and Imperial Bank, have faced distress due to inadequate risk management (Moody, 2019). The disparity highlights CRM's pivotal role in ensuring stability and profitability. In Kenya, where NPL fluctuations have been notable, banks must prioritize prudent risk assessment and provisions for bad debts to protect against credit risk's adverse effects (Aduda & Gitonga, 2011). This study emphasizes CRM's direct impact on financial performance, offering insights for Kenyan commercial banks to strengthen their practices.

Problem Statement

Effective credit risk management (CRM) is vital for the financial performance of commercial banks, as it helps identify and mitigate potential risks, reducing loan defaults and losses that harm profitability (Bhattarai, 2016). Poor CRM, however, leads to increased non-performing loans (NPLs), which negatively affect financial performance by tying up resources and eroding stability (Sujeewa, 2015). In Kenya, the banking sector has shown resilience, yet incidents like the receivership of Chase Bank and Imperial Bank in 2015 highlight the consequences of inadequate CRM, contrasting with the strong performance of banks like KCB and Equity (CBK, 2015; 2018). This disparity underscores the need to examine how CRM influences financial performance among Kenyan commercial banks.

Globally, the 2007 financial crisis demonstrated that weak CRM contributed to bank failures, emphasizing its critical role in sustaining financial performance (International Monetary Fund, 2011). Empirical studies reveal mixed findings: Shukla and Bajpai (2015) linked CRM to profitability in Rwanda, while Sujeewa (2015) found NPLs hurt Sri Lankan banks' performance, though these studies lack Kenyan context and broader CRM perspectives. Locally, Orang'i (2018) and Nyabicha (2017) reported varying CRM impacts on Kenyan bank performance, with methodological and conceptual gaps, such as overlooking management practices or underlying factors. These inconsistencies highlight the need for a focused study on CRM's effect on financial performance in Kenya.

This study addresses these gaps by exploring CRM's direct impact on financial performance, using indicators like delinquency rate, value at risk, and distance to default, analyzed through secondary data from 2013–2022. Unlike prior research, it investigates why some Kenyan banks thrive while others falter, building on portfolio theory to frame CRM as a key driver of financial outcomes. By focusing solely on CRM and financial performance, it aims to clarify their relationship, offering insights into how robust risk management can enhance banking stability and profitability in Kenya.

LITERATURE REVIEW

Theoretical Review

Portfolio theory, proposed by Markowitz (1952), serves as the anchor framework for this study, linking credit risk management (CRM) to financial performance in Kenyan commercial banks. It emphasizes diversification to balance risk and return, suggesting that managing credit risks—like delinquency rates, value at risk, and distance to default—through a well-structured loan portfolio can enhance financial stability and profitability. Critics note its reliance on historical data and simplified risk measures, which may not capture complex risks or market shifts (Seibel, 2012; Kairu, 2009). Nevertheless, its focus on optimizing risk-return tradeoffs directly supports the study's exploration of how effective CRM practices mitigate losses and boost financial performance.

Financial intermediation theory, pioneered by Diamond (1984), highlights banks' role in efficiently allocating resources between savers and borrowers, a process central to CRM and financial performance. By managing credit risks, banks reduce transaction costs and improve market efficiency, which can positively influence profitability (Adebayo, 2017). Critics argue it overlooks lenders' risk management roles, focusing instead on participation costs (Scholtens & Van Wensveen, 2000). For this study, the theory frames how CRM practices, such as assessing borrower creditworthiness, underpin financial performance by ensuring stability and efficient resource use in Kenyan banks.

Information asymmetry theory, introduced by Akerlof (1970), addresses the information gap between borrowers and lenders, a key challenge in CRM affecting financial performance. Effective CRM strategies mitigate adverse selection and moral hazard, reducing risks like NPLs that erode profitability (Horne, 2012). Critics highlight its ambiguous identification of impacted investors (Horne, 2012), but it remains relevant by explaining how banks manage lending risks to improve financial outcomes. In this study, it underscores how CRM indicators help Kenyan banks bridge information gaps, enhancing financial stability.

Merton's default risk theory (1970) provides a model to assess borrower default likelihood, directly tying CRM to financial performance. By analyzing asset values and volatility, it quantifies risks like distance to default, aiding banks in managing credit portfolios to minimize losses and boost profitability (Jorion, 2014). Though criticized for underestimating default risk (Jones, 1984), its focus on default probabilities supports the study's analysis of how CRM practices stabilize financial performance in Kenyan commercial banks.

Empirical Review

Aebi, Sabato, and Schmid (2022) conducted a study on the effect of risk management on bank performance during the financial crisis in the US and Europe. The study found that banks with stronger risk management frameworks had better financial performance during the crisis. This study addresses the importance of robust risk management practices but presents a contextual gap as it focuses on a different geographical region and does not specifically analyze the indicators of distance to default, delinquency rate, and value at risk.

Gitau (2021) investigated the influence of CRM on the financial performance of dairy cooperatives in Kisii, Nyamira, Bomet, and Kericho Counties, Kenya. The study adopted a descriptive panel design using secondary data from 1,245 dairy farmers registered by December 2018. Data spanning ten years (2009-2018) was analyzed using multiple panel regression models. The results indicated that CRM significantly impacted the return on investment, measuring the performance of dairy marketing cooperatives. However, this study operationalized CRM differently from the current study, focusing on general credit risk management practices without capturing specific indicators such as distance to default, delinquency rate, and value at risk. Therefore, the specific impact of these critical CRM indicators on financial performance remains unexplored.

Otanga, Mule, and Momanyi (2020) examined the effect of CRM on the financial performance of DT-SACCOs in Western Kenya using a correlational research design. A census of 19 DT-SACCOs from 2013 to 2017 provided 95 data points, analyzed using hierarchical panel data regression. The findings showed a negative significant effect of CRM on financial performance, indicating that reducing the nonperforming loan ratio improves financial performance. This study's geographical focus on Western Kenya leaves a gap regarding DT-SACCOs in other regions, and it did not specifically address the CRM indicators of distance to default, delinquency rate, and value at risk.

Mogga et al. (2018) explored how CRM utilized by banks in Sudan influenced performance, focusing on six banks in Juba. Data was collected via questionnaires and analyzed using descriptive statistics and linear regression. The study concluded that risk identification minimally impacted performance, while risk monitoring significantly affected financial performance. This study presents a conceptual gap as it operationalized CRM in terms of risk management stages rather than specific measures such as distance to default, delinquency rate, and value at risk.

Orang'i (2018) analyzed the impact of CRM on the performance of Kenyan banks using a descriptive research design. The study utilized data from all commercial banks operating between 2013 and 2017, analyzed using descriptive statistics, correlation, and regression

analysis. The results showed that risk identification was insignificant to performance, while risk monitoring was positive and significant. This study presents a methodological gap as it used an interval scale for the independent variable, while the current study will utilize a ratio scale to capture more precise quantitative differences in CRM measures.

Li and Zou (2018) investigated the impact of credit risk management on the financial performance of commercial banks in Europe. Using data from 47 banks between 2007 and 2017, the study found a significant relationship between effective CRM and improved financial performance. However, this study presents a methodological gap as it used different CRM measures and did not incorporate efficiency and bank-specific characteristics as moderating or mediating variables.

Conceptual Framework

The conceptual framework is as presented in Figure 1. This study's conceptual framework positions credit risk management as the independent variable, directly impacting financial performance, the dependent variable, through practices that mitigate defaults and loan losses using indicators like delinquency rate, value at risk, and distance to default. Financial performance, assessed via the CAMEL framework, depends on CRM's effectiveness, with the hypothesis suggesting a positive relationship where robust CRM enhances profitability and stability. Efficiency acts as an intervening variable, amplifying or diminishing CRM's impact on financial performance by optimizing resource use and cost management, thus influencing the relationship's strength. Bank-specific characteristics, such as size and age, serve as moderating variables, altering CRM's effect on financial performance—larger, older banks may leverage better resources and experience to strengthen this link, while smaller or newer banks might face constraints that weaken it.

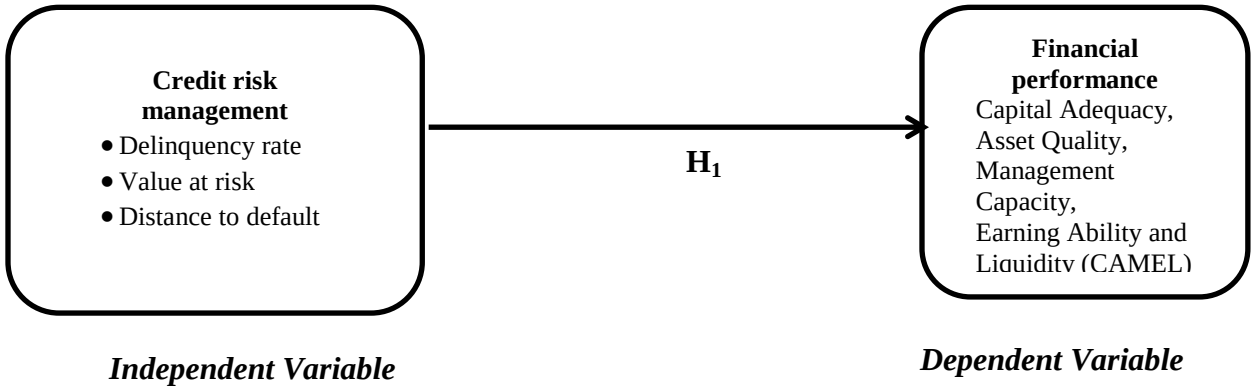

Figure 1: The Conceptual Model

METHODOLOGY

This study employed a positivist research philosophy and a descriptive research design to examine the relationships between credit risk management (CRM) and financial performance among 42 commercial banks in Kenya as of December 31, 2022. The positivist approach, rooted in observable facts and quantitative data, guided the testing of hypotheses derived from existing theories, using a structured methodology (Burns & Burns, 2008). The descriptive design facilitated the collection and analysis of secondary data from financial reports spanning 2013 to 2022, sourced from the Central Bank of Kenya (CBK) and individual bank annual reports. This 10-year period was utilized to capture recent trends, with financial performance measured via the CAMEL model and CRM assessed through delinquency rate, value at risk, and distance to default, providing a robust basis for understanding their interplay.

Data analysis involved rigorous diagnostic tests to ensure the validity of the classical linear regression model (CLRM), addressing multicollinearity (via correlation matrix and VIF), autocorrelation (Durbin-Watson test), heteroskedasticity (Breusch-Pagan test), normality (Kolmogorov-Smirnov test), and stationarity (Augmented Dickey-Fuller test). These tests ensured unbiased and efficient parameter estimates, with remedial measures like robust standard errors or data transformation applied when assumptions were violated. The Hausman test determined whether a fixed or random effects model was appropriate for panel data analysis. Descriptive statistics (mean, standard deviation) and regression analyses (simple, multiple, and stepwise) were used to explore relationships, with Pearson's correlation assessing linear associations between variables.

The study operationalized CRM as the independent variable, financial performance as the dependent variable, efficiency as an intervening variable, and bank-specific characteristics (size and age) as moderating variables. Hypotheses were tested using multiple regression for CRM's direct effect, Baron and Kenny's (1986) four-step process for mediation by efficiency, and a three-step process for moderation by bank characteristics. A hierarchical multiple regression assessed the joint influence of CRM, efficiency, and bank-specific factors on financial performance. Results were interpreted based on regression coefficients, adjusted R^2, and p-values (rejecting null hypotheses if $p<0.05$), providing a comprehensive analysis of how CRM drives financial outcomes in Kenyan banks.

RESULTS AND DISCUSSION

Descriptive Results

In order to arrive to the conclusion of the general understanding of the secondary data published financials of banks operating in Kenya between January 2013 and December 2022,

the researcher calculated the mean, standard deviation, minimum and maximum of the study variables. Table 1 presents the descriptive statistics for the variables involved in the study: Delinquency rate, Value at risk, Distance to default, and Financial performance.

Table 1: Summary of Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Delinquency rate	292	.029	2.121	.26219	.306085	3.777	.143	15.691	.284
Value at risk	292	0.00%	75.98%	15.1433%	12.12978%	1.770	.143	4.288	.284
Distance to default	292	2.70%	475.85%	72.0328%	56.45103%	3.498	.143	17.067	.284
Financial performance	292	-282.600	127.300	10.92534	29.248481	-4.594	.143	41.201	.284
Valid N (listwise)	292								

For delinquency rate, the mean value is 0.26219, indicating that, on average, past due loans constitute about 26.22% of the total value of outstanding loans. The variability is reflected in the standard deviation of 0.306085, suggesting a moderate level of dispersion around the mean. The skewness value of 3.777 indicates a significant rightward skew, suggesting that the distribution is positively skewed, with a long tail to the right. Additionally, the kurtosis value of 15.691 indicates heavy-tailedness or outliers present in the distribution.

For Value at risk, the mean is 15.1433%, representing the average proportion of total loans outstanding relative to total assets. The standard deviation of 12.12978% indicates considerable variability in this ratio, reflecting diverse risk exposures among the banks. The skewness value of 1.770 indicates a moderate rightward skew, while the kurtosis value of 4.288 suggests some degree of peakedness in the distribution.

Distance to default has a mean of 72.0328%, signifying that, on average, net operating income covers about 72.03% of total debt service. The standard deviation of 56.45103% suggests a wide dispersion of values around this average. The skewness value of 3.498 indicates a significant rightward skew, and the kurtosis value of 17.067 points to heavy-tailedness or outliers in the distribution.

Financial performance, measured by the Geometric Mean of the CAMEL Attributes, has a mean of 10.92534. The standard deviation of 29.248481 indicates a substantial dispersion of financial performance across the sampled banks. The skewness value of -4.594 indicates a significant leftward skew, and the kurtosis value of 41.201 points to heavy-tailedness or outliers in the distribution.

Hypothesis Testing

The study examined the effect of credit risk management measured by delinquency rate, value at risk and distance to default on the financial performance of commercial banks in Kenya. Hausman specification test indicated that the fixed effects model was suitable. The results are as shown in Table 2

Table 2: Effect of Credit Risk Management on Financial Performance

Financial performance	Coef.	Std. Err.	P>t
Delinquency rate	-1.004*	0.021	0.007
Value at risk	-1.646*	0.234	0.000
Distance to default	1.028*	0.036	0.001
_cons	1.234*	0.461	0.000
Model Summary			
R-squared	0.5613		
F(3, 290)	143.24		
Prob > F	0.0000		
Observations	291		

Note: p<0.05*

The regression results presented in Table 2 offer valuable insights into the impact of credit risk management factors, namely Delinquency rate, Value at risk, and Distance to default, on the financial performance of commercial banks in Kenya. The coefficients associated with each variable provide information on the magnitude and direction of their influence on financial performance.

The negative coefficients of -1.004 for Delinquency rate and Value at risk (-1.646) indicate that, an increase in Delinquency rate and Value at risk is associated with lower financial performance. The negative coefficients for Delinquency rate (-1.004) and Value at risk (-1.646) suggest that, decreases in these variables are associated with higher financial performance. This aligns more intuitively with expectations, as lower delinquency rates and lower values at risk are generally indicative of healthier credit risk management practices.

The positive coefficient of 1.028 for Distance to default indicates that, a greater distance to default is linked to higher financial performance, reinforcing the idea that a robust financial cushion contributes positively to a bank's overall performance. The constant term (intercept) with a coefficient of 1.234 represents the baseline financial performance when all other variables are zero. The statistically significant p-values for all coefficients ($p<0.05$) indicate that, the observed relationships between these credit risk management variables and financial performance are statistically robust.

The overall model summary provides additional context, with an R-squared value of 0.5613. This indicates that, approximately 56.13% of the variability in financial performance is explained by the combined effects of Delinquency rate, Value at risk, and Distance to default. The F-statistic of 143.24 with a very low p-value (Prob > F = 0.0000) further confirms the model's overall statistical significance.

Hypothesis one (H_1) evaluated the effect of credit risk management on the financial performance of commercial banks in Kenya, asserting no significant relationship between credit risk management and financial performance of commercial banks in Kenya. According to the findings, there is a significant relationship between credit risk management and financial performance. Hypothesis one was rejected because the overall model was statistically significant ($p< 0.05$).

CONCLUSION AND RECOMMENDATIONS

This study concludes that credit risk management (CRM) significantly shapes the financial performance of commercial banks in Kenya. Analysis of CRM indicators—delinquency rate, value at risk, and distance to default—reveals their substantial impact, with delinquency rate and value at risk exerting a negative influence, reflecting challenges in maintaining loan quality amid economic and regulatory shifts, while distance to default positively correlates with performance, emphasizing the value of robust risk buffers. These findings affirm CRM's pivotal role in ensuring financial stability and profitability, highlighting the need for effective practices to mitigate loan losses and enhance economic health in the Kenyan banking sector.

For policy and practice, the study recommends that regulators strengthen frameworks focusing on delinquency rate, value at risk, and distance to default to improve banking stability. Enhanced transparency in CRM practices is crucial to reduce information asymmetry, enabling better stakeholder decisions. Bank managers should invest in advanced risk management systems, utilizing technology and training to monitor and predict credit risks effectively, ensuring sustained financial performance. These tailored strategies, aligned with the study's CRM indicators, aim to foster a resilient and profitable banking sector in Kenya.

SUGGESTIONS FOR FURTHER RESEARCH

Future research could deepen the understanding of the relationship between credit risk management (CRM) and financial performance by exploring additional dimensions and contexts, particularly given this study's focus on Kenyan commercial banks. Investigating the impact of technological advancements, such as artificial intelligence and big data analytics, on CRM practices could reveal how these tools enhance risk assessment and financial outcomes, reflecting the banking industry's evolution. Extending the study geographically beyond Kenya through comparative analyses across countries could uncover contextual differences in CRM's effect on financial performance, improving external validity. Additionally, qualitative approaches, like interviews with bank executives and regulators, could provide richer insights into the practical challenges and strategies of CRM, complementing quantitative findings for a more comprehensive perspective.

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