African Journal of Emerging Issues
Peer reviewed | Double blind | Interdisciplinary

African Journal of Emerging Issues (AJOEI)
Online ISSN: 2663 - 9335
Available at: https://ajoeijournals.org

FINANCE

EFFECT OF FIRM CHARACTERISTICS ON CREDIT RISK OF TIER III COMMERCIAL BANKS IN KENYA

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Publication Date: June 2025

ABSTRACT

Banks play the intermediary role of connecting investors and savers to achieve economic meaning of financial inclusion. However, these financial institutions have faced severe challenges in performing this noble function due to high exposure to credit risk that continue to threaten their sustainability. Non-performing loans among the Tier III banks in Kenya has been rising over the past five years, threatening the sustainability of these institutions. Despite the stringent measures by the regulatory authority to protect the Tier III commercial banks from financial collapse due to high credit risk, they continue to experience high levels of non-performing loans which undermine their ability to provide credit facilities. This study therefore determined the effect of firm characteristics on credit risk of Tier III commercial banks in Kenya. Specific objectives included to determine the effect of; capital adequacy, bank size, bank competitiveness, and management efficiency on credit risk of Tier III commercial banks in Kenya. Information asymmetry, market power, liquidity preference, and credit risk theories were used. Descriptive research design was adopted and target population was 22 Tier III com banks. Census sampling design and secondary data from 2019 to 2023 using the secondary data collection sheet were applied. The Statistical Package for Social Sciences Version 26 software was used for data analysis, using the panel regression model. Findings were presented in tables and narration to inform their application in research and practice. Capital adequacy had a negative significant effect on credit risk, bank size had a positive significant effect on credit risk, bank competitiveness had a negative significant effect on credit risk, and management efficiency had a positive insignificant effect on credit risk. The study concluded that firm characteristics significantly affect credit risk. To the regulator, the study recommends a review of existing minimum reserve requirements, increasing the requirements to acceptable high levels to shield the Tier II commercial banks from adverse effects of credit risk and enable the financial institutions support realization of Kenyan Vison 2030 of economic growth and development.

Keywords: *Bank Competitiveness, Bank Size, Capital Adequacy, Core Capital Credit Risk, Firm Characteristics, Herfindahl-Hirschman Index, Loan Loss Reserve, Logarithm of Asset Value, Management Efficiency, Operating Profit.*

1.0 INTRODUCTION

Banks play a great role in the financial service sector majorly by playing the intermediary role of connecting investors and savers to achieve economic meaning of financial resource (Suchodolski, Junior, Bechelaine, & Costa, 2022). Commercial banks therefore, are critical economic enablers whose continued operation is of great interest not only to the players in the financial markets, but also other sectors whose daily operations heavily rely on its efficient performance. To other industries, commercial banks provide loans for expansionary projects and facilitate the simultaneous transaction across boarder, thus creating a village world where money can be sent and received across the global geographic seamlessly (Malik, Parks, Russell, Lin, Walsh, Solomon, & Goodman, 2021). However, in providing the critical financial services for the continued operation of the local and international economies, banks have been defined by inadequate firm characteristics that have increased their exposure to credit risk levels, which has threatened their stability.

Since the Great Depression in the 1930s, the world thereafter experienced a global financial crisis between 2007-2008 which started in the USA before spreading to other parts of the world. During the 2007/2008 crisis, the USA housing market prices experienced abnormal shocks and downturns which through the global financial systems, affected most countries where close to $2 trillion was lost in the global economy (Adachi-Sato & Vithessonthi, 2021). The crisis was occasioned by excessive risk taking by banks, increased borrowing by banks and investors, erroneous policies and regulations, persistent build-up of toxic assets within the banks. Consequently, mortgage-backed assets tied to the American real estate and underlying derivatives lost value. Financial institutions suffered severe financial loss which culminated with the bankruptcy of Lehman Brothers Bank. According to Ray, Gallagher, and Kring (2020), the USA home mortgage to GDP increased from 46% in 1990s to 73% in 2008, averaging $14.6 trillion in 2003.

In Ghana, banks provision of loans has been characterized by increased loan default which has turned into a distressing situation for such financial institutions. Since 2017 to 2019, the Ghanaian banking industry came under sharp focus, making headlines as it experienced perennial difficulties in collecting advanced credits facilities (Yensu et al., 2021). The Bank of Ghana revealed a worrying state of NPL which grew from GHS 4.4 billion in December 2017 (17.3%) to GHS 6.2 billion (22.5%) in December 2019 (Akomeah, Agumeh, & Siaw, 2020). In 2021, NPLs were GHS 6.9 billion, and is expected to increase at a constant ate of 10% in the next 10 years if stringent credit policies anchored on bank characteristics are not adopted by the lending institutions.

In Kenya, Tier III commercial banks are exposed to high levels of credit risk as they undertake lending and deposit-taking activities to address the acute financial services shortage (Muthoni, Mwangi, & Muathe, 2020). Whereas credit creation is the main source of income for the Kenyan commercial banks, this activity has faced difficulties due to high levels of nonperforming loans which averaged an increase of 5.3% between 2018 to 2022 (Koskei & Samoei, 2024). The Kenyan economy heavily relies on the banking industry for various key services, including loan provision, accepting savings and offering interests, facilitating currency exchange, and monetizing assets into realistic value for economic growth and development.

Risk that one will default a loan as per the agreed contractual terms when being extended credit facilities is known as credit risk (Akomeah et al., 2020). Credit risk as such, emanates from instances of high non-performing loans that an organization finds difficult to collect to enable it continue with daily operations (Locurcio, Tajani, Morano, Anelli, & Manganelli, 2021).

Commercial banks primarily function by accepting deposits and offer financing to various entities to bridge the financial inclusion gap (Habib, Hussain, Al-Faryan, & Hussain, 2022). Credit risk is defined by Yeasin (2022) as the potential losses arising from lending services and which can in the worst case scenario, result into the collapse of an institution due to high value of declared bad loans.

Locurcio et al. (2021) conceptualized credit risk by looking at the non-performing loans ratio. Additionally, Muthoni et al. (2020) assessed credit risk through loan-loss reserve ratio stipulated by the commercial banks' regulator, Commercial Bank of Kenya. Yeasin (2022) on the other hand, examined credit risk through interest rate charged and duration of credit facilities. In this study, credit risk was measured through loan loss reserve ratio. According to Afey and Warui (2019), firm characteristics are the natural and artificial factors stemming from within and outside an organization that collectively determine the firm's optimal operation. According to Ndida (2021), firm characteristics play a critical role in ensuring the underlying firm achieves its target objectives as their adequacy may deny such firms the much needed competitive advantage and attainment of market leader status for continued operation into the foreseeable future.

This study conceptualized firm characteristics through capital adequacy, bank size, bank competitiveness, and management efficiency. Capital adequacy according to Andersen and Juelsrud (2024), is the floor capital reserve a bank must have to remain operationally viable. According to Afey and Warui (2019), bank size is the overall capacity and scale defined by number of depositors, loan portfolio, geographical scope, market share, revenue and total assets. According to Baituti (2021), bank competiveness relates to the deliberate steps taken by a commercial bank to strengthen its market presence and market share to outperform other players in the banking industry. Management efficiency measures the firm's ability to raise additional revenue from the assets at its disposal (Becker, 2024).

1.1 STATEMENT OF THE PROBLEM

Commercial banks play the intermediary role of connecting investors and savers to achieve economic meaning of financial inclusion. However, tier three commercial banks have faced severe challenges in performing this noble function due to high exposure to credit risks that continue to threaten their sustainability. NPLs have been rising over the past five years among the tier three commercial banks in Kenya, threatening the sustainability of these institutions due to increased exposure to credit risk. Despite the stringent measures by the regulatory authority to protect the Tier III commercial banks from financial collapse due to high credit risk levels, these continue to experience high levels of non-performing loans which undermine their ability to provide credit facilities.

Compared to Tier I, the Tier III banks have experienced relatively high credit levels due to the increased non-performing loans and default levels. According to Koskei and Samoei, (2024), in the year ending September 2023, Tier III commercial banks recorded a growth in provision for bad loans by $207 million (75.34%) of the total loan portfolio as the institutions sought to cushion themselves against ripple effect of deteriorating asset quality and non-performing loans. This was significantly high compared to the Tier I commercial banks' $102 million (69.8%) of the total loan portfolio. In the same period ending September 2023, about ksh. 121.05 billion were declared bad loans by the tier three commercial banks, compared to Tier I commercial banks 82.3 billion occasioned by high interest rates, high inflation, unpredictable political environment, and weakening shillings against the dollar (Kamun & Olweny, 2023).

The banks in Kenya also increased the impairment charges for bad loans to ksh. 75.84 billion (77.34%) in September 2023 from ksh. 34.47 billion in June 2023, compared to Tier I commercial banks' increase to 44.39 billion (60.4%) from 23.57 billion in the same period. Between June 2022 to September 2022, the non-performing loan in Tier III commercial banks increased by 40.31% to ksh. 539.29 billion from ksh. 338.23 billion compared to Tier I commercial banks' increase by 22.69% to 489.21 billion from 398.75 (Koskei & Samoei, 2024).

Ndida (2021) examined firm characteristics and financial distress whose dependent variable was measured through the Altman's Z-score index while current study's dependent variable (credit risk levels) was measured through NIM. Baituti (2021) researched on bank characteristics and NPL of listed commercial banks where a causal research design was used whereas the current study used descriptive design. Om'mbongo (2020) researched on effect of NPL and profitability of Kenyan commercial banks while the current study assessed the bank size, bank competitiveness, capital adequacy, and management efficiency as independent variables.

Arifaj and Baruti (2023) study examined credit risk and financial performance in Balkan Countries. Ekinci and Poyraz (2019)'s credit risk and financial performance of deposit banks in Turkey, credit risk was measured through ROA and ROE while in the current study, credit risk was measured through loan-loss reserve ratio. These studies presented underlying contextual, conceptual, methodological, and scope gaps that the current study will addressed. This study therefore examined the effect of frim characteristics on credit risk.

1.2 OBJECTIVES OF THE STUDY

The general objective of this study was to determine the effect of firm characteristics on credit risk of Tier III commercial banks in Kenya. The specific objectives of this study were to:

i. To assess the effect of capital adequacy on credit risk of Tier III commercial banks in Kenya
ii. To determine the effect of bank size on credit risk of Tier III commercial banks in Kenya
iii. To examine the effect bank competitiveness on credit risk of Tier III commercial banks in Kenya
iv. To evaluate the effect of management efficiency on credit risk of Tier III commercial banks in Kenya

1.3 RESEARCH HYPOTHESES

The following research hypotheses informed this study

H_{01}: Capital adequacy has no significant effect on credit risk of Tier III commercial banks in Kenya.

H_{02}: Bank size has no significant effect on credit risk of Tier III commercial banks in Kenya.

H_{03}: Bank competitiveness has no significant effect on credit risk of Tier III commercial banks in Kenya.

H_{04}: Management efficiency has no significant effect on credit risk of Tier III commercial banks in Kenya.

2.0 LITERATURE REVIEW

2.1 Theoretical Literature Review

Information Asymmetry Theory

The theory was developed by Spence Akerlof and Stiglitz J. (1970s and 1980s) who later become Economic Noble Prize winners in 2001 for their contribution (Auronen, 2003). The information asymmetry theory is an economic model that assumes imbalance in information among market participants can result into market failures. Market failure is where there is imbalance in the information in determining determine commodity price levels (Bessler, Drobetz, & Grüninger, 2011). Information asymmetry therefore is characterized by a state where one party in a transaction is in possession of more information than the other party. It can therefore, happen where the seller is in possession of other information not possessed by the buyer and as such, enable the seller make informed decisions on the commodity being transacted to result into optimal business outcome.

The information asymmetry theory can be used to plan the transactions between the Tier III commercial banks and the borrowers who seek credit facilities from these banking institutions (Bartov & Bodnar, 1996). Through various agencies like the Credit Rating Bureau (CRB), the Tier III commercial banks in Kenya can access prior information on the credit rating of the potential borrows and understand their credit worthiness. The Tier III commercial banks can go ahead and use such information in classifying the potential borrowers into high risk, moderate risk and low risk categories before advancing them credit facilities. The commercial banks will as such, be in possession of critical information not in possession of the borrowers which the institutions can use to cap the maximum amounts the various risk-categories of borrowers can access to reduce the credit risk and financial loss (Bessler et al., 2011).

Market Power Theory

Robinson (1933) is accredited for this theory (Silvestre, 1993). The theory states that firms have the ability to set unsustainable price levels which is achieved through mergers and acquisitions. The theory therefore, asserts that mergers among firms is motivated by the need to increase monopoly that is experienced in setting of price levels that cannot be sustained in a perfect competitive market structure over a long time. This economic theory explains the strategies taken by firms to exert and gain control over market dynamics such as pricing and competition. According to the theory proponents, firms with significant market power can influence outputs and pricing to their advantage, thus gaining optimal operating position.

The market power theory assumes that firms are profit maximizers in that firms with significant market power aim at maximizing their profit margins rather than engage in competition. Additionally, the theory further assumes that dominant firms can influence price levels rather than being price takers in the market and that firms engage in product differentiation to develop unique product that are competitive and non-imitable in the long-run (Hankir, Rauch, & Umber, 2011). The effect of bank competitiveness on credit risk was be explained using the market power theory. Managements of the target institutions will utilize the market power theory to assess merger and acquisition opportunities that enable them gain and exert control in the highly competitive banking industry, as a credit risk reduction strategy.

Liquidity Preference Theory

Keynes (1936) developed the model (Bibow, 2005). The theory is relevant in circumstances where investors who prefer short-term bonds are persuaded to opt for long-term bonds with relatively

high interest rates since naturally, investors prefer liquidity. The liquidity preference theory explains the underlying trade-off between holding money and earning interest on other assets or investments. The theory identifies three motives for holding money; transaction, speculation, and precautionary motives (Mierzejewski, 2009). The transaction motive is the need for money for one's day-to-day transaction like buying and selling while precaution motive is the and for money to cater for unforeseen expenses. The speculative motive is the need for money in anticipation of future investment opportunities.

The speculative motive for holding money therefore resonates adequately with the current study where commercial banks listed at NSE need to hold adequate capital base in anticipation of the market opportunities like lending at relatively high interest rates (Ogiriki & Andabai, 2014). The commercial banks can also increase their capital base by encouraging depositors to open long-term savings accounts, which promise high interest rate in return over short-term savings accounts. The theory can therefore, help commercial banks persuade investors or savers go for long-term savings with lucrative high interest rates over short-term savings which attract relatively low interest rates (Bibow, 2005). In the long-run, tier 3 commercial that manage to persuade their customers to open long-term savings accounts enable the respective banks access increased deposits that they can then lend out both in the short and long-runs to other borrowers and earn interest for improved financial position. The long-term savings also ensure increased capital base for the commercial banks to undertake relevant investment decisions to enhance their financial position while enticing depositors with high interest rates.

Credit Risk Theory

Merton (1974) founded this approach (Koulafetis, 2017). The credit risk theory is a financial distress model which asserts that high level of NPLs and inadequate loan loss reserves can cripple the operations of an institutions like banks. Credit risk is the risk that a borrower will not honor loan obligation and surrender loan payments as agreed, which eventually starved the lending institutions the needed resources to continue with its operations (Schmid, 2012). Such firms, end up with high obligations compared to their asset bases which makes them financially distress and unable to meet their obligations as and when they arise It therefore, becomes of great necessity for financial institution like Tier III commercial banks to critically examine the credit risk exposure to their key activities, the act of lending to ensure they minimize the risk to acceptable levels that they can withstand and thus remain financially viable.

Credit risk directly threatens the stability and survival of financial institutions which needs a critical examination to reduce its occurrence. Whereas Trueck and Rachev (2009) note that not all risk like credit risk can be eliminated, respective institutions should adopt modern technologies to undertake credit risk identification and management to reduce its impact on the organization's financial position. The effect of firm characteristics on credit risk of Tier III commercial banks in banks was based on this theory. Tier III commercial banks will adopt the credit theory to ensure optimal balance between the firm characteristics and credit risk of the commercial banks (Koulafetis, 2017).

The credit risk theory will enable Tier III commercial banks develop sound firm characteristics

2.2 Conceptual Framework

Figure 1 shows the study's conceptual framework which shows the interrelation between the independent variable and the dependent variable.

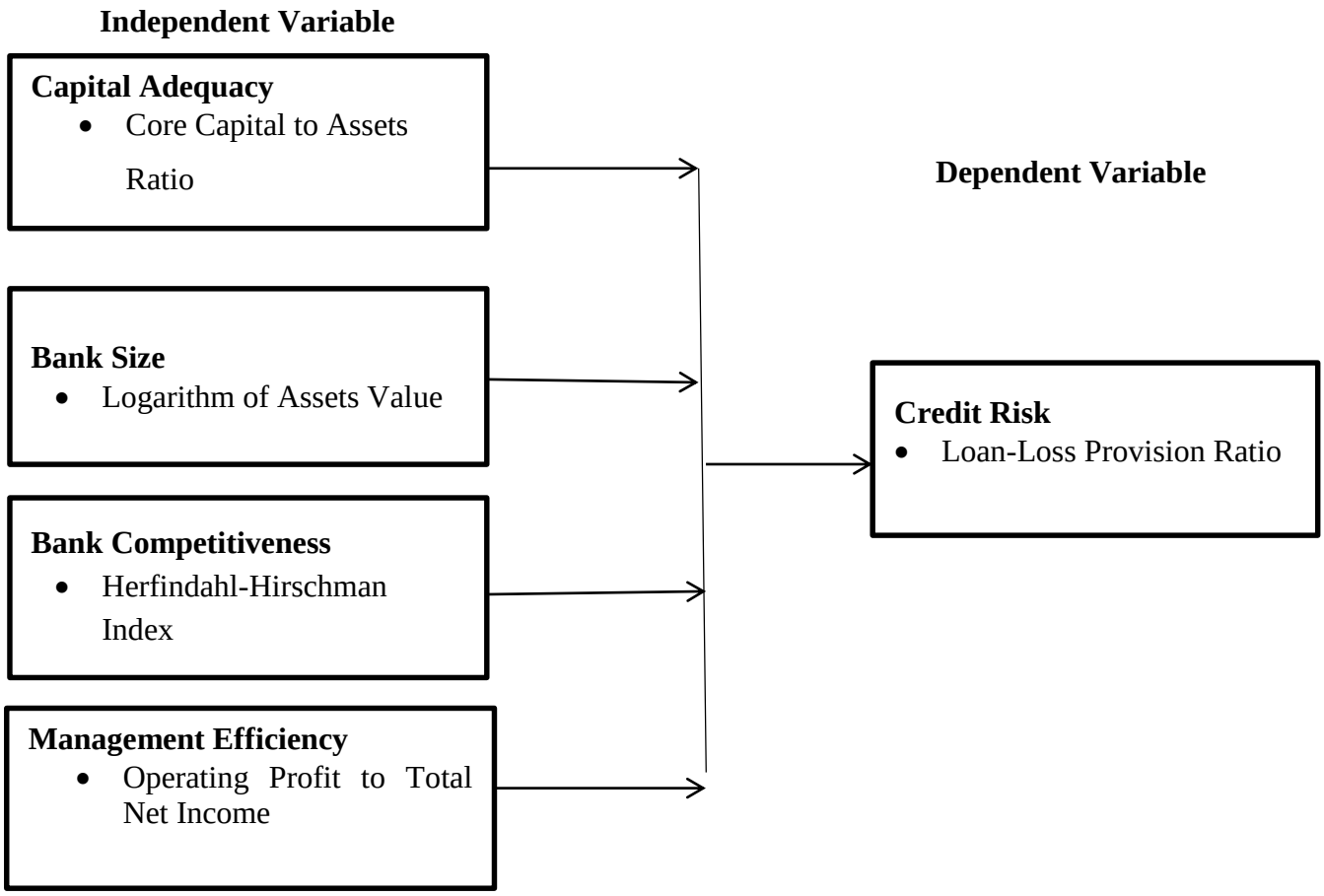

Figure 1: Conceptual Framework

Source: Researcher (2025)

2.3 Empirical Literature Review and Hypothesis Development

Sampurnaningsih, Irani, Sahroni, Zulfitra, and Sunarsi (2021) studied capital adequacy and financial performance of Bank DKI Indonesia. Quantitative descriptive research design was used and targeted one bank. Data from 2010 to 2019 were collected and analyzed using SPSS. Capital adequacy greatly enhances financial performance. In this study however, there was no theoretical model as was envisioned currently by using market power, liquidity preference, asymmetry information, and credit risk theories.

Ogunode, Awoniyi and Ajibade (2022) researched on capital adequacy and corporate performance. Trade-off theory and ex-post factor research design were used. 63 listed firms were targeted and secondary data collected using published annual financial statements. Capital adequacy negatively affected corporate performance. This study however, targeted non-profit making organizations while current study was on profit-making firms.

Kamau (2023) examined the influence firm size on financial performance of insurance firms. Agency theory was used and targeted 54 insurance firms in that had operated in Kenya between 2010-2028. The random and fixed effect model characterized the study methodology where it was

found that firm size had negative moderating role on financial performance. Firm size was a moderator.

Nurwati, Prastio, and Kalbuana (2021) researched on firm size and transfer pricing. The study utilized agency and internalization theories to inform the literature review, quantitative research design was used where findings revealed that firm size had no considerable influence on transfer pricing. Transfer pricing while the current study analyzed credit risk as the dependent variable.

Moudud-Ul-Huq (2021) examined bank competition and performance, evidence from BRICS countries. Panel data from 1137 banks in BRICS countries was used, involving dynamic panel GMM. The study found that bank competition significantly affects performance levels of a firm. The study was however, conducted on foreign countries (BRICS) as opposed to Kenya.

Moyo, and Sibindi (2021) studied influence of bank competitiveness on credit access. Market power theory and discrete binary choice model was used, targeting informal firms in 14 African countries. The study found that depending on the measure of competitiveness, outcome on credit access varied. For instance, using the Lerner index as a measure of competitiveness, there was positive relationship between firm competitiveness and access to credit facilities while Boone index registered a negative relationship. This study was however, done on informal firms while the current study targeted formal institutions.

Becker (2024) studied positive management practices and profitability. The study used social exchange and positive psychology theories to explain the relationship underlying study variables. Using regression analysis approach, the study target 182 companies over three-year period. Positive management practices enhanced firm profitability. This study's dependent variable however was profitability while current study's dependent variable was credit risk.

Nyakieni, Kimitei, and Siele (2022) examined management efficiency and financial performance. The study used explanatory research design targeting 40 banks. Secondary data over ten-year period ranging from 2009 to 2018 were used. There was a great co-integration influence of management efficiency on financial performance. This study lacked a definite theoretical model as was envisaged currently through information asymmetry, market power, liquidity preference, and credit risk theories.

3.0 RESEARCH METHODOLOGY

Descriptive research design was used, an approach that helps researchers explain the characteristics of the study phenomenon in their original setting (Bairagi & Munot, 2019). 22 Tier III commercial banks in Kenya formed the study population. Secondary data from the last financial five years i.e. 2018/2019, 2019/2020, 2020/2021, 2021/2022, and 2022/2023 were collected. SPSS Version 26 software was used to compute descriptive and inferential statistics. The panel regression model was adopted as given blow;

$$Y= \beta 0+ \beta 1\ X1it + \beta 2\ X2it + \beta 3\ X3it + \beta 4\ X4it + \varepsilon$$

Where;

Y= Credit Risk measured through Loan Loss Reserve Ratio

β0= Y-intercept (constant term)

β1 to β3= Correlation Coefficient (betas)

X1 = Capital Adequacy, measured through Core Capital to Assets Ratio

X2 = Bank Size measured through Logarithm of Assets Value

X3= Bank Competitiveness measured through Herfindahl-Hirschman Index

X4= Management Efficiency, measured through Operating Profit to Total Net Income

i= Commercial Bank

t= Time Scope

ε = Error Term

In observing ethical research procedures, an introductory letter from Kenyatta University was obtained as the institution's approval for the study. Secondly, a research permit from the National Commission for Science, Technology and Innovation was sought. Additionally, access to data request was made to the top managements of the Kenyan Tier III commercial banks, and treated with confidentiality.

4.0 RESULTS AND DISCUSSION

4.1 Descriptive statistics

The minimum, maximum, mean, and standard deviation were the descriptive statistics considered in this study.

Table 2: Descriptive Statistics

Credit Risk (LLPR) Year	N	Maximum	Minimum	Mean	Standard Deviation
2023	22	7.87	1.31	2.5000	1.5158
2022	22	8.64	1.23	2.6539	1.8816
2021	22	11.06	0.97	2.6810	2.1751
2020	22	9.64	0.81	2.8109	2.2040
2019	22	8.64	0.70	2.8345	2.0898
Aggregate Scores	**22**	**9.17**	**1.004**	**2.6961**	**1.9733**
Capital Adequacy (CCAR) Year	**N**	**Maximum**	**Minimum**	**Mean**	**Standard Deviation**
2023	22	0.76	0.13	0.4929	0.1835
2022	22	0.81	0.12	0.5002	0.2109
2021	22	1.03	0.09	0.5055	0.2315
2020	22	1.23	0.10	0.5124	0.2685
2019	22	1.42	0.12	0.5387	0.3500
Aggregate Scores	**22**	**1.05**	**0.112**	**0.5099**	**0.2489**
Bank Size (Log Assets) Year	**N**	**Maximum**	**Minimum**	**Mean**	**Standard Deviation**
2023	22	9.96	3.21	7.3166	2.4135
2022	22	9.91	1.67	6.7623	3.0849
2021	22	10.21	1.24	6.9855	2.9417
2020	22	10.23	3.71	7.6531	2.3029
2019	22	10.12	2.09	7.2360	2.7926
Aggregate Scores	**22**	**10.086**	**2.384**	**7.1907**	**2.7071**
Bank Competitiveness (HHI) Year	**N**	**Maximum**	**Minimum**	**Mean**	**Standard Deviation**
2023	22	8.843	0.95	2.8093	1.8324
2022	22	4.36	0.97	2.8122	1.2604
2021	22	10.09	0.47	3.1334	1.3378
2020	22	7.95	0.93	2.9074	1.8634
2019	22	4.51	0.95	2.6837	1.3518
Aggregate Scores	**22**	**7.1506**	**0.854**	**2.8692**	**1.5292**
Management Efficiency (OPNI) Year	**N**	**Maximum**	**Minimum**	**Mean**	**Standard Deviation**
2023	22	8.48	0.64	2.2118	2.0558
2022	22	11.65	0.56	2.7699	3.0546
2021	22	6.66	0.47	2.0534	1.8676
2020	22	6.25	0.50	2.0967	1.4381
2019	22	8.84	0.62	2.2040	1.7523
Aggregate Scores	**22**	**8.376**	**0.558**	**2.2672**	**2.0337**

Source: Field Data (2025)

From Table 2, credit risk measured through loan loss provision ratio resulted in the following aggregate scores; maximum of 9.17, minimum of 1,004, mean of 2.6961, and standard deviation (S.D) of 1.9733 over the five-year period, signifying a potential improvement in the credit risk due to optimal firm characteristics. Additionally, capital adequacy measured through core capital to assets ratio of the Tier III commercial banks in Kenya resulted in the aggregate scores as follows; maximum of 1.05, minimum of 0.112, mean of 0.5099, and standard deviation of 0.2489 over the five-year period. Bank size measured through logarithm of assets for the Tier III commercial banks in Kenya resulted in the aggregate scores as follows; maximum of 10.086, minimum of 2.384, mean of 7.1907, and S.D of 2.7071 over the five-year period under focus. Bank competitiveness measured through Herfindahl-Hirschman Index resulted in the aggregate scores as; maximum of 7.1506, minimum of 0854, mean of 2.8692, and standard deviation of 1.5292 over the five years. Management efficiency measured through Operating Profit to Total Net Income resulted in the aggregate scores as follows; maximum of 8.376, minimum of 0.558, mean of 2.2672, and S.D of 2.0337 over the five-year period examined.

4.2 Inferential statistics

Inferential analysis concerns with the use of data to make generalizations, predictions and decisions. Inferential statistics therefore, helps in drawing conclusions and testing of hypotheses beyond the dataset. Correlation analysis, diagnostic tests, and regression analysis formed the inferential statistics analyzed in this study.

Regression Analysis

Regression analysis, Analysis of Variance, and regression coefficients formed the inferential statistics analyzed in this study. Regression analysis examined amount of variations in the response variable and results presented on Table 3.

Table 3: Regression Analysis

Model	R	R-Square	Adjusted R Square	Std. Error of the Estimate
1	0.789[a]	0.623	0.609	1.1793

a. Predictors: (Constant), Capital Adequacy, Bank Size, Bank Competitiveness, Management Efficiency

Source: Field Data (2025)

The coefficient of determination represented by the adjusted R-square was given as 0.609, equivalent to 60.9%. This finding means that holding all factors constant, 60.9% of the credit risk of Tier III commercial banks in Kenya is explained by firm characteristics, the remaining 39.1% is explained by other factors not included in this study. This finding conform to those of Habib et al. (2022) which showed a great impact of firm characteristics on ownership structure of firm efficiency.

The Analysis of Variance tested fitness of the panel regression model.

Table 4: Analysis of Variance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	241.308	4	60.327	43.377	0.000[b]
	Residual	146.031	105	1.391		
	Total	387.339	109			

a. Dependent: Credit Risk

b. Predictors: (Constant), Capital Adequacy, Bank Size, Bank Competitiveness, Management Efficiency

Source: Field Data (2025)

From Table 4, the p-value<0.05 and F-statistic= 43.377 indicate that the panel regression model adopted was fit for this study. The results Further mean that firm characteristics had a significant effect on credit risk, findings which conformed to those of Afey and Warui (2019) which established that frim characteristics greatly influences financial leverage of companies listed at Nairobi Securities Exchange.

Table 5: Regression Model

		Unstandardized		Standardized		
Model		**β**	**Std. Error**	**β**	**t**	**Sig.**
1	(Constant)	5.133	0.459		11.186	0.000
	Capital Adequacy	-5.643	0.456	-0.751	12.364	0.000
	Bank Size	0.114	0.045	0.164	2.503	0.014
	Bank Competiveness	0.152	0.071	0.142	2.130	0.035
	Management Efficiency	0.011	0.058	0.012	0.190	0.850

a. Dependent: Credit Risk

Source: Field Data (2025)

The findings on Table 5 were interpreted using the following panel regression model;

$$Y = 5.133 – 5.643X_{1it} + 0.114X_{2it} - 0.152X_{3it} + 0.011X_{4it}$$

Where; Y= Credit Risk measured through LLR

β_0= Y-intercept (constant term)

β_1 to β_3= Correlation Coefficient (betas)

X_1 = Capital Adequacy, measured through CCAR

X_2 = Bank Size measured through Logarithm of Assets Value

X_3= Bank Competitiveness measured through HHI

X_4= Management Efficiency, measured through OPTNI

i= Commercial Bank

t= Time Scope

From able 5, at 95% confidence level the constant term represented by β_0, recorded a value of 5.133. this finding indicated that holding firm characteristics constant, the credit risk of Tier III commercial banks in Kenya registered an index 5.133. Tests for hypotheses were conducted as follows;

H_{01}: Capital adequacy has no significant effect on credit risk of Tier III commercial banks in Kenya.

From Table 5, the study found that capital adequacy had a negative significant effect on credit risk (β= -5.643; p= 0.000). These findings meant that holding all factors in this study constant, a unit increase in capital adequacy would result into decrease in credit risk of Tier III commercial banks of by 5.643 units. Since the p-value of 0.000 was less than 0.005, the study rejected the null hypothesis that there is no significant effect of capital adequacy on credit risk. The findings are consistent with those of Ogunode, Awoniyi and Ajibade (2022) which established that capital adequacy has a negative Signiant effect on corporate performance.

H_{02}: Bank size has no significant effect on credit risk of Tier III commercial banks in Kenya.

From Table 5, bank size registered a positive significant effect on credit risk (β= 0.114; p= 0.014). These findings farther indicated that a unit increase in bank size would result into increase in credit risk of Tier III commercial banks by 0.114, other elements of firm characteristics held constant. The p-value of 0.014 was less than 0.05, thus resulting in the rejection of the null hypothesis that there is no significant effect of bank size on credit risk. These findings are consistent with those of Nthimba, Jagongo, and Wamugo (2021) which asserted that fund size had a positive significant influence on performance of Kenyan unit trusts.

H_{03}: Bank competitiveness has no significant effect on credit risk of Tier III commercial banks in Kenya.

From Table 5, bank competiveness resulted in a negative significant effect on credit risk (β= -0.152; p= 0.035). These findings further meant that holding all other elements of frim characteristics constant, an increase in bank competitiveness by one unit would result into decrease in credit risk of Tier III commercial banks by 0.152 units. Since the p-value of 0.035 was less than 0.05, the study rejected the null hypothesis that there is no significant effect of bank competitiveness on credit risk. These findings support those of Moyo and Sibindi (2021) which revealed that when using the Lerner index as a measure of competitiveness, there was a significant positive relationship between firm competitiveness and access to credit facilities while Boone index registered a negative significant relationship.

H_{04}: Management efficiency has no significant effect on credit risk of Tier III commercial banks in Kenya.

From Table 5, management efficiency recorded a positive insignificant effect on credit risk (β= 0.011; p= 0.850). These findings further meant that holding all other elements of firm characteristics constant, an increase in management efficiency would result into increase in credit risk of Tier III commercial banks by 0.011 units. Since the p-value of 0.850 was more than 0.05, the study accepted the null hypothesis that there is no significant effect of management efficiency on credit risk. The findings conformed to those of Nyakieni, Kimitei, and Siele (2022) which

established that there was a moderate co-integration influence of management efficiency on financial performance.

5.0 CONCLUSION

The study concludes that capital adequacy had a negative and significant effect on credit risk. The also concluded that bank size had a positive and significant effect on credit risk. Bank competitiveness had a positive and significant correlation with credit risk. The study also concluded that management efficiency had a positive and insignificant correlation with credit risk of Tier III commercial banks in Kenya.

6.0 RECOMMENDATIONS

To the top managements of Tier III commercial banks in Kenya led by the respective CEO, the study recommends for the restructure and redesign of their management structure to reflect current conditions enhance the adequacy of such managements in managing credit risk levels. To the regulator, the Central Bank of Kenya (CBK), the study recommends for the review of the minimum capital adequacy requirements for all Tier III commercial banks, including raising the minimum reserve requirements to reasonable levels to enhance the stability of these institutions and shield them from adverse credit risk effects.

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