



Relationship between Financial Risk Exposure and Non-Performing Loans of Commercial Banks in Kenya

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ABSTRACT

Currently, there is a financial crisis affecting commercial banks in Kenya occasioned by high levels of loan loss provision as a result of Non-Performing Loans. The past decade has seen the collapse of major banks like Chase Bank among others. This trend on Non-Performing Loans of the institutions requires urgent measures to reverse failure to which the entire sector is likely to collapse, and customers would lose a significant amount of their deposits. This study sought to investigate the effect of credit risk and liquidity risk on non-performing loans (NPLs) of commercial banks in Kenya and appraise the moderating effect of firm age on the relationship between financial risk exposure on non-performing loans of commercial banks in Kenya. The study was underpinned by liquidity preference theory. The examination adopted a positivist paradigm guided by explanatory research design. The study targeted 40 commercial banks as the unit of analysis while branch managers, operations and risk managers were the units of observation drawn from the banks adding to 120 respondents and census was used. The study collected both primary data using structured questionnaire on the independent variable and secondary data from publications by Central Bank of Kenya (CBK) and respective banks and the same was analyzed through the statistical package for social sciences (SPSS) version 26 in a descriptive and inferential manner. The study established that credit risk ($p < 0.05$) and liquidity risk ($p < 0.05$) were all found to have significant effect on NPLs of commercial banks in Kenya and significantly moderated by their sizes. It was concluded that financial risk exposure has significant effect on NPLs of commercial banks in Kenya. It was recommended that finance managers working in commercial banks in Kenya to balance the investment in short term and long-term assets to maintain operational liquidity levels for better management of liquidity risks. Credit managers working for commercial banks in Kenya need to review the existing credit risk management efforts and mechanisms to minimize exposure to NPLs.

Keywords: Commercial Banks in Kenya, Credit Risk, Financial Risk Exposure, Non-Performing Loans, Liquidity

I. INTRODUCTION

Financial institutions are intermediaries required to mobilize deposits which are in turn used to finance loan requests hence financial intermediation (Nelly et al., 2019). However, this cannot be achieved when a financial institution is exposed to a great challenge posed by non-performing loans. The nexus between financial risks and non-performing loans causing financial instability and other vulnerabilities has received considerable attention in literature. Grippa et al. (2019) associates higher degrees of unsystematic financial risks with delinquent loans.

Risk is unforeseen circumstance that has some probability of occurrence. Some losses are likely to arise whenever a risk occurs in an organization (Gomez et al., 2021). Management of financial risk exposure (FRE) measures the possibility of future loss (losses) that may arise from risk occurrence. It is used as a basis of ranking of the probability of various types of losses and to provide the determination of the actual loss that can be accepted and one which cannot be accepted. A financial institution can be exposed to a range of risks that can include liquidity risk, operational risk (OR), credit risk (CR), interest rate risk (IRR) and market risk (MR) among other aspects (Roncalli, 2020).

Non-performing loan challenges do emerge soon after excessive lending or periods of low growth in structurally weak financial systems. Loan delinquency crowds out new lending, eroding the bank's profitability and solvency and hence can affect entire financial system to stop functioning normally. In such scenarios, the governments and regulators usually step in to lead the crisis response by deploying a variety of resolution instruments which is very costly (Bonizzi & Kaltentbrunner, 2020). When loans perform well, the financial system can operate in a manner that is effective and efficient even when shocks are evident (Vo, 2023).

Loans are the main source of profit for banks and at the same time, the main source of loss if poorly managed (Ivanov & Maksyshko, 2021). During the years of 2020 and 2021 (When Kenya experienced the impact of COVID

19), commercial banks faced the biggest challenge, a financial crisis. Most of the European based firms faced financial performance issues occasioned by negative return on equity (ROE) as well as on assets (ROA) because of the rise in COVID-19 pandemic. Even though it is stated that, banks in Africa were not affected directly and severely as other banks worldwide, it does not mean that the banks did not suffer from the crises. The Kenyan banking systems was directly and indirectly affected by the crisis through trade linkages and exchange rate depreciation increasing the inability to sustain credit facilities by bank clients and hence increase of non-performing loans (Nikolaidou & Vogiazas, 2017)

Locally in Kenya, non-performing loans are greatly increasing, and this can possibly lead to the bank failures as well an unemployment threat in the economy (Konya et al., 2019). According to Hussaini (2019), different risk management procedures can be adopted to help banks in Pakistan ease on the impact of severe crises. The study aimed to identify the different strategies banks in Pakistan can use to achieve low non-performing loans. It was concluded that non-performing loans are increasing and are becoming a threat to the financial performance of commercial banks. It is believed that the number of non-performing loans would increase in the years to come (Nguyen & Duong, 2021). From the literature surveyed, it is evident that the relationship between financial risk exposure and NPLs in developing countries like Kenya is scantily examined. Similarly, many of the existing studies on risk exposure tend to link the same with financial performance or profitability and not NPLs. This means that the empirical evidence linking the relationship between risk exposure and NPLs is scanty and that it can only be inferred.

In Kenya, the banking industry is considered a key pillar to the achievement of vision 2030 through increased savings, Foreign Direct Investment (FDI), safeguarding the economy from financial shocks as well as propelling the republic of Kenya to become a leading financial center in Africa. Kenya has witnessed significant collapse of some banks in the country in the past decade (Karanja & Simiyu, 2022). These include Chase as well as Imperial Bank among others. These institutions operate in very risky environments that need to be effectively handled (Njue, 2020). Lack of clear conceptualization of this relationship can have an implication on Loans performance of a bank (Ngumo et al., 2020). Thus, against the mentioned gaps and background, the present study sought to establish the relationship between financial risk exposure and non-performing loans of commercial banks in Kenya.

1.1 Statement of Problem

Currently, there is a huge problem with increasing levels of NPLs among commercial banks in Kenya (CBK, 2023). For instance, as of the financial year 2022/2023 and 2023/2024, there was a sharp rise in NPLs among commercial banks by 30% (CBK, 2023). This situation of the ever-increasing pace and rate of NPLs has forced some of the banks like the National Bank of Kenya to enter into buyout options with Access Bank from Nigeria among other outcomes (CBK, 2024). The trend in NPLs is ever increasing and has forced some banks like the Chase Bank and Imperial Bank to collapse while others like Dubai Islamic Bank have remained under receivership (CBK, 2022). The said historical collapse and sinking of some of Kenya's banks implies that their NPLs is a threat for sound functioning and viability of any financial institution. The necessity to solve this issue of increasing pace and rate of NPLs among commercial banks cannot be underscored in a developing economy since failure to examine the relationship between financial risk exposure and non-performing loans of commercial banks in Kenya may result to collapse of all commercial banks and customers would lose significant amount of their deposits (CBK, 2023).

However, the available studies like Konya et al. (2019), Juma et al. (2018) related financial risk exposure and financial performance which is conceptually related to credit performance. The study by Wangari and Oluoch (2021) studied Kenya's listed entities. Although the study by Mwanja and Suva (2022) and all the other aforementioned studies adopted secondary data, it also merely linked financial risk exposure to financial performance away from the specifics of non-performing loans. All these created gaps which the present study has sought to fill by examining how financial risk exposure affected NPLs of Kenya's commercial banks.

1.2 Objectives of the Study

- i. To investigate the effect of credit risk on non-performing loans of commercial banks in Kenya
- ii. To determine the effect of, liquidity risk on non-performing loans of commercial banks in Kenya
- iii. To establish the moderating effect of firm age on the relationship between financial risk exposure and non-performing loans of commercial banks in Kenya

1.3 Research Hypotheses

Ho1: Credit risk has no statistically significant effect on non-performing loans of commercial banks in Kenya

Ho2: Liquidity risk has no statistically significant effect on non-performing loans of commercial banks in Kenya

Ho3: Firm age has no statistically significant moderating effect on the relationship between financial risk exposure and non-performing loans of commercial banks in Kenya



II. LITERATURE REVIEW

2.1 Theoretical Review

2.1.1 Liquidity Preference Theory

Developed by Keynes (1975), it argues that investors have a strong preference of securities with high interest rates with greater maturity period. It also argues that investors have a strong preference for holding assets that can be converted into liquid cash easily when required to do so. According to Keynes (1975), people including investors do hold cash hence demanding liquidity because of three motives: precautionary, speculative and transaction purpose (Bibow, 2005). For transaction motive, cash is required by investors to settle daily requirements when needed (Tily, 2007). In terms of precautionary motive, liquid assets are held by individuals to cater for emergencies (Deleidi, 2020). Speculative motive is where cash is held by investors in expectation that there would be a rise in interest rates in future periods (Modigliani, 1944). The present study had liquidity risk as one of the independent variable. Thus, the theory was used to inform how adherence to precautionary and transaction motives can allow financial institutions to enhance their liquidity positions hence managing their exposure to liquidity risk.

2.1.2 Information Asymmetry Theory

The proponent of this theory was Akerlof (1970) and it describes a mismatch in the information possessed by an insurance firm and customers. This is a key challenge and problem in majority of the insurance firms. Information asymmetry results into adverse selection and moral hazard as key problems. With adverse selection, customers seeking insurance services may likely have some advantageous information that an insurance has no access to the insurance contractual terms. On the other hand, the moral hazard challenge relates to limited incentive by insured to undertake actions aimed at reducing possibility of losses once an insurance policy has been purchased. However, the moral hazard problem can be avoided among insurance firms by the use of deductibles. This theory will be useful in underpinning the dependent variable being NPLs where banks do ensure credit facilities issued to their customers (borrowers).

2.2 Empirical Review

2.2.1 Credit risk and Non-Performing Loans

Ahmed et al. (2022) covered Islamic as well as conventional banks in Middle East and determined nexus between credit risk and financial performance. In total, 200 banks from 15 nations over a period ranging from 2018 all through to 2021 were covered. NPLs against total loans proxied credit risk. The processed data indicated the existence of negative nexus in the involved variables. However, this study creates a methodological gap in that its main emphasis and thus focus was on collection and analysis of secondary data unlike this study that merged both primary and secondary data. This finding by Ahmed et al. (2022) concur with the study by Deng et al. (2020) that concentrated on South Sudan and determined the nexus between Credit Risk (CR) management and financial performance of banks. NPLs against total loans proxied credit risk and analysis provided evidence of existence of insignificant but negative nexus between credit risk and financial performance. The gap created by this study is that its focus and emphasis was on South Sudan as the country which is operationally different from Kenyan hence creates contextual gap. The study further creates a conceptual gap where its focus was on financial performance as the dependent variable away from NPLs as covered in this current study.

2.2.2 Liquidity risk and Non-Performing Loans

Ben-Lahouel et al. (2022) covered liquidity as part of the variables in relation to financial stability among banks in Europe. While leveraging data gathered from secondary sources, its processing indicated that liquidity significantly enhanced the financial stability of a bank. The gap which this study creates is that it was done in Europe which is far developed compared to Kenya hence the need to replicate the findings in Kenyan context thus the carrying out of this study. The findings of the study by Ben-Lahouel et al. (2022) can be compared with a number study that was done by Ghenimi et al. (2017) whose aim was to determine how liquidity risk and stability of the bank related to each other. Covering the horizon 2006 all to 2013, loans against total asset was a measure of liquidity risk adopted. The study pointed out the existence of significant connection between LR and FS. The gap that arises from the study by Ghenimi et al. (2017) is that its main emphasis and focus was on bank stability as the dependent variable away from NPLs determined through NPLs against total loans as it has been used as the dependent variable in the present study.

Pichler and Lutz (2017) did a review of liquidity risk and the link with financial stability in Vienna and loans to total assets proxied liquidity risk. Through the collection and analysis of secondary data, it was clear that a significant link exists between liquidity risk and FS. The gap that arises from this study is that pure secondary data was gathered and analyzed to inform the findings while this study merged both primary and secondary data in the analysis of the

findings. In a study conducted by Xuanling and Meng (2023), the focus was on China in the period 2015-2022 on the relationship between LR management and FS nexus was explored. It was noted that LR and FS were significantly linked with each other. The contextual gap which arises from this study is that its focus was on China which is more developed as compared to Kenya hence the need and rationale of replicating the findings in the Kenyan context and the motivation of conducting this study.

2.2.3 Financial Risk Exposure, Firm age, and Non-Performing Loans

Rwakihembo et al. (2023) reviewed the age and financial performance nexus of the privately established entities in Uganda. The adopted paradigm was positivist, and it was cross sectional in nature. The gathered and processed information indicated the existence of a positive nexus between the variables covered. The gap which this study presents is that its main emphasis was in Uganda while the proposed study will be done in Kenyan context. Furthermore, another gap which this study creates is that its focus was on financial performance as the dependent variable while this study has focused on NPLs. These findings are almost same with the one that were obtained by Nyabaga and Wepukhulu (2020) who conducted a review on firm attributes and monetary performance of listed banking entities in Kenyan context on a period 2010 all through to 2018. Both ROA and ROE proxied financial performance. The analysis was that the size of the bank and financial performance proxies were significantly related to each other.

2.3 Conceptual Framework

Figure 1 is the conceptual framework of the study. In this Figure, the credit risk and liquidity risk are two independent variables while NPLs is the dependent variable. Firm age is the moderating variable. The study sought to establish the underlying relationship between credit risk, liquidity risk and Non-performing loans.

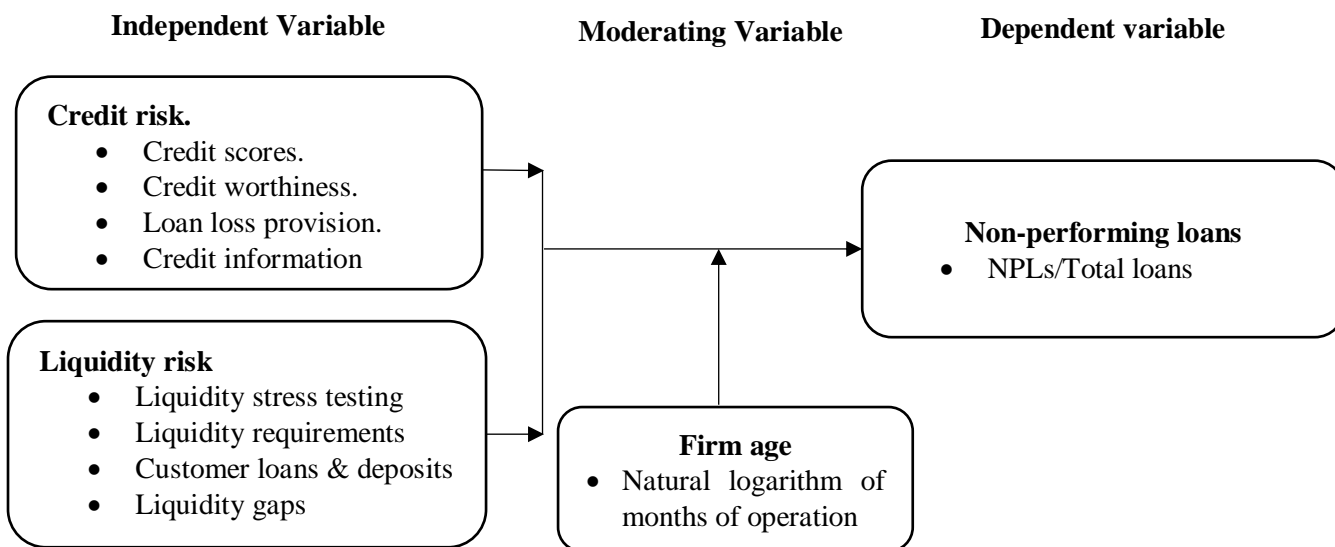


Figure 1
Conceptual Framework

III. METHODOLOGY

3.1 Research Design

In this study, explanatory research design was adopted to meet the formulated objectives. The rationale of choosing upon this design was to provide an accurate description of the current state of financial risk exposure and NPLs with reference to commercial banks in Kenya. According to Lo et al. (2020), explanatory research designs are suitable to studies involving testing of hypotheses to establish the cause-effect nexus in the variables. Given that the present study also entailed testing of formulated hypotheses.

3.2 Target Population and Sampling Design

Population is a collection of things including elements that have common attributes which can be observed (Pajo, 2022). In total, 40 banks formed the unit of analysis while branch managers, risk managers or operations



managers drawn from each of the banks adding to 120 respondents formed unit of observation. Since the population was small, census was adopted and thus no sampling was conducted.

3.3. Empirical Model

The direct effect of financial risk exposure on NPLs was explored through the following model.

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \varepsilon \dots\dots\dots$$

(i)

Y=NPLs

X₁= Credit risk

X₂= Liquidity risk

In carrying out the moderating effect of firm age in the nexus between financial risk exposure and NPLs, the following two moderated regression equation was used:

$$NPL = \beta_0 + \beta_2 CR + \beta_2 LR + \beta_3 FA + \varepsilon \dots\dots\dots$$

(ii)

$$NPL = \beta_0 + \beta_1 CR + \beta_2 LR + \beta_3 MR + \beta_4 FA + \beta_5 CR*FA + \beta_6 LR*FA + \varepsilon \dots\dots\dots$$

(iii)

Where:

CR= Credit risk

LR = Liquidity risk

FA= Firm age

NPL=Nonperforming loans

Model I helped in establishing the direct implication of FRE and Non-Performing. Model II helped to test the moderating effect of firm age in the nexus between financial risk exposure and NPLs.

3.4 Data Collection Instrument

Primary and secondary data was gathered in this study through structured questionnaire and collection sheet on a quarter from April-June 2024. This period was selected because it was recent and information over the same can easily be obtained. The study reason for using secondary data was because it was easily available and by nature of the variables. The information was gathered from reports and publications by CBK and financial statements from respective commercial banks on NPLs and firm age while primary data was gathered on the independent variable financial risk exposure.

3.5 Data analysis and Presentation

The analysis of the collected information was conducted through SPSS guided by descriptive statistics and regression analysis with presentations in tabular form.

IV. FINDINGS & DISCUSSIONS

4.1 Findings

4.1.1 Response Rate

A total of 120 questionnaires were administered to branch managers, risk managers or operations managers, of which 87 were completely filled in and returned. This translated to a response rate of 73% which was adequate and consistent with the assertion of Babbie (2010).

4.1.2 Descriptive Statistics for Credit Risk

The findings of descriptive statistics on credit risk were determined and summarized as shown in Table 4.2.

Table 1

Credit Risk

Statements	Mean	Std. Dev
Credit scores are used to evaluate credit risks of customers in this bank	4.17	0.868
Credit worthiness of the customer is evaluated to determine credit risks in this bank	3.85	1.04
The bank sets aside adequate loan loss provisions	3.64	0.692
Loan loss provisions cushion the bank against exposure to credit risk	4.02	0.764
The bank undertakes credit information sharing	4.35	0.852
Average	4.01	0.843

Table 1 shows that the studied commercial banks were exposed to credit risk ($M=4.01$, $SD=.843$), which in turn necessitated these institutions to undertake credit information sharing ($M=4.35$, $SD=.852$) while leveraging credit scores to evaluate credit risks of customers ($M=4.17$, $SD=.868$). At the same time, loan loss provisions cushioned the bank against exposure to credit risk ($M=4.02$, $SD=.764$), credit worthiness of the customer was evaluated to determine credit risks ($M=3.85$, $SD=1.04$) and that the bank sets aside adequate loan loss provisions ($M=3.64$, $SD=.692$). This means that although the operations of the studied banks were exposed to credit risk, there were relevant response mechanisms for the same. The finding is consistent with Deng et al. (2020) who indicated that credit risk is the likelihood that customers may not be able to repay their loans thus exposing the financial institution to losses. Financial institutions do effectively manage their exposure to credit risk by having in place loan loss provisions. Credit risk in the financial institution is measured by the delinquent loans or non-performing loans against total loans while operational risk is measured by cost income ratio (Van-Greuning & Bratanovic, 2020).

4.1.3 Liquidity Risk

The findings on liquidity risk as determined through descriptive statistics are summarized as indicated in Table 4.3.

Table 2

Liquidity Risk

Statements	Mean	Std. Dev
Stress testing is done to determine exposure of the bank to liquidity risk	3.62	1.03
Liquidity requirements of the bank are carefully determined	3.95	1.34
The bank mobilizes customer deposits to improve its liquidity position	4.3	0.703
Customer loans are significantly serviced from the mobilized deposits in this bank	3.87	1.33
Liquidity gaps influence liquidity risk exposure in this bank	3.64	1.13
Average	3.88	1.107

The findings in Table 2 show that on overall, respondents averagely felt that the banks under consideration were exposed to liquidity risk ($M=3.88$, $SD=1.107$). Thus, motivated to mobilize customer deposits to improve their liquidity positions ($M=4.30$, $SD=.703$). However, there are those respondents who were undecided on whether they carefully determined their liquidity requirements ($M=3.95$, $SD=1.34$) or customer loans were significantly serviced from the mobilized deposits ($M=3.87$, $SD=1.33$). There are also some respondents who were undecided on whether liquidity gaps influenced liquidity risk exposure ($M=3.64$, $SD=1.13$) or stress testing was done to determine exposure of the bank to liquidity risk ($M=3.62$, $SD=1.03$). These findings are echoed by Ghenimi et al. (2017) who indicated that liquidity risk is reflected in the ability of the financial institution to service its short term obligation as when they fall due using the most available current assets. Commercial banks engage in operations of lending and accepting customer deposits. These institutions are required to strike a balance between deposits and loan requests by customers.

4.1.4 Secondary Data of Firm Age and Non-Performing Loans

Quarterly secondary forecast data was gathered on NPLs for the months of April, May, and June alongside ages of respective banks across the respective months in the second quarter of 2024. The values of means and standard deviations as key descriptive statistics were then generated from these values as presented in Table 3.

Table 3

Firm Age and NPLs

Variables	Max	Min	Mean	Std Dev
Firm age	2.778	0.935	1.328	0.654
NPLs	0.218	0.035	.109	0.236

Table 3 indicates that overall, the average value of NPLs stood at 0.109 while that of firm age was 1.328. This implies that most of the studied commercial banks had operated for a significant period of time that exposed them to NPLs.

4.1.5 Diagnostic Tests

Diagnostic tests were conducted to validate the assumptions of regression analysis. These covered normalities and multicollinearities test as discussed below:

4.1.5.1 Normality test

This is a test conducted in ascertaining if the data is normal in its distribution (Knief & Forstmeier, 2021). Kolmogorov - Smirnov Test was adopted and $p > 0.05$ will mean the condition is evident in the data set (Mishra et al., 2019). In testing this diagnostic, the following were the hypothesis:

H₀: there is no normality in the sample data gathered in this study.

H₁: there is normality in the sample data gathered in this study.

Table 4 is a summary of the findings of Kolmogorov - Smirnov Test

Table 4

Kolmogorov - Smirnov Test

Variable	Significance
Operational risk	0.653
Credit risk	0.778
Liquidity risk	0.832
Market risk	0.975
Firm age	0.677
Non-performing loans	0.884

The findings in Table 4 indicate the p-values of all the variables as $p > 0.05$. This agree with Mishra et al., (2019) who established that probability values greater than 5% in the Kolmogorov - Smirnov Test implies presence of normality assumption. Thus, the study accepts hypothesis **H₁** that there is normality in the sample data gathered in this study.

4.1.5.2 Multicollinearity Test

Multicollinearity is said to be evident when the independent variables are closely connected with each other, and this is not desirable (Eden & Nielsen, 2020). Variance of inflation factors (VIFs) will test this assumption with values of 1-10 implying absence of the condition (Kyriazos & Poga, 2023; Bayman & Dexter, 2021). The following null hypothesis was tested in the study regarding multicollinearity:

H₀: there is no Multicollinearity in the sample data gathered in this study.

H₁: there is Multicollinearity in the sample data gathered in this study.

Table 5 gives an overview of the findings from analysis.

Table 5

Multicollinearity Test

Variable	Collinearity Statistics	
	Tolerance	VIF
Operational risk	0.271	3.69
Credit risk	0.448	2.234
Liquidity risk	0.383	2.611
Market risk	0.885	1.13
Firm age	0.614	1.63

The findings in Table 5 indicate the values of VIF on respective independent objective variables as all within the threshold of 1-10, which is in line with the stipulation of Kyriazos and Poga (2023) and Bayman and Dexter (2021).

4.1.6 Relationship between Financial Risk Exposure and Non-Performing Loans

The relationship between financial risk exposure and NPLs was determined through regression analysis. A summary of the findings is as summarized in Table 6.

**Table 6**

Relationship between Financial Risk Exposure and Non-Performing Loans

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	
1	0.874	0.763	0.759	0.434943	
	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	0.521	0.158		-3.291	0.001
Credit risk	0.346	0.059	0.285	5.84	0
Liquidity risk	0.325	0.049	0.661	6.623	0

The findings in Table 6 indicate that on overall, the value of R Square is 0.763, which means that is 76.3% change in NPLs among commercial banks in Kenya can be explained by their financial risk exposure. This means that there exist other factors aside from financial risk exposure that an affect NPLs of these institutions which should be the focus of future studies.

4.1.7 Hypotheses Testing

The study had the first hypothesis as ***H01: credit risk on non-performing loans of commercial banks in Kenya.*** The findings in Table 6 indicate a p-value for credit risk as 0.000 i.e. $p < 0.05$ with a beta coefficient being $\beta = 0.346$. Thus, the study rejects hypothesis ***H01***, deducing that credit risk significantly predicts NPLs of commercial banks in Kenya. It can therefore be inferred from these findings that a unit enhancement in credit risk exposure by commercial banks in Kenya can equally allow them to manage their non-performing loans by 0.346 units.

The second hypothesis of the study was ***H02: liquidity risk has no statistically significant effect on non-performing loans of commercial banks in Kenya.*** In view of the findings in Table 6, the p-value is given as 0.000 which is lower than 0.05 with a beta coefficient being $\beta = 0.325$. Hence, the study rejected ***H03*** and deduced that liquidity risk had significant effect on NPLs among commercial banks in Kenya. Thus, it can be implied from these findings that a unit positive variation in liquidity risk can allow banks to enhance their exposure to non-performing loans by 0.325 units.

4.1.8 Moderating Effect of Firm Age in the Relationship between Financial Risk Exposure and Non-Performing Loans

The moderating effect of firm size in the relationship between financial risk exposure and NPLs was determined through three regression models labelled as Model 1, 2 and 3. Consider findings in Tables 2 and 3 respectively.

Table 7

Moderated Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R-Square Change
1	.728 ^a	0.53	0.526	2.63354	0.53
2	.796 ^a	0.633	0.631	2.32502	.103
3	.857 ^a	0.735	0.731	1.21795	.102

From Table 8, there was generally a change in R-square of 0.103 and 0.102 in models 2 and 3 respectively. This change in R-square is a possible indication of presence of moderating effect of firm age. Table 3 gives an overview of the moderated beta coefficients and significance of the regression model summary.

Table 8

Moderated Beta Coefficients and Significance

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
Model 1	(Constant)	0.917	1.526		0.601	0.549
	Credit risk	0.186	0.086	0.086	2.163	0.02
	Liquidity risk	0.629	0.111	0.529	5.691	0
Model 2	Firm age	0.137	0.053	0.127	2.585	0.011
	(Constant)	9.66	1.792		5.39	0
	Credit risk*firm age	0.107	0.028	0.009	3.821	0.015
	Liquidity risk*firm age	0.805	0.031	0.859	25.745	0



From Table 8, the p-value for firm age in model 1 is given as .011 while in model 2, the p-values for interaction term are all less than 0.05. This means that indeed, firm age fully moderates the relationship between financial risk exposure and NPLs and thus hypothesis H_{03} was rejected.

4.2 Discussions

4.2.1 Credit Risk and Non-Performing Loans

The findings indicate a p-value for credit risk as 0.000 i.e. $p < .5$. Thus, the study rejects hypothesis H_{02} , deducing that credit risk significantly predicts NPLs of commercial banks in Kenya. Ahmed, El-Halaby and Soliman (2022) covered Islamic as well as conventional banks in Middle East and determined nexus between credit risk and financial performance. The processed data indicated the existence of negative nexus in the involved variables. These findings are consistent with the modern portfolio theory that was developed by Markowitz (1952) that provides a strong motivation and incentive for financial institutions to diversify their exposure to credit risk in order to effectively manage their NPLs.

4.2.2 Liquidity Risk and Non-Performing Loans

In view of the findings, the p-value is given as 0.000 which is lower than 0.05. Hence, the study rejects H_{03} and deduce that liquidity risk had significant effect on NPLs among commercial banks in Kenya. Ben-Lahouel et al. (2022) covered liquidity as part of the variables in relation to financial stability among banks in Europe. While leveraging data gathered from secondary sources, its processing indicated that liquidity significantly enhanced the financial stability of a bank.

4.2.3 Firm Size, Financial Risk Exposure and Non-Performing Loans

The moderating effect of firm size in the relationship between financial risk exposure and NPLs was determined through three regression models labelled as Model 1, 2 and 3. From the findings, the p-value for firm age in model 2 is given as .015 while in model 3, the p-values for firm age and interaction term are 0.024 and 0.002. This means that indeed, firm age fully moderates the relationship between financial risk exposure and NPLs and thus hypothesis H_{05} was rejected. The finding agrees with Rwakihembo et al. (2023) who reviewed the age financial performance nexus of the privately established entities in Uganda. The gathered and processed information indicated the existence of positive nexus between the variables covered.

V. CONCLUSION & RECOMMENDATIONS

5.1 Conclusions

Liquidity risk had significant effect on NPLs among commercial banks in Kenya. Market risk has significant effect on NPLs of commercial banks in Kenya. Firm age fully moderates the relationship between financial risk exposure and NPLs and thus hypothesis. Financial risk exposure has a significant effect on NPLs moderated by firm age of financial institutions. Thus, it be summed up that financial risk exposure can significantly predict NPLs.

5.2 Recommendations

5.2.1 Recommendations for Theory

The study has established that financial risk exposure is a significant predictor of NPLs. In theory, reducing or managing exposure to some of the financial risks requires risk managers to diversify their portfolio. On this account, the study recommends a detailed theoretical review to explore sound diversification strategies that can support and contribute towards minimization of NPLs.

5.2.2 Recommendations for Policy

Policy makers working at CBK in Kenya should formulate sound and effective policies in regard to various risks that commercial banks can be exposed to and the same should be well aligned with the objective of lowering NPLs. Policy makers working among commercial banks in Kenya need to have in place relevant policies for managing exposure of their institutions against NPLs.

5.2.3 Recommendation for Practice

Operational managers working with commercial banks in Kenya should adopt relevant strategies aimed to reducing exposure of their financial institutions to operational risk. Credit managers working among commercial banks in Kenya need to review the existing credit risk management efforts and mechanisms to minimize exposure to NPLs. Finance managers working in commercial banks in Kenya to balance the investment in short term and long-term assets



to maintain liquidity levels. Investments made by commercial banks in Kenya should be aligned with the prevailing market conditions for instance, the change in commodity prices.

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