



# **FIRM SIZE, NON-PERFORMING LOANS, MANAGEMENT EFFICIENCY AND FINANCIAL PERFORMANCE: A FOCUS OF COMMERCIAL BANKS IN KENYA**

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## **Abstract**

*Commercial banks are vital in facilitating trade and perform mediation role between savers and borrowers. As banks grow in size their credit risk exposure increases which might lead to reduced financial performance. Management efficiency provides an index of how efficient managers are utilising resources at their disposal to generate returns to business owners. This study intends to explore the joint effect of non-performing loans and management efficiency on the relationship between firm size and financial performance. Theoretical frameworks relied in this study included the financial intermediation theory, stakeholder theory and behavioural theory of firm growth. Secondary data was collected for a period of 10 years (2014-2023) on all*

*operating banks in Kenya. Unbalanced panel data was acquired since some banks did not operate for the entire period under focus. Diagnostic analysis carried out indicated that ROA as a measure of financial performance was not appropriate when total assets are used as a measure of firm size due to high levels of autocorrelation. Data was transformed to conform to test of normality. The findings concluded that firm size has a positive and significant effect on financial performance, NPLs have a negative and significant effect on the relationship between firm size and financial performance while management efficiency had no impact on the firm size-financial performance relationship. Recommendations to policy makers, practitioners and regulators in banking sectors have been made based on the research outcomes. This study adds to the existing body of knowledge, explore theories and provide empirical evidence.*

*Keywords: Firm size, Non-Performing Loans, Credit risk, Management efficiency, Total Assets, Number of Loan Accounts, Commercial banks in Kenya*

## **INTRODUCTION**

### **Background**

Commercial banks are vital in facilitating cashflow and mobilise investment capital (Sarpong & Winful, 2017). The large commercial banks are associated with better returns compared to small and emerging banks (Terraza, 2015). However, as banks increase in size their exposure to credit risk and management inefficiencies leads to reduced financial performance. Credit risk as known as non-performing loans (NPL) risk occurs when a credit facility is not paid in time which might progress to provision for bad debts. Management efficiency is expected to improve with growth, however with increased complexity in managing large firms, the need for monitoring and internal controls might lead to inefficiency. It is important for managers and owners to balance the growth, risk and efficiency to ensure that their firms are able to provide the desired level of performance.

Commercial banks in Kenya have experienced rapid growth over time. Central bank of Kenya is the regulator and has maintain a close oversight in the operation of lending institutions. However, despite the strong regulations various challenges have exposed banking sector and investors to losses. The level of NPLs has been on an upward trend while some banks have collapsed. Few have merged together while some have been acquired by foreign or local banks. Such challenges have raised serious concerns on the effect of firm size and performance of banks. With the slowdown in economic performance, NPL levels shot in the period ended 2022 implying that the possibility of loan recovery had also gone down (Central Bank of Kenya, 2021).

Despite these challenges, banks have developed innovative products and employed technologies to reduce losses and serve their customers better.

Despite the identified threats of NPLs and management efficiency on the relationship between firm size and financial performance, empirical studies carried out have yielded conflicting results. Khalil and Muhammad (2017) concludes a positive effect of firm size on financial performance, a finding that is contradicted by Tharu and Shrestha (2019) and Parvin, Minhajul, Siddiqua and Ferdous, (2014). Such inclusions and difference in measuring the study variables present gaps that need to be researched. This study builds on identified research variables, how they are measured and their relationship in the Kenyan context. The findings of this study are aimed at contributing to the body of knowledge, provide empirical evidence for policy and regulations as well as provide insight to owners and managers of financial institutions on how the relationship between firm size and financial performance is affected by NPLs and management efficiency.

### **Problem Statement**

Kenyan commercial banks have faced numerous challenges including capping of interest rates at some given time. The growth of the industry though positive has seen some banks wind up or be under administration (Including Imperial bank and Chase Bank). Moreover, large banks such as National Bank of Kenya had to be acquired by other banks in order to remain afloat. Similarly, CBK reports that NPLs have been increasing over time with the highest levels reported in the personal loan categories.

Banks aim at growing their size by performing mediation function, attracting new customers and improving their asset position. This is however faced by risk and exposures such as NPLs and management inefficiencies. Aladwan (2015) urges that as size increases banks have to improve their efficiency levels while Joleski, (2027) outlines that with such growth, NPLs exposure increases that might ultimately reduce the chances of firms meeting their performance targets. Local research by Konya et al (2019), Ngware, Olweny and Muturi, (2020) and Teimet, Leshanga, Iraya and Elly (2019) indicate that firm size influences performance but do not agree to what extent this holds.

There are notable differences between studies carried out. Contextual gaps from previous studies were noted where most studies were conducted outside the geographical area of the current studies. Results and findings from such studies would not proportionately be applicable to Kenya. Further, empirical studies done locally provided conflicting outcomes that are attributed to difference in methodological approach of different researchers. Definition of terms, parameters for measuring variables and non-inclusion of NPLs and management

efficiency were some of the noted research gaps that the current research aims to address. With the inclusion of NPLs and Management efficiency; this study sought to establish the effect of firm size on financial performance.

## LITERATURE REVIEW

### Theoretical Review

This study is anchored on financial intermediation theory as advanced by Gurley and Shaw in 1960. This theory outlines that financial institution exists to transform illiquid assets from savers to liquid assets by borrowers thereby mediating the relationship between the two. It relies on the basic assumption that savers and borrowers do not have a direct relationship and that commercial institutions exist to create that relationship and eliminate information asymmetry. Banks carry out these activities with the aim of maximizing returns and reducing their credit risk exposure. Managers therefore seek to grow the size of the firm and increase profitability.

Additionally, the stakeholder theory as proposed by Freeman 1984, is relevant to this study. According to this theory, managers have to factor in other players that influence the operation and performance of the firm. The traditional agency theory by Jensen and Meckling (1976) only focused on the relationship between owners and managers and how their conflicting interests influence a firm. However, under the stakeholder theory, it is important to factor in how other entities influence the firm. Government regulations and restriction dictate how much banks operate. This implies that the desire to grow is inhibited by external parties' actions. The relevance of this theory is to highlight that the financial performance of commercial banks in Kenya is not only dictated by internal environment of the firm but might also be influenced by the external stakeholders.

Behavioural theory of firm growth by Cyert and March (1963) provides the ultimate aim of firm. It provides that organisation make goals and targets with the aim of growing in the long and optimise returns to shareholders. Managers set goals and targets based on past performance, industry levels or predictive output levels geared towards improved position, performance or market dominance. Additionally, this theory outlines the need for top management to develop goals and communicate these goals to middle level managers; who internally interpret them to supervisors for implementation. Once the growth objective has been identified, it is the collective responsibility of all to work towards that goal.

## Empirical Review

On the effect of NPLs on firm size and financial performance; Nyarko (2018) concludes that bank size has a positive effect on firm size while NPLs have a negative effect on financial performance. As NPLs increase, financial performance reduces. Similar results were obtained by Konya et al (2019) while studying banks in Kenya and using regression to analyse data.

The effect of management efficiency on firm size and financial performance was explored by Syed and Jan (2013) where it was concluded that management efficiency has a positive effect on the relationship between firm size and financial performance. These findings were affirmed by Alomari et al (2020) but were contradicted by Yami, Ajmal and Sreejith (2021) who concluded that efficiency has no direct effect on performance.

Arafat and Buchdadi, (2011) concluded that NPLs have a negative moderating impact but management efficiency has no impact on the relationship between firm size and financial performance. This was after obtaining secondary data from Indonesian banks for a period of 3 years. Similar findings were obtained by Nayeem et al (2014) but it differed on the effect of management efficiency. In the later study, Management efficiency was found to have a positive and significant effect on the relationship between firm size and financial performance.

In order to address the identified research gaps; the current study obtained data from all operating commercial banks in Kenya as at end of 2023 for a period of 10 years (2014-2023). Firm size was measured using asset values in millions and number of loan accounts. NPL were measured as quotient of NPL to total NPLs, Management efficiency was expressed as the quotient while financial performance was measured using Return on Assets (ROA) and Return on Equities (ROE). Secondary data was obtained from published financial statements for the period under study. By incorporating all the study variables together, the current study aimed at providing insightful findings while eliminating limitations faced by previous studies that focused on partial relationships of firm size, NPLs, Management efficiency and financial performance.

## METHODOLOGY

The study utilised descriptive research design in assessing the effect of NPLs and management efficiency on the relationship between firm size on financial performance of commercial banks. The research set out objectives and hypothesis to be tested which is line with the positivism philosophy of research that emphasizes on empirical and statistical analysis. Positivism is critical in testing researchers' informed guess and hypothesis Saunders et al, (2009). The target population was all commercial banks operating in Kenya between 2014 and 2023 providing a span of 10 years.

Secondary data was obtained from published financial statements for the period. Firm size was measured using asset values and number of loan accounts while financial performance was measured using ROE and ROA. NPL and management efficiency ratio were computed as measures of NPLs and management efficiency respectively. Data was collected for the entire period. A total of 371 entries were obtained resulting to unbalance panel data because some institutions were not operational for the entire period of research.

Data collected was analysed using regression tools. Regression models and equation allow for the establishment of cause -effect relationship between study variables (Cooper & Schindler, 2013). This is critical in establishing significant levels, direction and hypothesis testing (Khan, 2008). Diagnostic tests were carried out to determine how good the data collected was for purposes of hypothesis testing. These diagnostic tests included test for autocorrelation, multicollinearity, stationarity test, heteroskedasticity and normality. Hausam test was used to identified if the study variables fit into random or fixed effect model. The final study models were used to statistically test the hypothesis identified.

## RESULTS AND DISCUSSION

### Descriptive Results

In order to define the characteristics of the data obtained, descriptive statics indicators (mean, standard deviation, minimum and maximum as well as skewness and kurtosis) were computed. The analysis of measures of central tendency and variability provides an insight on data behaviour and trends. The total number of data set collected was 371 entries (N=371). The results are as shown in table 1 below.

Table 1: Summary of Descriptive Statistics

	N	Range	Minimum	Maximum	Mean	Std. Deviation	Variance	Skewness	Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	
Total Assets (million)	371	1425355.10	14.90	1425370.00	118707.6245	188257.47234	35440875891.403	2.834	.127	10.279
No. loan Acc (million)	371	10.25	.00	10.25	.2157	.98464	.970	7.882	.127	68.318
Mgmt. Eff	371	167.70	-73.20	94.50	20.6809	13.04941	170.287	-1.918	.127	20.580
NPLS	371	76.20%	0.00%	76.20%	16.3900%	13.81704%	190.911	1.916	.127	4.528
ROA	371	46.30	-37.00	9.30	1.0484	4.75313	22.592	-4.478	.127	29.249
ROE	371	503.00	-375.70	127.30	8.0293	34.76240	1208.425	-5.647	.127	55.164
Valid N (listwise)	371									

Total asset recorded an average of 118,707, a standard deviation of 188,257 and skewness of 2.84, Number of loan accounts had a mean of 0.21 and a standard deviation of 0.98. These two variables were used as measure of firm size. NPLs for the period of the study had a mean of 16.39% and a standard deviation 13.87; Management efficiency recorded a mean of 20.68% and a standard deviation of 13.04%. The average profitability as measured by ROA was 1.04 and 8.02 as measured by ROE. The standard deviation of ROA and ROE was 4.75 and 34.76 respectively.

### Diagnostic tests

Diagnostic tests were carried out to ensure that assumptions for regression model were not violated. This was to avoid biasness and inaccurate interpretation of regression outputs. The test for autocorrelation between dependent and independent variables indicated that there was autocorrelation between asset values and ROA. Therefore, ROA was dropped as a measure of financial performance and ROE retained. Multicollinearity test was carried out, where the results showed that no multicollinearity existed. Data failed the test for normality and therefore had to be transformed in order to conform to the assumption of normality as required by assumptions of ordinary least square model. Using the Breusch-Pagan Test for heteroskedasticity, the data was found to exhibit homogenous characteristics. Hausman model specification test indicated that a random effect model was the most appropriate to analyse the data.

### Hypothesis Testing

To test the relationship of study variables; the study variable developed the following hypothesis:

$H_0$ : There is no joint effect of non-performing loans and management efficiency on firm size and financial performance of commercial banks in Kenya.

Table 2 presents findings of the hypothesis test. The model had an overall R-squared of 24.5% which implies that this model can explain 24.5% change in financial performance as measured by ROE. Firm size as measured by total asset values had a positive and significant effect on financial performance ( $p < 0.05$ ) where it was noted that an increase of 1 million shillings in assets results to an increase in performance (ROE) by 61.1. Number of loan accounts had no significant effect on financial performance ( $p > 0.05$ ).

Credit risk as presented by NPLs had a negative co-efficient ( $\beta = -44.98\%$ ,  $p < 0.05$ ) indicating that NPL has a negative and statistically significant effect on the relationship between firm size and financial performance as measured by ROE. Management efficiency ( $\beta = 0.082$ ,

$p > 0.05$ ) has an insignificant effect on the relationship between firm size and financial performance.

The constant term was 6.878 provides the value of ROE when all variables of NPL and Asset values are zero. The model summary had a p value of 0.000 ( $p < 0.05$ ) indicating that it was statistically significant.

Hypothesis ( $H_0$ ) evaluated the joint effect of NPLs and management efficiency on the relationship between firm size and financial performance with an assumption of no effect. The findings indicated that NPLs have a negative and significant effect while Management efficiency was found to have no effect.

Table 2: Joint Effect of NPLs and Management Efficiency on the relationship between firm size and financial performance

R-sq:		Obs per group:				
within	= 0.0516	min	=	5		
between	= 0.3309	avg	=	9.5		
overall	= 0.2450	max	=	10		
corr(u_i, X) = 0 (assumed)		Wald chi2(4)	=	35.17		
		Prob > chi2	=	0.0000		

  

ROE	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
TotalAssetsmillion	.0000611	.0000152	4.01	0.000	.0000313	.0000909
NoloanAccmillion	-1.917244	2.582448	-0.74	0.458	-6.978749	3.144261
MgntEff	.0823934	.1655502	0.50	0.619	-.2420791	.4068659
NPLS	-44.98485	9.496852	-4.74	0.000	-63.59833	-26.37136
_cons	6.87606	5.89559	1.17	0.243	-4.679085	18.4312
sigma_u	22.870104					
sigma_e	22.161181					
rho	.515739	(fraction of variance due to u_i)				

**CONCLUSION**

The study investigated the joint effect of NPLs and management efficiency on financial performance of commercial banks in Kenya. A total of 371 observations were extracted from published financial reports of all commercial banks operating in Kenya between 2014 and 2023. Preliminary data analysis necessitated data transformation in order to have normally distributed data and that ROA was not the best measure of financial performance when total asset is the dependent variable.

Hypothesis tests concluded that NPLs have a negative and significant effect of the relationship between total assets and ROE, management efficiency had no impact on the firm

size-financial performance relationship and that number of loan accounts are not affected by management efficiency or NPLs. These results affirmed earlier studies that had indicated that firm size has a positive effect on financial performance and NPLs have a negative effect on the relationship between firm size and financial performance. Additionally, the study concluded that management efficiency does not have any effect on financial performance. The study also reinforces conclusion of the behavioural theory of firm growth that suggest that firm aim to grow in order to improve returns to their shareholders.

## RECOMMENDATIONS

From the research conclusion several recommendations arise for managers, shareholders and policy makers. In terms of size managers should mobilise resources that ensure that they grow institution size as well as set performance targets. Regulators should put in place proper policy that ensures managers do not aim too high in terms of growth to the detriment of shareholders. NPLs have a negative effect on financial performance and therefore bankers should apply measures that reduces risk exposures while it is recommended that the regulator sets an industry NPLs levels and ceiling which will act as benchmark for the banking industry. There is need for banks to develop individualised loanee assessment index to reduce adverse selection during the loaning process. Banks are encouraged to continue sharing information via credit reference bureau to reduce multiple loan default from same individuals.

It is recommended that policy makers should provide an enabling and dynamic policy that evolve so as to cope with challenges faced by the banking industry. There is need to strengthen regulatory measures to improve customer and shareholders confidence in the wake of collapsing banks. Key performance indicators and bank specific performance targets need to be continually monitored to ensure that the banking industry remains vibrant.

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