

# BANK CHARACTERISTICS AND LOAN PERFORMANCE OF COMMERCIAL BANKS IN KENYA

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**Abstract:** Loan performance has over the years been a critical issue for banks as well as regulators. High/significant financial costs and economic costs are associated with non-performing loans. Banks' long term sustainability is threatened by its failure to earnings from various loans as well as recovering principal. Empirical works in past were however largely based on other countries, similarly, these works focused largely on multiple regression technique. This study investigated the effect of firm characteristics on commercial banks' loan performances in Kenya. Specifically, the study examined the effect of capital adequacy, bank size and liquidity on loan performances of commercial banks in Kenya. The study's target population of the study consists of all commercial banks in Kenya from 2013 to 2017, these are forty in number. The enquiry was based on census approach and focused Kenyan commercial banks. The analysis of data was done using descriptive and inferential analyses. The regression technique with a threshold of 5% level of significance was used. The study concluded that capital adequacy strongly influences the loan performances of commercial banks in Kenya. The study also found that bank size had significant effect on loan performance of commercial banks. The study concluded that liquidity to be a key predictor of loan performances. Banks should ensure putting in place sufficient capital buffer before focusing on lending activities. The study recommends that put up effective risk assessment and monitoring structures in place so as to eliminate the bureaucracies associated with large banks. This will in turn lead to decreasing no performing loans and in turn improve loan performances of commercial banks. The study is of the recommendation that banks increase their investment options, so as to diversify, thus, reduce poor loan performances.

**Keywords:** Capital Adequacy, Bank Size, Liquidity, Loan Performance and Commercial Banks.

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## 1. INTRODUCTION

### 1.1 Background of the Study

All over the world, commercial banking institutions perform an important function countries' economic development (Shekhar, 2015). The intermediation function done by banking institutions is crucial for countries' growth and development. These banks allocate economic resources through channeling of the same continuously to investors from savers (Prasanna, 2014). Banks' intermediation roles are however reliant on a sound banking system which is determined by the level of loan performance. Therefore, making loan performance of banks vital for countries' development as well as growth (Louzis, Vouldis & Metaxas, 2011).

Bank characteristics are regarded individual specific factors of banks, that impact banks' performances. The variables are therefore determined by banks' board and managers' internal decision making (Louzis *et al.*, 2011). The variables are in the operational scope of banks' that are controlled by them which differ based by banks. They span from size of

banks/deposits, ownership structure, capital adequacy, liquidity levels and risk management. Loan performance is viewed as the level of loan repayment and NPLs for lending institutions. NPLs therefore commonly are viewed as loans which payment has not been done for in a long time say 90 days or more (Badar & Javid, 2013).

The loan performances of banks in Kenya is poor with the non-performing loans on an increasing trend. The increasing trend of NPL escalated from 2012 where it was reported to be 4.59% an increase when compared to that 4.43 of 2011. The level of NPL had been on a slow but steady increase from 2012 to 2015, however, it reached a significant high level of 11.40% in 2018 (World Bank, 2018). The rising trend in NPL reduces the liquidity of banks, their profitability and subsequently their financial performance. Therefore, this has been a source of worry to stakeholders as increased degree of NPLs are the primary causes of banking failure and banking crises as exhibited in the past (Central Bank of Kenya, 2018). Kenya's banking industry consists of the apex regulator (CBK); forty (40) commercial banks, 3 CRBs, 13 MFIs, 77 forex bureaus as well as 17 MRPs and by 2018 December, 31.

### **1.2 Statement of the Problem**

Loan performance over the years is regarded as a key or vital financial issue in the context of banking organizations as well as regulators. This is due to the various magnitude of the costs (in the financial and economic contexts) of NPLs in an economy. High NPLs levels also impact on private investment level (through increased loan loss provision) as well as private consumption (through reduced loan disbursement that is "credit crunch") which is due to banks' equity and asset depletion. Commercial banks' loan performance over time has been poor with the NPLs on an increasing trend. In Kenya, the increasing trend of NPL escalated from 2011 where it was reported to be 4.43% and reached a significant high level of 11.40% in 2018 (World Bank, 2018).

Kamande (2017) studied bank factors influence on banks' performance for Kenya. Also, Hassana, Ilyas and Rehman (2015) looked at bank-specifics which influence NPLs Pakistan and Klein (2013) empirically analyzed NPLs in South-Eastern, Central and Eastern Europe. These studies were however largely based on other countries, similarly, the studies largely centered on other nations and ignored diagnostics procedures. The proposed study aims at filling the research gaps through assessing the effect of firm characteristics on loan performance of Kenya commercial banks. Specifically, the study examined the effect of capital adequacy, bank size and liquidity on loan performance of Kenya commercial banks.

### **1.3 Objectives of the Study**

#### **1.3.1 General Objective**

The main objective of the study is to determine the effect of bank characteristics on loan performance of commercial banks in Kenya.

#### **1.3.2 Specific Objectives**

The specific objectives:

- i.** To establish the effect of capital adequacy on loan performances of commercial banks, Kenya.
- ii.** To determine the effect of bank size on loan performances of commercial banks, Kenya.
- iii.** To establish the effect of liquidity on loan performances of commercial banks, Kenya.

## **2. LITERATURE REVIEW**

### **2.1 Theoretical Review**

Stakeholders was advanced Mitroff in (1983). The context of business operations, management and shareholders are key in the operations of businesses. However, as contented by Miles (2012), a larger group or groups are consider in Stakeholders Theory which are seen or viewed to influence the policies and objectives of institutions unlike Agency Theory that only incorporates two stakeholder groups which are management and firm's shareholders. Turnbull (1994) contend that the involvement of these stakeholders in making decisions in institutions would bring about reduction in conflict and thereby ensure that business activities operate smoothly. Stakeholders Theory is based on three (3) approaches which are normative, instrumental and descriptive approaches. The approach that comes up with various morals to be utilized for good management and operation of the institution is regarded as normative approach. The

approach which depicts the underlying linkages existing among institutional goals and stakeholder's management group is regarded as instrumental approach. Lastly, the approach which focuses on showing the behavior and characteristics on how institutions are being operated (Donaldson & Preston, 1995).

Market Power Theory was introduced by Bhagwati(1965). The theory relates to the degree by which a business unit influences the prices of a good or service through exerting control over its supply, demand or /and both. Under the paradigm economics based on perfect competitiveness, all units are presumed to possess zero influence or market power in the market. Therefore, each unit in reality goes with existing prices prevailing in the market due to not having control over it. Market Power Theory is of the view that increasing forcing emanating from the external market translates to improved firm profitability and financial operations. Additionally, the Market Power Theory is based on the notion that only firms which possess large share of the market as well as a highly differentiated products portfolio have the capabilities of outperforming their competitors and earning abnormal profits.

## **2.2 Empirical Review**

Various works were carried out on firm characteristics and loan performances of banking institutions. These works are however based on different context. Klein (2013) did a research on non-performing loans with focus on CESEE covering the time 1998 to 2011. The research applied panel method based on annual data where the study outcome showed that the degree of loan performances is traced to firm specific characteristics. Capital adequacy and liquidity were found to significantly predict the loan performance of banks. The study was however centered on Europe which has unique contextual characteristics as compared to a developing country like Kenya.

An analysis by Messai and Jouini (2013) on factors determining loan performances while covering three (3) countries (Greece, Spain and Italy) based on eighty five (85) which was the research sample for the time 2004 to 2008 periods. Using panel regression technique and the variables were banks' specific variables, return on assets as well as NPLs. Research outcome indicate liquidity having inverse and insignificant effect on loan performances. Capital adequacy was found to significantly affect the loan performance of banks. Investigation was however done in the context of Greece, Italy and Spain. Due to the varying contextual differences between Kenya and these countries, the present research filled the gap (contextual) through focusing on Kenyan banking institutions' NPLs.

Warue (2013) conducted an analysis on the linkage existing on NPLs, microeconomic variables and bank specific in the context of Kenya. Bank structures, credit risk management, bank size as well as management quality were the bank specific for the study. The time of the research was the years 1995 - 2009 where both (secondary and primary) data were utilised. Research focused on all commercial banks (44) situated in Kenya. While using regression technique, outcome show that most of the bank characteristics and macroeconomic affected NPLs. Thus, asset value as a proxy of size of banks significantly affected non-performing loans. ROA was documented to negatively and significantly impact on NPLs levels for the case of small banks and large banks and small banks, however it was not significant for that of medium banks. Bank size had significant effect on all or across all the categories of Kenyan banks. The study however multiple regression approach were diagnostics test were not considered to ascertain the fitness of research data.

An analysis by Makri, Tsagkanos and Bellas (2014) was done which sought to assess various factors determining the degree of NPL for the case of banking industry (Eurozone). The research covered the time frame 2000 to 2008. Panel (dynamic) regression approach was utilized for purposes of analyzing data. micro and macro variables were included in the research study such as GDP, unemployment profitability (ROE as well as ROA) and loans to deposits ratio. Research outcome showed bank size having a strong correlation with commercial banks' NPLs. Notably, the inquiry focused on the Eurozone's banking systems whereas this study will be based on commercial banks in Kenya. Various nation/continents are based on various economic as well as regulatory conditions, thus the necessity of this research.

An investigation by Hassana *et al.* (2015) focusing on bank variables and NPLs for the Pakistani case was done. Using regression analysis, research outcome indicate that bank size and asset quality have significant influence on loan performances for the case of Pakistani banks. This research concluded that bank characteristics contribute to the levels of banks' NPLs performances. However, the focus of the research loan performance of Pakistani banks, such results therefore cannot be applicable to commercial banks in Kenya.

An empirical work done by Hue (2015) was focused on assessing the key variables affecting Vietnam's banks NPLs for the time frame 2009 spanning to 2012. The research was done within the variables banks' specifics (loans/asset, total assets and dummy for state ownership or not) while applying panel data through the OLS approach. Outcome indicated that liquidity strongly affects degrees of NPLs in banks. The study was however, centered on Vietnam's banking system whereas this research aimed at filling the gap (contextual) through focusing on Kenya's banking industry.

In the context of Kenya, Kamande (2017) did an enquiry in order to assess bank specific effects on banks' performance for the case of Kenya. The investigation was for the years 2011 – 2015 (5 years). Asset quality, liquidity, capital adequacy, earnings ability and efficiency of management denoted the study independent variables. Explanatory approach was used based on panel data for the listed eleven (11) banks using multiple regression models. The Regression outcome indicated that banks' capital adequacy strongly affects ROA (financial performance). This study applied panel regression technique unlike the previous research which used multiple regression.

### 3. RESEARCH METHODOLOGY

Research design serves as a map plan in a research study which provides frameworks upon which data is collected, analyzed and interpreted. This study was based on causal research approach. All banking institutions in Kenya formed the study population which were 40 as at 31<sup>st</sup> December 2018 (CBK). The study therefore is used census approach as it focused on all Kenya's banking institutions. Research findings' reliability was therefore enhanced as it was a census study. Panel data was used in this study which was based on the period (2013 to 2017) for banks in Kenya Standard deviation and mean (descriptive analysis) was done as well as panel regression to ascertain firm characteristics effects on loan performances. Various diagnostics test as per panel regression analysis was considered; these are multicollinearity, heteroskedasticity and hausman tests. The panel regression analysis was used in testing the various hypotheses on the relationship between the study variables.

### 4. DATA ANALYSIS AND PRESENTATION

#### 4.1 Descriptive Analysis

The descriptive analysis performed on the study variables is contained in this section which sought to provide the general features of the research variables.

**Table 4.1: Descriptive Statistics**

Variable	Obs	Mean	Std. Dev.	Min	Max
Capitals	180	0.1477	0.0495139	0.02631	0.38047
BankSize	180	92487	113579.2	3710	555630
Liquidity	180	0.1768	0.1594306	0.00435	0.91
LNPL	180	3.247	0.6960931	1.04139	4.5338

**Source: Researcher (2020)**

Table 4.1 above contains the descriptive statistics of the study. The study variables were relatively disperse over the years with the exception of Loan performance as denoted by non performing loans which had high level of fluctuations. The mean and standard deviation values for loan performance were 3.24 and 0.70 respectively. A minimum of 1.04 and maximum of 4.53 was reported for loans performance which further evidenced its high fluctuations. The findings concurred with those of Kamande (2017) and Warue (2013) who documented high fluctuations of loan performances for commercial banks in Kenya.

#### 4.2 Diagnostic Tests

Diagnostic tests were done to ensure that research data are adequate for further use and conclusions. Tests for multicollinearity and hausman tests were carried out.

##### 4.2.1 Multicollinearity Test

In a regression analysis, it is important to assess the level of collinearity of the predictor variables. The study carried out the Variance Inflation Factor (VIF) test so as to test for multicollinearity. The output of the test is contained in Table 4.2.

**Table 4.2 Multicollinearity Test Result**

Variable	VIF	1/VIF
CapitalAde~y	1.08	0.924705
Liquidity	1.06	0.947771
BankSize	1.04	0.960827
Mean VIF	1.06	

**Source: Study Findings (2020)**

Table 4.2 provides the outcome of the VIF test. The VIF test for multicollinearity is based on a threshold of 2.5. This implies that a VIF value of above 2.5 signifies the existence of severe multicollinearity among research variables. Capital adequacy had a VIF of 1.08, liquidity had 1.06 and bank size had 1.04. The mean VIF value was reported at 1.06. These results thereby provided evidence of the absence of severe collinearity level among the predictor variables.

**4.2.2 Heteroskedasticity Test**

The test for heteroskedasticity is done on research variables to determine the existence of constant variance. The results for the tests are documented in Table 4.3.

**Table 4.3 Heteroskedasticity Test Results**

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Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
Ho: Constant variance
Variables: fitted values of LNPL

chi2(1)      =      0.34
Prob > chi2  =      0.5611
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**Source: Study Findings (2020)**

Table 4.3 provides the outcome of the heteroskedasticity test. The Breusch-Pagan test was carried out based on the null hypothesis that the residuals are homoscedastic. The test is based on a threshold of 0.05. A prob> chi2 of 0.5611 was obtained and as such the null hypothesis was upheld.

**4.2.3 Hausman Test**

The hausman test is conducted in a panel regression analysis for choosing the best estimation model. The test sought to choose the best model between the fixed effect model and the random effect model. The outcome of the test is presented in Table 4.4.

**Table 4.4 Hausman Test Results**

	Coefficients		(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
	(b) Fixed	(B) Random		
CapitalAde~y	1.703763	.3112702	1.392493	.1260207
BankSize	4.21e-06	4.03e-06	1.83e-07	3.85e-07
Liquidity	.9531946	.4476493	.5055453	.2362614

b = consistent under Ho and Ha; obtained from xtreg  
 B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

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chi2(2) = (b-B)'[(V_b-V_B)^(-1)](b-B)
        =      495.79
Prob>chi2 =      0.0000
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**Source: Study Findings (2020)**

The hausman test is based on a null hypothesis of random effect being the best model and conversely fixed effect. The outcome of the hausman test as contain in Table 4.4 indicates a p-value of 0.000 which implies significance. Thus, the null hypothesis was rejected and the fixed effect model was used.

### 4.3 Inferential Analysis

The inferential analysis of the study was based on panel regression technique. This was further applied in testing of the null hypotheses. The output is presented in Table 4.5.

**Table 4.5 Regression Results**

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Fixed-effects (within) regression              Number of obs   =       180
Group variable: Bank                          Number of groups =        36

R-sq:                                         Obs per group:
    within = 0.2778                           min =           5
    between = 0.2847                           avg =          5.0
    overall = 0.2821                           max =           5

corr(u_i, Xb) = -0.2013                       F(3,141)        =       18.07
                                                Prob > F         =       0.0000
    
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LNPL	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
CapitalAde~y	1.703763	.6758522	2.52	0.013	.3676495	3.039876
BankSize	4.21e-06	6.06e-07	6.95	0.000	3.01e-06	5.41e-06
Liquidity	.9531946	.3949262	2.41	0.017	.1724527	1.733937
_cons	2.437305	.1470022	16.58	0.000	2.146692	2.727918
sigma_u	.57439473					
sigma_e	.22065792					
rho	.87140136	(fraction of variance due to u_i)				

**Source: Researcher (2020)**

The outcome obtained from the regression analysis in Table 4.5 reveal that an R squared of 0.2821 was obtained. This therefore implies that collectively firm characteristics are responsible for explaining 28.21% of the fluctuations in loan performances of commercial banks in Kenya. This therefore further implies that firm characteristics had relatively strong effect on loan performances of commercial banks in Kenya.

The first objective of the study was to ascertain the effect of capital adequacy on loans performances of commercial banks in Kenya. With respect to this objective, a null hypothesis was formulated and tested at a threshold of 0.05 significance level. The study outcome in Table 4.5 obtained a p-value of 0.013 and a corresponding coefficient of 1.704. Capital adequacy therefore had significant effect on loan performances of commercial banks in Kenya. Increases in capital adequacy by 1 unit leads to a resultant increase in loan performances by 1.704 which is significant. The findings can be due to the fact the more the capital adequacy of banks, the better their capabilities to lend which in turn increases non performing loans that is causing poor loan performances. The study findings are in line with previous empirical works on capital adequacy and loan performances. Klein (2013); Messai and Jouini (2013); Hassana *et al.* (2015); Kamande (2017) found that capital adequacy significantly predict the loan performance of banks.

The second objective of the study was to establish the effect of bank size on loans performances of commercial banks in Kenya. With respect to this objective, a null hypothesis was formulated and tested at a threshold of 0.05 significance level. The regression results in Table 4.5 provides a p-value of 0.000 and a coefficient of 4.210. This there was an evidence that bank size had significant effect on loan performances of commercial banks in Kenya. A unit increase in bank size leads to a 4.210 increase in the non performing loans levels of commercial banks in Kenya. Large banks are often characterized by varying levels of bureaucracies which may hamper the loan performances of banks. Makri, Tsagkanos and Bellas (2014); Hassana *et al.* (2015) found that bank size has significant influence on loan performances of banks.

The third objective of the study was to establish the effect of liquidity on loans performances of commercial banks in Kenya. With respect to this objective, a null hypothesis was formulated and tested at a threshold of 0.05 significance level. The findings depicted in Table 4.5 shows that liquidity had a p-value and coefficient of 0.17 and 0.953 respectively. Therefore, liquidity evidently had significant preciting power on loan performances of commercial banks in Kenya. Increases in liquidity by a unit produces a resultant increase in loan performances as measured by non performing oans by 0.953 which is significant at 5 percent significance level. Klein (2013); Hue (2015) found that liquidity strongly affects degrees of NPLs in banks.

## 5. CONCLUSIONS AND RECOMMENDATIONS

The study arrived at a conclusion that capital adequacy strongly influences the loan performances of commercial banks in Kenya. Banks should ensure putting in place sufficient capital buffer before focusing on lending activities. The study also found that bank size had significant effect on loan performance of commercial banks. The study recommends that put up effective risk assessment and monitoring structures in place so as to eliminate the bureaucracies associated with large banks. This will in turn lead to decreasing no performing loans and in turn improve loan performances of commercial banks. The study also found liquidity to be a key predictor of loan performances. The study is of the recommendation that banks increase their investment options, so as to diversify, thus, reduce poor loan performances.

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