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# Capital and Loan Characteristics and Financial Performance of Commercial Banks in Kenya

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***Abstract***
*A stable financial sector is vital in the growth of an economy, hence, it is imperative to have a robust banking system to ensure economic stability. Kenyan banks have, however, had diminishing Returns on Equity (ROE). In 2010, the ROE was 25.98 percent and declined to 20.94 percent in 2013, and 17.39 percent in 2017. This study sought to establish the extent to which capital and loan characteristics determine the performance of Kenyan banks. The objectives evaluated the effect of capital level, liquidity, non-performing loans, and interest rates on financial performance. The theories supporting the study were moral hazard, buffer capital, financial intermediation, and loanable fund theories. The findings were capital adequacy had a positive and insignificant impact, liquidity had a significant and indirect effect, non-performing loans had a significant and inverse relationship, while interest rates had an insignificant and inverse relationship with the financial performance of Kenyan banks.*

***Keywords****: Capital levels, liquidity, non-performing loans, interest rates, Return on Equity, banking sector.*

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## I. Introduction

Banking is essential to the growth of any economy in the world. Banks act as intermediaries, that is, allocating resources and moving funds from depositors to borrowers, Gamechu and Okoth (2013). This is only possible when they get enough returns to cover their costs. This assertion implies that for banking institutions to proficiently accomplish their task of intermediation they should be profitable and have a good financial performance. Profitability serves as a form of reward to bank shareholders on the funds invested by them (Alemu & Negasa, 2015). Therefore, the successful operation and wellbeing of banks capture the interest of different stakeholders.

Globally, more specifically in America and European countries, various factors like interest rates and internal factors have tended to influence the performance of banks (Ngondo, 2018). During the global economic crisis in America, many customers became incapable of repaying their mortgage loans resulting in an unprecedented collapse of banks alongside other financial institutions. Lending rates for instance is a financial tool that can be used to control the expansion while supporting investments. Its variances influence the commercial banks' financial yields.

KPMG (2018) suggests that profitability of the banking sector depicted a decrease in major Australian banks in the year 2018 in comparison to 2017. The profit after tax decreased by $29.5 billion in the financial year 2018 which represented a 5.5% decrease. The average ROE for banks declined from 13.8% in 2017 to 12.5% in 2018. Further, there was an increase in the impaired loans from 0.20% to 0.22% in 2018. In Europe, the banking sector continued to witness a downward trend (European Banking Federation, 2019). The branches of banks and credit institutions reduced by 2.6% compared to 2017. Germany carried the largest bulk of this decline with the number being 48, followed by Italy at 28 and Ireland at 20. In terms of the loans outstanding, there was an increase in the value loans outstanding from the European Union by 2.5% in 2018 to more than 25.1 trillion Euros. High non-performing loans have triggered a crisis in the banking sector in East Asia and Sub-Saharan African countries. More than sixty banks in Indonesia failed during the financial crisis and bad loans accounted for three-quarters of the total asset portfolio.

During the 1990s banking meltdown, a large number of sub-Saharan countries were affected, the event was followed by a fast accumulation of non-performing assets (Onuonga, 2014). In South Africa, the ROE of banks decreased from 19% in 2017 to 18.5% in 2018 (PWC, 2019) The Net Interest Margin also decreased by 4.10% during the year 2018. Similarly, some developing countries' banks have experienced numerous cases of bank failures, these include; Alpha Merchant Bank Plc, Société General Bank Limited all in Nigeria. Banks contribute largely to the economic development of countries as they act as intermediaries in the money circulation and stimulate the economic growth of nations. The failure of homegrown banks in Kenya has dealt a

great blow to Kenyans in trying to take control of the economy by building strong local institutions (Kimani & Koori, 2018).

The failure and performance of banks are indicated to be determined by their capital and loan characteristics (Vij, 2018). The amount of money and other financial assets held by an entity, and a total asset held to fund its operations and for growth is called capital. Sufficient capital is important for liquidity purposes as deposits are prone to bank runs Ongore & Kusa (2013). Therefore, insolvency risk can be measured by the strength of an institutions' capital adequacy. Banks with low capital adequacy ratios are considered fragile than those with a higher capital ratio in case of a banking crisis, as well as banks' financial performance (Onuonga,2014).

An asset in default is an advance facility that neither the interest nor the principal monthly repayments are being made. This is where the borrower of the facility has not made interest payments as per the contract terms, which is usually 3 months in Kenya and has an outstanding principal (Alshatti, 2015). Banking failures in industrialized and emergent nations are mostly allied to the ratio of non-performing assets and the percentage of default.

## II. Literature Review

***Theoretical review***

This paper is underpinned by the moral hazard theory, buffer capital theory, financial intermediation theory, and loanable fund theory to anchor the connection amongst the study variables. As proposed by Zeckhauser in 1970 moral hazard theory is a scenario where one party gets involved in a risky venture or event with the knowledge that it is shielded against the risk by the other person or party. It has since been extensively used in finance. Moral hazard is also a problem resulting from information asymmetry. Thus, information asymmetry leads to unwarranted loaning and inefficiency in loan distribution. Nonetheless, limiting lending to circumvent Moral Hazards is quite costly to set up and to closely evaluate, and has limitations in their effectiveness (Claus, 2011). In understanding the effect of capital and loan characteristics, this theory was pertinent since it underscores why lenders for instance raised their capital levels and lending rates to shield against poor performance resulting from non-performing loans.

The Buffer capital theory was brought forth by Calem and Rob (1996). The capital buffer model suggests that the extra amount of capital a bank holds, above its least requirement reduces the risk of the bank. The theory suggests that a capital buffer may increase the performance of banks by reducing lending risks. As financial institutions engage in their day-to-day operations, the regulatory bodies for instance Central Bank requires them to maintain an adequate level of capital to shield them in case of losses. Consequently, most of them endeavor to keep the capital levels beyond the minimum regulatory requirements (Lotto, 2016). Milne and Whalley (2001) suggest that as a result of penalties that are imposed by regulatory authorities to those that do not meet or maintain the minimum set amount, financial institutions are inclined towards increasing their capital levels beyond the minimum requirement. This theory is pertinent to the current study in examining how the capital ratios and the profitability of commercial banks in Kenya are related. This theory for instance gives an understanding as to why the banks are required to meet the specified capital requirements. In holding buffer capital banks can be protected from financial losses.

Financial intermediation theory was proposed by Gurley and Shaw (1960). Financial Intermediation is a situation where the surplus unit places excess liquidity with a financial institution that then advances to the deficit unit. Financial Intermediaries occur in existing markets with flawed competition that are distinguished by unequal information. In money markets there is information asymmetry amongst creditors and debtors. Usually, the investors/savers avoid risky ventures and are not fully complacent with their future usage needs and cannot easily comprehend who to lend their excess liquidity to (Abera, 2012). Debtors, however, are aware conscious of their monetary wishes, seriousness, industriousness, security and collateral their ethics required to acquire funding. Financial Intermediaries come up as a consequence to provide these particular financing products. These products are traded at a cost that is projected to gather for operational expenses and meet the needs of investors and borrowers. This theory was important to the current study in expounding the correlation between liquidity and financial performance.

Loanable funds theory was advanced by Robertson, (1934) and Ohlin, Bertil (1937) where they argue that the calculation and determination of rates of interest is guided by the demand and supply of the funds that are available for loaning in the capital market. Further, it expounds that the rates rely on the savings and investments in the long run whereas the prevailing conditions of the economy determined the short-term interest rates. While interest rates are key consideration by borrowers, monetary policies prevailing also dictates the interest rates. If the monetary policy is tightened the rates of interest increases and vice versa. Thus, according to the theory, funds to be loaned affect the rates which in turn is affected by the monetary policies. This model is pertinent to this analysis since it explains what drives the rates of interest being the largest source of revenue to the banks and which ultimately determines its performance.

### *2.2 Empirical review*

On capital adequacy and financial performance, several studies have been done including Babalola (2012) studied on the determinants of profitability in Nigeria. Obamuyi (2013) examined the impacts of bank size, management of expenses, bank capital, interest income and economic conditions on the profitability Nigerian banks. Al-Qudah & Jaradat (2013) assessed how the banks' features and macroeconomic variables affect the financial performance of Islamic banks in Jordan. A study done by Weersainghe and Ravinda (2013) which attempted to establish the outcome of capital adequacy on Sri Lankan commercial banks' profitability. The results of these study were centered on other jurisdictions the current study examined the Kenyan context. In addition, the current study examined how capital adequacy and firm characteristic affect the banks

With regard to liquidity and financial performance, Oluwafemi and Obawale, (2010) carried out a study on liquidity and Nigerian banks' financial performance. Abera (2012) studied the issues affecting profitability in Ethiopian commercial banks. Hadad (2013), studied the aspects that affects the financial performance of the Naara rural banks in the upper east region of Ghana. Tesfai (2015) examined capital adequacy, level of liquid assets and assets in default concerning Habib Bank AG Zurich's Kenyan subsidiary's financial outcome. Nevertheless, these analyses were domiciled in other countries, the current study is aimed at Kenyan commercial banks. Further, the analysis by Tesfai (2015) centered on one bank, thus not up to 5% of the total number of banks, this study designed on Kenyan commercial banks.

On non- performing loans and financial performance, Hadad (2013) examined the aspects impacting the Ghanas' Naara Rural banks in the upper east region's financial performance. Yijun, (2014) did research in Europe on the impact of risk governance methods and the profit performance of European commercial banks. Tesfai (2015) examined capital adequacy, levels of liquid assets, and assets in default in relation to Habib AG Zurich's financial performance in Kenya from 2008 to 2014. Nevertheless, these analyses were domiciled in other countries, the current study is aimed at Kenyan commercial banks. Further, the analysis by Tesfai (2015) centered on one bank, thus not up to 5% of the total number of banks, this study was designed on Kenyan commercial banks. In 2017, Kamande examined the impact of bank precise factors on the financial operations of Kenyan banks. The current study was, however, have utilized ROA to particularly measure the revenue statement of commercial banks in Kenya.

In the relationship between annual interest rates and financial performance, Okoye and Eze (2013) analyses the Nigerian deposit money banks' lending rate and its revenue statement. Awoyemi and Jabar (2014) studied on the common rates of lending and the performance of microfinance banks in Nigeria. Kenyan commercial banks are the aim of this examination beyond the microfinance banks. Nyakundi and Maranga (2017) deliberated the impact of rates of interest levels on portfolio performance of particular banks in Kisii County, in Kenya. While drawing inferences, this study relied on the descriptive statistics while the current study relied on the panel regression model. Additionally, whereas the study used questionnaires, the current research employed the secondary data obtained from commercial banks. In 2018, Ngondo, analysed the impact of lending percentages on the revenues of Kenyan commercial banks. While this study employed the multiple regression in the data analysis, the current study intends to rely on a panel regression model.

## III. Research Methodology

A causal study design was selected since the study sought to comprehend the cause and effect of capital and loan characteristics on Kenyan banks financial performance. Cooper and Schindler (2009) argued that a causal research design is hinged on establishing the cause and effect of a phenomenon or variables. This is often based on a thorough investigation of the research problems and interpreting the solutions thereafter. The study period was from 2015 to 2019, while the population was the commercial banks in Kenya licensed by the Central bank of Kenya (CBK). Secondary data was sourced on all research variables including capital levels, profitability and non-performing loans. This paper employed panel data, with the use of 'STATA software' as the analysis tool, using a panel regression model. In order to explain the overall and rudimentary features of the data, descriptive analytics was employed. This measured the spread data sets in relation to its center/mean. Next, inferential analysis was carried out employing a panel regression model which was then employed in analyzing the study hypotheses as per the specific objectives of the study. The test was guided under the general 5 percent significance level. The model is as shown below;

$ROA_{it} = \beta 0 + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 X_{4it} + \epsilon_{it}$……..1

Whereby:

$ROA_{it}$ – Return on Assets

β0 - Constant

$X_{1it}$ – Capital levels

$X_{2it}$ –Liquidity

$X_{3it}$ – Non-Performing Loans

$X_{4it}$ – Interest rates

$\beta 1 - \beta 4$= Regression coefficients
$\epsilon_{it}$= Error term

## IV. Data Analysis

### *4.1 Descriptive statistics analysis*

The descriptive statistics analysis entails the representation of the characteristics of the data used for the study. This shows the total number of outcomes, mean, standard deviation, minimum and maximum values for the respective data.

**Table 1:Descriptive Statistics**

| Variable | Obs | Mean | Std. Dev. | Min | Max |
|---|---|---|---|---|---|
| **Financial Performance** | 287 | -0.15348 | 0.15106 | -0.43019 | 0.06199 |
| **Capital Adequacy** | 287 | 0.13896 | 0.06702 | -0.20583 | 0.48544 |
| **Liquidity** | 287 | 0.19361 | 0.13596 | 0.00435 | 1 |
| **NPL** | 287 | 12.85796 | 11.74602 | 0 | 69.62248 |
| **Interest Rates** | 287 | 9.42857 | 1.05161 | 8.5 | 11.5 |

Source: Research data (2022)

These results show, financial performance showed mean of -0.153 and 0.151 standard deviation values. This implies that, the mean of the data was relatively stable as it falls within the minimum and maximum values -0.430 and 0.061 respectively. Similarly, capital adequacy resulted in a mean value of 0.138 and a standard deviation of 0.067. This outcome suggests that, on an average, capital adequacy fluctuates within the least and highest values of -0.205 and 0.485. Furthermore, Liquidity resulted in a mean value of 0.193 and a standard deviation of 0.135. It also portrayed a minimum and maximum values of 0.004 and 1 respectively. Non-performing loans was high with a mean value of 12.857 with a variation rate of 11.746. This implies that the default rate of non-performing loans was high in the study area. This is indicated by the lowest and highest values of 8.5 and 11.5 for the study period. Finally, the rate of interest had a mean value of 9.428 and a standard deviation of 1.051. This implies that the rate of interest among banks rotates around the mean value of 9.428 and at variance of 1.051 among the banks. Thus, the rate of interest had a minimum and a maximum value of 8.5 and 11.5 respectively.

### *4.2 Diagnostic Tests Results*

In order to avoid spurious regression analysis, diagnostic tests were conducted to validate the axioms of ordinary least squares. The study conducted stationarity, correlation test, multicollinearity test, autocorrelation test, normality test and the hausman specification test.

#### *4.2.1. Bi-variate Correlation Analysis*

Bi-variate correlation analysis was performed to establish the degree and orientation of the variable's relationship. The strength of the relationship was established intervariable. The test result is as shown below;

**Table2:Bi-variate Correlation Analysis Results**

| Variable | Financial Performance | Capital Adequacy | Liquidity | Non-performing Loan | Interest Rate |
|---|---|---|---|---|---|
| **Financial Performance** | 1.0000 | | | | |
| **Capital Adequacy** | 0.1767 | 1.0000 | | | |
| **Liquidity** | -0.0676 | 0.0933 | 1.0000 | | |
| **Non-performing Loan** | -0.0864 | -0.2388 | 0.2497 | 1.0000 | |
| **Interest Rate** | -0.0722 | 0.0775 | 0.0036 | -0.0038 | 1.0000 |

Source: Research data (2022)

The table direction of the variable's linkages. Capital adequacy was noticed to have a direct and weak link with Kenyan banks financial performance. The strength of the link was determined to be 0.1767. The result indicates that a rise in capital adequacy would result into an increase in the commercial banks' financial performance. The degree of correlation amongst liquidity and commercial banks' financial performance was negative (-0.0676) indicating that a rise in commercial banks liquidness would lead to a decline in the Kenyan commercial banks' performance. Furthermore, non-performing loan also exhibited an inverse link with commercial banks' financial performance portrays, a rise in banks' financial performance is a direct result of a drop in non-performing loans. An inverse association of a weak nature was witnessed in the table above, depicting that an increase of 1% in the rate of interest results in a drop in the Kenyan commercial banks financial performance by 0.0722.

### *4.2.2. Multicollinearity Test*

Variance Inflation Factor was used to determine the severity of multicollinearity in the model. Using a pegged value of 5, the outcome obtained from the VIF test is presented in the table below.

**Table 3:Multicollinearity Test Results**

| Variable | VIF | 1/VIF |
|---|---|---|
| **Capital Adequacy** | 1/20 | 0.8345 |
| **Liquidity** | 1.04 | 0.9637 |
| **Non-performing Loan** | 1.23 | 0.8117 |
| **Interest Rate** | 1.01 | 0.9939 |

Source: Research data (2022)

The product of the VIF as reported in the table above showed that all the variance inflation values were below the pegged value of 5. Specifically, capital adequacy, liquidity, non-performing loan and interest rate had VIF values of 1.20, 1.04, 1.23 and 1.01 respectively.

### *4.2.3. Normality Test*

Based on the null hypothesis, (Green, 2008) stated that data is not normally distributed when tested against the alternate hypothesis that the data is normally distributed. Therefore, a p value of less than 0.05 shows a non-normality of the data while a p value of more than 0.05 show that there exists normality. This test was conducted using the Shapiro-Wilk W test and the outcome presented in the table below.

**Table 4:Shapiro-Wilk Test Results**

| Variable | Obs | W | V | Z | Prob>z |
|---|---|---|---|---|---|
| ROA | 287 | 0.92039 | 16.308 | 6.539 | 0.0000 |
| CapitalAdequacy | 287 | 0.86849 | 25.775 | 7.593 | 0.0000 |
| Liquidity | 287 | 0.82233 | 34.821 | 8.296 | 0.0000 |
| NPL | 287 | 0.81975 | 35.442 | 8.338 | 0.0000 |
| Interest Rate | 287 | 0.95700 | 8.808 | 5.096 | 0.0000 |

Source: Research data (2022)

It shows that the respective p values of the variables are <0.05. Therefore, this can be decided that the variables are not distributed normally. However, in line with the Central Limit Theorem, data from a population set of thirty and over, is presumed to have a normal distribution irrespective of the underlying distribution. Furthermore, Akims (2016) stressed that data from a sample/population of 30 and above is characterized by a normal distribution.

### *4.2.4. Stationarity Test*

This test was conducted to avoid the spurious regression coefficients. Fisher type unit root test which is based on Augmented Dickey Fuller tests was carried out to determine the stationarity of variables. This is imperative because, the usage of non-stationary series results to spurious regression estimation. To test this, Augmented Dickey Fuller test was used as represented in the table below.

**Table 5:Test for Stationarity**

| Variable | Test Statistic | P-value |
|---|---|---|
| Financial Performance | 18.3175 | 0.0000 |
| Capital Adequacy | 1.7958 | 0.0363 |
| Liquidity | 1.7991 | 0.0360 |
| Non-Performing loans | 8.1588 | 0.0000 |
| Interest Rates | 10.8484 | 0.0000 |

Source: Research data (2022)

All the p-values obtained for the research variables are below the threshold of 0.05, thereby denoting the presence of stationary in the data set.

### *4.2.5. Autocorrelation Test*

This test was aimed at establishing whether the error terms in a regression model can correlate over time. This test was accomplished by employing the Wooldridge test for autocorrelation, the results have been displayed in the table below;

**Table 6:Test for Autocorrelation**

| **Woolridge test for autocorrelation**<br>**H0: no first order autocorrelation** |
|---|
| F(3,206)=1.95<br>Prob>F=0.1229 |

Source: Research data (2021)

The Wooldridge test for autocorrelation was used where a p value of 0.1229 was established. The null hypothesis was upheld and concluded that there was no first order autocorrelation in existence in the dataset.

### *4.2.6. Heteroscedasticity Test*

This test was conducted with the aid of Breusch Pagan test, the results is as shown in the table below;

**Table 7:Breusch Pagan/Cook Weisberg test**

| **H0: Constant variance**<br>**Variables: fitted values of Financial Performance** | |
|---|---|
| **Chi² (1)** | 3.46 |
| **Prob>chi²** | 0.0628 |

Source: Research data (2022)

The final p value obtained from the Breuch-Pagen/Cook-Weisberg test implies the absence of heteroscedasticity (constant variance) which denotes acceptance of the H0 (null hypothesis) and determines that there exists homoscedasticity.

### *4.2.7. Model Specification Test*

The hausman test was conducted in establishing the appropriate model to be estimated for this study. The null hypothesis states that a random effect model is preferred, while the alternate hypothesis prefers the fixed effect model. A probability value of less than 0.05 infers rejection of the null hypothesis, therefore, the fixed effect model is used, whereas, a p value of 0.05 fails to reject the null hypothesis and adopt the random effect model. Consequently, the Hausman test results is displayed in the table below;

**Table 8:Hausman Test Results**

```
.
                 ——— Coefficients ———
                   (b)          (B)            (b-B)     sqrt(diag(V_b-V_B))
                Random        Fixed       Difference          S.E.
-------------------------------------------------------------------------------
CapitalAde~y    .0064124     .0066658      -.0002534       .0012541
Liqu~lAssets   -.0068189    -.0067692      -.0000497       .0006111
NPLTotal~100   -.0002788    -.0002788      -8.04e-08       6.64e-06
         CBR   -.0003378    -.0003394       1.55e-06       .0000476
-------------------------------------------------------------------------------
                           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

                  chi2(4) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                          =         0.06
                Prob>chi2 =       0.9996
```

Source: Research data (2022)

The outcomes of the hausman test shows that the null hypothesis (H0) of the test was upheld, stating that the random effect model is preferable for estimation. The outcome of this tests shows a chi² of 0.06 and a p value of 0.9996 indicating a chi-square value as being statistically insignificant at 0.05 significance level.

### *4.3 Regression Analysis*

Panel regression estimation was conducted in determining the influence of the independent variables on the dependent variables. This is significant in determining the coefficients of the regression measures. Given the longitudinal nature of the observations, panel regression analysis became the most appropriate technique to be used. Therefore, the result of the random effect is presented in the table below.

**Table 9:Random Effect Panel Regression Results**

| Financial Performance | Coeff. | Std. Err. | Z | p>/z/ | [95% Conf. Interval | |
|---|---|---|---|---|---|---|
| **Capital Adequacy** | 0.0064124 | 0.006507 | 0.99 | 0.324 | -0.0063411 | 0.0191658 |
| **Liquidity** | -0.0068189 | 0.0031727 | -2.15 | 0.032 | -0.0130372 | -0.0006005 |
| **Non-Per Loans** | -0.0002788 | 0.0000344 | -8.10 | 0.000 | -0.0003463 | -0.0002114 |
| **Interest Rate** | -0.0003378 | 0.0002459 | -1.37 | 0.170 | -0.0008199 | 0.0001442 |
| **Cons** | -0.1463779 | 0.0218342 | -6.70 | 0.000 | -0.1891723 | -0.1035836 |
| **$R^2$ between** | 0.0003 | | | **$R^2$ within** | 0.2654 | |
| **Chi2 (4)** | 79.23 | | | **Overall $R^2$** | 0.0011 | |
| **Prob > Chi2** | 0.0000 | | | | | |
| **Number of Observations** | 273 | | | | | |

Source: Research data (2022)

This showed R-square between of 0.2654 was observed in the model. This implies that about 26.54% discrepancy in the dependent variable was caused by the various groups of descriptive variables. The significance of the model was observed from the probability of the Chi2 which has a value of 0.0000 less than 0.05. This means that the variables used in the model have joint significance on the dependent variables. Capital adequacy displayed an optimistic and insignificant influence on the financial performance of commercial banks. This can be drawn from the coefficient 0.0064 and the equivalent p value of 0.324. This suggests that a 1% rise in the ratio of capital to risk weighted assets would lead to a 0.0065% rise in the Kenyan banks' financial performance. Furthermore, liquidity documented a negative and a substantial impact on the Kenyan banks' financial statement position. This is apparent in the coefficient -0.0068 and a p value of 0.032. Negative coefficient indicates an increase in liquidity by 1%, of Kenyan banks, will result in a drop in the profitability by 0.0068%.

Non-performing loans shows a negative and significant impact on the Kenyan banking sector financial performance. As can be affirmed by the coefficient -0.0002 and its consequent p value of 0.0000. Inferring that a 1% increment in non-performing loans would amount to a reduction in Kenyan commercial banks' financial performance by 0.0002%. Interest rate on the other hand exhibited an adverse and statistically immaterial impact on the Kenyan banks financial performance. This indicates that Kenyan commercial banks' performance would reduce by 0.0003% when interest rate is increased by 1%. The study shows a Wald chi2 of 79.23 and an equivalent p value of 0.0000, indicating a joint significance of the variables in the model. More so, $R^2$ (R-squared) of 0.2654 was recorded. Signifying that 26.54% disparity in the Kenyan banks' performance is directly related to the explanatory variables adopted in the model. Based on the estimated coefficients, the regression equation is expressed as:

$FP_{it} = -0.1443 + 0.0065X_{1it} - 0.0068X_{2it} - 0.0002X_{3it} - 0.0003X_{3it} + \epsilon_{it}$

$FP_{it}$ – Financial Performance

β0 - Constant

$X_{1it}$ – Capital levels

$X_{2it}$ –Liquidity

$X_{3it}$ – Non-Performing loans

$X_{4it}$ – Interest rates

Єit= Error term, it captures the omitted variables in the model

β1 – β3 = Regression coefficients

### 4.4 Discussion of Findings

These findings showed that capital adequacy has a positive and insignificant impact on Kenyan commercial banks' financial performance. These results from the study with respect to capital adequacy and financial performance is consistent with the study by Babalola (2012); Obamuyi (2013); Al-Qudah and Jaradat (2013) and Weersainghe and Ravinda (2013) who established a positive and significant impact of capital adequacy on banks' financial performance. Therefore, the opinion that capital adequacy plays an essential role in the Kenyan banks financial performance was upheld.

On the effect of commercial banks' liquidity on Kenyan banks' financial performance, the outcome revealed a significant indirect relationship between liquidity and financial performance. These findings are in contradiction with that of Oluwafemi and Obawale (2010); Abera (2012); Hadad (2012) and Tesfai (2015) but consistent with Weersainghe and Ravinda (2013). The negative relationship could be attributed to unwillingness of Kenyan commercial banks to lend credit to investors and low credit risk appetite which could affect their financial performance positively.

The third objective was to examine the impact of non-performing loans on the Kenyan commercial banks' financial performance. The outcome established a significant inverse relationship between non-

performing loans and financial performance. The findings corroborate with Yijun (2014) and Tesfai (2015) who established that non-performing loans critically impact negatively on the financial viability of banks whereas the study findings were inconsistent with that of Kamade (2017). Thus, non-performing loans lead to the depletion of banks' profitability.

The last objective was to investigate the effect of interest rates on the Kenyan commercial banks financial performance. The results indicated an insignificant inverse relationship between the rates of interest and Kenyan banks' financial performance. The findings of this study contradicted those of Okoye and Eze (2013); Awoyemi and Jabar (2014); Nyakundi and Maranga (2017) and Ngondo (2018) who established that the rates of interest affect bank performance positively, this simply indicates that higher bank profits can be associated with higher interest rates.

## V. Conclusion

This paper contributes to existing literature in a number of ways; firstly, it recommends that bank managements could reduce their liquidity by assessing the feasibility and viability of investment opportunities by customers in order to reduce the rate of non-performing advances of the banks. Secondly, appropriate credit risk management practices should be implemented by the commercial bank. Weaknesses in the management of credit risk results in high levels of default rates which in due course negatively affect the Kenyan commercial banks' financial performance.

Finally, the Central Bank of Kenya which is the policymaker should reduce the liquidity ratio requirement for the commercial banks to enable the banks give out more loans to more productive ventures in the economy. This will enhance the operational performance of the banks and as well increase their level of income diversity.

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