

Credit Risk Management and Performance of Banks in Ghana: the ‘Camels’ Rating Model Approach

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ABSTRACT: *The primary aim of the study was to assess the performance of Ghanaian banks using the CAMELS rating model. The model is an acronym for capital adequacy, assets quality, management efficiency, earning, liquidity, and sensitivity. The rating is based on ratio analysis of the financial statements together with an onsite examination by the regulatory authority. A total of 10 banks were selected for a seven-year period. A standard multiple regression was employed in the study to analyse the effect the various components of the CAMELS model have on the performance of banks in Ghana. The findings from the analysis of the computed ratios from the financial statements of the selected banks indicated that Earning stood out as the highly significant factor that affects the performance of banks in Ghana. A percentage change in earning will result in a whopping 82.5% increment in bank performance measured by ROE. Capital adequacy, assets quality, management efficiency, and liquidity were equally found to be significantly affecting the performance of Ghanaian banks. Sensitivity, on the other hand, was found to be the only insignificant factor of the CAMELS model that affects the performance of banks in Ghana.*

KEY WORD: *CAMELS ratings, Performance, Banks, Ghana*

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I. INTRODUCTION

Banks as an intermediary serve as the backbone to the financial service sector which facility the proper utilisation of the financial resources of a country. Banks around the globe have a primary function of channelling the surpluses arising in the economy into deficit units in the economy. This core function has been threatened for the past years in the country due to the rising level of loan defaults. A developing economy like Ghana cannot survive without a thriving banking system since the healthiness of the banking system in any country reflects the healthiness of the country's economy. Banks play a very predominant role in granting credit facilities, which help, propel the private sector that serves as the engine of growth. However, banks incurring losses resulting from non-payment of loans or other forms of credit keeps on increasing yearly due to inadequate credit risk management. According to Kargi (2011), the most significant credit risk confronting banking and financial institutions, in general, is the risk of customer or counterparty default. Measurement of bank performance has, therefore, become increasingly important due to the continuous worsening of the assets quality of the Ghanaian banking industry.

Credit Risk management

Credit is a contractual agreement in which a borrower receives something of value now, and agrees to repay the lender at a future date with consideration generally with interest (<https://www.investopedia.com>). Risk generally refers to the probability or threat of quantifiable damage, injury, liability, loss or any other negative occurrence that happens due to external or internal vulnerabilities, which can be avoided through preemptive measures. Risk management is the practice of identifying potential risks in ahead, analysing them and taking precautionary steps to reduce the risk (www.economicstimes.indiantimes.com)

From the financial statements of banks, it could be realised that credit creation has been the primary income generating activity for these banks. However, this significant activity involves a considerable risk taken. The risk of trading partners not fulfilling their part of the obligation can seriously endanger the smooth running of these banks. It is an undeniable fact that highly risky ventures yield high returns so in an attempt to maintain profit banks engage in excessive risk-taken ventures while ignoring the dangers ahead. This practice has resulted in the collapse of many banks and non-bank financial institutions collapsing in the country. Kargi (2011) opines that the leading cause of severe banking problems directly relates to low credit standards for borrowers, and counterparties, poor portfolio management and lack of attention to economic changes or other situations that can lead to deterioration in the credit standing of bank's counterparty. Given the above opinion, one can say that credit risk management remains very critical to the very survival of banking institutions; otherwise, credit activities can lead to financial distress.

The CAMELS Rating Model

The Federal Financial Institutions Examinations Council (FFIEC) of the United States of America initially adopted this Uniform Financial Institutions Rating System (UFIRS) CAMEL on the 13th of November 1979. The Federal Deposit Insurance Corporation (FDIC) revised to include a sixth measure (sensitivity) to the UFIRS in 1997 to classify a bank’s overall condition (soundness). This new component looks into how a bank responds to changes in interest rates, equity prices, commodity prices, and foreign rates. The CAMELS rating framework was subsequently adopted and implemented outside the United States by various banking supervisory regulators. The ratings are assigned based on ratio analysis of the financial statements together with an on-site examination by the supervisory regulator. The term CAMELS is an acronym, which is made up of the following components: Capital adequacy, Assets quality, Management Efficiency, Earnings ability, Liquidity (Asset –liability management), Sensitivity (sensitivity to market risk especially interest rate risk). Fig. 1 below indicates the various components of the CAMELS model.

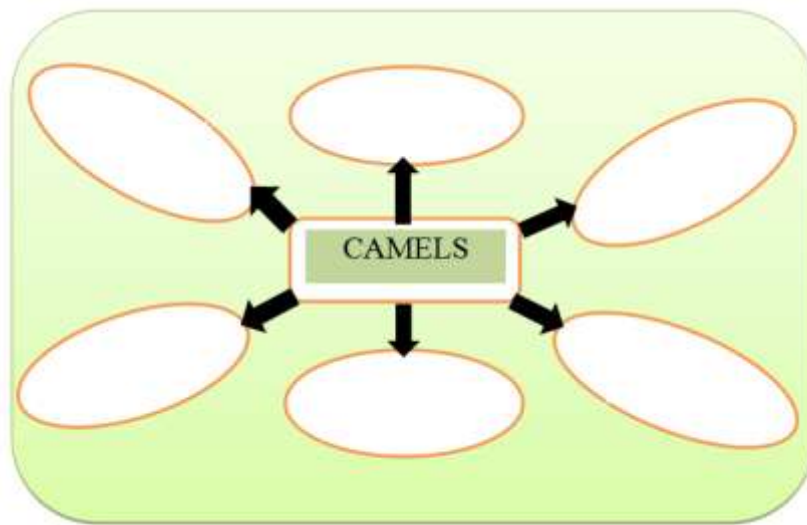


Fig. 1: the Components of the CAMELS rating Model

Source: Researcher’s illustration

Ratings are allotted from 1.0 (strong) to 5.0 (unsatisfactory) in each of the components. The descriptions of the ratings are as explained in Table 1 below.

Table 1: ratings of CAMELS components

RATING	RANGE	DESCRIPTION
1	1.0 – 1.4	Strong: Sound in every respect, no supervisory responses required.
2	1.6 – 2.4	Satisfactory: Fundamentally sound with modest correctable weakness
3	2.6 – 3.4	Fair (watch category): Combination of weakness if not redressed will become severe. Watch category- requires more than normal supervision
4	3.6 – 4.4	Marginal (some risk of failure): Immoderate weakness unless properly addressed could impair future viability of the bank. Needs close supervision
5	4.6– 5.0	Unsatisfactory (high degree of failure evident): High risk of failure in the near term. Under constant supervision/cease and desist order

Source: Suresh and Paul (2018, P.90)

II. LITERATURE REVIEW

Alemu and Aweke (2017) used CAMEL ratings to analyse the financial performance of private commercial banks in Ethiopia. The researchers use a panel regression model to measure the performance of these private banks. Their findings indicated that capital adequacy was positive and significantly related to the performance of Ethiopian private commercial banks. Assets quality was found to be insignificant in explaining ROE (performance). Management quality also affected performance significantly. Earnings quality also affected performance negatively and significant whereas liquidity was found to affect the performance of Ethiopian private commercial banks positively and significant.

Zafar et al. (2017) investigated the Pakistani banking sector performance using the CAMELS ratio framework. Fixed effect panel data analysis conducted indicated that capital adequacy ratio, management quality, and sensitivity were all found to be positive and insignificantly related to performance. Assets quality however found to affect performance negatively and was significant. Liquidity was also negative and significant

with respect to performance. Earning was found to be the most highly significant parameter, which negatively impacts on the performance of Pakistani banks. Out of the CAMELS ratios, three variables (Assets quality, Earnings ability and Liquidity) were found to significantly predict bank performance in Pakistan

Another researcher Mohammed KamrulAhsan (2006) researched measuring financial performance based on CAMEL on selected Islamic Banks in Bangladesh. The researcher found out that the analysis that, all the selected Islamic banks are in strong position on their composite rating system. The banks were found to be sound in every respect (i.e. capital adequacy, asset quality, management quality, earnings capacity, and liquidity conditions).

Elizabeth M. Samuel (2018) evaluated the performance of selected commercial banks in India using the CAMELS rating model, using data for five years. The non-parametric analysis of the banks indicated that all the selected banks conform to the capital adequacy requirement as per the Basel norms. Besides, all banks had sound asset quality and management efficiency. However, earnings capacity, as well as the liquidity of the banks, were not satisfactory.

III. STATEMENT OF PROBLEM

The Ghanaian banking industry (both bank and non-bank financial institutions) in recent times has been battling with the problem of credit risk management. This phenomenon has resulted in many banks becoming insolvent day by day. The evidence of inadequate credit risk management is the manifestation of the recent collapse, liquidation and consolidation of banks and non-bank financial institutions in the country. The revoking of the licenses of UT and Capital banks on the 14th August 2017 and the consolidation of another five indigenous banks (Sovereign bank, BEIGE bank, Royal Bank, Unibank and Royal bank) on the 1st of August 2018 were all because, the management of the banks did not adhere to prudent credit- risk management practices. This happening in the banking industry has resulted in the public losing confidence in the banking sector. It is on this premise that the researcher has embarked on this study to ascertain the relationship between credit risk management and performance of banks in Ghana using the CAMELS rating model.

IV. OBJECTIVES OF THE STUDY

1. To analyse the financial soundness of the selected banks
2. To find out the relationship between the parameters of the CAMELS rating model and performance of the selected banks
3. To provide suggestions to policymakers on ensuring performance stability in the Ghanaian banking sector

V. RESEARCH QUESTIONS

1. What has been the level of soundness in the selected banks?
2. What relationship exists between the parameters of the CAMELS model and the performance of the selected banks?
3. What are the ways forward to ensure performance stability in the Ghanaian banking industry?

VI. HYPOTHESIS

H_{01} : There is no significant relationship between Capital adequacy and performance.

H_{02} : There is no significant relationship between Assets quality and performance.

H_{03} : There is no significant relationship between Management efficiency and performance

H_{04} : There is no significant relationship between Earnings capacity and performance

H_{05} : There is no significant relationship between Liquidity and performance

H_{06} : There is no significant relationship between Sensitivity and performance

VII. STUDY VARIABLES

The dependent variable used for the study was the financial performance of the banks measured by return on equity (ROE) whereas the independent variables were the CAMEL component.

Return on Equity (ROE)

It is a measure, which is of great interest to the shareholders. It is a measure of the company's efficiency at generating profit from every single unit of shareholders equity. The ratio ROE allows investors to understand how their money is being put to productive use. The ROE, which is also referred to as net worth, is an essential measure of the bank's earnings performance. According to Prasanna Chandra (2011, P.82), ROE is the most critical measure of performance in an accounting sense.

$$ROE = \frac{\text{Profit after Tax (Net income)}}{\text{Total Equity Capital (Total Shareholders fund)}}$$

The numerator of this measure is profit after tax whereas the denominator, which is total equity capital, comprises of all contributions made by equity shareholders (i.e. Paid up capital + reserves and surpluses)

Capital Adequacy (C)

This component of the CAMELS model is a measurement that determines the solvency of a bank. Adequate capital reserve helps banks to expand, and increase the confidence of depositors and regulators. The measure also provides a cushion for potential loan losses and other unanticipated problems. In effect, capital adequacy enhances the stability and efficiency of the bank (Parvesh and Sanjeev, 2016). For the purpose of this study, the capital to risk-weighted assets ratio will be used as a measure of capital adequacy.

$$\text{Capital Adequacy} = \frac{\text{Tier 1} + \text{Tier 2 Capital}}{\text{Risk - weighted Assets}}$$

Where: Tier 1 capital includes; shareholders equity, perpetual non-cumulative preference shares, disclosed reserves and innovative capital instruments.

Tier 2 Capital includes undisclosed reserves, revaluation reserves of fixed assets, and long-term holdings of equity securities, general provisions/loan loss reserves, hybrid-debt capital instruments, and subordinated debt.

Asset Quality (A)

This ratio is a measure of the degree of the financial strength of a bank. Measurement of asset quality is very significant since it depicts the profitability of the bank. Assessment of asset quality involves rating investment risk factors that the bank may face and compare them to the company's capital earnings (Baidoo et al., 2014). Asset quality is a reflection of the efficiency of a bank's credit decisions and investment policies and practices. Since loans and advances make up the large portion of bank assets, the study will use the ratio of Loan Impairment charges to Total Loans as a measure for assets quality.

$$\text{Asset Quality} = \frac{\text{Loan Impairment Charges}}{\text{Total loans}}$$

Management Efficiency (M)

It is another critical measure as it guarantees the growth and survival of a bank. The management efficiency ratio indicates the adherence to the laid down norms and regulations, leadership and administrative capability, and the capability to counter any changing operational environment. Return on advances will be used as a measure for management efficiency. This ratio reveals the relationship between net profit after tax and total advances issued by the bank. The higher ratio of return on advances implies higher performance and the profitability of the funds. This ratio was chosen over others because it indicates the efficiency of management in the utilisation of deposits mobilised from the public into advances with maximum returns

$$\text{Management Efficiency} = \frac{\text{Net Profit}}{\text{Total Advances}}$$

Earning Capacity (E)

This measure indicates the bank's ability to create appropriate returns in order to be able to expand, retain competitiveness, and add to capital through retained earnings. High earnings quality reflects the firm's current operating performance and an indicator of future operating performance. Primarily, earning quality reflects the profitability of banks and throw light on the consistency of future earnings. Return on assets will be used as the measure of earnings quality.

$$\text{Earning} = \frac{\text{Net profit}}{\text{Total assets}}$$

Liquidity (L)

A liquid bank is the one that can meet its obligations towards depositor. Liquidity also means the available fund with a bank to meet its credit demands and cash flow requirements. Banks with a larger volume of liquid assets are perceived safe since these banks can live up to the call of unexpected withdrawals. However, the adverse effect of keeping a larger volume of liquidity is that it reduces management's ability to commit credibly to an investment strategy that protects investors' interest. Banks can maintain an adequate liquidity position by either increasing current liability or quickly converting their assets into cash (Parvesh and Sanjeev, 2016). The measure for liquidity for this study will be loans and advances to deposit ratio. The higher the ratio, the more credit the bank generates from its deposit received from customers.

$$\text{Liquidity} = \frac{\text{Loans and Advances}}{\text{Total deposit}}$$

Sensitivity (S)

This measure explains how particular risk exposure can cause havoc to the bank's profitability. It is the new addition to the rating's parameters which reflects the degree to which changes in interest rates, exchange rates, commodity prices and equity price can affect earnings and hence, the bank's capital (Suresh and Paul, 2018 p.89). GAP analysis is a tool used to evaluate a bank's earnings exposure to interest rate movements. A bank's GAP over a given period is the difference between the value of its assets that mature during that period and the value of its liabilities that mature during the same period. If the difference is significant, then interest rate changes will have a tremendous impact on net interest income. A balanced position will occur if the amounts of maturing (repricing) assets exactly offset by the repricing liabilities; the ratio will be equal to 1.0. If the GAP ratio is less than 1.0, then it is an indication that the bank is liability sensitive (i.e. Liability matures earlier than assets). On the other hand, if the GAP ratio is greater than 1.0, then the bank is asset sensitive, (i.e. assets mature earlier than liability). GAP is the difference between risk-sensitive assets and risk-sensitive liabilities.

$$GAP = Rate\ Sensitive\ Assets\ (RSA) - Rate\ Sensitive\ Liabilities\ (RSL)$$

The GAP ratio, on the other hand, is the ratio of RSA to RSL

$$GAP\ ratio = \frac{Rate\ Sensitive\ Assets\ (RSA)}{Rate\ Sensitive\ Liabilities\ (RSL)}$$

Where: Rate-sensitive assets are the sum of net advances, net investment and money at call.

Rate-sensitive liabilities are the sum of deposits and borrowings of the bank

VIII. RESEARCH METHODOLOGY

The data source for this study is secondary and was obtained from the annual financial reports of the selected banks. A total of 10 banks in Ghana were selected for the study for seven years. The basis of selection was purely based on data availability. A regression analysis of the components of the CAMELS model was conducted to ascertain its relationship with the performance of the selected banks. The CAMELS rating model was used because it encourages transparency, evolution and transformation among banks. It clearly identifies institutional strength and weakness in all facets of financial and managerial abilities. The interpretation of the study was descriptive in nature.

Model Specification of the study

To be able to ascertain the relationship between the CAMELS components and the performance measure (ROE), a regression model was adopted. Because the independent variables are more than one, a standard multiple regression was deemed appropriate for the analysis of the data. The model for the study is in the following form:

$$ROE = \beta_0 + \beta_1 C + \beta_2 A + \beta_3 M + \beta_4 E + \beta_5 L + \beta_6 S + \varepsilon$$

Where:

ROE = Return on Equity (performance measure)

C = Capital Adequacy

A = Assets quality

M = Management Efficiency

L = Liquidity

S = Sensitivity

β_0 = Constant term

$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6$ are the coefficients of the respective independent variables

ε = the error term

IX. DATA ANALYSIS AND INTERPRETATION

Descriptive Statistics

From table 1, it could be observed that some banks recorded ROE of -27.4% while others recorded as high as 50% during the study period. A mean value of 21% is an indication that most of the banks are performing well by effectively using the contribution of equity investors to generate profit to the investors. According to Investopedia, analysts consider ROE in the range of 15% and 20% to be favourable for the purpose of investment (<http://www.investopedia.com>). Average capital adequacy of 16.5% surpasses the regulatory requirement of 10%, which is a sign of compliance. Assets quality of 4.1% is also below the acceptable ratio of 5%, which indicates a lesser NPLs. Usually, a ROA ratio from 1% upwards is considered good, so earnings capacity (ROA) of the banks which was on average 3.6% is a very good return. It indicates that the management of the banks is utilising the assets employed judiciously. According to Nagaraju and Boateng (2018), the ideal percentage of deposits to be used in financing lending activities should be between

80% and 90%. The mean liquidity was 64.8%, which signifies that approximately 65% of the mobilised deposits are used to finance the lending activities of the banks, which is below the ideal percentage. The average sensitivity ratio was .96, which is approximately 1.0. A sensitivity ratio of 1.0 implies a balanced position, meaning the amount of maturing (repricing) assets precisely offset by the maturing (repricing) liabilities.

Table 1: Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Variance
Return on Equity	70	-.274	.500	.21067	.150475	.023
Capital Adequacy	70	.054	.440	.16479	.075359	.006
Assets Quality	70	.001	.626	.04091	.076217	.006
Management Efficiency	70	-.073	.455	.07886	.073605	.005
Earnings Capacity	70	-.037	.176	.03566	.031655	.001
Liquidity	70	.198	1.228	.64789	.217863	.047
Sensitivity	70	.24	1.64	.9557	.19805	.039
Valid N (listwise)	70					

Source: Research Data

Test for Multicollinearity among variables

One of the assumptions of regression analysis is that there should be no multicollinearity between the study variables. According to Nagaraju and Boateng (2018), a correlation coefficient of not more than .80 between any two variables is an indication of the absence of multicollinearity. Another test for multicollinearity is the use of the variance inflation factor (VIF) and tolerance. A VIF value of less than 10 and a tolerance value of less than .10 indicate the presence of multicollinearity. From table 2 below, none of the correlation coefficients is more than .80. Again, from table 5, it can be observed that all recorded values of VIF are less than 10 whereas all tolerance values are more than .10. It implies that there is the absence of multicollinearity among the variables.

Table 2: Correlations

		ROE	C	A	M	E	L	S
Pearson Correlation	ROE	1.000	.080	-.299	.545	.748	-.024	.212
	C		1.000	.432	.477	.608	-.042	-.131
	A			1.000	.456	-.096	-.285	-.466
	M				1.000	.522	-.399	-.173
	E					1.000	-.017	.066
	L						1.000	.330
	S							1.000

Source: Research Data

Model fit Evaluation

The performance of the regression model is assessed through the coefficient of determination (R^2) (Kwadwo Boateng, 2018). The R^2 measures the variations in the dependent variable, which is attributed to the independent variables. From table 3 below, the .902 recorded value of R^2 implies that the model is capable of explaining 90.2% of the variations in the dependent variable (ROE). Also from Table 4, it could be observed that the F-statistics attained a significance level of .000 which postulate that the regression model is significant at 5% significance level and deemed fit to be replicated in other studies.

Table 3: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.950 ^a	.902	.893	.049197	1.446

a. Predictors: (Constant), Sensitivity, Earnings Capacity, Liquidity, Assets Quality, Management Efficiency, Capital Adequacy

b. Dependent Variable: Return on Equity

Table 4: ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.410	6	.235	97.083	.000 ^b
	Residual	.152	63	.002		
	Total	1.562	69			

- a. Dependent Variable: Return on Equity
 b. Predictors: (Constant), Sensitivity, Earnings Capacity, Liquidity, Assets Quality, Management Efficiency, Capital Adequacy

Table 5: Coefficients

Model	Unstandardized Coefficients		Standardised Coefficients Beta	t	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
	B	Std. Error				Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1 (Constant)	.095	.038		2.487	.016	.019	.171					
C	-1.188	.131	-.595	-9.103	.000	-1.449	-.927	.080	-.754	-.358	.363	2.757
A	-.266	.134	-.135	-1.982	.052	-.534	.002	-.299	-.242	-.078	.336	2.976
M	1.053	.130	.515	8.111	.000	.794	1.313	.545	.715	.319	.384	2.605
E	3.921	.342	.825	11.450	.000	3.237	4.605	.748	.822	.451	.299	3.350
L	.076	.032	.110	2.372	.021	.012	.139	-.024	.286	.093	.726	1.377
S	.053	.035	.070	1.498	.139	-.018	.123	.212	.185	.059	.718	1.394

a. Dependent Variable: Return on Equity

The Regression Equation

The regression equation based on the results of the analysis as recorded in table 5 above is as stated below:

$$ROE = .095 - 1.188C - .266A + 1.053M + 3.921E + .076L + .053S$$

X. DISCUSSION OF RESULTS

Table 5 shows the results of the regression analysis. The capital adequacy recorded a standardised coefficient of $-.595$ with a Sig. value of $.000$. It means that there exists a significant negative relationship between capital adequacy of the bank and its performance. In evidence, a unit decrease in capital adequacy will result in a 59.5% decrease in ROE of the banks. This finding of a negative relationship between capital adequacy and performance is in contradiction with the findings of (Alemu and Aweke, 2017, Zafar et al., 2017).

The Assets quality also recorded a standardised coefficient of $-.135$ with a Sig. value of $.052$. It indicates that assets quality has a significant negative relationship with the performance of banks. A unit increase in loan impairment charges will translate into a 13.5% decrease in ROE of the banks. This significant negative relationship between liquidity and performance agrees with the findings of Zafar et al. (2017).

Management efficiency indicates the efficiency at which management of the banks utilise the deposits mobilised from the public into advances with maximum returns had a standardised coefficient of $.515$ and a Sig. of $.000$. The implication is that there exists a positive and significant relationship between management efficiency and performance of the banks such that a unit improvement in management efficiency will amount to 51.5% jump in ROE.

Earning capacity, which reflects the firm's current and future operating performance, recorded a standardised coefficient of $.825$ and a Sig. value of $.000$. It indicates a positive and significant relationship between Earnings and performance. A unit increase in earnings of the banks will lead to an 82.5% increase in the performance of the banks. It makes earnings the most essential contributing parameter of the CAMELS model. The findings of Zafar et al. (2017) also indicated that earning was the highly significant parameter of the CAMELS model though the relationship was negative.

Liquidity, which indicates the availability of funds for banks to meet its credit demands and cash flow requirements, had a coefficient of $.110$ and a Sig. of $.021$. This is an indication of a positive and significant relationship between liquidity and performance. It means that if there is a unit increase in liquidity buffer; ROE will increase by 11%. It is an expected outcome because most of the banks' income is generated from loans and advances. The positive and significant effect of liquidity on performance is consistent with the findings of Alemu and Aweke (2017) but contradict the findings of Zafar et al. (2017).

Sensitivity was measured GAP analysis, which is used to evaluate a bank's earnings exposure to interest rate movements. GAP is the difference between rate sensitive assets (RSA), and rate sensitive liabilities (RSL). The ratio of the RSA to RSL is termed GAP ratio. Sensitivity also recorded a standardised coefficient of $.070$ with a Sig. value of $.139$. It means, though a unit increase in sensitivity will result in 7% increase in bank performance, it is not significant. Zafar et al. (2017) also found a positive and insignificant relationship between sensitivity and performance.

Hypothesis Testing

Table 6 below shows the stated hypothesis and their outcome. It can be observed that with the exception of sensitivity, which was found to be insignificant ($P > .05$), all other parameters – capital adequacy, assets quality, management efficiency, earnings capacity and liquidity were all found to be significant ($P < .05$). All the stated hypothesis were therefore rejected with the exception of sensitivity.

Table 6: summary of the hypothesis testing

Hypothesis	Sig.	Remarks
H ₀₁ : There is no significant relationship between Capital adequacy and performance.	.000	Rejected
H ₀₂ : There is no significant relationship between Assets quality and performance	.052	Rejected
H ₀₃ : There is no significant relationship between Management efficiency and performance	.000	Rejected
H ₀₄ : There is no significant relationship between Earnings capacity and performance	.000	Rejected
H ₀₅ : There is no significant relationship between Liquidity and performance	.021	Rejected
H ₀₆ : There is no significant relationship between Sensitivity and performance	.139	Accepted

XI. CONCLUSION AND RECOMMENDATIONS

Conclusion

The primary objective of the study was to assess the performance of Ghanaian banks using the CAMELS rating model. After analysing the ratios computed from the financial statements of the selected banks, it was found that Earning stood out as the highly significant factor that affects the performance of banks in Ghana. A percentage change in earning will result in a whopping 82.5% increment in bank performance measured by ROE. Capital adequacy, assets quality, management efficiency, and liquidity were equally found to be significantly affecting the performance of Ghanaian banks. Sensitivity, on the other hand, was found to be the only insignificant factor of the CAMELS model that affect the performance of banks in Ghana.

RECOMMENDATIONS

Based on the findings of the study, the following recommendations were made to management and regulators of the Ghanaian banking system.

- Bank managers of and regulators must ensure that banks must commit to improving their earning ability since it has proven to be the component of the CAMELS model that has the highest impact on bank performance.
- Banks must ensure good loan quality because it has a negative influence on performance.
- The management of Ghanaian banks must be well resourced to be efficient. Also, management positions should be filled with competent and skilled individuals to be able to steer the affairs of the bank effectively
- Liquidity must be well managed to ensure that the banks would be in a position to meet the credit and withdrawal needs of customers.
- Capital adequacy requirement must be adhered to since a unit reduction in capital result in a substantial reduction in bank performance.

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