Assessing the Determinants of Financial Performance of Commercial Banks in Selected Sub-Saharan African Countries, 2001-2023

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Abstract

This study investigates the determinants of financial performance of commercial banks in selected Sub-Saharan African countries, specifically Nigeria, Cameroon, Kenya, and South Africa, from 2001 to 2023. The banking sector plays a crucial role in economic growth, yet its profitability remains low despite various reforms. Key variables include

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the bank's internal factors on financial performance: management efficiency, capital strength, asset quality, liquidity management, market share, banking sector development, GDP growth, inflation rate, interest rate spread, and real exchange rate. This research aims to identify and compare the internal (bank-specific), industry-level, and macroeconomic factors influencing bank profitability. Utilising a quantitative approach, the study employs a dynamic panel data methodology, specifically the Generalised Method of Moments (GMM), to analsze data from 20 selected banks across the four countries. The findings provide insights into the unique challenges and opportunities faced by banks in the region, contributing to the existing literature on bank profitability and offering practical implications for policymakers and banking stakeholders. The study recommends that commercial banks should incorporate fintech adoption and digital banking metrics to assess their impact on bank profitability and operational efficiency in Sub-Saharan Africa. There is a need for a comparative analysis across different banking regulatory environments that could provide deeper insights into how policy reforms influence financial performance in the region.

Keywords: Commercial Banks, Bank's Internal Factors, Bank's External Factors, Financial Performance, Sub-Saharan Africa.

Introduction

The development of a well-managed banking system is crucial for economic growth, as it creates capital, provides financial services, and facilitates business expansion. The banking sector is a cornerstone of economic development, providing financial intermediation, fostering investment, and contributing to overall economic growth of a nation. The survival and success of any economy and its financial systems are dependent on the efficiency and resilience of its banking sector (Ayodeji, Vusani & Ntungufhadzeni, 2022). That is, a healthy banking sector is vital for the effectiveness of

monetary policy and the stability of the financial system, both of which are critical for sustaining a nation's economic growth and development (Al-Harbi, 2019; Faal & Sönmezer, 2022). However, poor bank performance has an adverse effect on economic growth and development and leads to bank crises and failures. The financial sector has a critical role in effectively allocating capital to initiatives that promote economic growth and reduce income inequality, particularly in developing and impoverished Sub-Saharan African countries (Al-Harbi, 2019).

Statement of the Problem

Sub-Saharan African countries experienced varying levels of economic growth and stability in the recent past. Factors such as GDP growth rates, inflation, exchange rate stability, and commodity prices influenced the overall economic environment and subsequently have effects on the banking sector performance in the region. The banking regulatory frameworks also underwent changes and reforms across Sub-Saharan African countries to enhance risk management practices, financial stability, consumer protection, and market competitiveness. Also, regulatory interventions, such as capital adequacy requirements, liquidity standards, and loan classification norms, influenced banks' operational strategies and financial performance (Afriyie, 2022).

Despite extensive reforms in the financial sector in Sub-Saharan Africa in recent times, with a view of improving access to financial services through private agencies, financial depth and financial performance of banks in the Sub-Sahara Africa region have remained very low, not improving over the years. Commercial banks' financial performance has been poor due to low levels of private credit, high-interest rate spreads, high levels of non-performing loans, poor asset quality, and operational inefficiencies, among others. For instance, financial performance in some of Africa's biggest banking markets, including Egypt, Morocco, Cameroon, Kenya, and South Africa, and others, has been on a steady decline since 2016, with Nigeria being the exception with a 3.6% increase due to reduced risk following economic reforms post-2016 recession (Chironga, Cunha, Grandis & Kuyoro, 2018). The poor financial performance in Sub-Saharan African commercial banks can be attributed to several factors, including a decrease in net interest income, due to a decreasing interest rate environment,

declining fee margins due to increased competition and digitisation, and constant operating costs.

Research Objectives

The research objectives of this study are to:

i. Investigate the effects of bank's internal factors on financial performance of commercial banks in selected Sub-Saharan African countries; and

ii. Determine the effects of bank's external factors on financial performance of commercial banks in selected Sub-Saharan African countries.

Scope of the Study

The sample for this study comes from five (5) countries in each of the sub-regions, totalling twenty (20) countries in Sub-Sahara African countries. In Sub-Saharan Africa, financial system development and the presence of large commercial banks vary across sub-regions. Thus, the selection of five countries from each of the four sub-regions are based on countries known for having relatively developed financial systems and large commercial banks. In West Africa, these countries include Nigeria, Ghana, Côte d'Ivoire, Senegal, and Togo, which have major financial systems in West Africa, with Nigeria having the largest financial system; there are also Ghana's GCB Bank, and Côte d'Ivoire's Société Générale, and Togo with the Ecobank's headquarters.

In East Africa, Kenya, Tanzania, Uganda, Ethiopia and Rwanda are the countries with bank financial institutions that contribute to the rapid growth of the financial sector. In Southern Africa region, Namibia, Zambia, Botswana, South Africa and Mauritius are selected, while Gabon, Cameroon, Democratic Republic of Congo (DRC), Chad and Equatorial Guinea in central Africa region have made significant strides in developing their financial systems, thereby fostering strong commercial banking institutions. South Africa and Nigeria, in particular, stand out as financial hubs in their respective regions. This study covered the period between 2001 and 2023; this period offers a robust timeline for understanding long-term trends and recent dynamics in the banking sector.

Conceptual Review

Financial Performance Determinants

According to Muraina (2018), financial performance of any business organisation can be viewed in two different ways namely- profit and ability. The profit aspect of it is concerned with the net income after operating costs are removed from revenue, whereas, ability is the power of a business enterprise to generate profit. The major rationale behind the establishment of business enterprises, including banks, is the financial performance. Therefore, financial performance is defined as an important tool to evaluate the internal performance of a business enterprise, including banks, particularly by measuring its ability to generate returns relative to its resources, operating costs, and investments (Muraina 2018). Financial performance in the banking sector is not only a measure of financial success, but also reflects the efficiency, competitiveness, and contribution of banks to the broader economy (Olaoye & Olarewaju, 2015).

Bank-Specific (Endogenous) Factors

I. Management Efficiency

This metric serves as a means by which the performance of a bank's management can be assessed. The efficiency ratio indicates how successfully banks manage internally their assets and liabilities in hedging against their risk dimensions (San & Heng, 2013). In this study, the total operating expense to total assets is used to measure the efficiency of the banks. It is calculated by dividing a bank's operating expenses by its total income, providing insight into the bank's cost efficiency. Analysts use this metric to evaluate how efficiently a bank operates and manages its expenses relative to its income. Improving the efficiency ratio involves strategies such as reducing expenses, increasing revenue, or a combination of both (San & Heng, 2013). By analysing and optimising this ratio, banks can enhance their operational efficiency and overall financial performance. Management efficiency has a significant impact on bank financial performance. Additionally, management efficiency moderates the relationship between long-term performance and sustainable competitive advantage, highlighting its importance in driving bank performance (Gržeta et al.2023)

II. Capital Strength

Bank Capital is the net worth or equity of a bank, primarily made up of deposits, retained earnings, and securities. It serves as a financial buffer, safeguarding against potential losses and ensuring that depositors and creditors are protected (Muraina, 2018). Capital strength in the banking sector is typically measured using various ratios that assess a bank's ability to absorb losses and meet its financial obligations. Bank capital strength serves as a critical indicator of a bank's financial strength, which can be measured through the risk-weighted assets and capital adequacy ratios. The risk-weighted assets are defined as the Tier one plus Tier two divided by Risk Weighted Assets. Tier-One capital (Share Capital) is the one which can absorb losses without requiring the affected bank to close trading, but Tier-Two capital (preference share and subordinated debt) is the one that can absorb losses in case of bank liquidation, thereby providing depositors a lesser level of protection. According to Basel III provisions, banks' capital requirement must be between 8% and 10.5%. Capital adequacy can also be measured as the ratio of bank equity to total assets (Abdilahi & Davis, 2022; San & Heng 2013). It is expected that a greater capital level drives the financial performance higher since by having more capital, a bank can easily adhere to regulatory capital standards so that excess capital can be provided as loans (Muraina, 2018).

According to San and Heng (2013), capital adequacy reflects the ability of a bank to withstand losses or financial risk as well as lower the need for external funding, and subsequently result in higher profit. That is, a well-capitalised bank has a strong ability to take on more business opportunities at lower risk, which will reduce the need of borrowing and subsequently lead to a greater net interest margin, resulting in increased bank financial performance. Following the measurement used in Muraina (2018), and San and Heng (2013), this study will adopt the ratio of equity to total assets to measure capital adequacy. Thus, the relationship between capital adequacy and financial performance is predicted to be positive (San & Heng, 2013). The higher the equity-to-asset ratio, the lower the need for external funding and therefore the higher the financial performance.

III. Asset Quality

Bank asset quality is crucial for assessing a bank's credit risk and overall stability. The Loan Loss provisions to Gross Loans ratio (LLR) is used to measure asset quality, with a higher Loan Loss Reserve indicating a higher risk on the bank's assets. Poor asset quality, reflected in high LLRs, can lead to increased default risk, reduced interest income, higher provision costs, and ultimately lower bank financial performance (Ebenezer et al. 2017).

According to Yuan et al. (2022), asset quality, represented by indicators like impaired loans over gross loans, reflects the exposure of a bank's assets to credit risk. Poor asset quality, measured by factors like non-performing assets (NPAs), has a significant negative impact on banks' financial performance (Yuan et al., 2022). Asset quality plays a crucial role in determining a bank's financial performance. Several studies highlight the significance of asset quality as a determinant of banks' financial performance. Bank's asset quality is usually measured through credit risk indicators such as loan loss provision to total loans (Muraina, 2018; Mpofu & Nikolaidou, 2018; Abdilahi & Davis, 2022).). Under these non-performing loans loss provisions, the higher the ratio, the lower the asset quality and vice versa. Banks with good management of their loans achieve higher financial performance. So, to work properly in any economic condition, the banks should have a minimum or zero loan loss provision, which provides financial soundness and stability.

It shows the exposure of the bank to credit risk, which can be derived by dividing the ratio of total loans and advances to the total assets (Abdilahi & Davis, 2022, Kolapo, Ayeni & Oke, 2012). Loans to total assets ratio is a measure of the income source of banks, and it is expected to affect financial performance positively unless a bank takes on an unacceptable level of risk (Ebenezer et al., 2017). Thus, the relationship between asset quality measured by NPL and financial performance is predicted to be negative. (Mpofu & Nikolaidou, 2018). With respect to asset quality, the study will use the loan-to-total assets ratio. Loans-to-total assets ratio is a measure of the income source of banks, and it is expected to affect financial performance positively, unless a bank takes on an unacceptable level of risk (Ebenezer et al. 2017). The higher the ratio, the poorer the asset quality and therefore the higher the risk of the loan portfolio will be.

Theoretical Review

The theoretical underpinnings of this study, which deals with how macroeconomic, industry-level and firm-specific factors affect financial performance of commercial banks in Sub-Saharan Africa, is based on five significant theories revealed by the extant literature and empirical studies (Maredza 2014; Ebenezer, Omar and Kamil 2017, Sarwar, Mustafa, Aroosa and Ahmad, 2018) on the determinants of bank financial performance. Therefore, this study is mainly guided by the relative efficiency hypothesis/ efficient-structure, which comprises the X-efficiency model and the Scale Efficiency Hypothesis, structure conduct performance (SCP), also known as Market Power (MP) theories.

Market Power Theory

The theory of market power originated with Bain (1951). This is also known as Structure-Conduct-Performance (SCP) theory and was later developed by Shepherd in 1983. Structure-Conduct-Performance (SCP) Hypothesis, according to Iacobelli (2017), states that favourable banking conditions, such as deregulation and higher interest rates, yield greater profits for banks. It also suggests that banks with larger market shares and a wider range of products are more profitable. Market power theory is an economic framework used to analyse the relationship between market structure, firms' conduct within that structure, and their performance, particularly in terms of financial performance. The theory holds that all firms in a market are assumed to have zero market power, meaning each firm has to accept the current market price without being able to exercise any control over it. As a result, the structure of a market influences the behaviour of firms operating within it, which in turn affects their performance, including their financial performance.

The Efficiency Structure Theory

The Efficiency Structure Theory encompasses the X-efficiency model and the Scale Efficiency Hypothesis (Berger, 1995). Both the Efficiency Hypothesis and X-Efficiency theories highlight the critical role of operational efficiency in determining banks' financial performance. These theories emphasise the importance of operational efficiency in enhancing financial

performance for commercial banks. According to Berger (1995), operational efficiency translates to higher financial performance, greater market power, and exceptional bank performance. The theories posit that differences in bank profits are attributed to their efficiency, where more profitable banks are considered more effective.

The X-efficiency Model

The X-efficiency model, introduced by Harvey Leibenstein in 1966, is a cornerstone of microeconomic theory that explores inefficiencies in organisational and individual performance. Unlike traditional economic models that emphasise allocative efficiency, the optimal allocation of resources, Leibenstein's X-efficiency model focuses on the behavioural aspects of inefficiency within firms and organisations, (Le & Ngo, 202). It emphasises that firms often fail to achieve maximum potential output due to factors such as motivation, effort, and organisational dynamics, even when resources are optimally allocated. The X-efficiency theory focuses on firms' ability to fully utilise their resources to achieve maximum potential output efficiently. In the context of banks, X-efficiency can be a determinant of financial performance as it emphasises productive efficiency and cost minimisation rather than allocated efficiency and welfare maximisation. Efficient banks optimise their resource utilisation, leading to higher productivity and lower costs, ultimately improving financial performance and overall economic welfare (Alshatti, 2016).

Research Methodology

Given the nature of this study, an explanatory/quantitative research approach and ex-post facto research design were employed. Ex-post facto research design is used because it seeks to find out the factors associated with certain occurrences, conditions and behaviour of banks by analysing historical and quantitative data to establish possible causal factors. In addition, the quantitative research approach requires the use of statistical analysis to answer research questions by transforming test data into numerical form and applying statistical techniques like descriptive statistics and inferential statistics.

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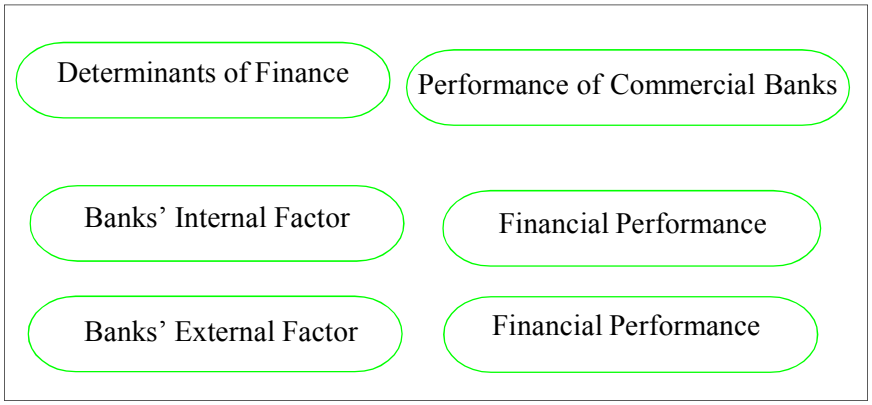
In West Africa, these countries include Nigeria, Ghana, Côte d'Ivoire, Senegal, and Togo, which have major financial systems in West Africa, with Nigeria having the largest financial system. There are also Ghana's GCB Bank Côte d'Ivoire's Société Générale, and Togo with the Ecobank's headquarters. In East Africa, Kenya, Tanzania, Uganda, Ethiopia and Rwanda are the countries with bank financial institutions that contribute to the rapid growth of the financial sector. In the Southern African region, Namibia, Zambia, Botswana, South Africa and Mauritius were selected, while Gabon, Cameroon, Democratic Republic of Congo (DRC), Chad and Equatorial Guinea were picked in the Central Africa region as they have made significant strides in developing their financial systems and fostering strong commercial banking institutions. South Africa and Nigeria, in particular, stand out as financial hubs in their respective regions.

Figure 1: Conceptual Framework.



Source: *Researcher's Compilation (2025)*

Model Specification

In this study, internal factors and external factors are to be used to investigate and compare the financial performance of commercial banks in Sub-Saharan African countries (Nuhiu, Hoti & Bektashi 2017). The internal factors are those within the control of the bank that relate to its management, operational efficiency, and risk management. The external factors, on the other hand, are influenced by market conditions, regulation, or the overall economic environment, often outside the bank's direct control. The commercial bank's financial performance was proxied by the interest rate spread (IRS). This is a measure of the bank's financial performance; it reflects its profit margin on lending activities. It was expressed as a function of a bank's internal and external factors.

In order to achieve the objectives of the study, the model in Odusanya et al. (2018) was adapted as in Abdilahi & Davis (2022), where the banks' performance is determined by both the internal and external factors (Siwi & Irawati, 2023). Following the study of Odusanya et al. (2018), the model in econometric form was expressed as:

$$\pi_{i,t} = \alpha + X_{it}\beta + \varepsilon_{it} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad (3.1)$$

Where: π_{it} = Performance of banks in country i in period t, the vector X represents internal and external factors that determine commercial bank performance.

Model 1

This model addressed the study objective one, which examines the effects of bank's internal factors on the financial performance of commercial banks in Sub-Saharan Africa. Therefore, the model was stated thus:

$$\alpha+LQM_{it}+BCA_{it}+BNL_{it}+LIR_{it}+LDCB_{it}+LBCB_{it}+\ldots\ldots\ldots\ldots\ldots(3.5)$$

Where;

IRS= Interest rate spread
LQM=liquidity management
BCA=Bank capital to assets ratio
BNL=Bank nonperforming loans
LIR=Lending interest rate

DCB=Depositors with commercial banks (per 1,000 adults) a measure of the bank size
BCB=Borrowers from commercial banks (per 1,000 adults)
a = represent constant, are the coefficients, i represent a cross-section, t represents time and is the error term.

A Priori Expectations in line with extant literature are:

$\beta 1 > 0, \beta 2 > 0, \beta 3 > 0, \beta 4 > 0, \beta 5 > 0, \beta 6 > 0$

It is expected that liquidity management β_1, *Bank capital to assets ratio* β_2, *Bank nonperforming loans* β_3, lending interest rate β_4, *Depositors with commercial banks* β_5, and *Borrowers from commercial banks* β_6, was positively or negatively related to financial performance of commercial banks in Sub-Sahara African countries within the period of study.

Model 2
The model captured objective two of the study, which is to examine the effect of bank external factors on the financial performance of commercial banks in Sub-Saharan Africa. Therefore, the model was stated thus:

$$\alpha+NFL_{it}+DPS_{it}+INF_{it}+EXR_{it}+GDPR_{it}+PGR_{it}+....(3.6)$$

Where:
IRS= Interest rate spread
NFL=Net Financial Liabilities of commercial banks
DPS= Domestic credit to private sector by banks (% of GDP)
INF= Inflation rate
EXR= Exchange rate
GDPR=Gross domestic products growth rate
PGR=Population growth rate
a = represent constant, are the coefficients, i represents a cross-section, t represents time and is the error term
A Priori Expectations in line with extant literature are:
$\psi 1 > 0, \psi 2 > 0, \psi 3 > 0, \psi 4 > 0, \psi 5 > 0, \psi 6 > 0$

It is expected that *Net Financial Liabilities of commercial banks* ψ_1, *Domestic credit to private sector by banks* ψ_2, *inflation rate* ψ_3, exchange rate ψ_4, *gross domestic product growth rate* ψ_5, and *population growth rate* ψ_6, was positively or negatively related to financial performance of commercial banks in Sub-Sahara African countries within the period of study.

Data Analysis

Correlation Analysis for the internal factors and financial performance model

One of the key benefits of correlation analysis is the opportunity to investigate the potential of a relationship between independent variables. A considerable relationship between independent variables indicates a multicollinearity issue. Although collinearity may not be an issue if the correlation is modest or moderate, multicollinearity is common when the correlation coefficient surpasses 0.8 (Asthana, 2020). According to Table 1.1, liquidity management (LQM), Bank capital to assets ratio (BCA), lending interest rate (LIR), depositors with commercial bank (LDCB) and borrowers from commercial banks (LBCB) have positive and weak relationship with the interest rate spread (IRS), with a correlation coefficient of 0.009, 0.158, 0.793, 0.296, and 0.419 respectively, while Bank nonperforming loans (BNL) have a negative and weak relationship with the interest rate performance (IRS). This suggests that the bank internal factors influence positively the financial performance of commercial banks in Sub-Sahara Africa. In addition, bank nonperforming loans (BNL) negatively correlate with IRS, implying that higher loan defaults may contribute to a reduced interest rate spread, possibly due to increased provisioning costs or risk management strategies, thereby reducing the financial performance of the banks. Also, the strongest correlation value is 0.716, indicating a strong relationship between the depositors and borrowers with commercial bank. This value is much less than 0.8, indicating that there is no reason to be concerned about model collinearity.

Table 1.1 Correlation Matrix for the Internal Factors and Financial Performance Model

	IRS	LQM	BCA	BNL	LIR	LDCB	LBCB
IRS	1.000						
LQM	0.009	1.000					
BCA	0.158	-0.148	1.000				
BNL	-0.182	-0.037	0.075	1.000			
LIR	0.713	-0.126	0.010	-0.213	1.000		
LDCB	0.296	-0.100	0.039	-0.091	-0.229	1.000	
LBCB	0.419	-0.306	-0.010	-0.020	-0.319	0.716	1.000

Source: *Computed by the researcher based on the data from the World Bank WDI (2025)*

Test for Multicollinearity (Variance Inflation and Tolerance Factor Test)

Despite the preceding section's correlation results, the variance inflation test and tolerance factors provide a comprehensive examination of the multicollinearity issue. The variance inflation factor (VIF) and the tolerance factor are statistical tests that are used to detect multicollinearity among predictor variables in a multiple regression model. The tolerance factor is the VIF's reciprocal and assesses the degree of variation in a predictor variable that cannot be explained by the other predictor variables. A tolerance factor value near 1 implies low multicollinearity, while values near 0 indicate strong multicollinearity. Miles (2014) suggests that the tolerance should not be less than 0.1 and the VIF should not be larger than 10. As indicated in Table 1.2, the VIFs are less than 10, and the tolerance is more than 0.1, indicating that there is no reason to be concerned about multicollinearity among the independent variables used in this study.

Table 1.2 Variance Inflation Factor (VIF) and Tolerance level for the internal factors and financial performance model

Variable	Coefficient Variance	VIF	1/VIF Tolerance factor
LQM	5.98E-05	1.169189	0.855293712
BCA	0.000925	1.542194	0.648426852
BNL	0.000365	1.306829	0.765211057
LIR	0.000564	1.332481	0.750479744
LDCB	0.023691	1.890902	0.528848137
LBCB	0.030902	2.184922	0.457682242

Source: *Computed by the researchers based on the data from the World Bank WDI (2025)*

Homogeneity Test for the Internal Factors and Financial Performance Model

The Pesaran and Yamagata (2008) test was used to confirm slope heterogeneity, which evaluates the weighted difference between the cross-sectional unit-specific estimate and a weighted pooled estimate. This is because conducting panel research with slope heterogeneity would produce consistent and reliable findings (Ameziane and Benacoub, 2021). Table 1.2 displays the outcomes of the tests. At the 1% level of significance, the p-values of the Pesaran and Yamagata tests are statistically significant. As a result, the null hypothesis was rejected, and the data-generating process' heterogeneity was confirmed, demonstrating the presence of slope heterogeneity.

Discussion of Findings

This study investigates the impact of internal and external factors on the financial performance of commercial banks in selected African nations. Internal factors, such as non-performing loans and capital adequacy, measured by the bank capital-to-assets ratio, exhibit significant variations across East, West, Central, and Southern Africa, reflecting differences in banking stability. Commercial banks in West and Central Africa report higher

levels of nonperforming loans compared to those in East and Southern Africa. This trend aligns with previous research, which highlights that some regions, such as Ghana, have experienced elevated nonperforming loans due to weak corporate governance and inadequate risk management practices, leading to banking crises (IMF, 2023; World Bank, 2023). In terms of capital adequacy, West Africa records the highest average values, while Central Africa reports the lowest. This disparity suggests differences in regulatory enforcement and capital buffer requirements across regions. For instance, Mozambique's banking sector has faced persistent financial stability challenges, prompting the development of predictive models for bank insolvency and improved risk management strategies (Da Silva & Agyapong, 2023).

Conclusion

The conclusion of this study highlights the significant role of internal bank factors in shaping the financial performance of commercial banks in sub-Saharan Africa. Liquidity management, bank capital asset ratio, and lending interest rates were found to positively and significantly influence financial performance, emphasising the importance of efficient financial resource management within banks. However, bank non-performing loans and the number of borrowers had negative effects, underscoring the detrimental impact of poor credit management and default risks on profitability. Based on the results, banks are required to prioritise prudent risk management strategies, improve operational efficiency, and ensure effective liquidity management to optimise their financial performance.

Recommendations

Based on the findings, several recommendations are proposed to enhance the financial performance of commercial banks in sub-Sahara Africa. Since liquidity management, bank capital asset ratio, and lending interest rates have significant positive effects on financial performance, banks should implement robust liquidity management frameworks, maintain optimal capital adequacy, and set competitive yet sustainable lending rates. Regulatory authorities should ensure compliance with capital requirements and promote policies that encourage financial stability within the banking sector.

Given that non-performing loans and the number of borrowers negatively affect financial performance, banks must strengthen credit risk management strategies by enhancing loan assessment procedures, improving borrower screening, and implementing stringent loan recovery mechanisms. Encouraging responsible lending practices and leveraging financial technologies for credit risk assessment can help mitigate default risks and reduce the adverse impact of non-performing loans on bank profitability.

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