



**BANK-SPECIFIC FACTORS AND LENDING BEHAVIOUR IN SUB-SAHARAN AFRICA**

**Ibrahim Bello Abdullahi<sup>1</sup> & Hussain Umar<sup>2</sup>**

<sup>1</sup>Department of Finance, University of Ilorin, Nigeria  
08054781113: [abibrahim@unilorin.edu.ng](mailto:abibrahim@unilorin.edu.ng)<sup>1</sup>,

<sup>2</sup>Department of Finance, Kwara State University, Malete, Kwara State, Nigeria  
08035054306: [umar.hussain@kwasu.edu.ng](mailto:umar.hussain@kwasu.edu.ng)<sup>2</sup>

**Abstract**

*The intermediary function carried out by commercial banks in moving financial resources from surplus units to deficit units continues to be most critical to economic activities across the globe including sub-Saharan Africa. However, literature revealed that challenges involving inadequate capital, poor asset quality and smaller bank sizes constrain the lending capacity of commercial banks in sub-Saharan Africa, leading to inefficient intermediation, weak lending capacity and financial underdevelopment. Therefore, this study aimed at examining the effect of bank-specific factors on lending behaviour in Sub-Saharan Africa. This study employed ex post facto research design. Population of the study consists of fifty-four (54) African nations within the sub-Sahara African region, while 14 sub-Sahara African countries were purposively drawn as the sample size of the study. Secondary data were sourced from World Development Indicators (WDI) and African Financials covering the period of 1990 to 2022. The study employed pooled ordinary least squares (POLS) regression method for the analysis. The results were that: capital adequacy ratio ( $\beta = 0.289$ ;  $p\text{-value} = 0.000$ ); asset quality ( $\beta = 0.306$ ;  $p\text{-value} = 0.003$ ); and bank size ( $\beta = 3.928$ ;  $p\text{-value} = 0.000$ ) have significant positive effect on lending behaviour in the SSA region. The study concluded that bank-specific factors affect lending behaviour in sub-Saharan Africa. The study therefore recommended that management of commercial banks in the SSA region should pursue growth strategies like mergers and acquisitions to achieve economies of scale and improve lending capacity; and policymakers should implement flexible guidelines for capital adequacy tailored to the unique economic conditions of sub-Saharan Africa, so as to ensure financial stability without over-restricting banks' lending capacities.*

**Keywords:** Bank-Specific Factors, Lending Behaviour, Commercial Banks, POLS Regression, Sub-Saharan Africa

**JEL Codes:** E51, G21

**INTRODUCTION**

The essential and indispensable function carried out by commercial banks is intermediation of financial resources between surplus units to deficit units; which continues to be most critical to economic activities across the globe including sub-Saharan Africa. This activity is primarily focused on providing short-term credits to address the needs of the economy. This pivotal role in allocating and distributing financial resources within the economy often aimed at setting in motion a ripple effect towards fostering investment, generating employment, increasing income,

expanding businesses, and ultimately promoting economic prosperity. Consequently, commercial banks receive deposits, extend credit through loans, and provide a range of financial services. These deposits typically originate from customers with surplus funds, allowing banks to simultaneously provide loans to those with deficit (Bhari, 2023; Babarinde & Gidigbi, 2022; Coetzee & Genukile, 2020).

In this capacity, commercial banks convert deposits into bank assets in the form of loans and advances, minimize transaction expenses, among other functions (Akindutire, 2021; Yunusa, et al., 2020). Lending activities stood at the core of commercial banks operations and can be likened to the lifeblood of their business models. By extending loans and advances to individuals and businesses in the short-term, commercial banks enable them to engage in investment and developmental economic activities (Sonn & Park, 2022; Miyajima, 2020). However, commercial banks across the globe including those in sub-Saharan Africa encounter various types of risks, shaped by diverse internal or bank-specific factors that threaten the survival of the bank.

According to Mahlangu and Chowa (2022), unsystematic risks which may stem from internal banking-specific factors such as bank size, asset quality, capital adequacy, credit risk are tied to specific factors unique to each bank (Miyajima, 2020; Yunusa, *et al.*, 2020). These specific risk factors may significantly affect lending behaviour. Capital adequacy, for instance, ensures that banks maintain sufficient capital reserves to absorb potential losses, thereby safeguarding their stability and enhancing their capacity to lend. Asset quality, which reflects the soundness of a bank's loan portfolio, is another critical determinant of lending behaviour, as poor asset quality can lead to increased provisions for bad debts and reduced lending capacity. Bank size also matters, as larger banks with more substantial assets can diversify their portfolios and potentially take on more lending activities (Bhari, 2023; Coetzee & Genukile, 2020).

Hence, Anagnostopoulos and Kabeega (2019) cautioned that the deterioration of banks' asset quality which often results from heightened loan losses can harm social well-being, undermine economic activity, and pose a significant financial threat to the banking system. In sub-Sahara Africa, such challenges constrain the lending capacity of commercial banks, leading to inefficient intermediation and financial underdevelopment. To address these issues, the Basel Committee on Banking Supervision introduced regulatory frameworks for adequate capital requirements to mitigate various risks, including credit risk stemming from bank loan portfolios. However, many countries in the SSA region, excluding South Africa, Egypt, and Mauritius, have been slow to adopt these Basel regulations, citing their stringent nature (Thamae & Odhiambo, 2022; Sayedi & Ringim, 2019).

Furthermore, the underdevelopment of banking sectors in across African countries further impeded their integration into the global financial system. Factors such as inadequate capital, smaller bank sizes, and poor asset quality limit the ability of banks to meet customer loan demands. These factors present major challenges to lending activities of commercial banks in SSA. The immediate consequence of a substantial volume of NPLs within the banking system is the potential for poor performance, conservative lending practices, bank failures and a subsequent economic meltdown (Yitayaw, 2021). Literature revealed that banking regulations have mixed effects on lending, balancing the benefits of financial stability against the costs of constrained credit supply (Thamae & Odhiambo, 2021; Asongu & Odhiambo, 2018).

Furthermore, commercial banks in Africa including sub-Saharan Africa (SSA) frequently encounter multiple instances of loan defaults that discourage lending activities and erode profitability and stability. Loan defaults often result in conservative lending practices, as funds that could have been lent to new borrowers are lost due to non-repayment by previous customers (Özşuca, 2022). Consequently, loan losses contribute to deteriorating asset quality, restrict access to credit for potential borrowers, and affect critical banking metrics like size, capital adequacy, and asset quality, ultimately impacting the overall lending behaviour of bank within the SSA (Thamae & Odhiambo, 2022; Basel Committee on Banking Supervision, 2017).

Consequently, SSA countries initiated comprehensive financial sector reforms, including substantial modifications to banking regulations and supervisory frameworks. These reforms involved the widespread adoption of 1992 Basel I accord, which mandated a minimum capital adequacy ratio of 8% based on risk-weighted assets to reduce credit risk. Countries like Angola, Botswana, Malawi, and Mozambique adopted Basel II accord, or certain aspects of it, integrating operational risk into capital adequacy, thereby improving transparency and risk oversight (Odhiambo, 2020). Similarly, economies like Ghana, Kenya, Mauritius, Nigeria, Rwanda, Tanzania, South Africa, and the West African Economic and Monetary Union (WAEMU) adopted principles from Basel II and III (or specific components from both). Adherence to these accords has been credited with enabling the banking sector to withstand the 2007–2008 global financial crisis and the 2020 COVID-19 pandemic (Coetzee & Genukile, 2020).

Despite these efforts, SSA's average loan-to-deposit ratio is 61.89%, which falls short of levels observed in other developing economies, such as Brazil (92.1%), Ecuador (99.2%), Indonesia (77.5%), India (71.9%), Jamaica (84.6%), Morocco (70.1%), and Singapore (94.0%) (Atuahene, et al., 2021). Aside the little progress observed with lending practices of the banking sector in the SSA, important drivers such as the bank specific factors are plagued with little to no development (Atuahene, *et al.*, 2021). The observed weak internal bank-specific metrics create an environment less conducive to efficient banking operations and the formulation of effective lending strategies (Thamae & Odhiambo, 2022; Law, Ng, Kutan & Law, 2021; Coetzee & Genukile, 2020). Addressing these deficiencies is crucial for strengthening the role of commercial banks in fostering effective financial intermediation in SSA. Given these issues, this study seeks to address these issues by evaluating the effect of bank-specific factors (capital adequacy, asset quality, and bank size) on lending behaviour in Sub-Saharan Africa.

The study is thereby guided by the following research questions:

- i. What is the effect of capital adequacy ratio on lending behaviour in Sub-Saharan Africa?
- ii. What is the effect of asset quality on lending behaviour in Sub-Saharan Africa?
- iii. What is the effect of bank size on lending behaviour in Sub-Saharan Africa?

## LITERATURE REVIEW

### Conceptual Review

#### Bank-Specific Factors

Bank-specific factors are financial and operational metrics used to assess the performance, stability, and health of individual banks or financial institutions (Gutiérrez-López & Abad-González, 2020). Bank-specific factors such as capital adequacy, asset quality, and bank size, help to understand bank's operations, risk management, profitability, and overall financial strength. Regulators, investors, and other stakeholders use these indicators to assess a bank's stability and

make informed decisions (Yitayaw, 2021). These factors are considered comprehensive explanatory variables because they comprise aspects related to capital strength, credit risk, and liquidity (Arintoko, 2021).

### **Capital Adequacy**

Capital adequacy refers to the requirement for banks and other financial institutions to have enough capital to cover their risks and operate safely. It is the sufficiency of the bank's capital in relation to its risk-weighted assets, used to ensure that a bank has enough capital to absorb potential losses and continue operating safely. The primary goal of capital adequacy is to protect depositors and promote the stability and efficiency of financial systems around the world (Sonn & Park, 2022). Capital adequacy has been the subject of intense discussion since the Basel Capital Accord was introduced, is one of the fundamental factors that influence bank lending (Adabor, 2022). It comprises elements such as paid-up capital, retained earnings, legal reserves, and surplus funds earmarked for unforeseen circumstances. According to Gazi et al. (2022), banks are better able to endure times of financial difficulty and sustain or even enhance their lending activity when they have tier-1 capital (but not tier-2 capital).

### **Bank size**

Bank size refers to the scale or magnitude of a bank's operations, typically measured in terms of its assets, liabilities, market capitalization, number of branches, and employee count. Also, it is broadly conceptualized as bank's total net assets, used to capture the potential economies or diseconomies of scale. Hence, bank size influences a bank's market power, regulatory environment, operational challenges, and economic impact. Understanding the size of a bank helps stakeholders assess its significance, risk profile, and role in the financial system. To measure the size of banks, many scholars have adopted the natural logarithm of total assets as a proxy (Singh & Sharma, 2021; Hu & Gong, 2019).

### **Asset Quality**

Asset quality refers to the composition of a bank's assets and reflects the calibre of the bank's loan portfolio, comprising elements such as current assets, credit holdings, fixed assets, and other investments. Poor asset quality is a common contributor to a bank's insolvency. Maintaining good asset quality is paramount for bolstering liquidity, as it strengthens the bank's capacity to meet its financial obligations promptly. According to Assfaw (2019), asset quality can be assessed through the ratio of loan loss provisions to total loans. A lower ratio of loan loss provisions to total loans indicates that a bank's asset quality is relatively superior compared to other banks. Also, asset quality can be measured by the non-performing loan to total loan ratio. Literature has shown that an increase in non-performing loans diminishes the level of liquid assets held by banks (Mazreku, et al., 2019).

### **Bank Lending Behaviour**

Bank lending behaviour refers to how commercial banks adjust the volume of loans and advances they offer in response to observed circumstances along with regulatory provisions. The choice of whether to extend loans and the amount to extend at a specific moment is a pivotal decision that can significantly impact the sustainability of a lending institution. This comprises the regulatory policies that determine the maximum loan amount that can be extended, eligible borrowers, and

the interest rates applicable for a specific timeframe (Coetzee & Genukile, 2020). Commercial banks typically engage in short-term borrowing, primarily through deposits, while they extend loans for the long term, often in the form of credits. Handling the timing difference between receiving deposits and providing credit not only brings advantages but also involves a range of risks (Beutler, et al., 2020).

Bank lending behaviour can be measured by the ratio of loans and advances to total assets to assess the proportion of a bank's assets that are allocated to loans and advances. This ratio shows the extent to which a bank's resources are deployed in lending activities, indicating the significance of loans in relation to the total asset base. The formula for calculating this ratio is:

Ratio of Loans and Advances to Total Assets = Loans and Advances/Total Assets x 100

Where; loans and advances represent the total value of loans and advances extended by the bank; and total assets represent the sum of all assets held by the bank, including loans, investments, cash, and other holdings.

The result is usually expressed as a percentage, representing the proportion of the total asset base that is committed to loans and advances. A higher ratio suggests that a significant portion of the bank's assets is invested in lending activities, while a lower ratio indicates a relatively smaller allocation to loans compared to other assets. Thus, it's important to note that while a higher ratio may indicate a more aggressive lending strategy, it also implies higher credit risk. Banks carefully manage this ratio to balance the need for profitability through lending with the necessity to maintain a diversified and well-managed asset portfolio. Monitoring changes in this ratio over time can provide insights into shifts in a bank's lending behaviour and risk appetite (Adabor, 2022; Coetzee & Genukile, 2020, Beutler, et al., 2020).

## **Theoretical Framework**

### ***Theory of Financial Intermediation***

Allen and Santomero developed the theory of financial intermediation in 1977 to explain the role of financial intermediaries, like banks, in the economy. Their theory is based on the idea that problems such as unequal access to information (information asymmetry) and dishonest behavior (moral hazard) exist in financial markets. These problems make it harder for lenders and borrowers to connect directly. Financial intermediaries help solve this by collecting, analyzing, and sharing information about borrowers. They use tools like credit scores, financial analysis, and risk assessments to decide if someone is likely to repay a loan.

Financial intermediaries help reduce the risk of borrowers acting dishonestly (moral hazard) by keeping a close eye on them, setting clear rules in loan agreements, and managing risks carefully. They include specific terms in loan contracts to make sure the money is used properly. By regularly checking in on borrowers, they can spot signs of trouble early, like missed payments or poor money management, and take steps to fix the situation before it gets worse. Thus, financial intermediaries are very important for keeping the financial system stable and efficient because they help manage and spread out risk. They collect money from many different people and organizations, like businesses, investors, and regular savers, and then lend that money to a variety of borrowers. By doing this, they reduce risk and make investing safer. Since they gather a large amount of money, they can fund bigger projects and investments than any one person could, helping to support economic growth and development.



Hence, financial intermediaries, like banks, save money by pooling funds from many savers and investors, which allows them to spread out costs like administration, regulatory fees, and infrastructure over a larger base. This means they can offer services, like loans, savings accounts, and investments, at a lower cost than if individuals tried to access these services on their own, because the cost per customer becomes cheaper as the number of customers grows. The theory of financial intermediation recognizes that laws and regulations play a big role in shaping how banks and other financial institutions operate. These rules help keep the financial system stable, fair, and transparent. As a result, banks must carefully follow many changing rules, like keeping enough capital, maintaining proper liquidity, managing loan quality, reporting accurately, and preventing money laundering.

This theory is highly relevant to this study by explaining why banks exist and how they influence lending decisions, especially in environments with limited or unreliable information. Commercial banks act as intermediaries that manage and reduce lending risk through proper screening and monitoring; and play a key role in overcoming the problem of unequal access to information between borrowers and lenders, an issue common in many Sub-Saharan African countries. In addition, studies such as Akindutire (2021), Yitayaw (2021) and Coetzee and Genukile (2020) provided strong support for the relevance of this theory for this study.

## **Empirical Review**

### *Studies outside sub-Sahara African*

Isa, Latif, Zaharum, Nasrul, and Noh (2019) examined the four specific internal factors influencing the commercial banks' lending behaviour in Malaysia from 2009 to 2018. Specifically, the volume of deposit and non-performing loans negatively influence the banks' lending behaviour whereas the level of liquidity and bank size pose positive impacts on lending behaviour. These findings are very beneficial to the commercial banks, the Central Bank of Malaysia (BNM), depositors or shareholders as well as business firms in planning, formulating appropriate policies and ultimately making well-informed decisions in the future.

Nguyen and Dinh (2022) examined the role of bank capital on the bank lending channel of monetary policy transmission in Vietnam from 2007 to 2020 using two-step system-GMM methodology. The results confirm the inertia related to loan growth and the presence of a monetary policy bank lending mechanism, which is robust across a series of monetary policy instruments and the approach of variable exclusion from the baseline model. In addition, this study shows the specific range value of bank capital that monetary policy stance has no impact on bank loan supply in a time of monetary restrictions.

Ahmed, Sayed and Ahmed (2024) examined the effect of firm-specific determinants on bank lending activities and the impact of NPLs on this behaviour among Arab banks from 2016 to 2020, using OLS regression (Pooled) method. The findings reveal a significant negative impact of NPLs and capital adequacy ratios on bank lending behaviour, while bank size and deposit growth positively influence lending activities. Additionally, the study notes an insignificant relationship between profitability, equity as a percentage of total assets, and lending behaviour.

### *Sub-Sahara African Studies*

Akindutire (2021) examined factors that determine the deposit money bank's lending behaviour to the private sector of the economy in Nigeria from 1986 to 2017, using Granger causality test and

ARDL. The findings revealed that the variables move in the long run. However, among the variables of interest, the volume of deposits and M2 determines bank lending behaviour in the short and long run. At the same time, RSR, INF, and LDR retard lending to the private sector. The study also found that causality runs from the volume of deposits to private sector credit.

Jeremiah, Akpanuko and Acha (2022) examine the influence of bank liquidity on the lending behaviour of commercial banks in Nigeria from 2006 to 2020, using regression analysis. The results revealed that bank liquidity significantly influenced the lending behaviour. However, the loan-to-total assets ratio was found to exert the highest relative influence on the lending behaviour. Makanile and Pastory (2022) examined the determinants of the lending behaviour of six commercial banks in Tanzania from 2015 to 2019 using multiple regression analysis. The results show that liquidity and capital adequacies have a significant relationship with lending, whereas interest rate and management efficiency have no statistically significant influence on lending.

## METHODOLOGY

### Research Design

The research design employed in this study is ex-post facto. This design is appropriate as it relies on existing (secondary) data and examines established facts. One advantage of this research design is that it reduces the need for data manipulation, making it accessible for anyone interested in validating its authenticity.

### Model Specification

To achieve the objective of this study, pooled ordinary least squares (POLS) regression method was employed as estimating techniques based on the theoretical framework. POLS regression method assumes that individual entities (banks) share similar characteristics, allowing the pooling of cross-sectional and time-series data. Pooled OLS regression captures the dynamic relationship between dependent variable (bank lending behaviour) and independent variables (capital adequacy, asset quality, bank size) by modelling the aggregate effects of bank-specific factors on lending behaviour across multiple banks and time periods. Studies such as Ahmed et al. (2024), Bounbou (2022), Avignone et al. (2021) used the regression-based estimating techniques in their respective studies.

The functional model for this study is specified as follows:

$$LENB_{it} = f(CAR, ASQ, BSZ) \quad (3.1)$$

The model is further stated in econometric form as:

$$LENB_{it} = \beta_0 + \beta_1 CAR_{it} + \beta_2 ASQ_{it} + \beta_3 BSZ_{it} + \mu_t \quad (3.2)$$

Where LENB = lending behaviour measured by ratio of loans and advances to total asset; CAR = capital adequacy ratio measured by ratio of total equity capital to total assets; ASQ = asset quality measured by ratio of loan loss provisions to total loans; BSZ = bank size measured by natural logarithm of total assets. *A priori* expectation is stated in mathematical form as  $\beta_1, \beta_2, \beta_3 > 0$ . The research design employed in this study is ex-post facto. The annual data used for this study were secondary in nature and obtained from World Development Indicators (WDI) by World Bank, and World Governance Indicator covering the period of 1990 to 2022.

This study employed ex post facto research design. The population for this study consists of all fifty-four (54) African nations within the sub-Saharan Africa. While the sample size of 14 sub-Saharan African countries was purposive drawn based on availability of data that were public between 1996 and 2022. The study excluded sub-Sahara African countries whose data were not

made public between 1996 and 2022. Also, South Sudan which gained independence in 2011, and Somalia which has been gripped with political instability for decades were excluded. The following sampled countries were purposively selected for this study based on availability of required data. The countries are Angola, Congo Democratic Republic, The Gambia, Kenya, Madagascar, Mauritius, Namibia, Nigeria, Rwanda, Seychelles, South Africa, Tanzania, Uganda, Zambia.

## RESULTS AND DISCUSSIONS

### *Summary Statistics of Variables*

Table 1: Descriptive Statistics

Variable	Mean	Std. Dev.	Min	Max
Lending behaviour	22.44	17.8063	6.8600	217.8750
Capital adequacy ratio	9.1814	4.3069	-9.6207	25.4677
Asset quality	10.6391	10.2885	-20.254	65.7644
Bank Size	11.0770	7.6122	9.1961	36.593

Source: Author (2025)

In Table 1, the descriptive statistics result revealed that lending behaviour has a mean of 22.44%, a minimum of 6.86%, and a maximum of 217.88%. The mean lending rate of 22.44% suggests that, on average, lenders are charging interest rates at this level in the Sub-Sahara African region. The minimum value indicates instances where some lenders in the Sub-Sahara African region are offering relatively low-interest rates; while the maximum value indicates instances where lenders are charging extremely high interest rates. The wide range between the minimum and maximum values suggests significant variability in lending behaviour of commercial banks in the Sub-Sahara African region.

Capital adequacy ratio has a mean of 9.18%, a minimum of -9.62%, and a maximum of 25.47%. The mean value suggests that, on average, commercial banks in the SSA region maintain capital reserves at this level relative to their risk-weighted assets. The minimum value being negative (-9.62%) is concerning as it implies that some commercial banks in the SSA region have capital adequacy ratios below zero; while the maximum value of 25.47% indicates that some commercial banks in the SSA region maintain a significant buffer of capital reserves relative to their risk-weighted assets.

Asset quality ratio has a mean of 10.64%, a minimum of -20.25%, and a maximum of 65.76%. The mean value suggests that, on average, commercial banks in the SSA region have 10.64% of their assets classified as non-performing or at risk. The minimum value being negative (-20.25%) is more concerning as it implies that some commercial banks in the SSA region have negative asset quality ratios, suggesting that these banks might have more non-performing assets than total assets, which could indicate significant credit risk exposure or poor asset management practices; while the maximum value of 65.76% indicates that some financial institutions have a substantial portion of their assets classified as non-performing or at risk.

Bank size has a mean of 11.08, a minimum of 9.20, and a maximum of 73.59. The mean value suggests that, on average, commercial banks in the SSA region are relatively large in size. The minimum value of 9.2 shows that the smallest banks within the SSA region manage reasonably good assets, while the maximum value of 73.59 shows that big banks in the SSA region have large total assets.



### Stationarity Test

In order to identify the order of integration and ascertain whether the variables in this study are stationary or nonstationary, the Augmented Dickey-Fuller (ADF) and Phillips Perron (PP) unit root tests were utilized.

**Table 2: Unit Root Test**

Variables	Augmented Dickey-Fuller (ADF) Unit Root Test				Phillips Perron (PP) Unit Root Test			
	Level		First Difference		Level		First Difference	
	t-stat	p-value	t-stat	p-value	t-stat	p-value	t-stat	p-value
LENB	-3.5138	0.0002	-	-	-3.5138	0.0002	-	-
CAR	-1.9999	0.0228	-	-	-1.9999	0.0228	-	-
ASQ	-5.8061	0.0000	-	-	-5.8061	0.0000	-	-
BSZ	-4.5672	0.0043	-	-	-4.5672	0.0043	-	-

Source: Author (2025)

ADF and PP unit root test were employed to ensure robustness and shown in Table 2. The results indicated that lending behaviour, capital adequacy, asset quality, bank size, control of corruption, inflation and interest rate were stationary at level I(0). While regulatory quality, rule of law and unemployment rate were stationary at first difference I(1). By this result, the null hypothesis which states that each of the variables is not stationary is hereby rejected, while the alternative hypothesis is accepted. Hence, a cointegration test must be performed as part of the investigation since some variables are stationary at first difference.

### Cointegration Test

After establishing the order of integration, the maximum-likelihood test procedure developed by Johansen (1991) was employed to investigate whether a long-run relationship exists among the variables of concern. However, it is important to note that the existence of 66cointegration vectors among a group of variables might not imply that there is a causal influence between pairs of variables included in the model.

**Table 3: Johansen Test for Cointegration**

Series: LENB, CAR, ASQ, BSZ				
Lags interval (in first differences): No lags				
<b>Unrestricted Cointegration Rank Test (Trace)</b>				
Hypothesized No. of CE(s)	Eigenvalue	Trace Stat	5% Critical Value	p-values
None *	0.362253	479.5835	197.3709	0.0001
At most 1 *	0.257787	328.4462	159.5297	0.0000
At most 2 *	0.215390	228.2783	125.6154	0.0000
<b>Unrestricted Cointegration Rank Test (Maximum Eigenvalue)</b>				
Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Stat	5% Critical Value	p-values
None *	0.362253	151.1373	58.43354	0.0000

At most 1 *	0.257787	100.1679	52.36261	0.0000
At most 2 *	0.215390	81.50287	46.23142	0.0000

Source: Author (2025)

The Johansen cointegration test outcomes, as displayed in Table 3, lead to the rejection of the null hypothesis. The trace statistic values surpass the critical values at the 1% significance levels, indicating evidence of the presence of a cointegration relationship among the variables before and after the creation of composite index. Taken together, the Johansen test results point to a long-term connection between the independent variables (bank-specific characteristics, institutional quality, and macroeconomic indicators) and the dependent variables (bank lending behaviour). These results support the alternative hypotheses by decisively rejecting the null hypothesis of no cointegration at the 1% significance level. Consequently, it may be said that the model's variables have long-term relationships and are cointegrated.

### Pooled Ordinary Least Squares (POLS) Regression

Table 4: POLS Regression Results

Variable	Coef.	t-Stat	p-value
Dependent Variable: Bank Lending Behaviour			
C	-0.0661	0.9890	0.1547
CAR	0.2898	3.9904	0.0001
ASQ	0.3064	2.3088	0.0032
BSZ	3.9280	4.3198	0.0000
$R^2 = 69.97\%$			
F-stat = 13.5945			
Prob (F-stat) = 0.0000			
D-W stat = 1.9598			

Source: Author's Computation (2025)

### Interpretation of Results

As shown in Table 4, capital adequacy ratio ( $\beta = 0.289$ ; p-value = 0.000) has a significant positive effect on bank lending behaviour; asset quality ( $\beta = 0.306$ ; p-value = 0.003) showed a significant positive effect on bank lending behaviour; and bank size ( $\beta = 3.928$ ; p-value = 0.000) has a significant positive effect on bank lending behaviour in the SSA region.

### Model Diagnostics

Finally, the coefficients of determination ( $R^2$ ) stood at 0.6997 indicating that 69.97% of the change in bank lending behaviour is explained by the changes in bank-specific factor such as capital adequacy, asset quality and bank size. Moreover, the result also showed that the model is jointly significant at 1% significant level when independent variables are taken together with the dependent variable as reflected by the probability value of 0.0000. Durbin Watson of 1.9598 reflects the absence of serial correlation between dependent variable and independent variables.

## Discussion of Findings

As shown in Table 4, capital adequacy ratio has a significant positive effect on bank lending behaviour in the SSA region. This implies that higher regulatory capital adequacy leads to increased lending activity by commercial banks in Sub-Saharan Africa. This result aligns with the theories of financial intermediation, particularly the capital adequacy set forth by regulatory authorities such as the Basel Committee on Banking Supervision. By mandating commercial banks to maintain a certain level of capital relative to their risk-weighted assets, regulators aim to enhance the stability and resilience of the banking sector. In response to higher capital adequacy ratio, banks may adjust their lending behaviour to comply with regulatory standards while still meeting the credit needs of borrowers. This finding is consistent with that of Hsieh et al. (2022), Özşuca (2022), Yitayaw (2021), Demehin (2021) which found a positive effect of capital adequacy on bank lending in Nigeria. However, this finding does not align with that of Boungou (2022), Oyetade, et al. (2021) and Chukwu and Ogbonnaya-Udo (2020) which found a negative impact of capital adequacy on bank lending in Africa.

Similarly, asset quality showed a significant positive effect on bank lending behaviour in the SSA region. This suggests that commercial banks with higher asset quality are more inclined to extend credit to borrowers in Sub-Saharan Africa. Thus, regulatory measures aimed at improving asset quality, such as enhanced risk management practices and stricter credit assessment standards, can contribute to the expansion of credit availability in Sub-Saharan Africa. Banks with robust asset quality are likely to attract more deposits and investor confidence, thereby enhancing their capacity to lend. High asset quality typically indicates a lower proportion of non-performing loans (NPLs) or impaired assets in a bank's portfolio. Banks with lower NPL ratios are generally perceived as being more financially stable and less exposed to credit risk. As a result, they may feel more confident in extending credit to businesses and individuals, thus positively impacting lending behaviour.

In the theory of financial intermediation, banks act as information aggregators and analysts, assessing the creditworthiness of borrowers. Higher asset quality indicates that banks hold a portfolio of loans with lower default risk, signalling to lenders that they have conducted thorough due diligence and risk assessment. Thus, this finding aligns with the financial intermediation theory which posits that financial intermediaries must ensure compliance with various regulatory standards involving quality of assets. In addition, this finding is consistent with the results of Diarra and Prasad (2021) which found positive impact of asset quality on bank lending. Syed and Aidyngul (2020) established that asset quality significantly affect bank lending among selected developed and developing nations.

Likewise, bank size has a significant positive effect on bank lending behaviour in the SSA region. This indicates that as the size of a bank increases, the bank's lending activities also increases. This is because larger banks are likely to engage in more lending activities compared to smaller banks. This can be due to several factors, including greater access to funding, more diversified portfolios, and stronger risk management capabilities. This finding is consistent with the financial intermediation theory which emphasized the advantages larger banks have in pooling resources and distributing them efficiently due to their resources and extensive networks.

As such, businesses and consumers in the SSA region may have better access to credit thus, stimulating economic growth by enabling investments, consumption, and business expansion.

Thus, this finding is consistent with the results of Özşuca (2022), Diarra and Prasad (2021), Arintoko (2021), Yitayaw (2021), Nasrul et al. (2019) which found bank size to have a positive and significant impact on lending behaviour. However, this finding contradicts the finding of Tuffour et al. (2019), Al-Homaidi et al. (2019) which found bank size to have a negative and insignificant impact on lending behaviour.

### CONCLUSION AND RECOMMENDATIONS

In conclusion, capital adequacy, asset quality and bank size have effect on bank lending behaviour in sub-Saharan Africa. These findings underscored the importance of strengthening internal bank characteristics to improve credit delivery in the SSA banking sector. Therefore, this study recommended that:

- i. Policymakers should implement flexible Basel capital adequacy guidelines tailored to the unique economic conditions of SSA, so as to ensure financial stability without over-restricting banks' lending capacities;
- ii. Management of commercial banks in the SSA region should pursue growth strategies like mergers and acquisitions to achieve economies of scale and improve lending capacity; and
- iii. Investors should invest in larger, well-capitalized banks with robust asset quality, as they are more resilient, capable of sustaining growth and are more likely to offer stable lending opportunities.

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