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## DETERMINANTS OF NON-PERFORMING LOANS IN THE NIGERIA BANKING INDUSTRY

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### ABSTRACT

This study examined the determinants of non-performing loans (NPLs) in the Nigeria banking industry between the periods of 2011-2020. The specific objective of the study is to examine the relationship between the measures of bank specific variables [Bank Size (BS), Capital Adequacy (CA), Profitability (PROF), Bank Age (BA), Liquidity (LIQ) and Loan to Total Assets (LTA)] and [NPLs proxy with Non Performing Loans Ratio (NPLR)] in Nigeria. The focus on the banks in Nigeria listed in the Nigeria Stock Exchange and the difficulty in assessing their annual reports and account of 10 banks were drawn out of the 18 deposit money banks (DMBs) for the study. The data for the study was gotten from the annual reports and accounts of the ten (10) banks on the basis of the variables under study and the data was analyzed using descriptive statistics, correlation and multiple regression analysis. The findings revealed that BS, CA and BA have significant effect on NPLR but the effect of BS and BA on NPR are negative while PROF have negative insignificant effect on NPLR of DMBs in Nigeria. This research found that determinants of NPLs have mix effect on NPLR in Nigeria. The findings suggested that BS in relation to total assets should put in consideration when granting loans and also, the DMBs in Nigeria should maintain and implement the capital adequacy policy enacted by the CBN.

**Keywords:** Non-Performing Loans, Bank Size, Capital Adequacy, Profitability, Bank Age, and Liquidity.

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## INTRODUCTION

In emerging economies like Nigeria, banks' major source of income is credit generation (Koju, Koju and Wang, 2018). The most well-known risk that banks face is credit risk (CR), which is calculated as the ratio of nonperforming to gross loans. Channeling this deposit to a loan imposes a risk on both the bank and the depositors. Among all the dangers that banks are confronted with, CR the ratio of popularity, which is the most prevalent, Non performing to gross loans, and it has the most significant disastrous consequence on banks' operations and stability; This suggests that nonperforming loans are the primary source of banks' financial vulnerability and distress on the global financial market (Koju, Koju and Wang, 2018).

Deposit Money Banks (DMBs) now offer a wide range of financial services and products in the market, and lending is regarded as their primary source of revenue. The CBN should, thus establish modalities and policies for granting loans, as non-performing loans have a detrimental effect on the Nigerian economy (Grima and Thalassinos, 2020). Thus, the likelihood of borrowers failing to satisfy their loan obligations to DMBs has recently increased, and this has become a major source of concern for Nigerian financial institutions, particularly those involved in unsecured lending. Hence, it has been demonstrated that the risks connected with a borrower's default can have a substantial influence on other related businesses (Mosharrof, Mohammed and Mohammad, 2020).

CR exposure can be influenced by both bank-specific and macroeconomic determinants. Variables that are particular to banks that are included in their control axis are known as bank-specific variables. The characteristics examined in this research are profitability (PROF), liquidity (LIQ), capital adequacy (CA), age, loans-to-total assets, and size. Macroeconomic factors, however, are those that affect the entire economy and, by extension, all businesses, regardless of industry, over which they have no control. The interest rate, gross domestic product growth rate, inflation rate etc are the macroeconomic indicators considered in this study, their negative impact that nonperforming loans may have on banks' operations, as well as the need to effectively and efficiently manage risk, and which is accurate loan pricing theory. In a bank-based economy like Nigeria, it's intriguing to look at the bank-specific characteristics that may influence NPL, which is supported by information asymmetry theory, financial intermediation theory, and agency theory (Wasiu, Trimisiu and Hafeez, 2020).

Specific characteristics and NPL in Nigeria, the majority of studies have produced inconsistent results. Wasiu, Trimisiu, and Hafeez (2020) found that the CAR, size, and loans-to-total-assets ratio all have a detrimental and important effect on NPL, whereas PROF and age have a substantial but favourable effect on NPL in Nigerian DMBs. The liquidity ratio has a negative, but minor, impact on NPL. No single macroeconomic variable, however, has a major impact on NPL.

The majority of bank loans and advances are for a short period of time. In most DMBs in Nigeria, the value of a loan portfolio is determined by the loan officer's credit analysis. The credit expert's job is to ensure that the loans that are given have a good quality composition. Bank loans have a high liquidity quotient, low risk, and an acceptable maturity structure, among other qualities. These qualities are required to ensure repayment on demand or at maturity.

Though there may be default (i.e., the customer failing to pay the interest and principal when they mature or fall due within the agreed-upon period between the lender (creditor) and the borrower (debtor) in some cases). When a debtor defaults as scheduled or recovery is highly unlikely or unlikely to be safeguarded, the loan becomes a NPL, which eventually leads to bad debts. This has happened in the past with Intercontinental Bank Plc, Oceanic Bank Plc, and Savannah Bank Plc (Chege, Omagwa, and Abdul, 2019).

NPLs, according to Chege, Omagwa, and Abdul (2019), are loans that are due for repayment but have not yet been paid. Interest earnings on failed loans do not generate profits for the issuing banks. Defaulted loans have a detrimental impact on banks because, in addition to profit rationing, they put liquidity limits on them. Furthermore, NPL, also known as bad loans, necessitate loan provisions, which result in a decrease in a DMB's PROF. NPL represent the greatest risk to DMBs, given that interest income is at the heart of DMBs' revenue generation, owing to the fact that lending is their basis, hence, this study is focused on bank specific determinants (BSDs) of NPLs among DMBs in Nigeria.

### **Statement of the Problem**

The ongoing deterioration of the quality of risk assets held by Nigerian banks is one of the key causes of bank collapse, among other factors. Many banks' capital positions have been weakened and losses caused by bad debts. That is, a large number of NPL have worn down their capital base. It is not a denial that a high level of bad loans can wreak havoc on a bank's operations and survival. The importance of early discovery and management of NPL cannot be overstated in light of this.

Despite the fact that several research have been conducted to analyze and address the key reasons contributing to the rise in NPLs, the majority of these studies have focused on the variables affecting NPLs in developed countries. It's tough to extrapolate findings from research to banks in developing economies like Nigeria's DMBs. Furthermore, most local studies have placed a strong emphasis on macroeconomic and customer-specific factors, while ignoring bank-specific variables. Furthermore, despite the fact that NPLs have their own negative impact on the economy, and if left unchecked, this impact on the economy can be disastrous because it can lead to bank failure, when banks make loans without adequate collateral, the end result is NPLs, which has resulted in the failure of several DMBs in Nigeria, including Intercontinental Bank. Therefore, the goal of this study is to investigate the BSDs that contribute to NPLs and how they might be prevented going forward. This is a contentious academic issue because the majority of studies done on the impact of BSDs on non-performing loans in the United States and abroad have mixed results and is inclusive, necessitating this research.

Hence, the relationship between BSDs and NPL in Nigeria is investigated in this study. The dependent variable is NPLR (proxy for NPL) and the independent variables (BSDs) are BS, CA, PROF, bank age and LIQ. Therefore, it is posited that BSDs have no significant impact on NPLs ratio of banks in banking industry in Nigeria.

## **REVIEW OF RELATED LITERATURE**

### **Conceptual Review**

#### ***Concept of Non Performing Loans (NPLs)***

NPLs are defined differently in different countries. In one country, a loan may be termed non-performing, whereas in another country, it is not. In rare circumstances, though, opinions do coincide. As such, the following is the definition suggested by the International Monetary

Fund's (IMF) Compilation guide on financial soundness indicators (2016): *“When interest and/or principal payments are 90 days or more past due, or when interest payments equal to 90 days or more have been capitalised, refinanced, or delayed by agreement, or when payments are less than 90 days past due but there are other good reasons—such as a debtor filing for bankruptcy—to doubt that payments will be made in full.”*

According to the Basel Committee on Banking Supervision (2001), as cited in El-Maude, Abdul-Rehman and Ibrahim (2017), a loan is considered default when a bank declares that a borrower (that is, debtor) is unable to meet his or her obligations and repay the loan, or when a borrower is past due on any payment of a bank credit for more than 90 days (Ehiedu & Brume-Ezewu, 2022). These definitions provide a practical foundation for identifying NPL, on which the report is built. Furthermore, NPL is defined as follows in Nigerian banking regulations: NPL and advances are loans whose credit quality has deteriorated and the collection of principal and/or interest in accordance with the loan's contractual repayment terms is in doubt (El-Maude, Abdul-Rehman and Ibrahim, 2017).

### ***Bank Size (BS) and NPL***

Bigger banks are effective in controlling the problem of NPL, because they have advanced technologies and qualified staff to handle moral hazard and agency difficulties tastefully, larger banks are more effective in controlling the problem of NPL. Furthermore, big banks amass a wealth of useful information about borrowers, allowing them to make sound lending decisions. However, the desire to make a monopolistic profit may lead larger banks to expand their activities into hazardous areas, resulting in a high percentage of bad loans and market failures (Kajola et al, 2018).

### ***Capital Adequacy (CA) and NPL***

The ratio of a bank's main capital to its total assets is known as CA. In terms of strength, the higher the capital, the better. High-capitalized banks have a lower risk of NPL, whereas undercapitalized banks have the opposite problem. Moral hazard is indicated by low capitalization (Kajola et al, 2018).

The CAR is a tool that assesses a bank's soundness. It displays the organization's ability to withstand abnormal losses and also demonstrates the organization's resilience and stability during times of crisis. Firms must maintain a minimal CAR in order to stay afloat (Wood & Skinner, 2018). The CAR is a metric for determining a bank's solvency and risk-reduction ability. It is used to safeguard storage and exhibit financial system stability and efficiency (Wood & Skinner, 2018).

### ***Profitability (PROF) and NPL***

A company's PROF is defined as its ability to generate net revenue that exceeds its costs. Profit is critical in the operations of every profit-oriented business. In order to grow, a bank must also generate a profit (Ehiedu & Toria, 2022). In order to proxy PROF, researchers in the preceding literature used a variety of PROF indicators. ROA, ROE, RCE, the absolute value of PBT, and the absolute value of PAT are some of the typical barometers used to measure it (Kajola et al, 2018).

### ***Bank Age (BA) and NPLs***

The term "age" in this study refers to the number of years that Nigerian banks have been listed on the stock exchange, or the year that a bank began to operate in a sophisticated manner. Bank age is projected to have a negative impact on NPLs; nevertheless, their experience, which is

derived from the number of years they have been in business, may help to mitigate credit risk (Kajola et al, 2018).

### ***Liquidity (LIQ) and NPLs***

The ability of a bank to meet its short-term maturing commitments is referred to as LIQ. Depositors and creditors are interested in LIQ because it indicates the extent to which the bank is able to meet its responsibility of paying out their deposits upon request. LIQ is projected to have a negative impact on NPLs in theory, due to a tradeoff between the quantity of LIQ held by the bank and the amount of credit they may advance to borrowers (Kajola et al, 2018).

### **Theoretical Review**

#### ***Information Asymmetry Theory (IAT)***

Akerlof (1970) proposed the IAT, which was later expanded by Stiglitz and Weiss (1981). According to this idea, the bank and the borrower contacting the bank for a loan have different levels of knowledge about the risk of the project they wish to finance. In this situation, the borrower has more information than the bank and may use that information to persuade the bank to pursue a less-than-optimal course of action, something the bank would not be able to do if it had equal information about the project to fund as the borrower. There is a risk of adverse selection and moral hazard in this situation (Matthews & Thompson, 2008).

Based on the theory's recommendations, the current study was inspired to investigate the BSDs that influence the proliferation of NPLs among Nigeria's deposit money institutions, using the IAT as a guide.

#### ***Agency Theory***

Jensen and Meckling are credited with developing agency theory (1976). The agency theory investigates the interaction between a principal, who is defined as the business owner, and an agent, who is defined as the principal's representative in the business (Eisenhardt, 1989). NPLs could be the result of bad credit structures and lending policies imposed by the principal's agents (Louzis et al., 2011). Agents may implement lax lending policies on purpose in order to expand the loan portfolio and collect more interest (Ehiedu, 2022).

This theory is relevant to this study because managers may try to increase the amount of loans they grant to their borrowers without considering the necessary modalities for granting loans because managers are compensated based on their ability to earn more accounting profit rather than cash profit, which may increase the efficacy of NPLs in banks.

### **Empirical Review**

Utilizing yearly dataset of 26 regular banks and four Islamic banks in Bangladesh for the duration of 2014-2018 and analyzing the data with Pooled Standard Least Square (OLS), Mosharrof, Mohammed and Mohammad (2020) explored the variables affecting the NPLs. Variables such as credit development, loans to deposit ratio, capitalization, inefficiency, size, enhancement and monetary development were examined in relation to NPLs. The conclusions showed that bank with huge size has the high capacity to absorb NPLs, thus, the size of the bank will exert negative influence on NPLs.

Based on the aforementioned study's findings, Wasiu, Trimisiu and Hafeez (2020) explored the BSDs and macroeconomic determinants of the NPLs of the recorded in Nigeria DMBs. The study made use of panel data from 2008-2017, and the data were analyzed by fixed effect regression analysis. The results demonstrated that the CAR, size, and loans-to-total-assets ratio all negatively and considerably effect NPLs, whereas the PROF and age were found to

significantly but favourably influence NPLs of the Nigerian DMBs, while the LIQ ratio has a negative but small impact on NPLs. NPLs are not significantly impacted by any macroeconomic factor, nevertheless.

The findings above is contradicts the findings of El-Maude, Abdul-Rehman and Ibrahim (2017) explored the relationship between BSDs and macroeconomic determinant of NPLs in Nigerian DMBs for the duration 5 years (2010 to 2014). The study focused on sample of 10 banks listed in the NSE and the data were analyzed using descriptive statistics, correlation coefficient and multiple regressions. The results indicated a positive critical relationship between non-performing loans and loans to deposits and BS; a positive insignificant association between the CA ratio and inflation; and a negative insignificant relationship between ROA and the rate of NPLs.

This further supported by the findings of Laxmi, Slam and Shouyang (2018), investigated macroeconomic and BSDs of NPLs in the Nepalese, by using both static and dynamic panel for 30 Nepalese business banks for duration of 2003-2015. The result indicated that NPLs have critical positive relationship with credit/loan to deposit ratio (CDR), loan to assets ratio (LAR), ROA, interest spreads (IS), operating expenses to operating income ratio (inefficiency, OEOIR), remittance rate (RE), the exports to import ratio (EIR), the per capita outstanding debt (PCOD) and BS and a negative relationship with the GDP growth rate, CA, and inflation rate. Using panel data collected from the annual report and accounts of State Bank in Pakistan for duration of 2006-2016, Khan and Ahmad (2018), investigated factors that may impact the rising degree of NPLs in business banks of Pakistan. The data were analyzed with descriptive statistics, correlation analysis and random effect panel least square regression with aids of STATA statistical software. The findings revealed that ROA, Earning per share, CAR and Breakup value per share has got a significant impact on NPLs while Cash to Total Asset and investment to Total Asset does not have significant impact on NPLs. This finding is supported by financial intermediation theory, which posits that banks with huge capital base have the capacity to grant more loans that the one's with smaller capital base.

This position was further supported with findings of Sohaib and Qazi (2016) investigated the determinants of CR proxy with NPL to total loan of commercial banks in Pakistan. The explanatory variable of the concern study are macro (GDP growth (GDPGR) and growth in interest rate (IRGR) and bank specific CAR, growth in advances (ADVNGR), operation inefficiency(OPINF), loan to depots ratio (LD), LLP and size of the bank) variables that was employed in the investigation. The sample size is 26 commercial banks, and the data period spans from 2007 to 2013. The findings indicate that CAR and loan loss provision had a highly significant positive correlation with credit risk, while this study also demonstrates that operating inefficiency, GDP growth, and increase in advances had a correlation with credit.

This stands was further supported by the findings of Muhammad, Asima and Zahid (2020), by using financial area (i.e., business banks) recorded in Pakistan Stock Trade over the time of 2005–2017, explored the determinants of NPLs noticing an instance of the financial area in Pakistan. The financial components, including PROF, operating efficiency, CA and income diversification, were assessed. The assessments were finished by regression utilizing arbitrary and fixed impacts through STATA programming. The operating efficiency and PROF indicators have a negative link with NPLs but are statistically significant, whereas the

correlation analysis and revenue diversification have a negative association with NPLs but are statistically insignificant, according to the results.

Utilizing yearly data for the duration 1991-2015, collected from National Bank of Barbados. Wood and Skinner (2018) explored the BSDs and macroeconomic determinants of non-performing credits of business banks in Barbados, for duration of 1991-2015. The sourced data were analyzed using econometric model with aids of SPSS. The result revealed that the bank-specific variables: ROE, ROA, CAR and LDR are significant determinants of non-performing loans, while the macroeconomic variables exerting significant influence are GDP growth, unemployment and interest rate. This finding is supported by financial intermediation theory and the agency theory, they are of the opinion that with high profitability has the tendency to grant more loans, and if not properly manage, it may result to NPLs in the banking industry.

However, the findings above is contradictory to the Kumar and Kishore (2019) panel data methodology including Random Effects model to recognize the BSDs and macroeconomic determinants of non-performing advances in the United Arab Emirates (UAE) customary banks for the period 2008-2015. Among the bank-specific determinants, non-performing advances (NPL, t-1) showed a critical positive relationship with NPL and liquidity proportion demonstrate a huge negative relationship with NPL, though CA and ROA was found to have an insignificant relationship because of the powerful financial guidelines in UAE. Every one of the macroeconomic determinants, in particular, gross domestic product, growth, inflation, domestic credit to private sector, unemployment and government debt had all the earmarks of being irrelevant in deciding the degree of NPLs, proposing that the emergency is more natural for inside issues, inside the corporations and not identified with macroeconomic components.

Chege, Omagwa and Abdul (2019) evaluated the connection between BSDs, prudential guidelines and NPLs among business banks recorded at Nairobi Securities Exchange, Kenya. The particular targets of the investigation were: to decide the connection between BS, credit size, loaning rate, CA, LIQ and NPLs. Inflation was utilized as a directing variable. The examination gathered auxiliary information of nine business banks between the periods 2012 to 2017. Panel regression with fixed effects method was used for analyzing the collected data at 5% level of significance. The CS and LIQ showed p-values of 0.04 and 0.045, respectively, showing a substantial effect on the amount of NPLs, whereas profitability and age were discovered to considerably but favourably influence NPLs of the Nigerian DMBs. BS, lending rate and CAR had p-value of 0.560, 0.10 and 0.982 respectively demonstrating a minimal impact on the level of NPLs. Inflation, had a substantial moderating impact on the connection between bank specific characteristics and NPLs and a minimal moderating impact on the prudential regulations and NPLs. This finding is supported by the agency theory that bank that has been in existence for very long time has the managerial competence to cope and combat NPLs.

Similarly, the finding of Ogundele, Akinadewo and Oloowokere (2020) was further supported by the findings Onyango and Olando (2020) dissected the impact of BSDs on NPLs among the business banks in Kenya. This research utilized forty-three (43) currently licensed commercial banks as its target population. Utilizing statistics, the study gathered secondary data from the previous year's financials statement and other financial reports for period covering 2012 to 2016. Quantitative investigation was utilized to create engaging insights and inferential examination completed to anticipate an investigation model for assessing NPLs as far as banks

related components. The examination uncovered that revealed that the average level of NPLs among Kenyan commercial banks is higher than the threshold of 5% signaling a serious NPLs problem amongst commercial banks in the country. According to the study, operating efficiency has a moderately a considerable improvement on NPLs among Kenyan commercial banks, operating efficiency is directly proportional to NPLs, and ROA has a significant negative impact on NPLs among Kenyan commercial banks, all at the 5% level of significance. It is harmful to ROA.

From the evaluate, it indicated that most of the research has methodological hole, due to the fact a number of them was base one or four BSDs. Also, the assessment of literature has proven that quite a few have a look at has been conducted on the relationship between BSDs and NPLs in Nigeria, but most of the few study are face with methodological problem of using 1, or 4 bank specific variables to measure BSDs and omitting other vital variables and most of their findings are combined and assessment to each other. Finally, most of the studies disregarded theoretical evaluation of the variables and findings are mixed and inclusive, all these now serves as literature gap that this research project intends to fill.

### RESEARCH METHODOLOGY

The Ex-Post Facto research design was used. The population of this study is a finite population, that is, the total 18 banks listed in the NSE as at August 31<sup>st</sup>, 2020 but a sample of 10 banks was drawn for the study. The secondary source of data is used for this study. The annual reports and accounts of the total 10 banks listed in the NSE during the financial years of 2011 to 2020 and analyzed using descriptive statistics, correlation analysis and multiple regression analysis using OLS method by using the pooled model with the aid of E-VIEW 9.0. The regression model was adopted from the study of Chege, Omagwa, & Abdul, (2019). The model which specifies that non performing loans [proxy with Non Performing Loans Ratio (NPLR)] is significantly influenced BSDs [Bank Size (BS), Capital Adequacy (CA), Profitability (PROF), Bank Age (BA), Liquidity (LIQ) and Loan to Total Assets (LTA)] is formulated as follows;

$NPLR = f(BS, CA, PROF, BA, LIQ, LTA)$

$$NPLR = \beta_0 + \beta_1 BS + \beta_2 CA + \beta_3 PROF + \beta_4 BA + \beta_5 LIQ + \beta_6 LTA + E$$

Where;

E = Error Term

$\beta_0$  = Intercept

$\beta_1 - \beta_6$  = Coefficient of the Independent Variables.

The a priori expectation is  $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6$ , is lesser or greater than 0.

Table 1  
*Measurement and Predicted Signs*

Variables	Measure	Type of Variable	Expected Sign
NPLR	Non Performing Loans/Total Loans	Dependent Variable	
BS	Natural Logarithm of Total Assets	Independent Variable	-
CA	(Tier-I + Tier-II)/Risk Weighted Assets.	Independent Variable	+
PROF	Net Profit / Total Assets	Independent Variable	+
BA	Natural log of the listing years	Independent Variable	-
LIQ	Current Assets / current liability	Independent Variable	-
LTA	Total loans /total assets	Independent Variable	+

Source: The researcher from data gathered

## RESULT AND DISCUSSIONS

### Summary Statistics

This section presents the descriptive statistics (DS) of the study where the lower, higher, mean, and standard deviation (SD) of the coefficients were described. The summary of the DS are shown below:

Table 2

*Summary Statistics Output of the Independent and Dependent Variables*

	NPLR	BS	CA	PROF	BA	LIQ
Mean	0.140785	7.558774	0.353464	0.025057	1.629205	1.060964
Median	0.055437	6.978131	0.196069	0.016393	1.531291	0.953969
Maximum	0.999632	9.882239	4.935155	0.265806	2.103804	13.45646
Minimum	0.000101	5.103414	0.264226	-0.020515	1.342423	2.07E-05
Std. Dev.	0.225961	1.377405	0.728623	0.036408	0.230183	1.827056
Skewness	2.220355	0.091512	4.832097	4.033770	0.623739	5.160733
Kurtosis	7.008866	1.539740	26.43174	23.87947	2.155146	32.46626
Jarque-Bera	149.1288	9.024408	2676.847	2087.656	9.458238	4061.638
Probability	0.000000	0.010974	0.000000	0.000000	0.008834	0.000000
Sum	14.07853	755.8774	35.34643	2.505734	162.9205	106.0964
Sum Sq. Dev.	5.054796	187.8273	52.55825	0.131229	5.245422	330.4752
Observations	100	100	100	100	100	100

Source: E-VIEW 9.0 Output, 2022.

The lower values of all the variables as indicated above ranges from lower of 5.1034 and higher of 9.8822 for BS. The mean value of the BS which is measured by the logarithm of total assets is 7.5588 with a SD of 1.3774. The DS also showed that the lower value is 0.2642 and the higher of 4.9354 for CA. The DS revealed that both the lower and higher values of -0.0205 and 0.2658 for PROF. Natural logarithms of the number of years the bank has been in operation were used to calculate the BA, which yielded values of lower and upper bounds of 1.3424 and 2.1038 respectively, as well as mean and SD of 1.6292 and 0.2302 respectively. This suggests that BA has 23.02% volatility. Additionally, the DS above demonstrates that for LIQ, the lower value is 2.0701 and the higher value is 13.4565. According to the ratio of current assets to current liabilities, the bank's LIQ has an average value of 1.0610 and a SD of 1.8271. The DS revealed that for NPLR, the lower value is 0.0001 and the higher value is 0.996, with a SD of 0.2260 and an average value of 0.1408 for NPLR.

### Correlation Results

Table 3

*The Correlation Matrix for the Variables under Study*

	NPLR	BS	CA	PROF	BA	LIQ
NPLR	1.000000					
BS	-0.311780	1.000000				
CA	0.180753	-0.041758	1.000000			
PROF	0.053489	-0.251041	0.024201	1.000000		
BA	-0.109691	-0.268136	0.121595	-0.081152	1.000000	
LIQ	-0.026500	-0.053965	0.101185	-0.052664	-0.171367	1.000000

Source: E-VIEW 9.0 Output, 2022.

Evident from the correlation co-efficient for the for all the explanatory variables in relation to the explained variable, it showed that CA and PROF has positive correlation with NPLs while BS, BA and LIQ has negative correlation with NPLs of DMBs in Nigeria.. Finally, the

correlation matrix that is presented in Table 3 and it shows the absence of multi-co linearity among the variables since the correlation values are less than 0.7.

## RESULT AND DISCUSSIONS

Table 4

### *Regression Results*

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.059786	0.242090	4.377659	0.0000
BS	-0.066999	0.016795	-3.989255	0.0001
CA	0.058063	0.029220	1.987129	0.0499
PROF	-0.507397	0.609358	-0.832675	0.4072
BA	-0.250381	0.098799	-2.534252	0.0129
LIQ	-0.009254	0.011860	-0.780313	0.4372
R-squared	0.193377	Mean dependent var	0.140785	
Adjusted R-squared	0.141337	S.D. dependent var	0.225961	
S.E. of regression	0.209385	Akaike info criterion	-0.221855	
Sum squared resid	4.077314	Schwarz criterion	-0.039493	
Log likelihood	18.09273	Hannan-Quinn criter.	-0.148049	
F-statistic	3.715919	Durbin-Watson stat	0.828200	
Prob(F-statistic)	0.002345			

Source: E-VIEW 9.0 Output, 2022.

Table 4 above, regression coefficient value recorded for BS on NPLR is -0.0670, with associated P-value of  $0.0001 < 0.05$ . This implies BS adverse substantial impact on NPLR. These results mean that each unit increase in the size of DMBs will decrease the NPLR by 6.70%. This findings is contradicts the financial intermediation theory. This is lines with findings of Wasiu, Trimisiu and Hafeez (2020) and Mosharrof, Mohammed and Mohammad (2020) but contrary to the findings of El-Maude, Abdul-Rehman and Ibrahim (2017) and Sohaib and Qazi (2016).

Also, Table 4 above, regression coefficient value recorded for CA on NPLR is 0.0581, with associated P-value of  $0.0491 < 0.05$ . This implies CA favourable major impact on NPLR. This result connotes that each unit increase in CA of DMBs, the NPLR will increase by 5.81%. CA is positively significant with the NPLs, which is contradicts with the moral Agency theory. This is line with findings of Eni, Puspa and Wan (2020) and Muhammad, Asima and Zahid (2020) but contrary with the findings of Khan and Ahmad (2018) and Sohaib and Qazi (2016).

In the Table 4 above, regression coefficient value recorded for PROF on NPLR is -0.5074, with associated P-value of  $0.4072 > 0.05$ . This implies PROF has an negligible impact on NPLR. Furthermore, the result is in line with the bad management in agency theory. The negative effect of PROF on NPLs corroborates the previous findings of Kumar and Kishore (2019), Kumar and Kishore (2019) and El-Maude, Abdul-Rehman and Ibrahim (2017) but contradicts to the findings of Wood and Skinner (2018), Wood and Skinner (2018) and Laxmi, Slam and Shouyang (2018).

In the Table 4 above, regression coefficient value recorded for BA on NPLR is -0.2504, with associated P-value of  $0.0129 < 0.05$ . This implies BA detrimental important association with NPLR. These results mean that each unit increase in the age of DMBs will decrease the NPLs by 25.04%. This finding is supported by the information asymmetry theory. This finding is supported by the findings of Chege, Omagwa and Abdul (2019) but contrary to the findings of Messai and Jouini (2013).

Finally, Table 4 above, regression coefficient value recorded for LIQ on NPLR is -0.0093, with associated P-value of  $0.4372 > 0.05$ . This implies LIQ unimportant connection with NPLR. This implies that a unit increase in liquidity would lead to 0.93% decrease in NPLs. It supported by the agency theory and in line with findings of Ogundele, Akinadewo and Oloowokere (2020), Ogundele, Akinadewo and Oloowokere (2020) and Onyango and Olando (2020) but contrary to the findings of Chege, Omagwa and Abdul (2019).

## CONCLUSION AND RECOMMENDATIONS

### Conclusion

In conclusion, there is considerable support for a link between NPLs and bank-specific characteristics, particularly prior-year NPL and credit growth. As NPL is a symbol of banking distress, banks with already high levels of NPL continue the trend in the following year, due to continued financial and economic uncertainty. Credit growth however, is seen to have a negative association with NPL as the increase in credit results from the repayment of loans in the first place. Increased lending activities are seen to mitigate deterioration in asset quality. According to the results of this study, bank-specific factors have no discernible impact on non-performing loans in Nigeria.

### Recommendations

It is advised that: Considering the results of this study, that;

1. Since BS has a detrimental influence on NPL, this study suggests that overall asset size of the bank be taken into account while making loan decisions.
2. Additionally, CA had a considerable positive impact on NPL, therefore the DMBs in Nigeria should continue to follow and implement the country's central bank's capital adequacy policy.
3. Since loan and advances are the highest yielding assets of the banks, PROF indicated a negative minor impact on NPL and advised DMBs to improve their in order to increase their PROF.
4. As BA has a negative, considerable impact on NPL, old banks should continue to maintain and enhance their loan recovery efforts.
5. LIQ has a little but negative impact on NPL, thus banks should improve their liquidity position to perform better.

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