Effect of Credit Risk in 10 Commercial Banks in Adamawa State Nigeria

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Abstract: The goal of the research was to determine the influence credit risk on selected commercial banking in the context of Adamawa State, Nigeria. The study focused on a dataset consisting of ten commercial banks in Yola Adamawa from the year 2005 to 2023. The target population was 677 which include clientele and personnel of the context of the commercial banks. The study implemented random sampling to collect data from 245 respondents. This study considered return on asset (ROA) as a moderating variable to sharpen the firm's credit risk which in this context is defined as capital adequacy ratio (CAR), non-performing loan ratio (NPLR), loan loss provision (LLP) and Loans to deposit ratio (LDR). The study opted primary data collection through questionnaires. The study made use of descriptive and inferential statistical analyses for the study. A descriptive measure that was computed included the mean, median, and standard deviation, alongside regression analysis and hypothesis testing for inferential analysis. The outcome of the research indicates that most of the factors of credit risk positively influence the performance of the ten commercial banks being studied. Managers of these ten commercial banks are advised to implement proper credit risk management policies by identifying critical areas that require improvement for the banks' longevity. In light of the above, the study, therefore, recommends that for these commercial banks credit risks should be managed through the adoption of adequate effective frameworks in the management systems and insurance policies coupled with adequate protective measures.

Keywords: *Credit Risk, Commercial Banks, Adamawa State, Nigeria*.

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I. INTRODUCTION

The performance of firms based on their financial strength involves their effort to raise capital through daily profits throughout a certain time, which is measured through net income and cash gotten from profit (Wambia&Jagongo 2020). Combs (2017) was of the opinion that financial performance can be accessed through accounting operations mechanism like Return on Assets (ROA), Return on Equity (ROE) and market return (Combs, & Shook, 2005; Hult, et al, Griffith &Cavusgil, 2018). Accounting mechanisms do reflect mostly in the past on a short-term performance financially, as market approaches shows the appearance of projected long-term financial operations (Hoskisson, 1994). The performance relating to finance of any bank deals with assessing their financial situations in order to collect data to determine the banks health by making use of index that can reveal financial data, and ratios of their finances (Torbira&Zaagha, 2016).

Pandey (2018) as cited in Abdulkadir (2017) was of the opinion that financial performance is all about means of better utilization of a bank's assets of its major business to produce revenues. It is generally seen as an overall health state financially of the bank within a certain period of time, it is also comparable to other competitors performance. Conducting financial evaluation of a bank is vital in order to keep the operating of such financial institutions healthy and floating with recent demands (Wambia&Jagongo 2020). The main variable to measure performance among banks is financial ratio analysis. The insight that a bank loan is exposed to is best explained through concentration ratios in quantitative terms which simplifies the percentage of the remaining accounts to the loan exposures.During the period of economic meltdown where financial institutions operates mostly with their portfolio operating, the level of defaulters in the loan repayment would be higher and bank affected financially. Bank were then encouraged to diversify their portfolio of lending into many sectors than one economy sector that can cause fluctuation in repayment if economy affected (Ledinhhac et al., 2021).

Banks are said not to possess adequate structures to manage risk credits in cases of weak credit risk regulations,

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insufficient credit risk monitoring, or less devices that is meant for early signals on risk management. Meanwhile, inadequate risk ability and risk habits, this is due to no clear adaptation among the risk appetite laid down through the bank's management and the real risk-taking attitude of firms involved in the transactions. The presence of a weak risk culture among the banking institutions do lead to unpredicted risk and credit project, by having a negative effect on the bank finances. Also, when there is limited credit risk management scheme, Banks have no choice than to face issues which could lead them to creating credit risk models that can handle the specific issues specific to the financial market of Nigerian. Issues such as limited available data, lack of data modeling experts, and inadequate access to vital historical data that can be used for gathering right credit risk modeling analytics.

Finally, lack of consistency, inadequate policies, low enforcement methods, and slow legal proceedings could lead to credit risk mitigation efforts and deter for a long time the results of the bank financially. Nigerian banks are in dare need of regular reforms, having continuous ability to close this gaps by many scholars towards credit risk. These studies have not really focused on the study area the present study seems to address, therefore, the study will examine effect of credit risk in 10 commercial banks in Adamawa state, Nigeria. Generally, the research objective is to investigate effects of credit risk on 10 commercial banks inAdamawa State within Nigeria. While the specific aims of the study were to;

- To ascertain impacts of capital adequacy ratio against credit risk in 10 commercial banks in Adamawa State, Nigeria.
- To determine impacts of non-productive loans among commercial banks in Adamawa State, Nigeria.
- To examine how loss of loan provision affects commercial banks in Adamawa State, Nigeria.
- To evaluate the Loans-to-deposit ratio (LDR) effects on commercial banks in Adamawa State, Nigeria.

II. LITERATURE REVIEW

Several pieces of literature would be examined in this section of the study to analyze author’s opinion on the study. This section of the study would be discussed within these sub-sections; conceptual review, review of theoretical issues and empirical review.

➢ *Conceptual Framework*

Concept of Credit Risk **-** Financial market represents a ‘broker’ responsible for offering the abundance and deficit sets in total for the benefits of all humanity. In the financial market, majority of the abundance sets often assume risks of borrowing to the deficit sets. The financial collaborators, on their own designs ‘assets’ from within the abundance left over from the economy that credits risks emanates. Through this, the risk associated with borrowing to the debt department does not generate funds by the abundance sets having situation of the financial sectors, than allowing the partners (Suresh & Paul, 2018). The financial partners ensures enough surplus sets have been entrusted savings in their custody which in turn lessens risk associated with less information costs.

- *Capital Adequacy Ratio –*

Capital adequacy ratio is meant to identify financial institutions who are performing with low caution but exhibits major profits in trade opportunities that could mean a negative collaboration among equity to asset ratio and financial institutions productivity (Goddard, et al. 2019). Similarly, banks that possess huge equities in asset ratio can often operate lower needs of external funding and therefore bigger profitability (Pasiouras&Kosmidou, 2007). Capital adequacy is a vital measure of financial viability of a commercial bank through its effort to which it’s able to offer capital to ensure it hedge the risk involved in debts (John &Okika, 2019). Mendoza and Rivera (2017) was of the opinion that capital adequacy ratio improves a lot of banking institutional stability so as to enhance their efforts to guard against loss of funds of depositors. The quality and security of financial capital affects banks’ profits realization.

- *Non-Performing Loans –*

Caprio&Klingebiel (2022) were of the opinion that non-producing loans are categorized under loans which may not bring forth profit within a long period of time, where its capital or interest are left unpaid over a period of time after due date of repayment expired. Non-active loans have long been a major issue of discussion among commercial banks in Nigeria for more than a decade as this study is ongoing. The higher level of non-producing debts within commercial banks has relations with poor organizational operational practices, lack of adequate credit management and slow in the adherence to credit risk management legislation (Kargi 2011).

Majority of the non-producing loans are led through lack of professional measures adopted by the Nigerian commercial bank manager leading to disbursement of loans which later affected personal partnerships with most account holders. Due to lack of implementation of bank lending policies as approved through CBN, they wentsolely to give out loans due to their relationship and personal interest, later the customers were found not to have the capacity and credit worthiness to meet the bank's standards for repayment and on the flipside to be granted such huge amount of loans as at when granted. It was discovered in the future that such transactions were categorized as non-producing loans. There are also cases that made banks offer extra loan facilities to account holders that often fail to repay borrowed money on time.

- *Loan Loss Provision –*

Granting of loans are major functions banks carry out daily, this could be termed as their most source of revenue that banks do enjoy. The issuing of bank loan and credit is associated with the source of inflow of money into the Nigerian economy. Banks are always meant to record loan losses offers in their accounting books each time loan is offered to a customer. The more the risk associated with a bank loan asset, the higher this offer increases as it relates to

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the total loan amount. A higher level of value of offers for loan debts related to majority loans is an example that it's getting harder to collect the bank's assets. The ratio is constantly examined within many scholarly works to calculate ratio of debt loss offer when considered by total debts. A high portion is seen to form a sign that shows inadequate credit risk management (Hull & John 2019).

➢ *Empirical Review*

Odebode et al (2024) studies the impact of non-producing loans (loan loss provision as moderator) towards return on investments among CBN. The s of secondary data of annual time series data dated 2010 - 2021 as were gotten through the CBN, Statistical Bulletin and Annual Financial Reports of commercial banks under study. The panel least square method of analysis was employed as the technique for data analysis. Result shows that loan debt offer provided a negative effect on return on assets among the selected commercial banks, while interest rate had a good result towards return on assets of the chosen commercial banks. Researcher made recommendations that, measures the complexity in period of time required for the redesigning required for credit plans and conversion could be adopted in the selected commercial banks to reduce the bad effects loan defaulters have caused the banks.

AliyuAlmustapha et al., (2020) studied the relationships among capital adequacy and productivity of commercial banks in Nigeria. They utilized secondary data to gather data needed for the audited financial statements of selected banks under study. Like 8 commercial banks with global approval for listing on the Nigerian Stock Exchange was taken as part of the samples under the study as studied from 2012 to 2019. Data collated were analyzed by using panel regression technique. Finding revealed that debts and advances (DAD) were positively identified with significant impact on the financial performance of DMBs with international legalization within the context of Nigeria. However, it was identified from findings that the capital adequacy is to be positively affected in the result commercial banks of the economy in Nigerian. Hence, research made recommendation that the CBN should improve on the extent of capital start-up commercial banks due to constant depreciation of naira value when compared with foreign exchange market.

➢ *Credit Default Theory*

Credit Default Theory was adopted for this study, it was propounded by Syin 2007. The Theory explain that the lending risk systematically and ultimately was meant to measure and manage credit risk complexity to ascertain financial operational stability. Syin (2007) argued that for a credit to be counted as defaulted, it is a product of both delinquency and insolvency. By delinquency it means the inability to meet a loan repayment terms within the expected repayment date, while insolvency on the other hand has to do with a situation where assets not more than liabilities. Hence, it is safe to conclude that credit default really mostly on the ideology of delinquency.

Delinquency happens at the moment a borrower is not able to repay a loan as at when due, as a result of inadequate access to liquidity. Delinquency enhances a solvency evaluation that are leading people to conclude negatively on equity position leading to loan termination, which could lead to losses on the terms of the banks, while the lender run at loss.

Furthermore, the theory that propose Loan Service Ratio (LSR), it implies that the maximum loan interest rate borrower can repay a loan amount from available income. The risk associated with giving loan comes to the servicing aspect where there would be changes over time due borrowers' conditions due to environmental circumstances and cases in the economic atmosphere. A loan which may have started off as being easily serviceable loan can become a struggle for the borrower as a result of unanticipated adverse advancement.

III. METHODOLOGY

The method suitable for this research is descriptive survey which enables the researcher to ascertain the relationships between variables under study. The choice of this descriptive research method is chosen because money deposit banks are scattered in their locations, as it helps to report the way the study populations are domicile (Mugenda&Mugenda, 2003). A design in a research involved the total plan structure that the research is founded upon which guides the knowledge that is required to gather data, method for data gathering and where data can be sourced (Salkind, 2010).

While the best research designs for the study is the descriptive survey methods. The research design is responsible for the information needed for data analysis to be obtained from relevant sources. The design has much offer for protection of bias and maximized reliability (Kothari, 2007).

➢ *Population of the Study*

The population is centered on ten selected commercial banks located in Adamawa State, Nigeria. Also, population is the entire pool from which a statistical sample is taken from. The target population for this study is fourteen (14) commercial banks listed in the Nigerian Stock exchange on the 31st of December, 2023.

The study populations consisted of 14 commercial banks and they are; Access, Eco, First, First Continental Monument, Fidelity, Guaranty Trust, Jaiz, Stanbic IBTC, Sterling, Union, United Bank for Africa, Unity, Wema, and Zenith Banks respectively were the entire 14 Banks chosen for the success of this study (Nigerian Stock Exchange, 2022).

➢ *Sample Size of the Study*

Creswell (2012) opinion on sample is that of a sub-group of a larger population targeted for the study a researcher intends to investigate in order to generalize on the target population. This study made use of a filtering

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procedure for the selection was considered for selecting the required sample. The filter is employed to remove some of the banks that have been removed and known-operation as well as do not have all information of majority of the data needed for scaling the variables chosen that are appropriate at the time that ranges from (2005-2023). Also, as a result of this filter, the sample size of selected commercial banks for this study reduced to minimum cap of ten (10). Whereas, these banks were removed from the study; Jaiz plc, Wemaplc, Stanbicibtc and Sterling and the reason for their removal is they possess atom of incomplete data.

➢ *Methods of Data Collection*

Primary and secondary was adopted for the collection of data in this study in order to achieve the set objectives.Secondary data that was used included sources such as relevant record from obtained annual financial reports that can be accessed onpublic domains like Osiris data base, it was carried out for all selected commercial banks out of fourteen commercial banks in Adamawa state. On the other hand, the primary data were gathered with the use of a structured questionnaire. The questionnaires were self-administered to every respondents in the sample size. The information received during the field survey was absolutely unbiased, free from researcher's influence. This made it accurate and more valid.

The first section of the questionnaire sought information on the background of the respondentsas well as the commercial banks. The other sections were second and subsequent sections sought information with regards to the four targeted aims for this research purpose. The 5-point Likert scale was employed such that it provided opportunity to respond to questions to the best of their knowledge with all questions asked in the instruments according to the study objectives.

➢ *Technique for Data Analysis*

Multiple Regressions was employed to investigate the impact of the independent variables on the dependent variable and to measure the discrepancy that exists between observed and expected frequencies as stated in null hypothesis. Independent variables included capital adequacy ratio, Non-performing loans, loan loss provision and Loans-to-deposit ratio (LDR) while depending variable is Return on Asset. ANOVA was used to test the statistical fitness of the model. Furthermore, study test of assumption through several pieces of information were carried out through the following: autocolleration, collinearity, linearity, normality and homoscedasticity. They were tested in order to avoid the likelihood of violation of regressionanalysis. This type of technique analysis was applied to similar studies, such as Mshelia (2016) and Wambugu (2013). The study used statistical package for the social science (SPSS) for its data analysis.

➢ *Descriptive Statistics*

Descriptive statistics was employed for the study, while descriptive statistics was used for data and central tendency for the summary of the data.

➢ *Correlation Analysis*

Pearson correlation analysis was done to ascertain the feature of existing relationship among the dependent and independent variables. It reveals the direction and power of the relationship among the autonomous variables among themselves and the dependent variable.

➢ *Multiple Regression Analysis*

To ascertain the differences in dependent variable (ROA) as a result variation in the independent variables (CAR, NPLS, LLP, and LD), linear regression technique were employed.

➢ *Model Specification*

The dependent variable (return on asset) and independent variables (credit risk, capital adequacy, non-performing loans, debt loss offers and Loans-to deposit ratio). This is to test the links among credit risk and financial institutions performance, the model below was employed.

$$ROA=f(CAR,NPLS,LLP,\ LD)\ldots\ldots\ldots\ldots\ldots\ldots i$$

$$ROAit= \alpha 0 + \beta_1 CARit+ \beta_2 NPLSit + \beta_3 LLPit + \beta_4\ LD\ it + \text{e}itb\ldots\ldots\ldots\ldots ii$$

α0= Intercept; β = regression coefficient; ROA = Return on Assets; CAR= Capital adequacyratio; NPLS= Non-Performing Loans to total loans; LLP=loan loss provision; LD=Loans-to-deposit-ratio; e= error term; i= banks and t = time period 2005 to 2023.

The bases for adopting the model is due to previously conducted studies which used this when they ascertain the influence credit risk methods of management has on the performance of commercial banks (Kolapoet al., 2012, Kithinji&Mercylynneet al., 2017).

IV. RESULT

➢ *Reliability Test*

Rachael (2012) was of the view that reliability was to validate and check for reliability of the instruments for the study. Hence, the reliability test was carried out to detect the flaws in data collection process, the result of Alpha coefficient is 0.5 as the minimum criterion. Cronbach's Alpha was among majority of the effective statistics for testing reliability, as the respondents were scattered (Babajide, 2011).

Conbach's Alpha ranges in the value from 0 to 1. A coefficient equal to or greater than 0.5 is seen with minimal acceptance measure, since the same authorizations for a higher level with minimal figure of 0.70 (Babajide, 2011). See Table 2 below. The internal reliability test found every level involving credit risk variables were 0.638, 0.726, 0.667 and 0.520 for capital adequacy ratio, Non-producing, loan loss provision and Loans-to-deposit ratio accordingly while the reliability test result for Performance is 0.689. This showed that the items of the both variables and resulting data show internal consistency.

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Table 1 Reliability Statistics of Each of the Variables

Stats	Capital adequacy ratio	Non-performance loans	Loan loss provision	Loans-to-deposit ratio	Performance	Overall
Cronbachs' Alpha	.638	.726	.667	.520	.689	.786
N of Items	6	7	7	6	3	29

Source: Field Survey, (2025)

The following tables revealed findings as shows in the regressions analysis. The assumptions of multiple regressions (MR) shows there are known primary issues related to the study known to include: autocolleration, collinearity, linearity, homoscedasticity and normality. Therefore, this particular section showed the test of each assumption.

- *Autocolleration Test*

The Durbin Watson test for autocolleration was conducted to test whether there is many breaking in the assumption; result revealed that there is no autocolleration within the residual of the identified model of the regression used for the study. The acceptance critical criterion of Durbin Watson is within 1.5 and 2.5. Result could be predicted that this value is in the range of the reach of critical criteria i.e 1.679, as seen in Table below in the study showing no violation of autocolleration.

Table 2 Model Summary

Model	R	R-square (R^2)	Adjusted R^2	Std. error of the estimate	Durbin watson
	0.818	0.669	0.663	1.036	1.679

a. Predictors: Constant - Capital Adequacy Ratio, Non-Producing Loans, Loan Loss Provision, Loans-to-Deposit Ratio
b. Dependent Variable: Performance
Source: Field Survey, (2025)

Table 2 shows multiple regressions model summary whereby the analysis found that R value (0.818) of overall credit risk, like capital adequacy ratio, Non-performing loans, loan loss provision, and Loans-to-deposit ratio reveal a significant impact of these four (4) independent variables on performance. Observation shows that coefficients of determination i.e the R-square (R2) value is 0.669 which shows 66.9% and adjusted R-square (R2) of 0.663 which shows 66.3% variable of the dependent variable (performance) as a result of independent variables (credit risk), which later a strong explanation strength of regression equation.

- *Linearity Test*

Multiple regressions is used to get the accurate measure of relationship existing among dependent and independent variables whether it is linear or not (Osborne and Water, 2002). The opportunity given for non-linear is high in the study. When the linear nature is violated, all estimated regression results of coefficients, standard error and tests of statistical significance may be biased (Keith, 2006).

- *Multicollinearity Test Assumptions*

Multicollinearity is a high level of correlation (Linear dependency) between many independents variables. It is commonly seen during larger number of independent variables added into a regression model. Only existence of multicollinearity do not affect the ordinary least squares regression (OLS) assumptions. Most correct multicollinearity violates the assumption that X matrix is fully ranked, making OLS impossible when a number of least solutions.

Coefficients can be said to attract higher standard error and low level of significance, though they are collectively and the R for the regression is quite high and the coefficients can have the "wrong" sign or implausible magnitude (Greene, 2000).

The judgement can be made on the result through analyzing statistics, such as tolerance value or variable inflation factor (VIF), Eigen value, and condition number. The VIF acceptance range is between 1 and 10 for the study, the VIF in Table 2 below is 1.121, 1.360, 1.022 and 1.282 within capital adequacy ratio, Non-producing loans, loan loss provision, and Loans-to-deposit ratio. Result revealed that the regression was not violated and there is no issues associated with multicollinearity. The rule of thumb for a large VIF value is ten (10) (Keith, 2006; Shieh, 2010).

Table 3 Coefficients

Model Constant	Collinearity Statistics Tolerance	VIF
CAR	0.892	1.121
NPL	0.736	1.360
LLP	0.978	1.022
LD	0.780	1.282

Source: Field Survey, (2025)

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V. FINDINGS OF THE STUDY

➢ *Findings Reveals as Following:*

- Capital adequacy ratio significantly has an effects on commercial banks performance in Adamawa State, since the contribution is 18% to the banks performance and the significant value is p< 0.05.
- Non-performing loans significant has an effects on selected money deposit banks performance in Adamawa State. It is true looking at the level of significant value is p<0.05 and it contributing about 19% to the performance of banks.
- Loan loss provision significantly affect commercial banks performance in Adamawa State. This is because it contributing about 28% of banks performance and the significant level is p< 0.05.
- Loans-to-deposit ratio significantly has greater influence on commercial banks performance in Adamawa State. Since it contributing about 61% to the performance of banks.
- There is an effectiveness between credit risks on selected money deposit banks in Adamawa State, Nigeria is seen to positivelyinfluence among money deposit banks.

VI. DISCUSSION

The study was done to evaluate credit risk among commercial banks in Adamawa State, Nigeria and data was analyzed with the use of multiple regression. The study found that credit risk factors such as capital adequacy ratio, Non-producing loans, loan loss provision and Loans-to-deposit ratio offer stronger result towards commercial banks performance. The results are in corroboration with that of consistent Flamini and Schumacher (2009), while it differs from that done by Abdulkadir (2017).

The result that focused on the components of Credit risk variables, Capital adequacy ratio, Non-producing loans, loan loss provision and Loans-to-deposit ratio, it was not recorded as predicted. The hypothesis was predicted that those factors or component have no significant effect on commercial banks performance in Adamawa state, but it was found that four variables have significant effect on the commercial banks performance in Adamawa State. Since both four variables contributed favorably and the significant value of coefficient is less than 0.05 and this resultis in line with the findings of the research of Adeleke et al (2016) which focused on assessment credit risk management on the profitability of rural and community banks in the BrongAhafo region of Ghana. The result shows that credit risk management adds to the profitable performance of urban and rural commercial banks.

PrasetyaAdiPratama (2023) reported that Non-Producing Loans, Return on Assets, Return on Equity, and Loan to Deposit Ratios has a positive relationship between minimum Capital Adequacy Requirement Based on Commercial Banks has in its whole operations

RECOMMENDATIONS

➢ *The Study made the Following Recommendations;*

- The management of the banks under study are encouraged to manage credit risks through authorized risk management strategies by using forwards, futures, swaps, options, and insurance as well as security methods.
- The borrower's character needs proper checks for creditworthiness before offering them loans facilities
- Top management staff of commercial banks should understand credit risk management very well and examine customer's capacity to repay any amount of loans they are requesting.
- Bank regulatory authority (CNB) are encouraged to set-up automated monitoring system in place to alert banks of credit worthiness customers and offer banks platforms to detect defaulter customers of previous loans

FURTHER STUDIES

The study out of this study was meant to add to existing literature on business, finance and credit management as it would serve as reference materials to them. Also, for further insights on the field of research and offer solutions according to the questions raised during the study.

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