Risk Management and Financial Performance of Commercial Banks in Nigeria.

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DOI: https://dx.doi.org/10.47772/IJRISS.2023.7012069

Received: 30 November 2023; Accepted: 06 December 2023; Published: 04 January 2024

ABSTRACT

This study establishes the degree to which risk management has impacted profitability of commercial banks with the aim of contributing to improving the financial performance improvement. This study used secondary data from listed banks extracted from Central Bank of Nigeria list of financial institutions. The study was 2012 to 2021. The sample size of fourteen commercial banks in Nigeria was utilized for the study. Data were analysed using descriptive, Pearson correlation, r and Multiple linear regression (ANOVA) r statistical analysis. Findings were that the Pearson results posted significant relationships among credit risk, operational risk as measures of risks with profitability measures of net interest margin except the liquidity risk. The linear regression result indicated that Credit risk has significant effect on Net interest margin. However, there is no significant effect of liquidity and operation risk on net interest margin of commercial banks in Nigeria. The findings suggest that effective risk management strategy play a key role in commercial banks profitability in Nigeria. Therefore, this study recommended that effective risk management framework to improve financial performance.

Keywords: Risk, Risk management, Profitability, Commercial Banks. Financial performance.

INTRODUCTION

Banking is an economic activity which deals with the intermediation of funds between the surplus units and the deficit units of an economy and channeling of such resources to profitable investment. Banking also enhanced business activity by accepting and safeguarding money owned by other individuals and entities, and then lending out this money to earn a profit (Khusi,2020). A sound, profitable, well-managed, and well-functioning banking system contributes to the stability of the financial system and thereby promotes economic growth. Therefore, to be attained, bank must pursue related regulations and guidelines (Olalere and Wan, 2016). More so, banks are classified as a dominant financial institution, thus their stability is important to the growth of the economy.

Furthermore, effective management of business organisations and the occasional disasters associated with life itself, together with political and social disruptions, are examples of the risks which a society is exposed to. However, it is not possible to totally eliminate these risks, but the probability of a loss can be reduced by changing some of the circumstances relating to a loss. Therefore, it is important than for banks to manage effectively the various types of risk at their disposal, such as credit, liquidity and operations risk, through better planning and well-organized risk management techniques. Eichler (2022), argues that the key to effective risk management plays a crucial role in any company's pursuit of financial stability and superior performance. For example, lending operations of banks have the inherent risks of possible loan losses, that is, (credit risk), but by taking the risk, banks are able to charge a premium for their risk-taking activities and

ISSN No. 2454-6186 | DOI: 10.47772/IJRISS |Volume VII Issue XII December 2023

earn profits. Risks are therefore, a source of profits to the bankers.

Another problem is operational risks. These are the risks of direct and indirect loss resulting from inadequate or failed internal processes, people and systems, or external threats. The manifestation of high operational risk in Nigerian banks is the volume of fraud and forgeries. Furthermore, Ogunleye (2001) observed that ignorance and neglect of regulatory guidelines meant to mitigate these risks by bank management contribute to risk. Some of the management teams in Nigerian banks are either ignorant of the risks inherent in banking operations or have a total neglect for regulatory guidelines that protect banking operations from potential losses.

In recent years, risk management in banks has come under increasing scrutiny by the Scholars, as both macro and micro-finance institutions have emerged in the banking industry limiting chances of survival to non-performing institutions.

Moreover, this study is designed to

This study is therefore designed to investigate the effect of risk management on financial performance of commercial banks using Net interest margin as a surrogate in Nigerian case under current market conditions given that the country is just recovering from a Covid 19 pandemic which riled all sectors in the country.

STATEMENT OF THE PROBLEM

It has become critical for bank managers, academic researchers, and other stakeholders to understand the current determinants of financial performance toward attaining high profitability and good performance which ensures survival in business. Poor bank performance may lead to banking failure and crisis, which have negative consequence on the economic growth (Ongore and Kusa, 2013). Commercial banks continue to spend huge resources in risk management modelling with the objective of maximizing profits. Unfortunately, existing research that investigated the effect of risk management on bank performance has produced mixed results. The risk management proxy and financial performance surrogate used by different researchers to establish their effect keep changing with the time and emergency of new risk factors. Given the new development in the economy and global trend, investigating the impact of the risk management on the firm performance would continue to be relevant and necessary in spite of the fundamental role the banking industry pays in sustenance of developing economy such as Nigeria, this study concentrates on risk management and financial performance.

Various studies have tried to quantify the magnitude of the effect of risk management on the financial performance of commercial banks in Nigeria using different financial ratios as a surrogate for profitability, but they rarely took cognisance of the net interest margin as a necessary financial indicator to measure the effect of risk management on commercial banks in Nigeria. Since the major source of income of commercial banks comes from the difference in interest income and interest expense which gives rise to net interest income, it is therefore a necessary financial tool if not the most appropriate proxy to use in measuring the effect of risk management on financial performance of commercial banks.

OBJECTIVES OF THE STUDY

The broad objective of this study is to examine the effect of risk management on financial performance commercial banks in Nigeria.

Therefore, this study is designed to achieve the following specific objective;

- Investigate the effect of risk management on the net interest margin (NIM) of commercial banks.

ISSN No. 2454-6186 | DOI: 10.47772/IJRISS |Volume VII Issue XII December 2023

RESEARCH QUESTIONS

The basic research questions emanating from the study is:

- To what extent does the risk management affect net interest margin (NIM) of commercial banks in Nigeria?

HYPOTHESIS

The following hypothesis has been formulated in the null form to pursue the research question as follows:

h_{o1}: Risk management has no significant effect on the net interest margin (NIM) of commercial banks in Nigeria.

SCOPE AND LIMITATION OF THE STUDY

The main focus of this study was to quantify the proportion of commercial banks' financial performance by unit variation in risk management and establish its significant level in the entire population of Nigerian commercial banks while the scope of this study covered 2012 to 2021. This study was restricted to unsystematic risk during the coverage period.

LITERATURE REVIEW

Risk in the simplest form may be defined as effect on future uncertainties on the objectives (Sonjai, 2021). Without an objective to be achieved, there will be no risk, hence profit is the reward of taking risk by the commercial banks in their day-to-day running of their business. The primary assignment of commercial banks is to collect deposit from surplus and gives it to the needy sector of economy, in providing these services the uncertainty about the future repayment of the lending sum may leads to the adverse outcome for the banking industry. Therefore, uncertainties about the future may deter achieving the goal. It is important to note that if there is no objective, there is a no risk, also if there is a no future, there is a no risk. Hence, to minimize risk both the conditions of future and objective must be satisfied with the event to be classified as risk.

Risk management is a process through which risks are identified, their likelihood and impacts are measured, their mitigation actions are planned, and risks are monitored regularly and reported to senior management (Sonjai, 2021).

Financial Performance refers to the degree to which financial objectives being or has been accomplished and is an important aspect of finance risk management (Verma,2022). It is the yardstick of evaluating the results of a firm's policies and operations in monetary terms. It is used to measure firm's overall financial soundness over a given period of time and can also be used to compare similar firms across the same industry or to compare industries or sectors in aggregation.

Having described the depended variable, the independent variables of this paper which are credit, liquidity and operation risk will be individually define as well:

Credit risk is the risk that the borrower fails to pay off its debt (Taiwo et al. 2017).The Basel Committee (1999) described credit risks as the likelihood of banks' borrowers or counterparts not fulfilling their obligations in accordance with agreed terms or loss of outstanding loans by credit events in part or in total.

Chijoriga (2011) pointed out that credit risks are the most important and costly risks associated with

financial institutions and have a significant impact on performance compared to other types of risks.

Kerton (2021) defined the liquidity risk as when the company or individual will not have enough cash to meet its financial obligations (pay its debts) on time. If banks cannot obtain credit at the right time to meet customers' needs, this will invariably lead to customers' losses. This can lead to a significant decline in bank profits and, consequently, to risks to profitability. If this persists, the bank will eventually be forced to close.

Nathan (2022) maintains that operation risk is the risk of loss stemming from some sort of internal or external process. Often these processes are part of the day-to-day operations of an organization. The risk can emanate from issues within the banks control or outside the banks control which can negatively impact the financial performance of banks. Such as the recent crisis of negative effect of poor implementation of redesign money implementation by CBN in Nigeria, which caused customers to queue at the ATM of commercial banks for new Naira notes and still could not obtain them due unavailability. This has led to the destruction of banks properties by angry customers, which will increase the operation cost in the final statement.

Omiagbo and Daniel (2021) worked on effect of risk management on financial performance of commercial banks in Nigeria, credit risk and liquidity risk were used as surrogate for the independent variables while return on asset was used as proxy for financial performance. The study used secondary data from ten commercial banks in Nigeria and data collected were analyzed with data panel regression analysis with the aid of E-view Software. The study findings show that there is significant and positive relationship between risk management and asset return.

Ebenezer and Omar (2015) also investigated the effect of credit risk on the profitability of commercial banks. Nonperforming loan to total loan ratio, total deposit to total asset ratio, total deposit to total equity ratio were used as surrogate for independent variables while return on equity was used as proxy for profitability. The study uses panel data analysis to examine the relationship between credit risk and profitability of commercial banks in Nigeria, using Hausman test in realising the robust model for testing. The relationship of debt to asset ratio is found to have negative and insignificant effect on profitability. The nonperforming loan ratio established the negative and significant relationship with profitability.

However, different studies conducted from the reviewed journals have not used Net interest margin as a surrogate to quantify the magnitude of the effect of risk management on the profitability of commercial banks in Nigeria. Thus, this paper is designed to fill the gap.

In addition, various theories have been discussed presenting arguments that guided this study. These theories include: shiftability theory, anticipated income theory, liability management theory, moral hazard theory and financial intermediation theory. The study is based on shiftability theory and anticipated income theory. The Shiftability theory, propounded by H. G. Moulton in 1915, argues that risk can be managed by obtaining liquidity converting assets to shift open market securities. When a bank that maintains a substantial amount of assets is in dire need of ready money, this theory supports the shift of such assets to a more liquid bank. Also, the Anticipated Income Theory, propounded by Herbert.V. Prochanow in 1944 posits that cash flow of the borrower is enough to hedge against risks from default. A bank's loan portfolio is thus considered as a source of liquidity

RESEARCH METHOD

This research followed an *ex-post facto* research design. Ex-post facto research design is a time-convenient and a cost-effective design. This study employed relevant secondary data from published audited financial reports of the sample commercial banks for ten years covering 2012 to 2021. This study used secondary data due to its ease of access and low cost of access to the data, as they are available in the public domain. It is

ISSN No. 2454-6186 | DOI: 10.47772/IJRISS |Volume VII Issue XII December 2023

also an avenue to generate new insight from previous analysis. It corroborates with the study of Omiagbo and Daniel (2021) which used secondary data,

Population

The population of the study was the whole twenty-two commercial banks in Nigeria

SAMPLING

The sample size of fourteen commercial banks was used based on multistage sampling method. First, using Sloving formula, the sample size emerged as follows: where n = sample size,, N = population size and e is the error margin of error usually 5% or as determined by the researcher. Therefore, ,n is 21.072. Therefore, the population size was divided by the sample size N / n to 22 / 21.072 = 1.044, which is a constant interval.

However, systematic random sampling was used to pick fourteen sample banks one after the other since our confidence interval is calculated to be 1.044 then one bank is pick one after the other until fourteen banks is complete. Multiple linear regression was used to quantify the magnitude of effect between the variables due to its high predictive power. Pearson correlation, r, linear regression and descriptive statistical analysis were used for data scrutiny with the aid of SPSS Version 20

Model Specification

The general form of the regression models used in explaining the effect of risk management on the performance of Commercial banks is specified in economic models, viz:

$Y= B_{0+}B_{1X1\ +}B_2x_2 +B_3x_{3\ +}e$

Y is a dependent variable which is the net interest margin.

X is independent variables which are credit risk., liquidity, and operation risk

x_1 is liquidity risk

x_2 is credit risk

x_3 is operating risk.

e is margin of Error

Where x_1, x_2, x_3 are used to proxy Risk management (RIM) which are Loan to deposit ratio, ratio of non-performing loan to total deposit and ratio of operating expenses to net income respectively. Y was used to surrogate the profitability of commercial banks (net interest margin.)

Table 1. Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
NET INTEREST MARGIN	140	.05	16.70	4.38	1.76
LIQUIDITY RISK	140	4.85	99.43	64.85	16.48
CREDIT RISK	140	.01	70.00	2.70	7.06
OPERATING RISK	140	.25	1161.08	255.19	254.09
Valid N (listwise)	140				

Table 1 present the descriptive results of the data set used in this study for the period 2012- 2021.The

ISSN No. 2454-6186 | DOI: 10.47772/IJRISS |Volume VII Issue XII December 2023

descriptive results indicated that Net interest Margin (NIM) has a mean value of 4.38 as against its minimum value of 0.05 and maximum value of 16.70. The mean value implies that banks on average has high interest expenses due to high competition for deposit, and this created a wide margin between the maximum of 16.7 and the mean of 4.38

Similarly, the mean value for the nonperforming loan ratio (credit risk) was 2.70 as against the minimum value of 0.01 and maximum value of 70. The implication is that on the average 2.7% of the loans granted by deposit money banks during the period under investigation are nonperforming, which may become impaired, bad and difficult to recover. The average value is below the regulatory limit of 5%. This shows that the quoted deposit money banks performed fairly well when it comes to managing loans during the period under review. The minimum value for credit risk ratio is relatively good suggesting that during a particular year a bank has only 1% of loans granted to customers that became non-performing, and the maximum value of 70% is very high, disturbing and unacceptable. Poor credit analysis and unfavourable macro-economic environment may be responsible for this high credit risk ratio.

Additionally, the descriptive results in Table 2 show that cost-to-income (operating risk) has a mean of 255.19 signifying that average operating cost is about 2.5 times the value of operating income. The implication here is that banks are not efficient in the management of operations. There is need for banks to take the issue of value for money analysis seriously. Value for money placed emphasises economy, effectiveness, and efficiency in the management of resources.

Regression Analysis

The study conducted a multiple linear regression analysis.

Table.2 Dependent and Independent Variables Measurements

S/N	Variable	Intervening Variable	Proxies	Definition of Proxies
A	INDEPENDENT			
I	Risk Management	Loan to deposit ratio	Liquidity risk	Bank loan divided by total deposit
		Ratio of non-performing loan to total loan	Credit risk	Non-performing loan in bank loan portfolio divided by total amount of outstanding loan
		Ratio of operating expenses to net operating income	Operational risk	Total operating expenses divided by net operating income
B	DEPENDENT			
Lii		Net Interest Margin	Profitability and Efficiency Ratio	interest income minus Interest expenses divided by total asset.

Source: Researcher's design, 2022

Table 3. DATA ANALYSIS AND RESULTS

Relationship between risk management and financial performance.

		NET INTEREST MARGIN	LIQUIDITY RISK	CREDIT RISK	OPERATING RISK
NET INTEREST MARGIN	Pearson Correlation	1			.
	Sig. (2-tailed)		.		.
	N	140			

LIQUIDITY RISK	Pearson Correlation	.164			.
	Sig. (2-tailed)	.053		.	.
	N	140	140		
CREDIT RISK	Pearson Correlation	-.198*	-.113	1	
	Sig. (2-tailed)	.019	.182		
	N	140	140	140	
OPERATING RISK	Pearson Correlation	.180*	.102	-.040	1
	Sig. (2-tailed)	.034	.232	.636	
	N	140	140	140	140

*. The correlation is significant at the 0.05 level (2-tailed).

The above table shows that Commercial banks Net interest had a negative and significant correlation to credit risk by r =-.198 at 5% significant level. Furthermore, net interest had a positive and significant correlation with operating risk by r = 0.180 at 5% significance level, while net interest margin had positive but not significant correlation with liquidity risk. By implication, there is significant correlation between the dependable variable and Independable variables, hence we. can proceed to quantify the magnitude of the effect between the variable with the aid of multiple linear regression analysis.

Multicollinearity Test

Collinearity is a linear association between two predictors. Multicollinearity is a situation where two or more predictors are highly linearly related. In general, an absolute correlation coefficient of >0.7 among two or more predictors indicates the presence of multicollinearity. To achieve this, the eigenvalue and condition index were computed.

Table 4. Multicollinearity Test Results

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions			
				(Constant)	LIQUIDITY RISK	OPERATING RISK	CREDIT RISK
1	1	2.757	1.000	.01	.01	.04	.03
	2	.849	1.802	.00	.00	.04	.91
	3	.365	2.748	.02	.03	.92	.03
	4	.030	9.624	.97	.97	.00	.03

a. Dependent variable: NET INTEREST MARGIN

The table 4 shows that there are no problems with multicollinearity. All eigenvalues are close higher than 0, indicating that the predictors are not intercorrelated.

ISSN No. 2454-6186 | DOI: 10.47772/IJRISS |Volume VII Issue XII December 2023

The condition indices are computed as the square roots of the ratios of the largest eigenvalue to each successive eigenvalue. Values greater than 15 indicate a possible problem with multicollinearity; greater than 30, a serious problem (IBM,2021). None of these indices are up to 15, which implies that there is no problem with multicollinearity in the study independent variables.

Table 5. Risk management and financial performance (ANOVA)

Model		Sum of Squares	Def.	Mean Square	**F**	Sig.
1	Regression	36.666	3	12.222	4.194	.007 b
	Residual	396.351	136	2.914		
	Total	433.017	139			

a. Dependent variable: NET INTEREST MARGIN

b. Predictors: (Constant), CREDIT RISK, OPERATING RISK, LIQUIDITY RISK

From the analysis, the model was statistically significant given that the upvalue was 0.007 which was less than 0.05 significant level. The null hypothesis was rejected since the probability value (P obtained was lower (P <.05)Thus, the model fit is acceptable implying that there is a significant positive linear relationship between risk management practices and financial performance among commercial banks in Nigeria.

Table 6. Risk management and financial performance regression coefficient.

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.334	.607		5.493	.000
	LIQUIDITY RISK	.014	.009	.128	1.539	.126
	OPERATING RISK	.001	.001	.160	1.935	.055
	CREDIT RISK	-.044	.021	-.177	-2.143	.034

a. Dependent Variable: NET INTEREST MARGIN

The result of the study shows that credit risk has significant effect on the Net interest margin at 5% significant level (r=-.04, p-value=.034). By implication, credit risk has significant effect on financial performance and a unit variation in credit risk will have -.044 variation in financial performance of commercial bank. Hence, the null hypothesis is rejected. This negative coefficient of regression also means that increase in credit risk will lead to decrease in Net interest Margin of the commercial banks in Nigeria. Liquidity risk has positive coefficient of regression but no significant effect on financial performance at

ISSN No. 2454-6186 | DOI: 10.47772/IJRISS |Volume VII Issue XII December 2023

(r=.014, p-value=.126), the null hypothesis is supported. Similarly, operation risk also has a positive coefficient of regression but no significant effect on the financial performance of commercial banks; the null hypothesis is supported.

RESULT DISCUSSION

Implication to the Regulatory Authorities.

Investigating the effect of the risk management on commercial banks' financial performance will assist the regulating authority (CBN) in determining the consequence of risk management and its impact on commercial banks going concern. This will enable CBN to improve on their supervision and routine examination of the commercial banks record and account for early detection of risk in commercial banks. With this study, credit risk could be minimised to the advantage of government local borrowing. Babatunde (2022) explains the need to avert costly public debt management in Nigeria. This study exposes risks as loopholes that could worsen the lending attitude of commercial bank customers such as government.

Implication to the Local /Foreign Investors.

It will guide existing and potential investors on why they need to review the risk management policy put in place by the commercial bank management while evaluating their investment decision. It will also guide international investors to determining the roles and consequences of risk management on the financial performance of commercial banks when evaluating their investment decision.

Implication for Commercial Banks.

Commercial banks have to strike a balance between liquidity and profitability so as to attain financial equilibrium that will put both goals at optimum level, but they face liquidity management dilemmas such as identifying the ideal mix or balance of profitability and liquidity. Choosing whether to invest in income-generating investments or to prioritise liquidity stability, identifying the relationship between profitability and liquidity (its significance on bank performance, magnitude of the relationship, and its direction), the effects of liquidity on bank's profitability and identifying the main triggers or causes of liquidity problems in commercial banks are persistent issues that require precise evidence for appropriate decision making. They should avoid making higher risk loans to increase the profitability of commercial banks in Nigeria.

Implication to the Research.

The implication of this study could extend to other sector of economy beyond Commercial banks and more variables that have implication on the financial performance can be added. Furthermore, the study will serve as a reference point for future researchers in their studies related to risk management and commercial banks.

CONCLUSION

Pearson correlation test shows that credit risk has negative statistically significant correlation with financial performance at 5% significant level (r=-.198, pvalue=.019), similarly operation risk shows positive statistically significantly correlation with financial performance at 5% significant level (r=. 180.pv=.034).

Multiple linear regression analysis shows that credit risk has a statistically significant effect on financial performance at a level of 0.05% significant (r = -.044, pvalue =.034) while liquidity and operation risk have no statistically significant effect on the financial performance of commercial banks.

Given the aforementioned findings, this study concludes that risks are major determinants of banks financial

performance in commercial banks in Nigeria in terms of net interest margin. Moreso, the theory of anticipated income supports that banks relying on the cash flow of borrowers to reduce the non-performing loan and credit loss and this will eventually reflect on significant increase in net interest margin of commercial banks. Effective risk management has a significant effect on financial performance in Nigerian commercial banks for the period of this study 2012-2021.

RECOMMENDATIONS

In view of the findings this study recommends as follows:

- The findings suggest that Commercial Banks should formulate proper policy and design a credit strategy that ensures that in the event of defaults or bad debts they can still remain solvent. This can be achieved by strictly complying with the CBN lending guideline in making a proper classification of outstanding debt and making the necessary provisions for it in their financial statement.
- The findings also established the need for the Central Bank of Nigeria to improve its monitoring and supervisory sector with modern technology so as to carry out periodic reviews of the lending history as well as current lending patterns of the commercial banks in this digital world. This will protect the image of Nigeria before local and foreign investors as we cannot afford any bank failure in Nigeria again.
- In view of grievous damage the banks failure will have on the Nigeria image local and international, it is hereby recommended that all the commercial banks in Nigeria should establish the risk management framework and ensure that risks are identified and recorded in a register from departmental level to the institution at large. This will facilitate early risk detection, reporting and assessment to enables managers know volatile areas and how much resources can be allocated and the best method to apply in risk mitigation.
- The findings established the implication of poor risk management on the members of the commercial banks as it is the determinant of their investment going concern, in view of this serious implication it is recommended that the commercial banks comply with International Financial Reporting Standard by making adequate disclosure in their financial statement on the risk management precautions put in place as such will protect the interest and boost the confidence of stakeholders on their going concern.
- The findings suggest that commercial banking institutions need to refocus on the appropriate financial tools to be used to evaluate the effect of risk management on financial performance. The result of this study suggested the use of net interest Margin as this is the profitability proxy that indicates the difference between the net interest income and net interest expenses as the banking business generates the high percentage of their profit from this source.

REFERENCES

1. Babatunde, S. A. (2022). Examining the association between government budget and poverty rate in Nigeria. *Global Journal of Accounting*. Retrieved on 2nd September, 2022 from http://gja.unilag.edu.ng/article/view/1572/1214
2. Basel Committee in Banking Supervision (BCBS) (1998).*Proposal to issue Supplement the Basel Capital to cover market risk' Bank for international Settlement Basel*
3. CFI Team. (2022). Risk Management. Retrieved on 29 August, 2022 from https://corporatefinanceinstitute.com/resources/knowledge/strategy/risk-management/
4. Chijoriga, M. M. (2011). Application of multiple discriminant analysis (MDA) as a credit scoring and risk assessment model. International Journal of Emerging Markets, 6(2), 132- 147.
5. Eichler R, (2022). Risk Management Framework. Retrieved on 12 September, 2022 From https://www.investopedia.com/articles/professionals/021915/risk-management- framework-rmf-overview.asp
6. Ebenezer, O., & Omar, W. (2015) The Empirical Effects of Credit Risk on Profitability of

ISSN No. 2454-6186 | DOI: 10.47772/IJRISS |Volume VII Issue XII December 2023

Commercial Banks: Evidence from Nigeria. (6)2319-7064

7. Hallunovi, A. (2018). The Relationship Between Risk Management and Profitability of Commercial Banks in Albania. *Asian Themes in Social Sciences Research, 1(2), 44-49.*
8. IBM (2021) Collinearity diagnosis. https://www.ibm.com/docs/en/spss-statistics/24.0.0? topic=sales-collinearity-diagnostics.
9. kushi. T (2020). Introduction: What is banking? (Meaning, Definition, Objectives & Features). Retrieved on 12, October 2022 from https://techykhushi.medium.com/introduction-what-is-banking-meaning-definition-objectives-features-ebe07a87bcad
10. Kerton, W. (2021), What is liquidity risk? Retrieved on 6 February 2023 from https://www.investopedia.com/terms/l/liquidityrisk.asp
11. Nathan. M (2022). Operational Risk and Overview. https://study.com/learn/lesson/operational-risk-overview-examples-what-is-operational-risk.html
12. Olalere, O. & Wan, A. B. (2016). Risk Management and the Financial Performance of Commercial Banks in Nigeria: *A review of the literature revised. IOSR Journal of Economics and Finance (7, (2). Ver. , 14- 19.*
13. Ogunleye, R. W. (2001). Sensitivity of Bank Stock Returns to Market and Interest Rate Risks: An empirical investigation. *NDIC, Quarterly Review, 11*(1-2), 57-77.
14. Ongore, V. O., & Kusa, G. B. (2013). Determinants of the financial performance of commercial banks in Kenya. *International Journal of Economics and Financial Issues, 3(1), 237.*
15. Omiagho, A. & Daniel, J. (2021). Effect of risk management on the financial performance of Commercial Banks in Nigeria. *World journal of management and Business Studies .1* (1).
16. Sonjai, K. (2021). Risk Management and Enterprise Risk Management. https://doi.org/10.20935/AL2234
17. Taiwo, J. N., Ucheaga, E. G., Achugamonu, B. U., Adetiloye, K., Okoye, L., & Agwu, M. E. (2017). Credit Risk Management: Implications on Bank Performance and Lending Growth. *Saudi Journal of Business and Management Studies (SJBMS). Vol.2, No.5B, pp.584-590, May 2017. Available at: http://scholarsmepub.com/sjbms/.* The challenge of risk management in Nigerian banks in the post consolidation era. *Journal of Accounting and Taxation, 3(2), 23-31.*
18. Verma. E. (2022), Financial performance: Understanding concepts and Its Areas. https://www.simplilearn.com/financial-performance-rar21-article