

# Effect of Credit Risk Management on Financial Performance of listed Microfinance Banks in Nigeria

Ahmad A. Abubakar (PhD)<sup>1</sup> Benjamin O. Tobi<sup>1</sup> Habib A. Abdullahi<sup>2</sup>

1. Department of Accounting, Adamawa State University, Mubi

2. Department of Banking and Finance, University of Maiduguri

## Abstract

This study examines the effect of credit risk management on financial performance in listed microfinance banks in Nigeria. Data were collected from annual report and accounts of the two microfinance banks listed on the Nigerian Stock Exchange within 2012 to 2017. Data collected were subjected to statistical analysis of Pearson correlation, and Multiple Regression, Panel regression. The results revealed that, Capital adequacy ratio is negative and has significant effect on financial performance. Ratio of Non-performing loans to total loan is positive and has a significant impact on financial performance. Ratio of loan loss provision is negative and has a significant impact on financial performance of microfinance banks in Nigeria. The control variable, bank size and inflation are negative and not significant with financial performance. This study showed that there is a significant impact of credit risk management on financial performance of microfinance banks in Nigeria and recommended that microfinance banks in Nigeria should only give loans to borrowers with better future inflows, this is in line with the anticipated income theory under pinning in this study.

**Keywords:** Credit Risk Management, Financial Performance, Microfinance Banks.

**DOI:** 10.7176/RJFA/11-18-13

**Publication date:** September 30<sup>th</sup> 2020

## 1. Introduction

Microfinance banks are specialized institutions that provide financial services to low income groups or individual; such as savings, micro-credit, and other services with the aim of improving the economic status of small-scale producers, both in the rural and urban areas. They make financial services accessible to the poor who are conventionally not served by the standard formal financial sector (Augsburg & Fouillet, 2010). The role of microfinance banks in an economy cannot be overemphasized, because they are the main source of credit to small and medium scale organizations in the economy. The main business of microfinance banks is to provide financial services by accepting savings deposit and granting loans to grow small scale businesses in order to empower low income earners which in turn generates employment and alleviate poverty (Armenda'riz & Morduch, 2005). A major goal of banks generally is to maximize profits through revenue streams which include; interest on loans, interest on advances, fees and commissions. Interest on loans and advances constitutes the highest proportion of income of banks (Kargi, 2011). Interest on loans and advances are the main sources of income for microfinance banks, by giving loans, banks are exposed to credit risk. Over the years, different scholars have made effort to explain the concept of credit risk.

Gibson (2012), defined financial performance as the extent to which financial goals and objectives of a financial institution have been accomplished or are being attained, it is a process of matching up the revenue generated to the organization. It is a key measure for assessing the financial health of an organization within a financial period. Several researchers (Shieler, Emenike, & Amu, 2017; Awoke, 2014; Oludhe, 2011; Luy, 2010) used profitability ratios to measure financial performance. These ratios are key indicators of credit analysis in most banks as well as microfinance banks, as they are linked to the results and are attributable to their financial performance (Gibson, 2012). Regularly used ratios are return of equity as well as return on assets. Return on assets (ROA) is an indicator of how profitable a company is relative to its total assets. ROA gives an idea as to how efficient management is at using its assets to generate earnings. Return on equity (ROE) measure a company's efficiency at generating profits from every unit of shareholder's equity (Kapoor & Sandhu, 2010). The usefulness of these proxies as measures for financial performance is the rationale for adopting them in this study.

The effect of credit risk management on financial performance of listed microfinance banks in Nigeria being the focus of this study, prior expectation was that a sound credit risk management achieves satisfactory financial performance, the study's preliminary expectation is that poor credit risk management leads to a lower financial performance level. The central question therefore is how significant is the effect of credit risk management on the financial performance of listed Microfinance Banks in Nigeria between 2012 and 2017.

Robert (2017) opines that non-performing loan ratio is perhaps the most widely used measure of credit risk management across articles. Studies by Detragiache and Gupta (2006), Martinez-Miera and Repullo (2010), Bertay et al. (2013) argue that nonperforming loans (a major proxy for credit risk management) and its impact on banking financial performance cannot be the same across different categories of banks due to varied levels of market discipline, risk management strategies, regulatory and supervisory measures, and sources of capital. Then, most

studies on credit risk management and financial performance focus on deposit money banks (Alshatti, 2015; Oludhe, 2011; Poudel, 2012; Waweru & Kalani, 2009). Only a few studies, to the researcher's knowledge, have examined the relationship between credit risk management and financial performance in microfinance banks. More so, most studies on microfinance banks were conducted outside Nigeria, hence the need to conduct this study to understand the impact of credit risk management on financial performance of listed microfinance banks in Nigeria.

## 2. Objectives of the Study

The main objective of this study is to examine the effect of credit risk management on financial performance of listed microfinance banks in Nigeria. The study also has the following specific objectives;

- i. To determine the effect of capital adequacy ratio on financial performance of microfinance banks in Nigeria.
- ii. To determine the effect of ratio of non-performing loans to total loans on financial performance of microfinance banks in Nigeria.
- iii. To determine the effect of the ratio of loans loss provision on financial performance of microfinance banks in Nigeria.

## 3.0 Literature Review

### 3.1 Concept of Credit Risk Management

Credit risk management is defined as the identification, measurement, monitoring and control of risk arising from possibility of default in loan repayments (Coyle, 2000). Credit risk management also refers to the systems, procedures and controls, which a company has in place to ensure the efficient collection of customer payments thereby minimizing the risk of non-payment (Mokogi, 2003). Credit risk management is a critical component of a comprehensive approach to risk management as whole and essential to long-term success of a banking organization. It helps reduce bank losses. According to Misker, (2015) credit risk management is very important to bank as it is an integral part of the loan process, it minimizes bank risk by maintaining credit risk exposure with view to shielding the bank from the adverse effects of credit risk. Bank are successful when the risks they take are reasonable, controlled and within their financial resources and competence (Machiraju, 2008).

Credit risk management is an important element in any institutions providing financial services in general and microfinance particularly, it is effective when a microfinance bank has created processes or procedures to manage their activities when creating credit in ways to reduce the negative impact on its earnings and capital. The credit risk management is very important for the long term sustainability of microfinance institutions (Cooperman, Mills, & Gardner, 2000) Management of risk arising whenever a lender is exposed to loss from a borrower, counterparty, or an obligatory who fails to honor their debt obligation as they have contracted is very important to financial performance (Luy, 2010). According to Colquitt, (2007) this loss may derive from deterioration in the counterparty's credit quality, which consequently leads to a loss to the value of the debt, or according to Crouhy, Galai, & Mark (2006), the borrower defaults when he is willingly to fulfill the obligations. Credit failure in microfinance banks is not new or a rare occurrence, they affect their liquidity position as well as cash flows and profits. Hence, Greuning & Bratanovic, (2009) maintain that it is a biggest threat to any bank financial performance and the principal cause of microfinance bank failures. According to Owojori, Akintoye, and Adidu (2011) available statistics from liquidated microfinance banks clearly showed that inability to collect loans and advances extended to customers and creditors or companies related to directors or managers was a major contributor to failure.

Microfinance bank exists not only to accept deposits but also to grant credit facilities, therefore inevitably exposed to credit risk. Management of credit risk is very crucial as credit risk is by far the most significant risk faced by all microfinance banks and the success of their business depends on accurate measurement and efficient management of this risk to a greater extent than any other risks (Gieseche, 2004). Chen and Pan, (2012) described credit risk management as monitoring the degree of value fluctuations in debt instruments and derivatives due to changes in the underlying credit quality of borrowers and counterparties. Coyle, (2000) further described credit risk management as appraisal of the losses from the refusal or inability of credit customers to pay what is owed in full and on time. Credit risk management maximizes bank's risk adjusted rate of return by maintaining credit risk exposure within acceptable limit in order to provide framework for understanding the impact of credit risk management on banks' performance (Kargi, 2011).

The main sources of credit risk include, limited institutional capacity, inappropriate credit policies, volatile interest rates, poor management, low capital and liquidity levels, direct lending, massive licensing of banks, laxity in credit assessment, poor lending practices, government interference and inadequate supervision by the central bank (Kithinji, 2010). An increase in microfinance bank credit risk gradually leads to liquidity and solvency problems. Credit risk may increase if the microfinances bank lends to borrowers it does not have adequate knowledge about.

From the above discussion, credit risk management can be referred to as the process a financial institution put in place to checkmate the likelihood of losing part or whole monies loaned to borrowers when borrowers fail

to pay back the loan they collected.

### 3.2 Concept of Financial Performance

Financial performance is the measure of the results of the firm's policies and operations within a specified time period in monetary terms. The results are expressed in form of profit or losses. Financial performance of microfinance banks is the measure of the level of the banks profit or losses within a specified time (Mutua, 2014). Ilaboya and Omoye, (2013) viewed financial performance in relation to the ability of the organization to generate earnings by efficiently and effectively utilizing available resources over a given period. Malik and Nadeem, (2014) viewed financial performance as a measure of financial position of a company over a specified period to know how efficiently a company is using its resources to generate income.

Financial Performance is the results of a company's policies and operations in monetary terms, these results are reflected in the organization's return on investment, return on assets and added value (Ilaboya&Omoye, 2013). Financial performance refers to accomplishment of financial activity of an organization; it explains the way a firm can use its assets to generate revenues. It is also the organization's ability to generate new resources from daily operations over a given period (Korir, 2011).

Financial performance, therefore, can be referred to as the outcome of a business's activities within a given period in monetary terms. It shows the changes in shareholders' wealth and asset/liabilities of the business.

### 3.3 Credit Risk Management and Financial Performance

Microfinance Banks play the critical role of providing different financial products and services to majority of people especially the low-income earners who lack collateral to borrow from formal financial institutions like the commercial banks. Microfinance banks are therefore important to a country's economic development, if this sector does not perform well, the effect on the economy could be huge and broad. This sector is however plagued majorly by loan delinquents and credit risk management is key to financial performance of these institutions.

Armendariz and Morduch, (2000) highlighted several important mechanisms that allow Microfinance institutions to generate high repayment rates from poor borrowers without requiring collateral and without using group lending contracts. These mechanisms include the use of non-refinancing threats, regular repayment schedules, collateral substitutes, and the provision of nonfinancial services. Typical group lending scheme include: (a) each member is jointly liable for each other's loan, (b) if any member does not repay, all the members are punished (often in the form of denial of future credit access), and (c) prospective borrowers are required to form groups by themselves. Group lending model has attracted an enormous amount of public and academic attention mainly after the success of group lending program in Grameen Bank.

Demirguc and Huzinga, (2000) suggested that microfinance banks performance is an important predictor of financial distress. The study of the microfinance bank performance is significant as it helps to understand current conditions of the sector and the critical factors to consider in making decisions and creating new policies. The aim of this research is to establish how credit risk management affects the financial performance of listed microfinance banks in Nigeria. The Financial performance is viewed or expressed in terms profitability. Achou and Tenguh (2008) defined the profitability of the company by its ability of earning a reasonable profit on the owners' investment. The financial performance of Microfinance banks in terms of profitability is measured by the following ratios of Return on Equity ratios and return on assets.

#### i. Capital Adequacy Ratio and Financial Performance

A strong banking infrastructure plays a major role in supporting economic activity and meeting the financial needs of the society and contributing in the overall growth of the country. For the smooth flow of credit in an economy, it is essential that banks should be financially sound so as to meet the various requirements of other fields. Capital adequacy ratio (CAR) is one of the measures which ensure the financial soundness of banks in absorbing a reasonable amount of loss. Capital adequacy requirements have existed for a long time, but most important are those specified by the Basel Committee of the Bank for International Settlements. According to Odongo (2013), past studies have found out that the announcement of regulatory change is viewed by market participants as generally unfavorable. The objective of this study is to examine the impact of credit risk management on financial performance. In the study done by Djan, Frimpong, Bawuah, Halidu and Kuutol (2015) covering default rate, cost per loan assets and capital adequacy ratio, it was found that all these parameters have an inverse impact on banks' performance; however, the default rate is the most predictor of bank financial performance. Ogboi and Unuafe (2013) studied the impact of credit risk management on capital adequacy on the financial performance of commercial banks in Nigeria, using a time series and cross sectional data from 2004-2009 obtained from selected banks annual reports and accounts in Nigeria, results showed that sound credit risk management and capital adequacy impacted positively on bank's financial performance with the exception of loans and advances which was found to have a negative impact on banks' profitability in the period under study.

Sedhain (2012) concluded that capital adequacy has helped in developing suitable prudential norms to save

the banks and financial institutions from financial crisis and signals of failure. Jha and Hui (2012) revealed that return on assets was significantly influenced by capital adequacy ratio, interest expenses to total loan and net interest margin, while capital adequacy ratio had considerable effect on return on equity.

ii. Loan Loss Provisions Ratio and Financial Performance

Research on Loan Loss Provisioning (LLP) used to focus narrowly from an accounting perspective on whether provisions were used by banks to smooth earnings (Greenawalt & Sinkey, 1988). Anandarajan, Hasan, and McCarthy (2007) examined whether and to what extent Australian banks use loan loss provisions (LLPs) for capital management, earnings management and signaling. They examined if there were changes in the use of LLPs due to the implementation of banking regulations consistent with the Basel Accord of 1988 which made loan loss reserves no longer part of Tier I capital in the numerator of the capital adequacy ratio. They found some evidence to indicate that Australian banks use LLPs for capital management, but no evidence of a change in this behavior after the implementation of the Basel Accord. Their results indicated that banks in Australia use LLPs to manage earnings. Further, they noted that listed commercial banks engaged more aggressively in earnings management using LLPs than unlisted commercial banks.

iii. Non-Performing Loans Ratio and Financial Performance

Negera (2012) conducted a study on the determinants of non-performing loans and stated that mixed research approach was adopted for the study. Survey was conducted with professionals engaged in both private and state-owned. The study used structured review of documents and records of banks and in-depth interview of senior bank officials in the Ethiopian banking industry. The findings of the study showed that poor credit assessment, failed loan monitoring, undeveloped credit culture, lenient credit terms and conditions, aggressive lending, compromised integrity, weak institutional capacity, unfair competition among banks, willful default by borrowers and their knowledge limitations. NPLs reflect the health of the financial system affecting the profitability. A nonperforming loan is any obligation or loan in which interest and the principal payments are more than 90 days overdue, more than 90 days 'worth of interest has been refinanced, capitalized or delayed by agreement or if payments are less than 90 days overdue but payments are no longer anticipated. Poor credit risk management and plain bad luck in form of external independent factors are the main reason for NPL. The inflation, deregulation and special market conditions can lead to poor credit lending decision which in turn leads to NPLs. In fact, many NPL studies are conducted in the countries with financial market recession.

This situation provides an incentive to borrowers to take on investment projects that are riskier than the lender would like due to high risk high return principal (Bester, 1994; Saunders & Connet, 2008). The situation becomes worse if the borrower is not honest and decides to hide the actual performance of the investment in order to avoid paying his/her obligations to the lender. This was also evidenced in this study where results show that some borrowers lack integrity and are not transparent. Weak credit analysis might have also been caused by unfaithful staff (though this was found out to be a minor contributing factor).

Beck, Jakubik, and PiloIU (2013) in a study on Non-Performing Loans (NPLs) in 75 countries argue that — Over the past decade, the credit quality of loan portfolios across most countries in the world remained relatively stable. average bank asset quality deteriorated sharply due to the global economic recession. Yet the deterioration of loan performance was very uneven across countries. Beck, Jakubik, and PiloIU, (2013) were interested in explaining these differences in bank asset quality across countries and over time.

Emphasize that lower non-performing loan ratio is the evidence of lower amount of loans being doubtful which in turn means a lower credit risk. This signifies the importance of non-performing loan rationale as a proxy for credit risk management. Some studies have argued that non-performing loans and its impact on banking stability cannot be the same across different categories of banks due to varied levels of market discipline, risk management strategies, regulatory and supervisory measures, and sources of capital Detragiache and Gupta (2006), (Martinez-Miera & Repullo, 2010) and (Bertay, Demirgüç-Kunt, & Huizinga, 2013).

#### 4 Methodology

This research employed ex-post facto design as it can be used to find out the factors that are associated with certain occurrence, conditions, events or behaviors by analyzing past events or already existing data for possible casual factors (Kothari & Garg 2014). Data was collected from annual reports of the companies and analyzed using multiple regression and correlation analysis. The population of the study consists of the microfinance banks listed on the Nigerian Stock Exchange. There are two microfinance banks listed on the Nigerian Stock Exchange within the period of the study. Therefore, the study used census approach as a technique to get appropriate sample size, entailing the use of the entire population.

S/N	Name of microfinance bank	Year listed
1	Nigerian Police Microfinance Bank Plc	2010
2	Fortis Microfinance Bank Plc	2012

Source: Nigeria stock Exchange Fact Book 2017

To examine the 'Impact of Credit Risk Management on Financial Performance of listed microfinance banks in Nigeria'. The model for this study took the following form:

Financial Performance = as a function of Credit Risk Management

$$FP = f(CRM) \dots\dots\dots (1)$$

Equation (1) above is now represented by its proxies in Equation (2)

$$RoA = f(CAR + RnPT + RLoLP) \dots\dots\dots (2)$$

The econometric model, introducing the control variable are as follows:

$$RoA_{it} = \beta_0 + \beta_1 CAR_{it} + \beta_2 RnPT_{nit} + \beta_3 RLoLP_{it} + \beta_4 BS_{it} + \beta_5 INF_{it} + \varepsilon \dots\dots\dots (3)$$

Where:

RoA<sub>it</sub> – Return on asset for company i in time t

CAR<sub>it</sub> – Capital adequacy ratio i and time t

RnPT<sub>nit</sub> – Ratio of Non-Performing loan on Total loan for company i and time t

RLoLP<sub>it</sub> – Ratio of Loan and advances to Total Deposit for company i and time t

BS<sub>it</sub> - Bank Size i and time t

INF<sub>it</sub>- Inflation Rates i and time t

ε - Error term

## 5. Results and Discussions

This section analyzed and discusses the results obtained from the correlation and multiple regression of the data. The analysis is based on the data obtained from annual reports and accounts of the listed microfinance banks.

### 5.1 Correlation of the Study Variables

**Table 5.1: Correlation Matrix of the Dependent and Explanatory Variables**

	ROA	CAR	RnPTLNRLoTd	BS	INF
ROA	1.0000				
CAR	-0.4625*	1.0000			
	0.0174				
RnPT	0.0784	0.1907	1.0000		
	0.7033	0.3508			
RLoLP	-0.3941*	0.2337	0.6905*	1.0000	
	0.0463	0.2506	0.0001		
BS	-0.1377	-0.0726	0.7172*	0.7506*	1.0000
	0.5024	0.7244	0.0000	0.0000	
INF	-0.3298	0.6613*	0.1322	0.2367	-0.0448
	0.0999	0.0002	0.5198	0.2443	0.8278

Source: Author's computation using STAT version 15.

The above table 5.1 shows that ratio of loan loss provision (RLoLP), bank size (BS), capital adequacy ratio (CAR) and inflation (INF) are negatively correlated with return on assets (ROA) while ratio nonperforming loan to total loan (RnPT) is positively correlated with return on assets (ROA). Capital adequacy ratio (CAR), ratio nonperforming loan to total loan (RnPT), ratio of loan loss provision (RLoLP), bank size (BS) and inflation rate (INF) have a coefficient of -0.4625, 0.0784, -0.3941, -0.1377 and -0.3298 respectively. Which also means that their degree of correlation is, 46.25%, 7.84%, 39.41%, 13.77% and 32.98% respectively. Ratio nonperforming loan to total loan (RnPT) has the lowest degree of correlation. Looking at their respective p-value, Capital adequacy ratio (CAR) and ratio of loan loss provision (RLoLP) are statistically significant at 5% level of significance. That is, they both have a negative effect on (ROA)

Ratio nonperforming loan to total loan (RnPT), ratio of loan loss provision (RLoLP) and Inflation (INF) are positively correlated with capital adequacy ratio (CAR), and bank size (BS) is negatively correlated with capital adequacy ratio (CAR). With the coefficient of 0.1907, 0.2337, 0.6613 and -0.0726, respectively. Which means that the degree of correlation is 19.07% 23.37% 66.13% and 7.26% respectively. But inflation (INF) is significantly related with CAR at 5% level of significance While ratio of nonperforming loan to total loan (RnPT), bank size (BS) and ratio of loan loss provision (RLoLP) and are not significant with capital adequacy ratio (CAR).

Ratio of loan loss provision (RLoLP) significantly related with ratio nonperforming loan to total loan (RnPT), ratio of loan loss provision (RLoLP) and bank size (BS) are positively correlated with ratio of nonperforming loan to total loan (RnPT) while and inflation (IF) is positively correlated with ratio nonperforming loan to total loan (RnPT) but is not significant. With the degree of correlation of 69.80% for ratio of loan loss provision (RLoLP) and 71.72% for bank size (BS). Inflation rate (INF) is positive but not significant with ratio of nonperforming loan to total loan (RnPT), with the degree of correlation of 13.22%.

There is positive and significant relationship between bank size (BS) and ratio of loan loss provision (RLoLP),

with the coefficient of 0.7506 which is about 75.06% and the p-value less than 5% level of significance. Inflation (INF) is positive and not significant with ratio of loan loss provision (RLoLP), with a degree of correlation of about 23.07%. Inflation rate (INF) is negative but not significant with, bank size (BS) with a degree of correlation of 4.48% and the p-value greater than 5% level of significance.

The Variance Inflation Factor (VIF) shows that there is no issue of multicollinearity among the variables of discussion. Looking at the table (appendix) under the VIF column, none of the figure is above 10, which signifies that there is no multicollinearity issue. From Table figure ranges from a minimum 1.84 to a maximum of 3.49 which shows that there is no multicollinearity problem.

## 5.2 Regression Results

This section presents the regression result of both fixed and random effect model used to examine the effect of credit risk management on financial performance of listed microfinance banks in Nigeria. Hausman test is used to determine if the fixed effect model or the random effect model is appropriate. Random effect model is appropriate because the p-value is greater than 5%.

**Table 5.2 Regression Result of the Impact of Credit Risk Management on Financial Performance**

Prob > F	=	0.0026				
R-squared	=	0.5758				
Adj R-squared	=	0.4697				
Prob > chi2	=	0.0001				
ROA	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
CAR	-.8366092	.3322107	-2.52	0.012	-1.48773	-.1854881
RnPT	.2696367	.0762714	3.54	0.000	.1201474	.4191259
RLoTd	-.9064665	.3654263	-2.48	0.013	-1.622689	-.1902441
BS	-.0709775	.0696244	-1.02	0.308	-.2074388	.0654839
INF	.5570179	2.573428	0.22	0.829	-4.486808	5.600844
cons	-1.512291	1.989004	-0.76	0.447	-5.410666	2.386085

Source: Author's computation using STAT version 15

The R2 value of 0.5758 indicates that the variables in this model are representing 57.58% which is a good result to show how much the explanatory variables have a power to represent the model. The other variable that are not included in the model represents 47%. From table 4.3, capital adequacy ratio (CAR), ratio of nonperforming loan (RnPT) and ratio of loan and advances to deposit (RLoLP) are statistically significant factors at 5% and affecting the microfinance banks performance (ROA). While bank size (BS) and inflation are not significant with bank performance (ROA). Ratio Nonperforming Loan to Total Loan (RnPT) is positive with a coefficient of (0.2696367) and a p-value of (0.000) which is significant at 5% level of significance. This means that an 1% increase in ratio nonperforming loan to total loan (RnPT) will increase return on asset (ROA) by (0.2696367) holding all other variables constant.

Ratio of loan loss provision (RLoLP) is negative with a coefficient of (-0.9064665) and a p-value of (0.013) which is significant at 5% level of significance. This means that a 1% increase in ratio of loan loss provision (RLoLP) will decrease return on assets (ROA) by (-0.9064665) holding all other variable constant.

Capital adequacy ratio (CAR), is negative with the coefficient of -0.8366092 with a p-value of 0.012 which is are less than 5% level of significance. This means that an increase in this variable will cause a decrease on return on assets (ROA) of microfinance banks in Nigeria. Bank size (BS) is negative and inflation rate (INF) is positive with the coefficient of -0.0709775, 0.5570179 respectively but their p-value are greater than 5% level of significance. This means that an increase in this variable will not cause any effect on return on assets (ROA) of microfinance banks in Nigeria.

## 6. Conclusion

The following conclusion were reached in this study.

- i. Capital adequacy ratio has a significant negative effect on financial performance of microfinance banks in Nigeria.
- ii. Ratio Non-performing loans to total loan has a significant positive effect on financial performance of microfinance banks in Nigeria.
- iii. Ratio of Loan loss provision have a significant negative effect on financial performance of microfinance banks in Nigeria.

## 7. Recommendations

Based on the study findings and conclusions, the following recommendations are made to improve credit risk management and therefore, financial performance.

- i. Microfinance banks in Nigeria should keep their risk-weighted assets (loans) to a reasonable margin to their capital and assets so as to cut down exposure to non-performing loans. This will cushion the effects of total loss from loans given to borrowers and interest accruing therefrom as a result of non-performance, by implication achieving improved overall financial performance.
- ii. Credit units of the microfinance banks in should ensure proper credit evaluation of potential borrowers and lending funds should be allocated to prime borrowers. This consistent to the premise of Anticipated Income Theory, borrowers should be selected based on their expected future inflows. This will then cut down the potentials for non-performing loans and in turn improve financial performance of the microfinance banks in Nigeria.
- iii. Microfinance banks should ensure a realistic loan loss provision ratio according to the size of their loan portfolio and regulatory requirement in order to cushion the loan loss from non-performing loans. Microfinance banks should ensure compliance with relevant provisions of the Banks and Other Financial Institutions Act (1999) as amended and the Prudential Guidelines.

## References

- [1] Anandarajan, A., Hasan , I., & McCarthy, C. (2007). Use of Loan Loss Provisions for Capital, Earnings Management and Signaling by Australian Banks. *Accounting and Finance*, 357-379.
- [2] Achou, T. F., & Tenguh, N. F. (2008). Bank Performance and Credit Risk Management. Unpublished Master's Thesis University of Skovde, Sweden.
- [3] Alshatti, A. S. (2015). The Effect of Credit Risk Management on Financial Performance of the Jordanian commercial banks. *Investment Management and Financial Innovations*, 12(1), 338-339.
- [4] Armendariz , A., & Morduch, J. B. (2000). Microfinance Beyond Group Lending. *Economics of Transition*, 8, 401-420.
- [5] Augsburg, B., & Fouillet, C. (2010). Profit Empowerment: The microfinance Institution's mission draft. *Perspectives on Global Development & Technology*, 3(4), 327-355.
- [6] Awoke, V. (2014). Commercial Banking Risk Management: an Analysis of the Process. *The Wharton Financial Institutions*, 34-56.
- [7] Beck, R., Jakubik, P., & PiloIU, A. (2013). Non-Performing Loans: What Matters in Addition to the Economic Cycle? ECB Working Paper No. 1515, 23-31.
- [8] Bertay, A. C., Demirguc-Kunt, A., & Huizinga, H. (2013). Do we Need Big Banks? Evidence on Performance, Strategy and Market Discipline. *Journal of Financial Intermediation*, 50-62.
- [9] Charles, O., & Kenneth , O. U. (2013). Impact of Credit Risk Management on Capital Adequacy in Commercial Banks In Nigeria. *Jornal of Emmerging Issues Economics and Finance*, 3(2), 8-10.
- [10] Colquitt, J. (2007). *Credit Risk Management: How to Avoid Lending Disasters & Maximize Earnings* 3rd Edition. USA: McGraw-Hill.
- [11] Cooperman, E., Mills, D., & Gardner , J. (2000). *Managing Financial Institutions, An Asset and or Liability Approach*, Orlando: The Dryden Press, Harcourt College Publishers.
- [12] Coyle, B. (2000). *Framework for Credit Risk Management*. Chartered Institute Of Banker United Kindom, 50-56.
- [13] Crouhy, M., Galai, D., & Mark, R. (2006). A Comparative Analysis of Current Credit Risk Models. *Journal of Banking and Finance*, 24(20), 59-117.
- [14] Demirguc, K. A., & Huzinga, H. (2000). Determinants of Commercial Bank Interest Margins and Profitability: Some International Evidence. *The World Bank Economic Review*, 13(2), 379-40.
- [15] Detragiache, E., & Gupta, P. (2006). Foreign banks in emerging market crises: Evidence from Malaysia. *Journal of financial stability*, 2, 217-242.
- [16] Gibson, C. (2012). How Chartered Financial Analysts View Financial Ratios. Expected with Permission From Financial Analysts Journal. Association fir Investment Management and Research, 74-76.
- [17] Gieseche, H. (2004). *Credit Risk Modelling and Valuation; An Introduction*. Cornell University London, 2, 256-159.
- [18] Greenawalt, M. B., & Sinkey , J. F. (1988). Bank Loan-Loss Provisions and the Income-Smoothing Hypothesis: An Empirical Analysis. *Financial Services Research*, 1(4), 301-318.
- [19] Greuning, H. V., & Bratanovic, S. B. (2009). *Analyzing Banking Risk: A Framework for Assessing Corporate Governance and Risk Management*. 3rd Edition. USA: The World Bank. Washington.
- [20] Ilaboya, O. J., & Omoye, A. S. (2013). Corporate Social Responsibility and Firm Performance. Evidence from Nigerian Jorunal of Asian Development, 2.
- [21] Jensen, M. C., & William, H. M. (2006). Can the Corporation Survive. *FinancialAnalysts*, 34-50.
- [22] Kaplanski, G., & Levy, H. (2013). Value-at-risk Capital Requirement Regulation, Risk. *The European Journal of*, 21(3), 215-241.
- [23] Kargi, H. S. (2011). Credit Risk and the Performance of Nigerian Banks. *Universty Of Zaria Journal*, 43-45.

- [24] Kargi, H. S. (2011, January 26). Credit Risk and the Performance of Nigerian Banks, Ahmadu Bello University Zaria. Credit Risk and the Performance of Nigerian Banks. Zaria, Kaduna, Nigeria: University journal.
- [25] Kithinji, A. M. (2010). Credit Risk Management and Profitability of Commercial Banks in Kenya. School Of Business, University Of Nairobi, Nairobi, 21-30.
- [26] Korir, S. (2011). The Effect of Credit Risk Management on Financial Performance of Deposit Taking Microfinance Institutions in Kenya. Nairobi: unpublished MBA project, University of Nairobi.
- [27] Kothari, C. R., & Garg, G. (2014). Research Methodology: Methods and Techniques. New Delhi: New Age International Limited.
- [28] Luy, D. D. (2010). Evaluation of Credit Risk Management Policies and Practices in a Vietnamese Joint-Stock Commercial Bank's Transaction Office. Business Economics and Tourism, 123-145.
- [29] Machiraju, H. R. (2008). Modern Commercial Banking 2nd Edition. USA: New Age International Ltd.
- [30] Malik, M. S., & Nadeem, M. (2014). Impact of Corporate Social Responsibility on the Financial Performance of Banks in Pakistan. International letters of Social and Humanistic Science, 21, 9-19.
- [31] Martinez-Miera, D., & Repullo, R. (2010). Does competition Reduce the Risk of Bank Failure? Review of Financial Studies, 23(10), 3638-3664.
- [32] Misker, B. (2015). The Impact of Credit Risk on Financial Performance of Banks in Ethiopia. Addis Ababa University, Ethiopia, MSc. Thesis, 30-35.
- [33] Mokogi, J. G. (2003). Economic implications of lending of Micro finance institution on MSES. Nairobi: Unpublished MBA Project, University of Nairobi.
- [34] Mutua, G. (2014). The Challenges of Risk Management in Diversified Financial Institutions, Federal Reserve Bank of New York. Economic Policy Review, 7, 1-17.
- [35] Negera, G. W. (2012). Determinants of Non-Performing loans : the Case of Ethiopian Banks. Institutional Repository, 45-50.
- [36] Ogboi, Charles, Unuafu, & Okaro, K. (2013). Impact of Credit Risk Management and Capital Adequacy on the Financial Performance of Commercial Banks in Nigeria. Journal of Emerging Issues in Economics, Finance and Banking (JEIEFB), 2(3), 2-6.
- [37] Oludhe, J. (2011). The impact of Credit Risk Management on Financial Performance of Commercial Banks in Kenya. Unpublished MBA Dissertation, University of Nairobi, Nairobi, 45-60.
- [38] Owojori, A. A., Akintoye, R. I., & Adidu, A. F. (2011). The Challenge of Risk Management in Nigerian Banks in the Post Consolidation Era. Journal of Accounting and Taxation, 13(2), 23-31.
- [39] Poudel, R. I. (2012). The Impact of Credit Risk Management on Financial Performance of Commercial Banks in Nepal. International Journal of Arts and Commerce, 1(5), 9-15.
- [40] Robert, H. (2017). The Impact of Credit Risk Management on Profitability of Nordic Commercial Banks. School of Economics and Management, Lund University, Master Thesis, 23-30.
- [41] Shieler, B., Emenike, O. K., & Amu, U. C. (2017). Credit Risk Management and Financial Performance of Microfinance Institutions in Kampala, Uganda. Journal of Banking and Financial Dynamics, 1(1), 24-35.
- [42] Waweru, N. M., & Kalani, V. M. (2009). Commercial Banking Crises in Kenya: Causes and Remedies. African Journal of accounting, Economics, Finance and Banking Research, 4(4), 12 – 33.