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Effects of Credit Policies on Delinquency Management of Microfinance Banks in Southwest, Nigeria

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Abstract

This study investigated the effect of credit policies on delinquency management of microfinance banks in Southwest Nigeria with the aim to examine the effects of credit standard and credit terms and condition on delinquency management of microfinance banks in Nigeria. Static Panel regression estimate which involved pooled regression, fixed effect estimate, random effect estimate, Hausman test were employed as the analytical techniques. Data on corporate governance (proxied by credit standard and credit terms and condition) and delinquency management (proxied by loan portfolio at risk) were obtained from Annual Financial Statement of respective microfinance banks over a period of seven (7) years from 2012 to 2018). Statistically, the study found that credit standard has positive and significant effect on loan portfolio at risk by ($t = 1.694070$; $p < 0.05$); the study also discovered that credit terms has positive with a significant effect on loan portfolio at risk by ($t = 1.694070$; $p < 0.05$). The result, therefore, implies that credit policy is very instrumental to delinquency management of microfinance banks in Nigeria based on their significant influences unlike corporate governance which has a negative impact on delinquency management. The study concluded that credit policy has positive and significant effect on delinquency management of microfinance banks in Nigeria. The study recommended that credit committees at all levels must work in co-ordination in order to ensure that credit is collected in a timely manner.

Keyword: Credit Policies, Delinquency Management, Microfinance Bank, Nigeria.

Introduction

Credit policy is a guide to successful credit administration and benefits must be weighed against the cost to ensure the benefits are worth the effort of administering the credit. Benefits like increase in market share, retention of existing customers, acquisition of new ones must be weighed against costs like selling and production costs, administration costs incurred during assessment, supervision and collection of credit and bad debts losses (Pandey, 2007). According to Gasbarro, Sadguna and Zumwalt (2002), a financial institutions credit policy affects the performance of that institution. The

credit policy of an institution affects the capital adequacy, asset quality, management quality, earnings and liquidity of a financial institution either positively or negatively depending on how well the policies are made and implemented. Among other factors, weakness in credit risk management has all along been cited as the main cause for lending in financial institutions (Richard, Chijoriga, Kaijage, Peterson & Bohman, 2008; Nyawera, 2013).

On the other hand, delinquency refers to the difficulty of the borrower to fulfil his/her loan obligation as and when due (Lakshmypriya, 2013). Existence of high levels of loan delinquency problem in microfinance industry in most countries negatively affects the level of financial and non-financial services to SMEs (Ditcher, 2003; Aliu & Gakure, 2014). This stands as one of the major reasons why deposit money banks give less attention to the financing of Micro, Small and Medium Enterprises (MSMEs). High loan delinquency rates in MSMEs lending should be of major concern to the board of directors and policy makers in developing countries, because of its unintended negative effects on MSMEs financing (Addae-Korankye, 2014).

The tendency that a microfinance banks may not receive its money (plus interest) from borrowers is high and often the most serious vulnerability in a microfinance institution (Warue, 2012). According to Warue (2012), since most microloans are unsecured, delinquency can quickly spread from a handful of loans to a significant portion of the portfolio. This contagious effect is worsened by the fact that microfinance portfolios often have a high concentration in certain business sectors (Addae-Korankye, 2014).

Moreover, many customers may be exposed to the same external threats such as lack of demand for customer products, livestock disease outbreak, bad weather, etc. These factors create volatility in microloan portfolio quality, therefore heightening importance of controlling credit risk. In this regard, microfinance banks need a good and effective corporate governance system that highlights repayment problems clearly and quickly, so that loan officers and their supervisors can focus on delinquency (repayment rate) before it gets out of hand. In lending services, a default is the failure to pay back a loan (Munene & Guyo, 2013). Microfinance Certification Programme (MCP) (2010) opines that delinquency management can be measured by percentage of loan portfolio at risk and default rate. MCP (2010) further suggests that microfinance banks should be stringent in advancing credit facility to creditworthy customers in order to reduce default rate.

Based on foregoing, microfinance banks in Nigeria are faced with the problem of loan delinquency/default, which may have long-term consequences if not addressed. Therefore, it is in the interest of the management and board of directors to fashion best credit policies which will have a bearing on the direction the firm takes and its ability to survive in the industry. This is because best and adequate credit policies ensure a firm is shielded from financial distress exposure in respect of loan delinquency (Donaldson, 2003; Ndumai, 2016). Firms with good, strong and adequate credit standard policies and terms will do better compared to the rest in the industry. When a firm embraces good and sound credit policies in its management and operations, it will have an effect on its financial profitability through significant reduction in delinquency/default rate, hence will attract more funds and be beneficial to all its stakeholders. However, poor loan administration leads to weak financial results, risky financing patterns and high delinquency/default rate. This will eventually make the banks to be prone to macroeconomic crises. The thrust of the study is to investigate the effects of credit policies on delinquency management of Microfinance banks in Southwest, Nigeria. In particular, the study examines:

- the extent to which credit standard policy impacts delinquency management of microfinance banks and evaluate
- how credit terms can impacts delinquency management of microfinance banks in Nigeria.

Literature Review

Conceptual Review

Credit Policies and Risk Management

Lending always involves some elements of risks stemming from circumstances which result from the nonpayment of the loan obligation when they fall due (Bwoma, Muturi & Mogwambo, 2017). When microfinance grants credit to its customers, it incurs the risk of nonpayment. Credit risk management refers to the systems, procedures and controls which microfinance puts in place to ensure the efficient collection of customer payments and minimise the risk of non-payment (Naceour & Goaied, 2003). Credit risk management forms a key part of a company's overall risk management strategy. Weak credit risk management is a primary cause of many business failures. Many small businesses have neither the resources nor the expertise to operate a sound credit management system (Richardson, 2002).

Credit policy of any organisation may be a lenient or stringent one depending on its approach. Accordingly, lenient credit policy refers to a situation where financial institutions tend to give credit facilities to customers very liberally, that is, credits are granted even to those customers whose credit worthiness are not known or are doubtful. On the other hand, stringent credit policy is one in which financial institutions offer credit facilities to their customers who have proven credit worthiness. The banks or organisations with stringent credit policy follow tight credit standard and terms and as a result, minimise cost, risks, and chances of bad debts and problem of liquidity (Bwoma *et al,* 2017).

Loan Portfolio

Loan portfolio constitutes loans that have been made or bought and are being held for repayment. Loan portfolios are the major asset of Microfinance institution. The value of the loan portfolio depends not only on the interest rates earned on loans but also on the likelihood that interest and principal will be paid (Jasson, 2002). Lending is the principal business activity for banks. The loan portfolio is typically the largest asset and the predominate source of revenue (Lillian, 2013). As such, it is one of the greatest sources of risk to a financial institution's safety and soundness. Whether due to lax credit standards, poor portfolio risk management, or weakness in the economy, loan portfolio problems have historically been the major cause of losses and failures. Effective management of the loan portfolio and the credit function is fundamental to a Microfinance safety and soundness. Loan portfolio management (LPM) is the process by which risks that are inherent in the credit process are managed and controlled (Ogilo, 2011).

Assessing LPM involves evaluating the steps the management takes to identify and control risk throughout the credit process. The assessment focuses on what management does to identify issues before they become problems. The identification and management of risk among groups of loans may be at least as important as the risk inherent in individual loans. For decades, good loan portfolio managers have concentrated most of their effort on prudently approving loans and carefully monitoring loan performance. Although these activities continue to be the mainstays of loan portfolio management, analysis of past credit problems, such as those associated with oil and gas lending, agricultural lending, and commercial real estate lending in the 1980s, has made it clear that portfolio

managers should do more. Traditional practices rely too much on trailing indicators of credit quality such as delinquency, nonaccrual, and risk rating trends. (Richardson, 2002).

Effective loan portfolio management begins with oversight of the risk in individual loans. Prudent risk selection is vital to maintaining favourable loan quality. Therefore, the historical emphasis on controlling the quality of individual loan approvals and managing the performance of loans continues to be essential. Technology and information systems have opened the door to better management methods. A portfolio manager can now obtain early indications of increasing risk by taking a more comprehensive view of the loan portfolio (Ogilo, 2011). To manage their portfolios, bankers must understand not only the risk posed by each credit but also how the risks of individual loans and portfolios are interrelated. These interrelationships can multiply risk many times beyond what it would be if the risks were not related. Until recently, few banks used modern portfolio management concepts to control credit risk. Now, many banks view the loan portfolio in its segments and as a whole and consider the relationships among portfolio segments as well as among loans. These practices provide management with a more complete picture of the bank's credit risk profile and with more tools to analyse and control the risk. (Sinkey, 1992; Lillian, 2013)

Theoretical Review

Transaction Costs Theory

The theory was first developed by Schwartz (1974). The theory shows that suppliers may have an advantage over traditional lenders in checking the real financial situation of the customers. Suppliers have a good chance to reinforce and monitor credit repayment. All these superiorities may give suppliers a cost advantage when compared with financial institutions. Petersen and Rajan (1997) group cost advantage sources into three categories: existing assets salvage value, buyer control and acquisition of information. Acquisition of information is because information is obtained at normal course of business, sellers are able to get the information about buyers faster and at lower cost. The theory informs the study in that financial institutions develop credit-worthiness and ability to repay credit facilities.

The 7C's Client Appraisal Model

According to Olomola (2002), cashflows for MFIs are determined by examining future projections and existing statements of cashflows if available. The financial statement and the business plan of the borrower are reviewed by the lender whereby a checklist is available to provide a guideline on the number of items to look at such as financial ratios. These will provide information to the lender whether the borrower will be able to repay the loan and his/her expenses as shown by the financial statements provided.

The personality of a client to the lender, that is the way he/she presents himself/herself as a person, social behaviour, economic standard, and his/her culture influences his clientele (Orua, 2009). The basis of a person's psychology factor is his/her inner worth and not touchable accomplishments. MFIs are able to determine also if the borrower is able to repay the debt from the cashflow. The technicality of cashflow analysis can make it difficult to sometimes compare income and expenses, hence result to ratios (Anthony, 2006). Alternative pledges for repayment of loans are collaterals which are mostly assets such as pledged against debt like land, plant & equipment or even stocks and debtors can be pledged (Lawrence & Charles, 2007). Borrowers of short term loans are advised to match their loans with securities that are short term. The theory informs the study in that the MFIs

largely earn income from interest on loans borrowed by customers and from investment on customer savings. Therefore systems on managing credit must be effective and efficient to be able to consider customer ability to repay credit facility thereby benefiting both the institution and the customer. Time and cashflows are important factors to be considered whenever a credit facility is to be offered.

Empirical Review

Claudine (2012) in Spain analyses the nexus between bank performance and credit risk management. The study employs ordinary least square regression analysis and discovered that return on equity (ROE) and return on assets (ROA) which both measure profitability were inversely related to the ratio of non-performing loan to total loan of financial institutions thereby leading to a decline in profitability. The study concluded that good risk management is good banking, which ultimately leads to profitable survival of the institution. Gaddiel, Afua, Henrietha, Gifty and Peter (2012) examine the effects of loan defaults on the operations of microfinance institutions (MFIs). The data gathered from the field were analysed through frequency and percentage counts. The study concluded that loan default had adverse effects on the MFIs (Sinapi Aba Trust), the Financial Service Officers (FSOs), and the clients of the MFIs in their operational sustainability and viability. Kolapo, Ayeni and Oke (2012) analyse the quantitative effect of credit risk on the performance of commercial banks in Nigeria over the period of 11 years (2000-2010). Panel model analysis was used to estimate the determinants of the profit function. The results showed that the effect of credit risk on bank performance is cross-sectional invariant. That is, non-performing loan negatively affect profitability (ROA); loan loss provision has negative effect on profitability and total loan and advances positively affect profitability of commercial banks.

Nyawera (2013) studies the effects of credit policies on the financial performance of Micro finance institutions. The study employs regression analysis which indicated that credit standard policy, credit terms and collection effort significantly affect financial performance. However, the study has been able to prove that credit policy can also be measured using secondary data against other studies which measured credit policy using primary data, it thereby established that credit standard policy, credit terms and collection are measurements of credit policy which have significant influence on financial performance of microfinance banks in Kenya. This will serve as an eye opener to this study in Nigeria by using the measurement as used in the study with large scope of data unlike the scope of 2010-2012 considered in this study. Oyadonghan and Bingilar (2014) focus on effective credit policy and liquidity of manufacturing companies in Nigeria. The Annual Reports and Accounts of year 2007-2011 of the selected companies as well as a questionnaire were subjected to statistical analysis. Analysis of variance (ANOVA) and regression analysis were used in the hypothesis testing. The study reveals that when a company's credit policy is favourable, liquidity is at a desirable level. And also, that manufacturing companies do not monitor and review their credit policy regularly and as a result the allowance of cash discounts could not be minimised as much as expected. Addae-Korankye (2014) analyses the causes and control of loan delinquency/default in microfinance institutions in Ghana. The study employs frequency counts and percentage and found that the causes of loan default to include; high interest rate, inadequate loan sizes, poor appraisal, lack of monitoring, and improper client selection. Measures to control default were found to include training before and after disbursement, reasonable interest rate, monitoring of clients, and proper loan appraisal. The study concludes that the government and Bank of Ghana should regularly monitor and supervise the MFIs so as to ensure safety of clients' deposits and customers' confidence.

Ugoani (2015) evaluates the relationship of poor credit risk management and bank failures in Nigeria. Chi-square statistic method was used for data analysis. The study shows that poor credit risk management influences bank failures. It is observed, that, the study is not well detailed, no scope, number and type of bank identified; variables that were used to capture poor risk management and bank failure could not be identified in the study. On the whole, the study implies that weak corporate governance accelerates bank failures. Matunda (2016) studies the effect of credit policy on financial performance of microfinance institutions in Kenya. By employing correlation and regressing multiples, the findings revealed that there was a significant relationship between financial performance of Micro Finance Institutions and credit standards, credit terms and conditions, and collection effort with R ranging from 0,498 to 0.235. Thus, it was established that credit standards, credit terms and conditions, and collection efforts affect the financial performance by a relatively moderate percent. Ugoani (2016) examine non-performing loans portfolio and its effect on bank profitability in Nigeria. The analyses were done through descriptive and regression analyses using the statistical package for the social sciences for the regression. With the regression result, it was found that non-performing loans portfolio has an insignificant negative effect on bank profitability. It is observed that no policy implication on the insignificant negative relationship between non-performing loan and bank profitability is discussed.

Murigi and Thuo (2018) investigate the relationship between credit risk management and loan performance in microfinance banks (MFBs) in Kenya. Regression analysis found a positive and statistically significant relationship between credit risk management and loan performance in the microfinance banks. Ogunlade and Oseni (2018) examine the influence of credit management practices on financial performance of Nigerian banks with specific reference to First Bank Plc. The result from regression analysis revealed that credit management practices have a significant positive influence on the financial performance of First Bank. Thus, the study concludes that client appraisal, credit risk control, and collection policy are major predictors of financial performance of First Bank. Notably, the study is robust on the use of client appraisal, credit risk control, and collection policy as a proxy for credit management but fail to disclose the variable/measurement that capture financial performance. More so, such study needs further investigation in microfinance institution.

Methodology

Research Design, Population, Sample and Sampling Technique of the Study

This study adopted ex-post facto research design to investigate the effects of credit policy on delinquency management of microfinance banks in Nigeria. The population of this study consisted of 337 microfinance banks in Southwest, Nigeria which comprises 5 National, 34 State and 298 unit microfinance banks (CBN, 2017). Convenient sampling technique is adopted in the research to select thirty microfinance banks from the population in Southwest on the basis that any chosen bank must have been in operation for at least 7 years which constitute the scope of the study especially from 2012 to 2018. In order to ensure accuracy, validity and reliability of data, thereby eliminating chances of errors and bias in selection process, and due to recent closure and license revocation of some microfinance banks by CBN, thirty (30) microfinance banks are randomly chosen based on 5 microfinance banks per state in Southwest.

Hence, the microfinance Banks considered for the study include: (AB Microfinance Bank; Accion microfinance Bank; NPF microfinance Bank; B. C. KASH microfinance Bank and FBN microfinance Bank for Lagos State; Covenant microfinance Bank; Ajose microfinance Bank; Babcock microfinance Bank;

Ilaro Polytechnic microfinance Bank and MAPOLY microfinance Bank for Ogun State; Caretaker Microfinance Bank; Excel microfinance Bank; FCMB microfinance Bank; Ifedapo microfinance Bank and UniIbadan microfinance Bank for Oyo state; First access microfinance Bank; Ikire microfinance Bank; OSCT microfinance Bank; Pathfinder microfinance Bank and Olofin-Owena microfinance Bank for Osun State; Ekimogun microfinance Bank; Fasidapo microfinance Bank; Lavelu microfinance Bank; New age microfinance Bank and Shield microfinance Bank for Ondo State; Consistent Trust microfinance Bank; Harvest microfinance Bank; Transwealth microfinance Bank; Ulayin microfinance Bank and Omiye microfinance Bank for Ekiti State). The choice of these microfinance Banks came to be as a result of large number of customer patronising their services.

Model Specification and Estimation Technique

The study examines the impact of credit policies on delinquency management of microfinance banks in Southwest, Nigeria. From review of literatures, Nyawera's (2013) research on credit policy and financial performance of microfinance banks is identified as the basis for this study.

Nyawera's (2013) model is stated as;

ROA = f (CS, CT, CE) 1

Where:

ROA = Return on asset

CS =Credit standard

CT = Credit terms and conditions

CE = Collection efforts

f = Functional notation

This study adapts the models by dropping the collection efforts. The reason for dropping the collection effort is that it is considered as a tool for retrieving funds from bank's customers which may widen the study beyond its scope. More so, the study replaces return on asset variable with delinquency management (DM) proxied by loan portfolio at risk (LPR) as evidence on page 241 and 242 of Microfinance Certification Programme (MCP) (2010). The justification for inclusion of loan portfolio at risk in the model is that the proxies directly measure delinquency management as introduced by MCP (2010) while return on asset measures firm's performance.

Hence, the main model for the study is stated as:

LPR = f (CS, CT) 2

Where;

LPR = loan portfolio at risk

CS = Credit standard

CT = Credit terms and conditions

f = Functional notation

The static panel regression model is used in this study and it took the form of Pooled Ordinary Least Square (OLS), Fixed Effects Model (FEM), and Random Effects Model (REM), however, in order to establish the most appropriate regression with the highest explanatory power, that is better suited to the data set employed in the study, i.e. a balanced panel, Hausman test was employed (Salawu, 2007). The regression test is stated as:

$$LPR = \alpha_0 + \alpha_1 CS + \alpha_2 CT + \mu_t \quad 3$$

Where;

$\alpha_0 = constant\ term$

$\alpha_1 - \alpha_2$ = Coefficient of the parameters
μ_t = error term
t = time series
Other variables remained as earlier defined.

Description of Variables, Sources of Data and *Apriori* Expectation

Table 1: Description of Variables and Source of Data

Variable	Formulae	Measurement/Description	Source
Delinquency management	Loan portfolio at risk	Outstanding balance of all loans with arrears over thirty days + all refinanced loans divided by outstanding gross loan portfolio.	Annual statement of account
Credit policy	Credit Standards = Bad debts costs	Bad Debt Cost is created when a bank agrees to lend a sum of assets to a debtor and granted with expected repayment BDC Ratio= Bad debt cost/ Total cost.	Annual statement of account
Credit policy	Credit terms and conditions = Cost per credit asset	Cost per loan asset (CLA) is the average cost per loan advanced to customer in monetary term. The purpose of this is to indicate efficiency in distributing loans to customers. i.e CLA Ratio= Total Cost/ Total amount of loans.	Annual statement of account

Source: Author's compilation (2020)

It is expected that at the end of the analysis, credit standard (CS), and credit terms and condition (CT) may have positive or negative relationship with the dependent variable delinquency management (DM) depending on credit standard and credit terms and condition. In other words, an increase in CS and CT by one unit should lead to a corresponding increase or decrease in the dependent variable DM in the same direction. From the above explanation, it can be summarised thus;

$$\frac{\partial DM}{\partial CS} > 0; \frac{\partial DM}{\partial CT} > 0 \qquad 6$$

Result and Analyses

Pooled OLS Analysis

Table 1 Pooled OLS Estimation Result of Credit Policies and Delinquency Management (Loan Portfolio at Risk)

Series: *LPR, BS, BC, CS, CT*

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C (LPR)	4.118857	1.890068	2.179211	0.0305
CS	3.868965	2.283829	1.694070	0.0918
CT	0.960749	0.839276	1.144736	0.2537
R-squared	0.550373	F-statistic		12.718539
Adjusted R-squared	0.371843	Prob(F-statistic)		0.003833
S.E. of regression	4.589560	Durbin-Watson stat		0.151180

Source: *Author's Computation, (2020) from E-view 9*

Pooled estimation result presented in Table 1 reveals that when heterogeneity effect across microfinance banks sampled in the study is not given consideration, credit standard policy and credit terms exerts positive with an insignificant effect at 5% level of significant on loan portfolio at risk with coefficient estimate of 3.868965 (p=0.0918 > 0.05) and 0.960749 (p= 0.003 > 0.05). Adjusted R-square statistics reported in Table 4.3 shows that about 37.18% of the systematic variation in loan portfolio at risk can be jointly explained by credit standard and credit terms. The F-statistics value of 12.7185 with the probability of F-statistics value of 0.005 < 0.05 shows that the fitted regression model is statistically significant and thus appropriate, reliable and acceptable for assessing the effects of credit policies and delinquency management in Nigeria.

Fixed Effect Analysis

Table 2: Fixed Effects Estimates (Cross-sectional and Period specific) of Credit Policies and Delinquency Management (Loan Portfolio at Risk)

Series: *LPR, BS, BC, CS, CT*

CROSS-SECTIONAL SPECIFIC EFFECT			TIME SPECIFIC EFFECT		
Variables	**Coefficients**	**Prob**	**Variables**	**Coefficients**	**Prob**
C	4.543116	0.0000	C	0.131632	0.6970
CS	0.598779	0.5919	CS	0.432406	0.0480
CT	-0.662223	0.0967	CT	-0.023317	0.9065
R-square = 0.883942 Adjusted R-square = 0.862181 F-statistics = 40.62078 Prob(F-stat) = 0.000000			R-square = 0.662762 Adjusted R-square = 0.515665 F-statistics=11.32602 Prob(F-stat)= 0.015113		

Source: *Author's Computation, (2020) from E-view 9*

Fixed effect cross-sectional specific estimation result presented in Table 2 shows that when heterogeneity effect across microfinance banks sampled in the study is incorporated into the model, credit terms has negative and insignificant effects on delinquency management measured by loan portfolio at risk whereas credit standard has positive with an insignificant effect on loan portfolio at risk. Reported coefficient estimate for credit standard and credit terms stand at -0.598779 (p=0.591 > 0.05) and -0.662223 (p=0.096 > 0.05) respectively. Adjusted R-square value reported for cross-sectional specific estimation presented in Table 2 stand at 0.862181, which reflects that about 86.22% of the systematic variation in loan portfolio at risk can be explained jointly by the explanatory variables.

Result of fixed effect period-specific estimation presented in Table 2 shows that when heterogeneity effect over time is incorporated into the model as intercept term, credit standard has positive with a significant effect on loan portfolio at risk with the coefficient of 0.432406 (p=0.04 < 0.05), and credit terms exert negative with an insignificant impact on loan portfolio at risk with coefficient estimate of -0.023317 (p = 0.906 > 0.05). Reported Adjusted R-square statistics shows that about 66.27% of the systematic variation in loan portfolio at risk can be explained jointly by credit standard and credit terms.

Random Effect Analysis

Table 3 Random Effect Estimation of Credit Policies and Delinquency Management (Loan Portfolio at Risk)

Series: *LPR, BS, BC, CS, CT*

Variable	Coefficient	Standard Error	T-Test Values	Probability
C	0.306883	1.165056	0.263406	0.7925
CS	5.723639	1.037150	5.518620	0.0000
CT	1.403521	0.475494	2.951715	0.0035
R-square = 0.942565; Adjusted R-square = 0.931078; F-statistics = 82.05467; Prob(F-statistic) = 0.000000; Durbin-Watson stat = 2.338137				

Source: *Author's Computation, (2020) from E-view 9*

Random effect estimation result presented in Table 3 revealed that when heterogeneity effect across microfinance banks and over time is incorporated into the model via the error term, credit standard and credit terms have positive and significant effect with estimates of 5.723639 (p= 0.00 < 0.05) and 1.403521 (p =0.00 < 0.05) respectively on loan portfolio at risk. Reported R-square for random effect estimation presented in Table 3 stand at 0.942565 which implies that about 94% of the explanatory variables contributes to loan portfolio at risk. The coefficient of adjusted R-square is 0.931078 which implies that the systematic variation in loan portfolio at risk can be explained by credit standard and credit terms of the sampled microfinance banks in Nigeria. The F-statistics value of 82.05467 with the probability value of 0.000 < 0.05 shows that the random regression model is statistically significant and thus appropriate, reliable and acceptable for assessing the effects of credit policy on delinquency management among selected microfinance banks in Nigeria. More so, the Durbin Watson test statistics of 2.33 shows that the model is free from any serial autocorrelation.

Hausmn's Test

Table 4 Hausman Test Decision Analysis

Null hypothesis	Chi-square stat	Probability
Difference in coefficient not systematic	24.2738	0.9995

Source: *Author's Computation, (2020) from E-view 9*

Table 4 reports chi-square statistic of 24.27 and probability value of 0.9995. The result reveals that there is no enough evidence to reject the null hypothesis that differences in coefficients of fixed effect estimation and random effect estimation are not significant. Therefore, the most consistent and efficient estimation is given by the random effect estimation as presented in Table 4. It thus become evident that the estimation that best explains the effects of credit policies on delinquency management of microfinance banks in Nigeria as measured in terms of loan portfolio at risk is the random effect estimation presented in Table 3, which reveals that credit standard and credit terms have positive and significant effect with estimates of 5.723639 (p= 0.00 < 0.05) and 1.403521 (p =0.00 < 0.05) respectively on loan portfolio at risk.

Post Estimation Test

Table 5: Post Estimation Test

Wald test		
Null hypothesis	**Statistics**	**Probability**
Panel homoscedasticity	0.390107	0.6775
Pesaran test		
Null hypothesis	**Statistics**	**Probability**
No cross sectional dependence	3.952	0.5668
Wooldridge test		
Null hypothesis	**Statistics**	**Probability**
No AR(1)panel autocorrelation	0.3369	0.5759

Source: *Author's Computation, (2020) from E-view 9*

Result presented in Table 5 showed that there is no evidence to reject null hypothesis on panel homoscedasticity, null hypothesis of no cross sectional dependence and null hypothesis of no AR (1) panel autocorrelation, given the reported probability statistics of 0.6775> 0.05 for Wald test, 0.5668> 0.05 for Pesaran test, and 0.5759> 0.05 for Wooldridge test. Hence, it can be established in the study that assumptions of equal variance of residual terms, cross sectional independence and absence of serial autocorrelation for the estimated panel based model is valid.

Discussion of Finding

Based on the test of hypotheses, the study found that credit standard and credit terms have positive and significant effect on delinquency management when measured by loan portfolio at risk. Therefore, any attempt to increase credit standard and credit terms of microfinance banks will further increase delinquency management by 57.24% and 14.05% respectively. The results validates the empirical findings of Mwangi and Muturi (2016) and Bwoma *et al* (2017) that credit standard and credit terms positively determine delinquency management of banks respectively. The result implies that microfinance banks in Nigeria are now prudent in business than before as they relate with their customers thereby adopting the use of some loan collection policies which include; monitoring loans that are in arrears, penalising clients for late payment, use of stringent policies, and limiting members' access to repeat loans. It also implies that microfinance banks made use of the 7 Cannon of lending in their business which has resulted into low loan delinquency. The result further implies that microfinance banks set out credit terms and conditions for her customers and strictly adhere to the stated conditions without giving preference to any customer. The study agrees with the positive effect recorded in the studies of Owusu, Oppong, Agyeiwaa and Abruquah (2015).

Conclusion

The study has empirically investigated the effects of credit policies on delinquency of Microfinance banks in Southwest, Nigeria. The study establishes that delinquency management of microfinance banks is influenced by credit standard policy and credit terms and conditions. The findings indicated that the mechanism used by microfinance banks to collect loan has been adequate to an extent in

reducing loan delinquency. For proper supervision of loan utilisation and repayment to be effective, corporate governance and credit policy must be rightly channeled. A number of reasons or factors could be responsible for high loan defaults rates among microfinance banks. Many of these causes result from the MFIs inability to control and manage their own operations. There are also factors that relate to the loan benefactor such as external pressures to divert the money (e.g., for medical emergencies, school fees, family maintenance), behavioral "biases" in decision -making (e.g., present biasedness, lack of self-control) and the nature of the investment required (e.g., its lumpiness) MFBs in Nigeria can reduce loan defaults by designing financial products that inherently reduce the risk of default by patrons (Owusu *et al*, 2015). The study conclusively corroborates the empirical finding of Nyawera (2013), Mwangi and Muturi (2016) and Bwoma *et al* (2017) that credit policy has positive and significant effect on delinquency management of banking institutions. Theoretically, the study aligns with the 7C's client appraisal model which stipulates that the MFIs largely earn income from interest on loans borrowed by customers and from investment on customer savings. Therefore systems on managing credit must be effective and efficient to be able to consider customer ability to repay credit facility thereby benefiting both the institution and the customer.

Premised on the discoveries and conclusion of this study, the following recommendations are presented: Microfinance banks should step up measures in her credit terms and conditions before advancing credit facility to the customers; Credit committees at all levels must work in co-ordination in order to ensure that credit is collected in a timely manner; The Central Bank should issue efficient monetary policies that would intensify transparency, integrity and curtail insider abuses on customers account in the Banking institutions.

Contributions to Knowledge

The study contributes to knowledge by employing secondary data indices of credit policies as evident in the study of Nyawera (2013) in Kenya and unlike other studies that employed the instrument of questionnaire to measure credit policies in Nigeria; the study contributes to knowledge by showing that positive and significant relationship exist between credit policy and delinquency management of microfinance banks in Nigeria. Lastly, the study contributes to theories by indicating that financial institutions develop credit-worthiness and ability to repay credit facilities. The study is in connection with the 7c's client appraisal model that systems on managing credit must be effective and efficient to be able to consider customer ability to repay credit facility thereby benefiting both the institution and the customer.

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