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Article

Credit risk evaluation and performance of microfinance banks in Ogun State

Accounting and taxation review

Provided in Cooperation with:

University of Benin, Benin City, Nigeria

Reference: Anounye, Ngozi Ben/Ngwama, Justice Chidi et. al. (2020). Credit risk evaluation and performance of microfinance banks in Ogun State. In: Accounting and taxation review 4 (3), S. 29 - 40.

[https://www.atreview.org/admin/12389900798187/Article%204\(3\)%2029-40.pdf](https://www.atreview.org/admin/12389900798187/Article%204(3)%2029-40.pdf).

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ISSN: 2635-2966 (Print), ISSN: 2635-2958 (Online).

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Original Research Article

Credit Risk Evaluation and Performance of Microfinance Banks in Ogun State

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Received: 31/05/2020

Accepted: 04/07/2020

Abstract

Microfinance banks in most world economies are dominant as financial institutions providing loans to business owners compared to any other financial institution. However, credit provision requires due attention as credit risk management is one of the critical aspects and challenges faced by microfinance banks. This study examines the role of credit risk management on loan performance in microfinance banks in Ota, Ogun State, Nigeria. The study adopted survey research design and data were collected through a well-structured questionnaire. Purposive sampling technique was adopted, and a sample size of two hundred respondents was drawn from the selected banks in Ota. Data were analysed through the aid of statistical package for social sciences (SPSS), and linear regression was used as a statistical tool for analysis ($R=.455$; $R^2=.207$ and $R\text{ Adj}=.202$). From the results above, the study revealed that there is a significant relationship between credit risk evaluation and loan performance. The study concludes that proper credit evaluation in microfinance banks is necessary. Therefore, the study recommends that the board and management of microfinance banks in Nigeria should ensure that the implementation of the appraisal process is strictly adhered to without compromise when evaluating risks inherent in loans to their clients.

Keywords: Microfinance, business, credit, financial, provisions, banks

JEL Classification Codes: G32

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Citation: Anuonye, N.B., Ngwama, J.C., Nkwoh, F.M., & Uchegara, C.C. (2020). Credit risk evaluation and performance of microfinance banks in Ogun State. *Accounting and Taxation Review*, 4(3): 29-40.

1. INTRODUCTION

The loan repayment defaults by clients are what the banks are facing, and if not properly managed, it is capable of running down the banks. It is an open secret that most microfinance banks in Nigeria are facing the severe challenges of loan delinquency, and these no doubt are hampering their growth and sustainable development. As credit risks increase, their negative consequences on the profitability and survival of microfinance banks also increase.

According to Agene (2011), a credit risk portfolio is a deterioration in loan portfolio quality that results in loan losses and high loan management costs. This was corroborated by Williams (2004) when he opined that credit risk is the risk of losing contractually obligated cash flows promised by a corporation, financial institution, government, et cetera due to default on the debt obligation.

For any microfinance bank to survive and maintain sustainable development, it must as a matter of necessity have strong credit risk administration. This is very fundamental to making microfinance banks stable and sustainable in Nigeria. The ability of microfinance banks to manage their operations is essential. Bad loans, according to Eferakeya, (2014), have become one of the fundamental reasons why banks are experiencing distresses. According to Bridge (1998), bad loans are attributable to moral hazards, which lead to adverse incentives on bank owners and consequently affect their lending strategies.

Insider lending and lending at high credit risks contrary to the interests of the bank's creditors were also suggested as jeopardising the solvency of the banks. This misconduct (Munene & Guyo, 2013) is not only limited to commercial banks but has also sneaked into microfinance banks, leading to the liquidation of many microfinance banks. Importantly, improperly managed credit risks may lead to liquidity risks which may result in the liquidation of the banks.

The products offered by various banks determine the level of risks involved. Such products may include short and long term loans, letters of credits along with other guarantees, et cetera. However, Kitua (1996) noted that despite all the risks, loans still constitute a more significant proportion of credit risks as they generally account for 10 to 15 times the banks' equities.

According to Arora & Kumar (2014), credit risk management constitutes a critical component of a comprehensive approach to risk management in the banking sector. A fundamental necessity for viable credit risk management is the capacity to sagaciously and productively oversee clients' credit lines. Credit management for a loan does not stop until the full, and the last instalment has been recovered (Moti, Masinde, Mugenda and Sindani, 2012).

Armendariz and Morduch (2005) observe that wrong selection may occur when the bank has insufficient information to determine between good and bad customers. Mersland & Strom (2007) concluded that

such knowledge is particularly important for microfinance banks whose customers frequently lack a long, or any, credit history.

The objective of the study

The main objective of the study is to examine the effect of credit management and evaluation on the performance of loans in microfinance banks in Ogun State, Nigeria.

The study will assist the management of the banks to suggest ways through which such risks can be reduced. The study shall provide insight into the management of microfinance banks on how to manage risks arising from loans given to their customers properly.

The specific objectives of the study are to: examine the effect of credit risk evaluation on the loan performance of microfinance banks; investigate the influence of credit policies on the performance of loans in microfinance banks; and determine the effect of clients' appraisal on loan performance in microfinance banks.

2. LITERATURE REVIEW

Conceptual Review

Microfinance banks can be described as financial institutions that provide a broad range of financial services such as loans, savings, payment services, transfer of money and insurance to small and medium entrepreneurs (SMEs), households, et cetera.

In Nigeria, microfinance banks are viewed as instruments which help in ameliorating poverty and breaking the ever-increasing barriers among the low-income earners of the society and as well as SMEs. By providing necessary financial support to the micro-enterprises above-mentioned groups,

microfinance banks in Nigeria act as vanguards for economic development.

Chijoriga, (2011) opined that microfinance bank is a business in which the person conducting the business holds himself out as accepting deposits on a day to day basis and any other activity of the business which is financed, wholly or to a material extent, by lending or extending credits. It also includes the provision of short term loans to small or micro-enterprises or low-income households. Similarly, Karlan and Goldberg (2007) describe microfinance as the provision of small-scale financial services to people who lack access to traditional banking services.

Different researchers, such as Fernando (2008), Gatimu and Fredrick (2010), Muneme and Guyo (2013) are of the view that a microfinance bank is a financial institution that provides financial services to the poor and low-income customers in a community.

Categories of risks associated with microfinance banks

One major problem encountered by financial institutions is the ability to identify risks and to avoid or guard against such risks. Each microfinance bank has to identify its risks and be able to manage it adequately.

Adamu, Asongo, and Nyor (2014) identified three categories of risks associated with microfinance banks:

a) **Liquidity Risks:** According to Craig and Dan (2011), liquidity risk arises when a microfinance bank is unable to meet its cash requirements or payment obligations timely and in a cost-efficient manner. Microfinance banks should be able to plan and match

available funds against withdrawal patterns to avoid liquidity crises.

b) **Market Risks:** According to Fernando (2008) market risks are by nature environmental and include risks for financial losses as a result of changes in interest rates, fluctuations in foreign exchange rates or mismatch in the management of long term assets and liabilities.

c) **Operational Risks** arise because of possible system or human errors in service or product delivery (Mersland and Strom, 2007)

According to Fernando (2008), risk management is about how to identify, measure, limit and monitor the risk that is faced by an institution. He added that risk management could be described as pro-actively identifying, measuring, monitoring, controlling the risk events and risk drivers, thereby reducing occurrences and impact of the undesired outcomes.

Credit risk management

According to Nikolaidov and Vogiazas (2014), credit risk management is an exercise for controlling and directing risks that an organisation is confronted with through the consolidation of key risk management tactics and processes in relation to the organisation's objectives. Frank, Simon and Josephine (2014) opine that it is essential to note that risk management practices are not developed and entirely aimed at removing the risk, but they are aimed at controlling the opportunities and hazards that may result in risk; in other words, mitigating the risk factors.

In addition, credit risk ensures that a proper framework guiding the management towards achieving organisational goals on loans must be in place, (Rose, Westerfield

and Jordan, 2008). It should be noted that effective credit management practice is not a perfect way to eliminating human errors in handling credit risks. When borrowers default in the repayment of loans, the consequence is that the cost of collection of loans may increase and the lenders stand the chance of losing their principals and interests.

Theoretical Review

This section identifies the diverse schools of thoughts on credit risk management and loan performance. The following theories are used in this study in order to explain the relationship between credit risk management and loan performance.

Liquidity Preference Theory

John Maynard Keynes first developed the Liquidity Preference Theory in his book "General Theory of Employment, Interest and Money" in 1936.

He proposed that firms should use more trade credits than loans from financial institutions. This suggests that when a firm is financially constrained, the offer of trade credit can make up for the reduction of the credit offer from financial institutions. This research is in line with the Liquidity Preference Theory in the sense that firms should access trade credits and thus reduce the credit risks on microfinance banks which may arise through low credit performance obligations from the borrowers.

His summary of the Liquidity Preference Theory was basically to fulfil the three motives for holding cash, which are: transactionary, precautionary and speculative motives.

Credit Risk Theory

The Credit Risk Theory proposes that the risk of non-repayment of a debt arising from the inability of the borrower to meet his obligations can be mitigated or reduced. To this end, the risk therein is that of the lender losing principal and interest, which will cause disruptions in cash flows as well as increased collection costs. Hence, to reduce the lender's credit risk, the lender possibly will perform a credit check on the potential borrower. Therefore in context, the higher the risk involved, the higher the interest rate the debtor will be required to pay on the debt. This is consequent on the fact that credit risk primarily arises when borrowers are unable to pay outstanding debts willingly. The assumptions of this theory are also in consonance with this research considering that credit risk analysis as an element of credit risk management is a major determinant of loan performance by microfinance banks.

Risk-Return on Capital (RAROC) Model

Sounders and Cornett (2007) are one of the contemporary proponents of the Risk-adjusted Return on Capital model. Risk-adjusted Return on Capital (RAROC) model is a risk-based profitability measurement framework which proposes the analysis of risk-adjusted financial performance while also providing a reliable view of profitability across businesses. As a performance assessment instrument, the model permits banks and other financial institutions to allocate capital to business units based on the economic value added (EVA) to each of the units. This research relates to the prepositions of this model in the sense that a risk-based profitability assessment largely determines the extent to which microfinance banks realise their loans.

Empirical Review

According to a study by Thisika and Muturi (2017) on credit management and loan performance in Kenya, it was established that credit appraisal has a positive and strong relationship with non-performing loans considering that good credit appraisal lowers the rate of non-performing loans. Murugi and Thuo, (2018) on their study on credit management risk and loan performance in microfinance banks in Kenya revealed that credit risk environment, credit appraisal process, credit administration, measurement and monitoring and internal control over credits are very relevant in explaining the loan performance of microfinance banks in Kenya. The author, therefore, concluded that the success of a bank's financial performance depends on its ability to manage credits. Al-Tamimi and Al-Mazrooei (2007) also revealed that a bank's efficiency on risk management would make the bank to perform better.

Furthermore, Wachukwu, Onyema, and Amadi (2019) observed a powerful but negative relationship between microfinance bank credit growth and per capita income in Nigeria. Conversely, they found out among other results that microfinance bank deposit growth and per capita income were positively related.

Akpan and Nneji (2015) in their study of the contributions of microfinance banks to the development of small and medium scale enterprises in Nigeria, using the Ordinary Least Square (OLS) analysis, found that microfinance banks contribute to the economic development of the country. The role of microfinance banks (Ademola & Arogundade, 2014) has a significant overall impact on the growth of the Nigerian economy.

However, emphasising poverty reduction as a primary function of microfinance banks, it was observed that the impact of deposit liabilities, as well as loans and advances on the banks' customers, was insignificant. Furthermore, their study also revealed that the impact of loans and advances to the banks' clientele was significant.

Gaps in Literature

Although studies have been carried out in Nigeria relating to credit risk management, its linkage to loan performance in microfinance banks, particularly in Ogun State, Nigeria has not been clearly established in the literature. Recent publications which focused on this study had western origins which are potentially biased with respect to results.

In addition, studies have shown that researchers are yet to model the relationship between credit risk management and loan performance, particularly in Nigeria. This study provides a model that depicts the relationship between credit risk management and loan performance. Similarly, most empirical studies used regression and correlation for data analysis. However, in this study, structural equation modelling was used to complement the regression and correlation analyses.

3. METHODOLOGY

Research design This study used descriptive research design. What informed

the choice of descriptive research design was the need to capture the descriptive nature of the study.

Descriptive research design explains the make-up or the characteristics of a population in a study. In descriptive research design, the researcher can use both qualitative and quantitative variables to describe his population. **Survey strategy** can be described as a means for researching the gathering and analysis of data using interviews and questionnaire. The population comprises of 200 management staff of microfinance banks that are registered in Ado-Odo/Ota Local Government Area of Ogun State, Nigeria. The purposive sampling technique was used for the study. This was to harness essential information which will adequately capture the relevance of the study. Data were therefore collected from top, middle and low-level managers from the four selected banks. The four microfinance banks were selected based on the fact that they provide easy access for loan collection by their clients. The banks also have track records of credit management with their customers for more than nine years. Furthermore, the top, middle and low management staff were selected because they are the category of staff that can give relevant information relating to the topic. A total of 200 managers of the Credit Department of the selected microfinance banks were used for the study, as shown in Table 1.

Table 1: (Estimated population of employees of the four selected banks)

Microfinance Bank	Estimated number of Managers			
	Top Management	Middle Management	Low Management	TOTAL
Covenant Microfinance (CMFB)	10	20	40	70
LAPO Microfinance	5	5	20	30
WESTEND Microfinance	8	10	32	50
ACCION Microfinance	8	7	35	50
Grand Total	31	42	127	200

Source: Researchers' Survey, 2019

Operationalisation of variables

X = Independent Variable (Credit Risk Management)

Y= Dependent Variable (Loan Performance)

$Y = f(X)$

$X = x_1$

Where:

x_1 = credit risk evaluation

From the hypothesis

$Y=f(X)$

$Y = f(x_1)$ ----- H_{01}

4. ESTIMATION RESULT AND DISCUSSION

Ho: Credit risk evaluation has no significant effect on the loan performance of microfinance banks.

In order to determine whether credit risk evaluation has any significant effect on loan performance of selected microfinance banks in Ogun State, a linear regression analysis was computed as depicted in Table 2 below:

Table 2: Model Summary

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.455 ^a	.207	.202	.27240
a. Predictors: (Constant), Credit Risk Evaluation				
b. Dependent Variable: Loan Performance				

Table 2 presents the extent to which the credit risk evaluation explains the variance in loan performance. The R (.455) in the model depicts the degree of relationship between credit risk evaluation and loan performance. The level of relationship between the two variables can be said to be moderate. On the other hand, the R^2 (.207 or 20.7%) explains the variation in the

performance of microfinance banks in Ogun State. This indicates that about 21% change in loan performance of microfinance banks in Ogun State is accounted for by credit risk evaluation. The standard error of the estimate (.27240) signifies the error term. This suggests that a unit increase in the credit risk evaluation will lead to an increase in loan performance.

Table 3: ANOVA test of hypothesis

ANOVA ^a						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	3.521	1	3.521	47.448	.000 ^b
	Residual	13.505	182	.074		
	Total	17.026	183			
a. Dependent Variable: Loan performance						
b. Predictors: (Constant), Credit Risk Evaluation						

Table 3 shows that the F value is 47.448 at .000^b significance level. This suggests that credit risk evaluation has a significant effect

on loan performance. Therefore, since the significance value is below 0.05, the null hypothesis should be rejected accordingly.

Table 4: Coefficients of the hypothesis

Co-efficients ^a						
Model		Un-standardised Coefficients		Standardised Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.109	.249		12.470	.000
	Credit Risk Evaluation	.368	.053	.455	6.888	.000
a. Dependent Variable: Loan Performance						

Table 4 presents the result of the analysis. The robust-value of 6.888 is beyond the likelihood of chance. The probability value of 0.0000 indicates that there is a significant positive relationship between the dependent variable of loan performance and the

explanatory variable of credit risk evaluation. The beta value of 0.455 shows that a unit increase in credit risk evaluation will increase loan performance by about 46%.

Table 5: Descriptive analysis of responses on loan performance

Strongly Agree (SA) =5, Agree (A) =4, Undecided (U) =3, Disagree (D) =2 and Strongly Disagree (SD) =1.

VIEW	SA	A	U	D	SD
Insider abuse should be discouraged.	24	160	0	0	0
MFBs should employ competent loan officers	28	106	20	20	10
Good appraisal and restructuring for better loan performance	26	156	2	0	0
MFBs should adopt cost-effective means of monitoring loans	32	142	4	6	0
Loan officers should ensure proper loan documentation	18	160	2	4	0
Analysis of cash-flow projections should be emphasised	26	100	24	30	4

Source: Researchers' survey, 2019

Respondents' views on loan performance are depicted in Table 4. Loan performance was tested using Likert's 5-step measurement scale. The rationale behind this was to examine the respondents' opinion and the extent to which they agree to the specific items for the measurement of loan performance.

To find out if insider abuse should be discouraged, 24(13.0%) of respondents strongly agreed; while 160 (87.0%) merely agreed.

On whether MFBs should employ competent loan officers and train them to acquire competences, 28(15.2%) of the respondents strongly agreed, while 106(57.6%) agreed with the statement. 20(10.9%) of the respondents were indifferent about the statement. 20(10.9%) disagreed with the statement while 10(5.4%) strongly disagreed.

On whether fair appraisal and restructuring of the needs of borrowers and bankers may lead to better performance of loans, 26(14.1%) of respondents strongly agreed while 156(84.8%) agreed and 2(1.1%) of the respondents were indifferent.

The researcher was also interested in finding out whether MFBs should adopt cost-effective means of monitoring loan utilisation and performances. 32(17.4%) of respondents strongly agreed while 142(77.2%) agreed with the statement. But 4(2.2%) of the respondents were indifferent while 6(3.3) had opposing views regarding the statement.

In order to find out whether loan officers should ensure that credit facilities are not disbursed without putting proper

documentation in place or perfecting legal charges over collateral securities, 18(9.8%) of respondents strongly agreed that loans officers should ensure that credit facilities are not disbursed without putting proper documentation in place or perfecting legal charges over collateral securities. 160(86.9%) agreed with the statement; 2(1.1%) of the respondents were indifferent about the statement while 4(2.2%) disagreed with the statement. In an attempt to find out if analysis of cash flow projections for loan repayment should continue to be emphasised in self-liquidating and asset-based transactions, 26(14.1%) of the respondents strongly agreed that analysis of cash-flow projections for loan repayment should continue to be emphasised in self-liquidating and asset-based transactions. 100(83.7%) agreed with the statement, 24(13.0%) of the respondents were indifferent about the statement. 30(16.3%) disagreed with the statement while 4(2.2%) strongly disagreed that analysis of cash-flow projections for loan repayment should continue to be emphasised in self-liquidating and asset-based transactions.

Conclusion

The study concludes that effective credit management practice would enhance the performance of loans of microfinance banks in Nigeria. This can be achieved through credit evaluation processes, as well as the implementation of structured credit policies.

Further studies confirmed that microfinance banks are veritable avenues for wealth creation through enhanced bank credits. These will, in turn, contribute to investment and asset growth that will enhance the per capita income of the citizenry.

Recommendations

The study, therefore, recommends that:

- 1) Microfinance institutions should allocate more resources to credit risk evaluation activities in order to reduce the risks on loans and achieve maximum loan performance.
- 2) Microfinance banks should encourage their credit officers by formulating and articulating credit policies considering their salient roles on credit monitoring and performance.
- 3) The Board and Management of microfinance banks in Nigeria should ensure that the implementation of the appraisal processes are strictly adhered to without any compromise.
- 4) Management of the microfinance banks should lay emphasis on training of staff involved in loan appraisal processes.

REFERENCES

- Adamu, I., Asongo, A., & Nyor, N. (2014). Credit Risk Portfolio in Microfinance Banks conceptual and practical insights: *Universal Journal of Applied Science*. <http://www.hrpub.org>
- Ademola, A. E., & Arogundade, K. (2014). The impact of microfinance banks on economic growth in Nigeria. *Journal of Emerging Trends in Economics and Management Sciences*, 5(5), 397-405
- Agene, C.E. (2011). *Microfinance Banking, principles and practice*. Abuja: Gene publications 10-12.
- Akpan, E.S., & Nneji, I.D. (2015). Contribution of microfinance banks to the development of small and medium scale enterprises in Nigeria. *Research Journal of Finance and Accounting*, 6(8), 22-47.
- Al-Tamimi, & Al-Mazrooei (2007). Bank's risk management: A comparison study of UAE national and foreign banks. *Journal of Risk Finance*. 8(4), 394-409.
- Armendariz de, A.B., Morduch, J. (2000). Microfinance Beyond Group Lending. *Economics of Transition*, 8, 401-420.
- Arora, A. & Kumar, M. (2014). Credit risk management index score for Indian banking sector: an in-depth analysis. *Journal of Bank Management*, 13, 19-28.
- Bridge, M. (1998). Financial Distress in Local Banks in Kenya, Uganda and Zambia: Causes and Implications for Regulatory Policy, *Development Policy Review Journal*, 16(2).173-89.
- 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.
- Craig, C. & Dan, C. (2011). *CARE Microfinance Risk Management Handbook*. Available online: <http://www.adb.org/doc./books/interest>. Retrieved on 11 January 2018.
- Eferakeya, I. (2014). Is Increasing Bank Capital the Solution to Improving Bank Liquidity and Preventing Bank Distress in Nigeria? *Universal Journal of applied Science* 2(4): 83-91, 2018. Online <http://www.hrpub.org/download/20140701/UJAS3-12202187.pdf>
- Fernando, N.A. (2006). Understanding and Dealing with High-Interest Rates on Microcredit. A Note to Policy Makers in the Asia and Pacific Region. Asian Development Bank. Retrieved <http://www.adb.org/documents/books/interest> on 30.04.18

- Frank, B., Simon G. & Josephine, M. (2014), Risk management practices adopted by financial firms in Malta. *Managerial Finance*, 40, 587-612.
- Gatimu, E.M. & Frederick, M.K. (2014). Assessing institutional factors contributing to loan defaulting in microfinance institutions in Kenya. *Journal of Humanities and Social Science*, 19,105-123.
- Kitua, D.Y. (1996). Application of Multiple Discriminate Analysis in Developing a Commercial Banks Loans: Classification Model and Assessment of Significance of Contributing Variables: A Case of National Bank of Commerce, Unpublished Master's Thesis, University of Dares Salaam, Dares Salaam.
- Mersland, R. & Strøm, R.O. (2007). Performance and corporate governance in microfinance institutions. [Online] Available: <http://mpra.ub.uni-muenchen.de/3887/>. Accessed: 20 February, 2018.
- Moti, H., Masinde, J., Mugenda N. & Sindani, M. (2012). Effectiveness of credit management system on loan performance: empirical evidence from micro finance sector in Kenya. *International Journal of Business, Humanities and Technology*, 2, 99-108.
- Munene, H. & Guyo, S.H. (2013). Factors Influencing Loan Repayment Default in Microfinance Institutions: The Experience of Imenti North District, Kenya. *International Journal of Applied Science and Technology* (3)80-84.
- Murugi, D.M. & Thuo, A. (2018). Credit Risk Management and Loan Performance in Microfinance Banks in Kenya. *International Journal of Economics, Commerce and Management*. 6(4), 623-643.
- Nikolaidou, E. & Vogiazas, S. (2014). Credit risk determinants for the Bulgaria banking system. *International Advance Economics Research*, 20, 87-102.
- Ross, S.A., Westerfield, R.W. & Jordan, B.D. (2008). Essentials of Corporate Finance. *Hill International edition*. USA: McGraw-Hill Companies Inc.
- Saunders, A. & Cornett, M.M. (2002). *Financial Institutions Management: A risk Management Approach* (4th edition). McGraw Hill, New York.
- Thisika, L. & Muturi, W. (2017). Effects of Credit Risk Management on Loan Performance in Kenyan Commercial Banks. *International Journal of Economics, Commerce and Management*, 9(9)1-15.
- Wachukwu, I.P., Onyema, J.I. & Amadi, S.N. (2019). Effects of microfinance banks and economic growth in Nigeria. *Journal of Finance and Marketing*, 3(1), 15-19
- William, J. (2004). *Proceedings of the 2004 Winter Simulation Conference*, New York, U.S.A.

APPENDIX

Strongly Agree (SA), Agree (A), Indifference (I), Strongly Disagree (SD) and Disagree (D)

S/N	CREDIT RISK EVALUATION QUESTIONS	SA	A	I	SD	D
1	Quality cash-flow analysis should be carried out by banks to determine the status and capability of borrowers before loans are granted.					
2	Quality collateral should be collected by MFBs as cushion for loan size to minimise risk and sustain the survival of the bank.					
3	Banks should ensure that micro borrowers keep records of their business transactions by effective monitoring and constantly checking their records by visitation.					
4	Stocks hypothecation and borrower's insurance should be used as collateral substitute					
5	Loan size should be structured to simultaneously meet the borrowing needs of the customer and the lending requirements of the MFBs.					
6	Two or more reputable guarantors should be obtained to secure loans in order to reduce repayment challenges among MFBs customers.					
7	Efficient analysis of project viability should be enhanced.					