EFFECTS OF LOAN TERMS AND BORROWERS' BEHAVIOR ON NON-PERFORMING LOANS IN NIGERIA'S MICROFINANCE BANKS

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Abstract

This study investigated the effect of loan terms and borrowers' behavior on NPLs in Nigeria's Microfinance banks. Specifically, it explored the influence of interest rates, repayment periods, loan conditions, overleveraging, loan diversion, and financial literacy, on the NPLs of 25 selected MFBs in South West Nigeria. Spearman correlation and multiple regression analyses were used to analyse the data. The results indicated that high interest rates and short repayment periods were positively linked to the increase in NPLs, meaning that borrowers have difficulties with high borrowing costs and tight repayment schedules. Moreover, rigid conditions of the loans further increased the level of NPLs due to lack of borrower flexibility. Overleveraging and loan diversion also proved to be significant enhancers of NPLs, while financial literacy turned out to reduce default risks. The study emphasizes the need to adopt flexible loan conditions and make sure clients are more financially literate, which would reduce default rates and increase sustainability for MFBs. These findings have important implications for policymakers and financial institutions concerned with enhancing the resilience of the microfinance sector in Nigeria.

Keywords: loan terms, overleveraging, repayment period, non-performing loans, microfinance banks
Jel classification : D14, G21,G32, O16

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Introduction

Microfinance banks play a key role in developing countries like Nigeria through the provision of financial services that enhance inclusion and economic growth by advancing credits to people and small businesses that, on normal basis, would be excluded from conventional banking services (Ademola, et al, 2020). As a matter of fact, these institutions give the poor the power of access to resources that help stimulate activities that lessen poverty (Odell, 2010). However, one major challenge facing MFBs is the increasing level of Non-performing loans (NPLs) mainly emanating from lending and borrowing practices. NPLs arise when loans are not paid back in accordance with the terms of the agreement, thereby resulting in financial losses for lenders and borrowers alike. According to Islam (2020), NPLs have a debilitating impact on a bank's liquidity and profitability which are the two very vital pointers reflecting the general performance of any bank. Therefore, with an increase in NPLs, the income generated in the general economy would tend to be lower.

In Nigeria, the challenge of NPLs has reached a critical point that seriously threatens the sustainability and operational efficiency of MFBs. High ratios of NPLs translate to reduced credit availability, high loan-loss provisions, and deteriorating financial health of these banks, with negative implications for their ability to perform their developmental mandate. According to Karadima & Louri, (2021), one of the most important predictors of loan defaulters is the size of the loan compared to the borrower's income. This means that loan repayment may be improved when loan installments are designed based on the borrowers' income cycles. However, poor financial management by many borrowers in Nigeria leads to the inability to pay debts, while others make partial repayments, which has accumulated NPLs as noted by Budiarto (2021).

On the very core level of the problem rests the behavior and decisions of borrowers. Many NPLs are tied to the borrower not thinking deeply about the very long-term implications or capability of managing both loan repayments and all other key financial commitments. The inability of a borrower to plan properly, coupled with an absence of assessment in determining the capability to repay, basically sets the reasons for defaults (Magali, 2022; Mensah, 2013). Apart from affecting just the borrower, this also has a greater impact on banks. For instance, NPLs reduce the profitability of banks and deplete their capital base, limiting their capacity to expand their customer base or risks. The more NPLs accumulate, the more banks will have to set aside additional resources for loan loss provisions, further depleting their revenues and threatening their viability. Hence, it is very important to address the root causes of NPLs, especially within MFBs, since most of their financial viability depends on income accrued from loan interest.

Despite the various studies regarding economic and regulatory variables affecting NPLs, studies focusing on the joint impact of loan terms, and borrower behavior in Nigeria's microfinance banks remain relatively scanty. The financial literacy and

behavior of borrowers are thus the two foremost elicitors of repayment outcomes related to overleveraging and loan diversion. Understanding the link between loan conditions and borrowers' behavior is at the heart of mitigating credit risk, as well as the key factor that will make microfinance institutions viable over time. This paper, therefore, attempts to fill this lacuna by examining the interface between loan conditions and borrowers' behavior, and their consequences for NPLs in the microfinance sector of Nigeria.

Statement of the Problem

While MFBs play a rather important role in pursuing the goals of financial inclusion and economic development in Nigeria, NPLs actually pose one of the significant threats to the financial stability and long-term sustainability of these institutions. A high level of NPLs negatively affects not just the borrower but also diminishes credit supply, causes distorted credit allocation, and lowers market confidence in the overall financial sector (Ochonogor, 2020). These can also lead to the instability of the whole financial system and, therefore, the economy. As MFBs remain the principal flow of credit to the low-income population, the higher ratio of NPLs hampers them from performing their developmental roles effectively.

While there have been a number of empirical studies identifying financial, regulatory, and macroeconomic variables as some of the factors that affect NPLs, a gap does exist in the literature with respect to loan terms and borrower behavior impacting on NPLs within the context of microfinance institutions, especially in Southwest Nigeria. Most of the studies so far have been focused on broader determinants, like economic conditions and regulatory frameworks, without a sufficient look at how such specific loan conditions interact with individual behaviors: high interest rates, short repayment periods, and inflexible terms overleveraging, diversion of loans, and poor financial literacy. These dynamics are important to understand borrowers' inability to fulfill their obligations and how defaults have piled up in the microfinance sector.

This research tries to fill this gap by ascertaining how interaction between loan terms and borrowers' behavior adds to the increase in NPLs in microfinance banks in South West Nigeria. Understanding this interaction is key to the elaboration of risk management strategies that are in better accordance with the operational realities. Consequently, considering these particular factors, this research tries to offer an insight into potentially helping to develop policies that can contribute towards better sustainability of microfinance institutions. It is also an empirical contribution of the study that it could provide, through this research, a more detailed insight into how loan conditions are related to borrowers' behavior-a perspective which attracted limited attention in the present literature. This may finally enrich the understanding of credit risk in the context of microfinance.

Objectives of the study

The general objective of the study is to examine the effects of loan terms and borrowers' behavior on non-performing loans of Nigeria's microfinance banks. The specific objectives are to:

1. Determine the effect of loan terms (interest rates, repayment periods and loan conditions) on non-

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performing loans of Nigeria's microfinance banks.
2. Evaluate the influence of borrowers' behavior (overleveraging, loan diversion and financial literacy) on non-performing loans of Nigeria's microfinance banks.

Hypotheses of the study

1. Loan terms (interest rates, repayment periods and loan conditions) have no significant effect on non-performing loans of Nigeria's microfinance banks.
2. Borrowers' behavior (overleveraging, loan diversion and financial literacy) does not significantly influence non-performing loans of Nigeria's microfinance banks

Conceptual Review

Microfinance Banks in Nigeria

The Central Bank of Nigeria (CBN, 2005), defined Microfinance banks as any duly licensed company carrying on the business of providing microfinance services comprising deposit taking, loans, domestic fund transfers and other financial services for the economically active poor, micro-enterprises and small enterprises". The introduction of the microfinance banking scheme into Nigeria has been a deliberate attempt to address the shortcomings of the existing financial institutions that have predominantly cared for urban residents, the middle class, and large corporations (Ademola, 2022). MFBs were not only to serve as alternative channels for the unbanked poor but also contribute to the generation of employment and rural development, and help reduce poverty(Acha, 2012), Other impacts microfinance banks include; re-orientation of the rural populace on sound financial practices, as well as issues such as partnering with other institutions to provide insurance services to clients, reproductive healthcare, girl child education and the granting of scholarship to children of clients up to secondary and university education.(Ehigiamusoe, 2011).

Non-Performing loans

Non-performing loan is among the oldest form of credit risk facing the banking industry. It is also referred to as the risk of default due to failure by borrowers to fulfill their obligations with regard to repayments of loans. The International Monetary Fund (2009), defined a non-performing loan as any loan in which interest and principal payments are more than 90 days overdue; or more than 90 day worth of interest has been refinanced. Otherwise, it could be loans with accrued interest and principal outstanding that have been capitalized, rescheduled, or rolled over into a new loan for a period of 90 days or more. According to Ezu et al. (2023), the NPL represents the risk assets which are not yielding returns because the interests and principals have been unpaid over a period of time. Therefore, large NPL in the financial sector has an immediate effect that causes bank distress (Ihemeje et al., 2022). In the same line of explanation, Amir et al. (2016) define NPLs as loans whose mark-up or principal becomes overdue by 90 days or more from its due date. Jacqueline (2023) describe NPL as an indicator showing the health status of the financial institutions.

It is therefore conceptualized that NPL is the byproduct of performing loans. Harimurti et al 2022 observe that the best

yardstick for measuring NPLS is the ratio of non -performing loan to total loan outstanding. Central Bank of Nigeria prudential guidelines 2010 classified loan quality as performing and non- performing. A loan is performing when the interests payable are paid-up in accordance with the agreed covenants. It shall be considered

requirement of NPL categorizes credit facilities into 4 categories: They are substandard, doubtful, very doubtful, and lost. It is substandard when the loan facilities remain outstanding for more than 90 days. Doubtful when the outstanding remains unpaid for over 360 days but less or equal to 720 days. Facilities for which principals and interests remain outstanding for over 720 days but less or equal to 1080 days are very doubtful. It is lost if it is over 1080 days. This classification becomes necessary so as to reflect the true accounting values of the asset quality.

Factors accounting for Non-Performing Loans

Interest Rates

Interest rates are the cost of borrowing money, reflecting the rate as a percentage of loaned money. High interest rates may raise the burden level on the borrower by increasing the difficulty to meet the repayment obligations, which in turn is likely to increase NPLs' emergence. In the light of Ademola et al. (2020) and Okpugie (2009), the more manageable alternative is low interest rates, which may encourage loans but probably could bring about inadequate returns for the lender. High interest rates are associated with higher risks of defaults from low-income borrowers. High interest rates raise the cost of repayment immensely relative to income levels (Mwagi ,2014).

NPL in credit facilities where interest or principals are not paid up for 90 days or more. This may also be seen as a non-performing loan when the payable interest is equivalent to 90 days or more and has been rolled over into a new credit facility. As contained in the CBN guidelines, the provisioning

Repayment Periods

Repayment periods denote the period over which a credit facility is to be repaid. Short periods allow MFBs to collect repayments more frequently, which may have a positive consequence on the liquidity and cash flow management position of the banks. However, short repayment periods put huge pressure on the borrower, especially when his income generation cycle does not coincide with the loan repayment. Flexible and longer repayment periods consistent with the borrower's cash flow could minimize the probability of default while rigid terms tend to heighten the chance of NPLs occurring. (Ademola, et al., 2020).

Loan Conditions

Conditions of loan refer to the terms that establish loan agreements, including interest rates, repayment periods, and sanctions. Flexible conditions of loan allow borrowers to readjust their loan payback schedules in correspondence to their changing financial status, this is a factor that may decrease the incidence of NPLs. However, tight conditions of the loan increase tension on the borrower's side during times when unexpected financial issues arise and may increase the likelihood of defaults that may have been triggered by such incidents. Overly strict bank terms may force borrowers into distress in case of

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changed circumstances and defaults (Alnabulsi et al. 2023).

Overleveraging

Overleveraging is a situation where there is too much debt taken by a borrower

maximizes the chances of default. This could mean that borrowers cannot service many debts, leading to a build-up of NPLs. While overleveraging is often viewed as a highly risky approach to financing, it may also introduce new opportunities for growth. In particular, borrowers may invest in operation expansion, releasing new products, or tapping into new markets that

relative to his or her ability to pay the same. This happens because of overestimation of one's ability to sustain the debt burden. This state of overleveraging enhances financial vulnerability and

will eventually generate revenue, which can be used to service loans in due time, assuming everything goes well. Overleveraging, however, remains a critical determinant of credit risk because of its outcomes in financial distress which endangers the stability of the borrower and lender alike (Louiz et al. 2012)

Diversion of Loan

Loan diversion refers to the situation where borrowers utilize the proceeds of loans for other purposes than what was jointly agreed to at the time of the loan application process. The diversions disrupt the expected income flows that would have supported loan repayment, thus increasing the likelihood of defaults. Loan diversion is a leading cause of NPLs because this reduces a borrower's ability to generate the income required for timely repayment (CBN, 2021).

Borrower Literacy Level

The financial literacy of borrowers deals with the understanding of financial concepts such as budgeting, savings, and credit management. Low levels of financial literacy among borrowers could be a source of ignorance in the prudent management of loans, leading to defaulting and hence an increase in NPLs (Xu & Zia, 2012). According to Lusardi & Mitchell (2014), financially literate borrowers are more capable of

planning, apportioning resources, and abiding by debt repayment plans in line with. Low literacy levels further enable loan diversion and overleveraging as borrowers do not understand the conditions and obligations of their loans fully.

Theoretical Review

The study is anchored on the following theories

Anticipated Income Theory

This theory was presented by Prochanow in 1949 and espoused that the loan settlement must be linked to the expected income of a borrower, instead of his collateral. Facility terms and loan repayment plans must be reined into the income generations of the borrower for elasticity. However, if the maturity of loan settlement is very short or rigid, borrowers are probable to delinquents; hence, a rise in NPLs.

Commercial Loan Theory of Liquidity (Real Bills Doctrine)

This theory was given by Adam Smith in 1977, which said that loans must be of the short-term and self-liquidating type, which means the loan has to be returned from the income received from the economic activity from which the loan was taken. When borrowers utilize loans for unintended uses, this process of repayment is hampered. The likelihood of NPLs increases because the income that is to be used for the repayment of the loan is not acquired.

Moral Hazard Theory

This theory was further explained by Arrow in 1963, saying that the borrowers may take more risks after receiving the loan, as they know that the bank will bear the losses after the occurrence of default. Without proper monitoring and structured loans, borrowers may involve in risky activities that increase the chances of NPLs.

Asymmetric Information Theory

This theory was propounded by Akerlof in 1970, who postulated that many borrowers generally know their financial ability and intentions better than their lenders. This asymmetry in information can result in adverse selection and moral hazard, whereby the borrower may mislead the lender or misuse the loan, leading to higher NPLs.

Empirical Review

Most of the studies conducted on NPLs focused on only two sources of determinants responsible for the change in NPLs of banking institutions, namely bank-specific factors and macro-economic factors. Khoirunisa et al. (2022) examined the factors that impact Non-Performing Loans in Indonesian banking by focusing on ROA, Income Diversification, Bank Capital, and Bank Efficiency as independent variables. The results show that ROA, Bank Capital, and Bank Efficiency all have a significant and negative impact on NPLs. It finds the development of a model for banking companies so that efforts towards credit risk mitigation could be improved. In light of this, the development of factors such as ROA, Bank Capital, and Bank Efficiency has minimized NPLs. Alshebami et al., (2020) examined non-performing loans and selected bank and macroeconomic determinants of twelve Saudi commercial banks within the period 2009-2018. They found negative association between NPLs and return on assets, growth of GDP, liquidity risk and credit risk of their sample banks. Contrary to what was reported by Jabbouri and Naili (2019), the relationship of NPLs and capital adequacy ratio remains insignificant in this study.

Khan et al. (2020) investigated the determinants of NPLs in the banking sector of Pakistan from 2005 to 2017. The authors found out that the operating efficiency and profitability indicators have a negative association with NPLs but were statistically significant, while capital adequacy and income diversification have a negative association with NPLs but were statistically insignificant. Outside of Eurozone. Jabbouri and Naili (2019) also evaluated, within the MENA context, the effect of bank-specific and macroeconomic determinants on NPLs for 98 banks from ten emerging countries in MENA, during the years 2003-2016. Bank size, a ratio of capital adequacy, bank-operating efficiency, profitability of the prior year, growth of GDP, inflation,

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unemployment, along with public debt were determined as the significant factors underlying the determination of NPLs in the region.

In Nigeria, the study by Ademola, (2018) ascertained the NPLs of the listed DMBs in Nigeria. The dependent variable was proxied as NPL, while the explanatory variables were capital adequacy ratio, loan-to-total asset ratio, loan loss provision of banks, crude oil price, and exchange rate. The results indicated that the ratio of loan loss provision, the ratio of loan to asset, and crude oil price had positive and significant impact on the NPLs of the banks. However, in the case of the capital adequacy ratio and exchange rate, impacts are positive but not significant to the NPLs. Atoi (2018) evaluated NPL and its implications on the stability of Nigerian banks with national and international operational licenses from 2014: Q2 to 2017: Q2. The findings show that the determinants of NPLs are different between the two types of banks, but the weighted-average lending rate is an important macroeconomic trigger for NPLs for both. Such findings also support the moral hazard hypothesis, as well as the risk-reward trade-off proposed by the efficient market theory. Thabiso (2021) examined the macro-economic and bank-specific factors affecting non-performing loans in commercial banks. Using 47 listed commercial banks from six countries, namely 19 banks from Nigeria, 14 banks from Benin, 3 banks from Burkina Faso, 3 banks from Gambia, 3 banks from Guinea, and 5 banks from Liberia for the period 2008 to 2019, fixed and random effect model was used. The Hausman test favored the selection of fixed effect model, and it was found from the estimation that the liquidity ratio, capital adequacy ratio and inflation rate significantly affected non-performing loans.

While there have been a lot of studies that investigated the effect of bank-specific and country-specific macro-economic variables on NPLs-particularly, the variables of capital adequacy, ROA, and GDP, only few researchers have tried to study the effect of loan terms and borrower behavior on NPLs in microfinance banks in Nigeria. This present study covers this lacuna by assessing the non-quantitative factors like the loan repayment period, flexibility, financial literacy, over-leveraging, and loan diversion amongst others-fundamental to developing an understanding of the unique challenges microfinance institutions have to bear in managing NPLs. Furthermore, while the existing literature largely focused on determinants from either larger commercial banks or macroeconomic perspectives, this study adds a new dimension to this trend by emphasizing how borrower behavior and the specifics of the loan terms impact NPLs among microfinance banks-a sector generally underrepresented in prior studies. This is relevant for garnering insights that reduce the level of NPLs in financial institutions serving more vulnerable, low-income borrowers.

Conceptual Framework of the study

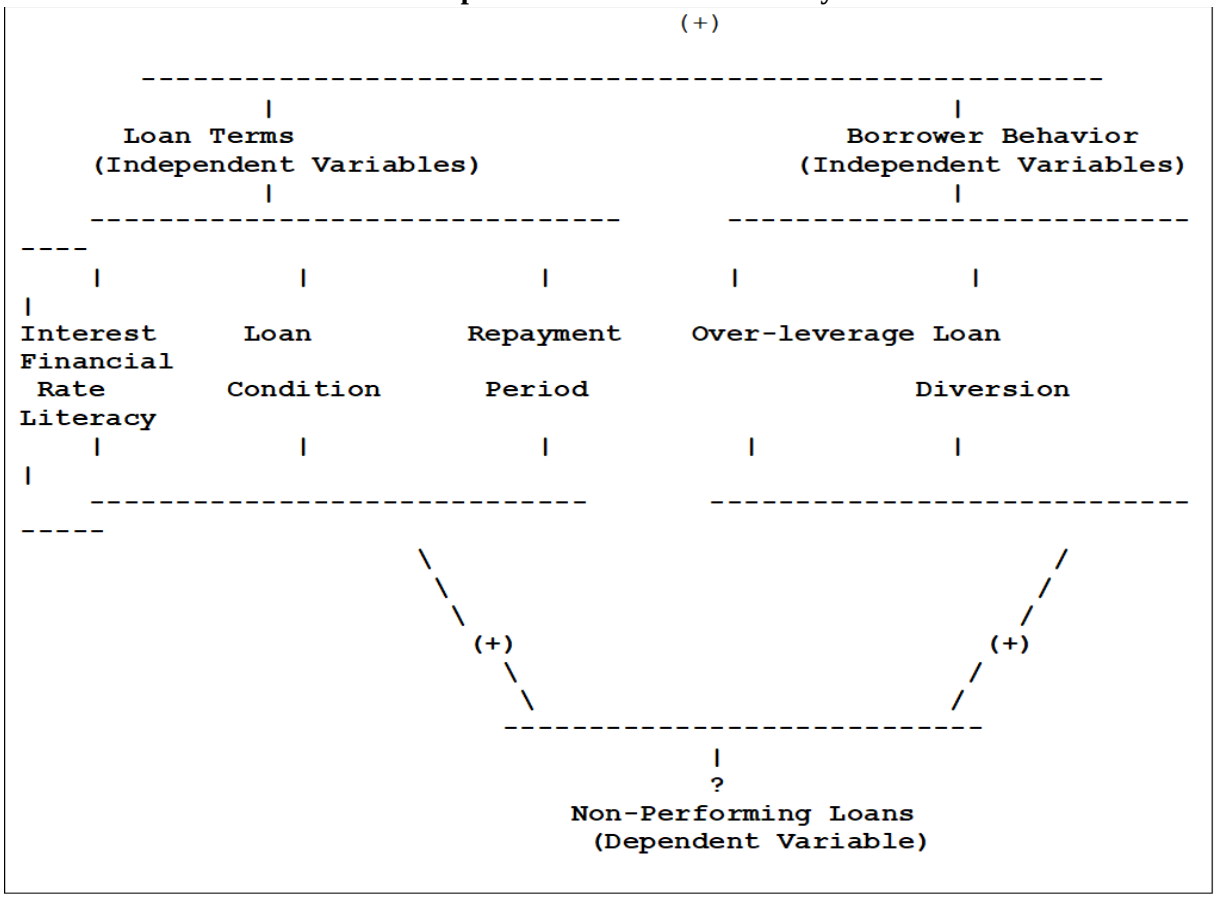

Fig 1
Effects of loan terms and borrower behavior on non-performing loans in Nigeria's MFBs. Source; Author's Conceptualization, 2024.

Methodology

This study was conducted by adopting a mixed-methods approach, which combines quantitative and qualitative methodologies in order to evaluate the impact of loan terms on NPLs, as well as the behavior of borrowers, within Nigeria's MFBs. The NPLs are measured quantitatively by financial data through annual reports of the selected MFBs, while qualitatively, borrower behaviors and attitudes are explored through scheduled interviews, using structured questionnaires to elicit responses from officials and customers of the selected MFBs. This design will thus allow both for numerical trends and underlying behavioral factors that lead to NPLs.

The population of the study comprised all microfinance banks licensed

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to operate in Nigeria and operational as at December 31st, 2023. In this study, a total of 25 MFBs in the South Western part of Nigeria were purposively selected, consisting of states in Oyo, Osun, Lagos, Ondo, and Ogun. Respondents for this study were two loan officers and twenty customers each from the selected MFBs, totaling a sample size of three hundred for this study. The analysis involved the Spearman correlation matrix and multiple regression analysis.

Table 1
Measurement of Variables

Variable	Type	Measurement	Expected Impact on NPLs
Non-Performing Loans (NPLs)	Dependent Variable	Ratio of defaulted loans to total loans	N/A
Interest Rate	Independent (Loan Term)	Percentage (%) charged on loans	Positive (+)
Loan Condition	Independent (Loan Term)	Ordinal scale (1 = favorable, 5 = strict)	Positive (+)
Repayment Period	Independent (Loan Term)	Number of months or years	Negative (-)
Overleveraging	Independent (Borrower Behavior)	Ratio of borrower's debt to income	Positive (+)
Loan Diversion	Independent (Borrower Behavior)	Binary (1 = loan diverted, 0 = not diverted)	Positive (+)
Financial Literacy	Independent (Borrower Behavior)	Scale based on financial knowledge score (e.g., 1–5)	Negative (-)

Source; Author's Compilation, 2024.

Model Specification

$Y = a_0 + b_1x_1 + b_2x_2 + b_3x_3 + u_i$.....Equation 1

Where: Y= Non-performing loans (NPLs), x_1 = Interest rate, x_2= Loan condition, x_3 = Repayment period. a_0 =Base constant, u_i =Stochastic error term.

$Y = a_0 + b_1x_1 + b_2x_2 + b_3x_3 + u_i$.....Equation 2

Where: Y= Non-performing loans (NPLs), x_1 = overleveraging, x_2= Loan diversion, x_3 = financial literacy. a_0 =Base constant, u_i =Stochastic error term.

Results and Discussion

The correlation matrix showing the relationship between Non-Performing Loans, Interest Rate, Repayment Period, and Loan Condition is indicated in Table 2. The results showed that the correlation coefficients of the tested variables are all less than 0.8. Thus, the model has no defects of multicollinearity. Findings revealed that that a strong positive

correlation (0.6392) exists between NPL and Interest Rate. This therefore, indicates that with higher interest rates, the ratio of NPLs will go higher. For instance, if a bank intends to charge high interest rates, then it's likely that the borrowers will face difficulties in making timely repayments; hence, this will increase loan defaults. In the same vein, the correlation of -0.5482 between NPL and the Repayment Period indicates that the shorter the period for repayment, the higher the rate at which loans become non-performing. The shorter the repayment period is, the more difficult it is for the borrowers to meet their repayment schedules and loan defaults may occur. A longer repayment period allows borrowers more time to repay, thereby potentially lowering the risk of non-performing loans.

Furthermore, a negative relationship exist between NPL and condition of Loan (-0.5105) and this suggests that stricter or more rigid the loan conditions are, the higher the NPLs. Overly strict terms of loan may considerably raise the barriers for borrowers to fulfill their obligations, thus leading to defaults.

On the other hand, a moderate negative correlation (-0.4225) exist between the interest rate and the repayment period and this can be interpreted to mean that with the rise in the interest rate, the tendency of the period for repayment to become shorter. This might make sense, as high interest rates could incite banks to also shorten the time needed for repayment, reducing risk in their investments. However, this would place an added financial burden on borrowers, potentially inflating NPLs. Interest Rate and Loan Condition are correlated at -0.3156, meaning that the higher the interest rate, the more rigid the loan condition. Repayment Period and Loan Condition are correlated at -0.4844, suggesting that the conditions for loans with shorter repayment periods are more rigid. This may force borrowers into paying back loans over a shorter time, which can heighten the prospect of default.

Table 2
Correlation Matrix showing relationship between loan terms and NPLs

	NPL	Interest Rate	Repay. Period	Loan Condition
NPL	1.0000			
Interest Rate	0.6392	1.0000		
Repay. Period	-0.5482	-0.4225	1.0000	
Loan Condition	-0.5105	-0.3156	-0.4844	1.0000

Source; Author's Computation, 2024.

The correlation matrix showing the relationship between NPL, overleveraging, loan diversion, and financial literacy is indicated in Table 3. The results showed that the correlation coefficients of the tested variables were all less than 0.8. Thus, the model has no defects of multicollinearity. Strong positive correlation, (0.6883) exist between NPL and overleveraging indicating that high levels of overleveraging are strongly associated with increased NPL. This strong correlation suggests that overleveraged borrowers have more tendency to default easily, eventually leading to a high level of NPLs. The correlation coefficient between NPL and

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Loan Diversion gives a high positive value (0.6210), meaning if the loans are diverted away from their intended purpose, then there will be high probability of default as the funds borrowed may not return the expected benefits. The correlation of -0.5254 between NPL and Financial Literacy denotes that the higher the level of financial literacy, the lower the incidences of non-performing loans. A financially literate borrower will make more enlightened decisions on the issue of borrowing, budgeting, and managing debt, hence reducing the likelihood of default.

of -0.4420, between Overleveraging and Financial Literacy implies that borrowers with higher financial literacy are less likely to become overleveraged. This could also be due to the fact that financially literate people could better manage their debt and, hence could not take on unnecessary debt. Findings also showed, the correlation of -0.5297 exist between Loan Diversion with Financial Literacy suggesting that borrowers with higher financial literacy are less likely to divert loans from their stated purposes.

Additionally, a correlation of 0.5911 exist between Overleveraging and Loan Diversion meaning that overleveraged borrowers are more likely to divert the loans from their stated purposes. Such borrowers may be in urgent financial need and divert the proceeds of the loan to purposes other than their intended usages, like solving current financial problems. This will increase their financial burdens and heighten the chances of default. The negative correlation

Table 3
Correlation Matrix showing relationship between borrowers' behavior and NPLs

	NPL	Overleveraging	Loan Diversion	Fin.Literacy
NPL	1.0000			
Overleveraging	0.6883	1.0000		
Loan Diversion	0.6210	0.5911	1.0000	
Fin. Literacy	-0.5254	-0.4420	-0.5297	1.0000

Source; Author's Computation, 2024.

Results from Table 4 revealed R-square value of 0.6418 which indicates that 64.18% of the variation in NPL is explained by the independent variables-interest rate, period of repayment, and loan conditions. This shows a strong association between these variables and the levels of NPLs. The overall F-statistic is 13.600 with a p-value of 0.0011, indicating that this model is statistically significant. In other words, independent factors as a whole significantly affect NPL. The Durbin-Watson statistic is around the ideal value of 2 with the value of 1.572, hence no serious autocorrelation in residuals exists that would undermine the strength of the model.

Interest rates presented a positive coefficient of 0.0249 and a p-value of 0.0012, respectively. This result suggests that an increase in the level of interest

rates is associated with an increase in the level of NPLs. High levels of interest rates increase the cost of borrowing and hence add pressure on borrowers, who are mostly those with low resources. This results in their inability to pay back loans, increasing their chances of being in default. Recent research findings have pinpointed a prolongation of high interest rates as one of the major dominant factors that has led to increased NPLs, which eat away at banks' profitability and financial stability (Ademola et al., 2020). High interest rates have made poor borrowers unable to pay back the interest and borrowed amount in achievable by all, let alone in periods of economic uncertainty. Hence, banks with more stringent repayment schedules could face higher default rates. In this regard, the finding is consistent with Ademola et al., (2020), who affirmed that a short period of repayment is not an opportunity for loans to yield futuristic gains nor allow the loans to be meaningfully utilised. Idowu & Salami (2010) asserted that performance of borrowers may not be enhanced after collecting the loan because repayments frequency constitutes a serious problem of loan default. This means that flexible and longer structures of loan repayment could reduce the occurrences of default and improve the performance of loans. Anticipated income theory also justifies the idea that when the time to repay the loan is too short or not flexible, the borrower will fail to fulfill his obligations, thus resulting in increased NPLs.

time; thus, the borrowers are left to wallow in penury. Idowu & Salami, (2010) also supported the fact that MFBs interest rates are unreasonably high. Furthermore Okpugie, (2009) also confirmed that exorbitant interest rate on loans by MFBs is the major cause of outrageous loan default

Repayment period has a negative coefficient (-0.1654) and this suggests that shorter repayment period is the cause of higher NPLs. Shorter repayment periods would imply pressure to make bigger or more frequent installments in a constrained period, which may not be

The negative coefficient (-0.1987) of the loan conditions variable, coupled with a p-value of 0.0038, indicates that rigid loan conditions-for instance, no options for restructuring, penalties, and other unfriendly conditions-make MFBs' services burdensome, thus increasing the possibility of loan defaults (Ademola et al., 2020). Hence, in such situations, borrowers unable to bear the rigid loan conditions have a tendency to default and, as such, enhance the level of NPLs. Thus, banks offering less stringent conditions on their loans are more capable of dealing with NPLs and being at ease with financially healthy borrowers. This finds its justification in the anticipated income theory which had posited, "if the borrower's anticipated income falls short or is misaligned with loan terms then this may lead to defaults.

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Table 4
Influence of loan terms on Non-performing loans of MFBs

Variable	Coefficient	Std.Error	t-statistics	Prob
C	2.0821	0.1766	11.7850	0.0000
Interest Rate	0.0249	0.0097	2.5691	0.0012
Repay. Period	-0.1654	0.03442	-5.4332	0.0018
Loan Condition	-0.1987	0.04550	-4.3389	0.0038
R-squared	0.64188	Mean dependent var		2.53092
Adjusted R-squared	0.61553	S.D. dependent var		0.33532
F-statistic	13.6003	Durbin-Watson stat		1.57224
Prob(F-statistic)	0.00116			
Dependent Variable: NPL				

Source; Author's Computation, 2024.

The regression analysis that investigates the effect of overleveraging, loan diversion, and financial literacy on NPLs is indicated in Table 5. R-square value of 0.8081 infers that about 80.81% of variation in NPLs are explained by the independent variables -overleveraging, loan diversion, and financial literacy. This is a good fit model since a large amount of variance in NPLs is explained. Overall, the statistical significance of the F-statistic being 18.0252 with its p-value of 0.00009 implies that the independent variables collectively have a significant effect on NPL. The Durbin-Watson statistic is 1.7281 suggesting that there is no significant autocorrelation in the residuals, hence a robust model. The positive coefficient for overleveraging is 0.0439, meaning that with each additional unit of overleveraging, NPL increases by 0.0439 units. This is statistically significant since the p-value of 0.0013 is well below 0.05. This supports recent literature where overleveraging is seen to greatly attribute to loan defaults. Louiz et al. (2012) also pointed out that excessive borrowing, judged against the level of income, is linked with the heightened probability of loan default, at least during times of financial stress. Over-leveraged borrowers tend to be more exposed to defaults in the case of an external economic shock. Again, this finding is consistent with moral hazard theory.

Moreover, loan diversion bears a positive coefficient of 0.0304 suggesting when loans are diverted away from their stated purpose, the NPLs go up by 0.0304 units. The p-value of 0.0005 stands significant and indicates that loan diversion

is a key determinant of NPLs. Loan diversion is one of the most frequent reasons cited for loan defaults in developing economies. The Central Bank of Nigeria, (CBN, 2021) highlighted that when borrowers redirect funds away from productive investments (e.g., for consumption), they often fail to generate the income needed for repayment, leading to higher default rates. This finding is consistent with the Commercial Loan Theory that held that practices like loan diversion increases the likelihood of non-performing loans to occur as intended income-generating activity does not take place, leading to loan default.

The financial literacy coefficient is 0.0226, indicating that a rise in financial literacy tend to decrease NPLs by 0.0226 units with a p-value of 0.0179. This goes ahead to reveal that financially literate borrowers are in a position to make close-to-perfect decisions in relation to borrowing and the management of debt (Xu & Zia, 2012). Lusardi & Mitchell (2014), affirmed that financial literacy is an important tool in the avoidance of over-indebtedness and improvement of repayment behavior. This finding supports the asymmetric information theory, wherein it emerged that borrowers may mislead lenders regarding their capability for repayment or misuse the funds, hence causing defaults. The problem of information asymmetry is exacerbated, especially in microfinance banks, where financial literacy among the borrowers is likely to be low, leading to higher NPLs.

Table 5
Influence of Borrowers Behavior on Non-performing loans of MFBs

Variable	Coefficient	Std.Error	t-statistics	Prob
C	1.3803	0.2719	5.0765	0.0000
Overleveraging	0.0439	0.0134	3.2740	0.0013
Loan Diversion	0.0304	0.0106	2.8510	0.0005
Fin. Literacy	0.0226	0.0094	2.3945	0.0179
		Mean dependent		
R-squared	0.8081	var		2.8430
		S.D. dependent		
Adjusted R-squared	0.79023	var		0.3855
		Durbin-Watson		
F-statistic	18.0252	stat		1.7281
Prob(F-statistic)	0.00009			

Dependent Variable: NPL

Source; Author's Computation, 2024.

Summary and Recommendation

Summary

This study evaluated the effect of loan terms, such as interest rates, repayment periods, and loan conditions, and the borrowers' behavior, including overleveraging, loan diversion, and financial literacy, on NPLs within MFBs in Nigeria. Interest rates are positively related to NPLs; the higher the interest rate, the

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higher is the rate of NPLs. This is attributed to the financial burden placed on borrowers, particularly those with limited resources, making repayment more difficult. The period of repayment bears a negative coefficient. This depicted that the NPLs are increasing when there are shorter periods of repayment, since these set up extra pressure on the borrower, particularly when there is economic uncertainty. Rigid conditions of loans also increased the likelihood of default, where rigid terms and conditions make borrowers unable to restructure loans when financial challenges arise. On borrower's behavior, overleveraging was found to increase NPLs, since excessive borrowing relative to income increases the likelihood of default during periods of recession. Loan diversion, in which borrowers use loans for unintended purposes, also heightened the levels of NPLs because of failure in generating the expected income for its repayment. On the contrary, financial literacy was positively associated with a reduction in NPLs since more financially literate borrowers make better financially informed decisions that reduce the chances of default. The research findings also summarize the role of flexible loan terms and increased financial literacy that would help MFBs reduce the frequency of NPLs, thus improving the financial health of both borrowers and lenders.

Recommendation

MFBs need to develop an approach of flexibility in interest rate setting and ensure that this mechanism is oriented toward the customers. MFBs could decrease the interest rate, especially for low-income earners; this could help reduce financial burdens and compromise the threat of loan defaults. Again, they need to bring in more flexibility in the time for repayments, corresponding to the income and earnings cycles of the borrowers. This would provide the best avenue for borrowers to get their house in order and effect repayments by extending the repayment periods or even through grace periods. It would be such flexibility that will enhance loan performance, reducing defaults.

Besides, financial literacy programs need to be added in the loan approval process that will light up the borrowers on prudent borrowing, debt management, and repayment strategy. Providing borrowers with the knowledge that would allow them to make prudent decisions in managing their finances, MFBs would be in a position to minimize cases of loan diversion, overleveraging, and poor financial planning that reduce NPLs. MFBs have to establish more effective mechanisms for monitoring loans to identify early signs of financial stress from borrowers in time. The results would allow periodic checks on the borrowers' financial health, enabling intervention in time through restructuring loans or financial counseling before a loan can turn non-performing. This proactive way helps decrease credit risk.

Implications for the study and suggestion for further studies

This study have serious implications for both the microfinance banks and the

policymakers of financial sector in Nigeria. MFBs have to revisit their current lending practices and policies on borrower engagement to reduce incidence of NPLs. The study, therefore, impresses on policymakers the need for regulations that encourage financial literacy initiatives and consumer protection measures. There is a need for guidelines that ensure flexible loan terms with non-exploitative interest rates to improve financial stability not only in MFBs but also in the economy as a whole. However, future studies could also be conducted on the lender-borrower relationship with a focus on trust, communication, and transparency, and their impact on loan performance and risk of default.

References

Acha, I. A. (2012). Microfinance banking in Nigeria: Problems and prospects. *International Journal of Finance and Accounting, 1*(5), 106-111.

Adam.S. (1977). *The wealth of nations* (Originally published in 1776). Chicago: University of Chicago Press.

Ademola, A. O. (2023). What factors drive the microfinance banks' profitability in Nigeria? *Gomal University Journal of Research*. 39(1), 31-46. https://doi.org/10.51380/gujr-39-01-04

Ademola, A. O., Adegboyegun, A. E., Kazeem, B. L. O., & Akanbi T. A., (2020). Reasons for low patronage of microfinance banks by women entrepreneurs. *Journal of management and science 10*(4), 1-6

Ademola, A. A. (2018). Determinants of non-performing loans of listed Deposit money banks in Nigeria. (Unpublished MSc. Dissertation, Ahmadu Bello University, Zaria, Nigeria.

Akerlof, G. A. (1970). The market for "lemons": Quality uncertainty and the market mechanism. *The Quarterly Journal of Economics*, 84(3), 488-500.

Alnabulsi, K.; Kozarevi´c, E.; Hakimi, A. (2003). Non-performing loans as a driver of banking distress: A systematic literature review. *Commodities* 2 (1), 111–130. https://doi.org/10.3390/ commodities2020007

Alshebmi, A. S., Mohammad Adam, M. H., Mustafa, A. M. A., Thomran, M., & Fathelbab, O. E. A. (2020). Assessing the non-performing loans and their effect on banks profitability: Empirical evidence from the Saudi Arabia banking sector. *International Journal of Innovation, Creativity and Change*, 11(8), 69-93.

Amir, I. X., Qin, S., Faisal, I. and Mohammad, F. (2016). Determinants of non-performing loans in Pakistan. *The Journal of Applied Business Research*, 32(6): 1723-1730.

Arrow, K. J. (1963). Uncertainty and the welfare economics of medical care. *The American Economic Review*, 53(5), 941-973.

Atoi, N. V. (2018). Non-performing Loan and its effects on banking stability: Evidence from national and international licensed banks in Nigeria. *CBN Journal of Applied Statistics*, 9(2), 43-74.

Budiarto, A. (2021). The impact of non-performing loans towards the financial performance of BPR in Central Java, the role of empathy credit risk. Proceedings of the 4th *International Conference on*

Printed ISSN 2621-6167, e-ISSN 2621-4466
https://journal.uniku.ac.id/index.php/ijbe

Sustainable Innovation 2020-Accounting and Management, pp. 251-258

Central Bank of Nigeria. (2005). Microfinance Policy, Regulatory and Supervisory Framework for Nigeria. Abuja: http://www.cenbank.org.

Central Bank of Nigeria (CBN). (2021). Annual report: Non-performing loans in Nigerian banks. *CBN Publications*. https://www.cbn.gov.ng

Ehigiamusoe, K. U., & Lean, H. H. (2020). The role of deficit and debt in financing growth in West Africa. *Journal of Policy Modeling*, 42(1), 216-234. https://doi.org/10.1016/j.jpolmod.2019.08.0

Ezu, G. K., Nwanna, I. O., and Nwolisa, N. R. 2023. NPL and profitability of deposit money banks in Nigeria. *International Journal of Research in Finance and Management*, 6(1): 188-196

Harimurti, C., Pandoyo., and Mohammad, S. (2022). Factors affecting non-performing loans of state owned banking in Indonesia. *International Journal of Economics, Business and Accounting Research, 6(*2): 958-965.

Idowu, A. & Salami, A. (2010). Impact of microfinance banks on standard of living of hairdressers in Ogbomoso north local government. *American Journal of Social and Management Science, 2*(1), 34-40

Ihemeje, J. C., Ugwanyi, G. C., and Efanga, U. O. (2022). NPL and banks profitability in Nigeria. Indo-*Asian Journal of Finance and Accounting, 3*(2): 97-116.

Islam, T. U. (2020). Determinants of non-performing loans in Pakistan. Preprints, July. https://doi.org/10.20944/preprints202007.0682.v1

International Monetary Fund (2019). The IMF 2019 financial soundness indicators compilation guide. Retrieved from https://www.imf.org/en/Data/Statistics/FSI-guide (Accessed August 20, 2020).

Jabbouri, I., & Naili, M. (2019). Determinants of Non-performing loans in emerging markets: evidence from the MENA region. *Review of Pacific Basin Financial Markets and Policies, 22*(4), 1950026.

Jacqueline, N. K. (2023). Macro-economic factors and non-performing loans in the Kenyan banking industry. *International Academic Journal of Economics and Finance, 3*(8): 279- 291.

Karadima, M., & Louri, H. (2021). Economic policy uncertainty and non-performing loans: The moderating role of bank concentration. *Finance Research Letters, 38*, 101458. https://doi.org/10.1016/j.frl.2020.101458

Khan, M. A., Siddique, A., & Sarwar, Z. (2020). Determinants of non-performing loans in the banking sector in developing state. *Asian Journal of Accounting Research, 5*(1), 135 145.DOI: 10.1108/AJAR-10-2019-0080. 50

Khoirunisa, H., Hutauruk, C. M., & Muchtar, S. (2022). Factors affecting non-performing loans of conventional banking: Evidence in Indonesia Stock Exchange. *Jurnal Syntax Transformation*, 3(1).

Louiz, D. P., Vouldis, A. T., & Metaxas, V. L. (2012). Macro-economic and bank-specific determinants of non-performing loans in Greece: A comparative study of mortgage, business and consumer loan portfolios. *Journal of Banking & Finance, 36*(4), 1012 1027

Lusardi, A & Mitchell. O.S (2014). The economic importance of financial literacy: Theory and evidence. *Journal of Economic Literature*, 52(1), 5-44. https://doi.org/10.1257/jel.52.1.5

Magali, J. (2022). Financial literacy variables in microfinance institutions studies: A systematic literature review. *Huria Journal*, 29(1), 101-120

Mensah, C (2013). The relationship between loan default and repayment schedule in microfinance institutions in Ghana: A Case Study of Sinapi Aba Trust. *Research Journal of Finance and Accounting 4(*19), 2013

Mwangi, J. (2014). The relationship between the level of non-Performing loans and the financial performance of Paper; No. 6107. World Bank, Washington, DC.

commercial banks in Kenya. *Journal of Banking and Finance, 1* (2) 17-23

Ochonogor, M. H. (2020). Microfinance institutions and economic development in Nigeria. *NDIC Quarterly*, 35(3 & 4).

Odell, K (2010). Measuring the impact of microfinance. Grameen Foundation, Washington, 1–38.

Okpugie.G (2009).High microfinance interest rates cause loan defaults in Nigeria, The Guardian, Nigeria.

Prochnow. (1949). *Anticipated income theory of bank liquidity*. New York: Prentice-Hall.

Thabisco, S.M (2021) Factors affecting non-performing loans in commercial banks of selected West African countries. *Banks and Bank Systems*, 17(1), 1-12

Xu, L. and Zia B. (2012). Financial literacy around the world: An overview of the evidence with practical suggestions for the way forward. Policy Research Working