



Determinants of Loan Repayment Among Microfinance Beneficiaries in Lagos State, Nigeria

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ABSTRACT

This study examines the determinants of loan repayment among microfinance institutions (MFIs) among their 384 microenterprises. The research found that age, gender, marital status, educational level, business experience, family size, type of business, interest rate, profit level, lending method, training/business enhancement program, and loan repayment time are not significant determinants of loan repayment among MEs in the study area. Prompt loan repayment can encourage cordial relationships between MFIs and their customers, and thus, MFIs and stakeholders should consider these significant variables when extending loans to their clients. This highlights the importance of timely loan repayment for MFIs' survival and growth.

INTRODUCTION

Microfinance institutions (MFIs) no doubt provide loan to small business holders with little or no collateral security, and for this function to be performed effectively and efficiently without disruptions, repayment of loan by borrower as at when due is germane. However, default in loan repayment of microfinance loan is often faced by MFIs which could threaten their sustainability and impede them from extending loan to other customers. Enimu et al. (2017) observed that microfinances are unable to meet their clients' request when repayment of loans by loan beneficiaries are not paid as at when due. The authors also explained that default in loan repayment may affect financial outreach of MFIs and financial inclusion.

Microfinance institution no doubt is one of the financial institutions that assists in channeling fund/credit for business activities especially to the most vulnerable in the society, this channeling of fund is often peculiar to business activities like micro and small business (Nawai & Mohd Shariff, 2012). In Nigeria, the situation is not different as MFIs have helped both microenterprises and SMEs in their various businesses through credit facilities. Access to finance is identified as one of the impediment for micro enterprises business in Nigeria as the conventional banks are often difficult to approach due to their stringent documentations and collateral requirements. MFIs have played this pivotal role of channeling fund to small business holders, which has helped in business stability and continuity. In line with this, studies have identified, access to finance as an impediment to business growth especially the informal sectors (Okurut et al, 2005; Aya & Ahmed, 2018).

Similarly, lack of access to formal credit is one of the main obstacles confronted by the poor as microfinance institutions are identified to have helped in bridging gap in terms of financial assistance to the poor and people at the bottom of the pyramid in order to reduce poverty and augment their business activities (Jote, 2018). Therefore, access to finance by small business is highly important as it helps in employment generation, business expansion, business sustainability, and poverty reduction.

Consequently, as financial sustainability is a necessary condition for the sustainability of MFI, thus, a study of factors that determine loan default among loan beneficiaries is important for MFIs credit provider, stakeholders in credit provision, and the government. Also, for sustainability of MFIs to be maintained, there is need to inquire about what determine repayment rate among microenterprises.

This study is important as it will help stakeholders in the affairs of credit to be conversant with factors that determine loan repayment and thus through the consideration of these factors appropriate clients can be given loan; which will possible reduce loan default and consequently eliminate it.

Loan repayment rate among beneficiaries of microfinance, has often been low especially when it has to do with government involvement in the loan program. High default rate in loan is a common phenomenon in developing countries (John, 2013). Prompt repayment of loan helps MFIs and the borrower; for the MFIs it helps to ensure continuity in their financial services to their client

and financial sustainability, and to the customers it assists in ensuring continuity in their access for further loan and even bigger loans. As one of the indicators for measuring the effectiveness of MFIs is based on loan repayment performance of the borrowers (Godquin 2004). Similarly, study has observed that loan default can affect the chance of new applicant in a loan programme (Jote, 2018).

Furthermore, financial adequacy of MFI is ensured through prompt repayment of loan when due for payment, which also help to ensure increase in the amount of subsequent loan to customers (Bond & Rai, 2009). Scholars have emphasized low repayment rate affecting borrower and MFI, as borrower would find it difficult to secure subsequent loan/higher loan while the lender's sustainability in given out further loan would be affected (Melese & Asfaw, 2020).

The paper is organized as follows: the first part represents the introduction, followed by the second part which is the literature review, the third part of the paper is the methodology employed by the study, the results and the discussion are presented in the fourth part of the paper, and the final part of the paper presents the conclusion and some recommendations.

LITERATURE REVIEW

A priori the age of the borrower is expected to have a negative relationship with the loan repayment. Studies have used different categories to categorise variable that determine repayment rate among borrower for instance, Jote (2018) categorised variable that influence loan repayment into three: demographic factors, economic factors, and institutional factors. While Angaine and Waari (2014), grouped these factors into individual characteristics, business characteristic, and lender characteristics. This study therefore categorised the factors that determine loan repayment into three categories: demographic, individual business characteristics, and institutional factors. In view of these, the variables that will be used in this study are: demographic characteristics [Age (age), gender (gende), marital Status (Marsta)], individual business characteristics [educational Level (edulev), business experience, (busexp), family Size (famsiz), type of business (typbuz)], and institutional characteristics [Interest Rate (intrat), Profit Level (prolev), Lending Method (lenmet), Loan Repayment Time (loreti), Training/Business enhancement Programme (trenpr)]

Scholars have arrived at different results in terms of variables that influence loan repayment for instance, Nawai and Sharriff (2012) identified that age variable has a positive influence on loan repayment; that is the higher the age of the borrower the lower the repayment rate as increase in age could affect the active activities of the borrower. However, Angaine and Waari (2014) have found significant and negative impact of age on loan repayment. Gender of the respondent also affect repayment rate as Nawai and Shariff (2013); Angaine and Waris (2014) found that when the gender of borrower is male it has positive impact on repayment rate and this shows that males are better loan payer than their female counterpart.

Studies have opined that household size/family size has significant influence on repayment of loan by borrower a small family size enhances prompt repayment of loan than when the family size is large. (Folefack & Tegular (2016); Haile & Harari (2015): Jote 2019), As it is belief that large family size is meant to put more financial expenses on household thereby impact negatively on repayment.

The educational level of the borrower is found in the literature to have a mixed impact on repayment of loan for instance, Jote (2019) found in his study in Ethiopia a positive influence of educational level on loan repayment by borrower while Nawai and sharriff (2012) found a different result of a negative impact of education on loan repayment rate. Similarly, positive influence of business experience on loan repayment has also been observed by Haile and Harari (2015) in their study. Profit earned from business activities is observed to have a positive and significant influence on loan repayment by borrower (Fale fack & Tegula, 2016; Jote, 2019). This shows that increase in profit earned by borrower from the loan received can enhance prompt repayment of loan than when loss is made.

Lending model also has impacts on repayment of loan, for instance, Jote (2019) found in a study in Ethiopia using a logistic regression that the method of lending that is based on individual lending have a negative influence on loan repayment of individual borrower. However, Haile (2015) found a positive influence of business training on loan repayment of borrower in the study area.

METHODOLOGY

Area of study

Lagos State is selected from the 36 state in Nigeria, the State is located in the western region of the Southern part of Nigeria. It was formally the capital of the country. The state is enriched with the highest number of microenterprises and microfinance institutions (NBS, 2018). The selected Local Government Area (LGA) is Amuwo Odofin. The case study banks are located in the LGA. In this area, some microenterprises were systematically selected from the list of the banks and every 6th ME on the list was selected as sample and this comprises microenterprises in Agboju market, Trade fair Market, and Mile Two market.

Data and sampling procedure

A systematic sampling procedure was used to select a sample of 384 microenterprises from three microfinance banks in the study area, these samples were those that had accessed the loan facility and have been clients to the microfinance banks for at least three years. The 384 samples were selected from the list of the three microfinance banks by the officers of the selected microfinance banks in the study area and every 6th person from the lists were selected as sample. From the sampled microenterprises, 168 are loan defaulters while the remaining 216 have fully paid their loan.

Variable measurement and Description

Table 1. Variable Measurement and Description

Variable (Code)	Variable Description	Variable Measurement
Age (age)	Age of the borrower	In years
Gender (gende)	Sex of borrower	Male =1 Female = 0
Marital Status (Marsta)	Marital Status of the borrower	Married= 1 Single=0
Educational Level (edulev)	Educational qualification of the borrower	In years
Business Experience (busexp)	Experience of the borrower in the business	In years
Family Size (famsiz)	Number of person living in the household	In Number
Type of business (typbuz)	Type of business activities operated by the MEs	Daily need business = 1 Non- daily need business = 0
Interest Rate (intrat)	Cost of fund/interest rate paid on loan received.	In Number
Profit Level (prolev)	Profit from business activities	Amount in Naira
Lending Method (lenmet)	Method of lending	Individual Model =1 Group lending= 2
Loan Repayment Time (loreti)	Time lag between when loan is disbursed and when the loan is to be paid	1=Preceding month after loan is received 2=Two months after loan is received
Training/Business enhancement Progame (tranpr)	Training or business programme organized for the borrower	Training= 1 No Training= 0

Model Specification

In analyzing the data, descriptive statistics and binary logistic regression statistics were used. The dependent variable which is the Loan repayment performance was measured with two categories - non defaulter and defaulter. This response variable which is the dependent variable assumes two values, 1 for non-defaulter and 0 for loan default/otherwise. Logistic regression analysis was used to estimate the factors that determine loan repayment among microenterprises. The logistic regression is a binary response variable with outcome variable and estimated with maximum likelihood estimate which is a special case of generalized least square model.

The model for the study is stated as

$$(1) \quad P = f(x_1, \dots, X_n) \dots \dots \dots$$

$$(2) \quad P = f(x_1, x_2, x_3, x_4, x_5, x_6, x_7, x_8, x_9, x_{10}, x_{11}, x_{12}) \dots \dots \dots$$

In econometric form the function is represented as:

$$P = a_0 + a_1X_1 + \dots + a_nX_n + \epsilon \quad \dots\dots$$

(3)

Where P =1or 0; 1 denotes loan payment (1) and 0 denotes loan default.

X_i= Vectors of factors that determine loan repayment and these are

X₁=age of respondents

X₂ = Marital status of the respondents

X₃ = respondent's years of education

X₄= business experience of the respondent

X₅= size of the household/family

X₆= status of the creditor in the family (1for head of the family and 0 for not)

X₇= other source of income aside from the business (1 for other source of income, 0 for not)

a₀ = constant

a_i = are coefficients of the independents variables to be estimated

RESEARCH RESULT AND DISCUSSION

Descriptive Statistics

The descriptive statistics table is represented by Table 2. The age variable measured in years depicts the age of microenterprises operators in years. Over 70% of the respondents are within the age range of <25 and 35 years old as given by 76.31% (27.08% + 49.23%). This indicates that majority of those operating as microenterprises in the study, are in their active years. In terms of gender, more of the respondents are male as given by the frequency and percentage of 202 and 52.60% respectively for the male microenterprises. The female respondents' frequency and percentage stood at 182 and 47.40 % respectively.

Table 2. Descriptive Statistics

Variable	Frequency (384)	Percentage (100%)
Age(years)		
<=25	104	27.08
26-35	189	49.23
36-45	76	19.79
46-55	11	2.86
56-66	04	1.05
Gender:		
Male	202	52.60
Female	182	47.40
Marital Status		
Singles	186	48.44
Married	198	51.56
Educational Level:		
<u>Literate</u>		
Primary	18	4.69

Secondary	162	42.19
OND/NCE	104	27.08
Degree/HND	42	10.94
<u>Illiterate</u>	58	15.10
<i>Debtors Status in the family:</i>		
Head	248	64.58
Not Head	136	35.42
<i>Sources of capital:</i>		
Only loan	113	29.43
loan and other source	271	70.57
<i>Number of loan received:</i>		
One loan	231	60.16
Multiple loan (more than one loan)	153	39.84

In terms of marital status, more of the respondents are married as given by the frequency and percentage of 198 and 51.56% respectively for those that are married and those that are single are represented by the frequency and percentage of 186 and 48.44 % respectively in Table 2. This shows that the gap between the married microenterprises and the single microenterprises is small

Similarly, most of the respondents are literate though with lower level of education and their educational level falls within secondary school and OND (NCE) as given by the percentage of 69.27% (42.19% + 27.08%) and frequency of 266 (162+104) as shown in Table 2. It is also observed that majority of the borrowers are head of their household as represented by the frequency and percentage of 248 and 64.58%. While 136 and 35.42% depict the frequency and percentage for those that are not head of their families. Majority of the selected MEs received loan and other sources of capital as given by the frequency and percentage of 271 and 70.57% respectively from Table 2 and the frequency of 113 and percentage of 29.43% represent those that received only loan as their sources of capital.

For loan frequency, more of the microenterprises received only one loan represented by the frequency and percentage of 231 and 60.16% respectively while those with multiple loans stood at 153 and 39.84% representing frequency and percentage respectively. Furthermore, over 70% of the respondents have no other source of capital except through loan as shown by the frequency and percentage of 271 and 70.57% respectively. A total of 113 and percentage of 29.43% represent those borrowers that have other sources of capital aside from the loan they received.

- **Logistic regression Analysis**

Logistic regression is used to analyse the factors that determine repayment rate among borrowers of microfinance loan in Amuwa Odofin LGA of Lagos State, Nigeria. The results from the logistic regression are depicted in Table 3. From the table, the log likelihood ratio indicates a 1% level of

significance. This indicates that the independent variables used in the model jointly explain the dependent variable i.e. the probability of loan repayment. The number of observation indicates that there was no missing data.

Table 3: Logistic Regression Result

Number of obs = 384
 LR chi2 (8) = 87.76
 Prob> chi2 = 0.0000
 Log likelihood = -165.93313
 Pseudo R² = 0.2091

Table 3. Logistic Regression Result

Variable	Old Ratio	Log Odds Ratio	Coefficient	Standard Error	Z	P Value
age	1.02672	0.02637	0.03680	0.0176	2.09	0.036618
gender	0.4462	-0.807	-0.7854	0.3057	-2.56	0.010467*
marital	1.4530	0.3736	0.3521	0.3419	1.10	0.271332
Educational Level	0.8874	0.11946	0.1362	0.0357	-3.82	0.0001***
Business Exper	1.1638	0.1517	0.1347	0.0374	3.88	0.0000***
family size	.81668	-0.2025	-0.2014	0.0832	-2.42	0.015521*
type of business	1.7638	0.5675	0.6457	0.2930	2.20	0.027807*
Interest rate	0.9986	-	-0.0000641	6.38e-06	-3.15	0.001***
		0.001401				
Profit level	0.1636	1.8103	1.7702	0.2448	-7.23	0.000***
Lending method	1.8070	0.5917	0.5638	0.3314	1.70	0.08923*
Loan Repayment Time	1.0354	0.03479	-0.3294	0.1756	-1.87	0.061484*
Training/business enhancement Prog.	0.8480	-0.16487	-0.03474	0.0541	0.64	0.522123
Constant	2.5459	0.9345	0.7973	0.7478	1.07	0.284619

Twelve variables were used to measure the factors that influence loan repayment among loan beneficiary in the study area. These variables are group based on demographic factor, individual factors, and institutional factors. For the demographic factor the study examines, age, gender, marital status, and

educational level of the respondents, while the individual/ business factors include family size, business experience, type of business, profit level of the borrower and the institutional factors are the interest rate, lending method, loan repayment time, training/business enhancement programme. The result from the logistic regression indicates that from the variable used to measure the determinants of loan repayment only three of the variables are not significant and these variables are age, marital status, and training/business enhancement program. The remaining nine variables follows the a priori expectations and also significant.

Age

Age of the respondents measure in years is not significant and also not with the expected sign as indicated by the positive sign of the coefficient. This indicates that a one unit increase in the age of respondent, the log odds of loan repayment by the borrower of accessing credit would increase by 0.0258. The odd ratio indicates that a one unit increase in the variable age would increase the odd of repayment of loan by a factor of 1.0261

Gender (gend)

The gender variable measures as 1 for male and 0 for female is significant and has the expected sign. The coefficient from Table 3 signifies that when the gender is male this will decrease the log odds of loan repayment by 0.8074. The odd ratio indicates that when the gender of loan recipient is male, the odd of repayment of loan decrease by 0.4469. This indicates that male often default in loan repayment than their female counterpart.

Marita Status (marsta)

The variable marsta which indicates the marital status of the borrower is not significant but has the positive expected sign. The coefficient shows that being married increase the log odds of loan repayment by 0.3723 for the loan borrowers. The odd ratio is given by 1.4510 from Table 3 and this shows that being married would increase the odd of loan repayment by 1.4530.

Educational Level (edulev)

The educational level of the borrower represented by edulev is highly significant and positive. The positive sign indicates that the higher the educational level of the borrower the higher the likelihood of loan repayment. The coefficient is given by 0.1172 and indicates that a one-unit increase in the educational level of the borrower would increase the log odd of loan repayment by 0.1194 while holding other factors constants. The odd of loan repayment would increase by 0.8874.

Business Experience (busexper)

The business experience of the borrower is measured by the number of years the borrower has spent in operating the business. From the Table, the variable is significant at 1% and the coefficient shows a positive sign, this

indicates that the log odds of loan repayment will increase with a year increase in the business experience of the borrower by 0.1517. The odd of ratio indicates that a one-year increase in the business experience of the borrower will increase the old of loan repayment by 1.1638.

Family Size (famsiz)

The variable Famsi which represent the family size and measured by the number of person living in the household is negative and significant at 10% level. The coefficient indicates that a unit increase in the number of person in the family would decrease the log odds of loan repayment by 0.2025. The odd ratio shows that a one unit increase in the variable Famsi , would decrease the odd of loan repayment by the respondent by a factor of 0.81668.

Type of Business (typbus)

The variable typbus denotes the type of business activity engaged by the borrower and grouped into daily business and non- daily business. The daily businesses are those business activities engaged by the borrowers that involve essential daily selling of goods and provision of services while the non-daily businesses are not often day to day businesses. The variable has a positive sign and significant at 10%. The coefficient indicates that borrower that engaged in daily need are able to increase the log odd of their loan repayment by 0.5657. The odds ratio indicates that when the business of the borrower is in the area of daily needs this has the tendency of increasing the odd of loan repayment by a factors of 1.7638.

Interest Rate (intRat)

The variable interest rate which is represented as intRat has a negative sign for its coefficient and highly significant at 1%. The coefficient indicates that a unit increases in the cost of borrowing would decrease the log odds of loan repayment by 0.0001. The odd ratio shows that for a one-unit increase in the variable interest rate, the odd of loan repayment by the borrower decrease by 0.9986 while holding other variable constant.

Profit Level (Prolel)

The variable Prolel which stands for the profit level of the borrower although highly significant and with positive sign. The coefficient indicates that a one unit increase in the amount of profit earned by the borrower would increase loan repayment and this is given by the log odds of loan repayment of -1.8103. The odd ratio indicates that for a one unit increase in the profit earned by the borrower, the odd of loan repayment increased by 0.1636, while holding other factors constants.

Lending Method (lenmet)

The lending method which is represented as Lenmet is coded as 0 for individual lending and 1 for group lending. The variable has a positive coefficient and significant at 10%. The coefficient shows that when the lending method is in favour of individual lending the log odds of loan repayment by the

borrower would increase by 0.5917. Also, if the lending method is in favour of group lending the log odds of loan repayment will decrease by the odds of 1.8070 while holding other variable constant.

Loan Repayment Time (loreți)

This variable is the time lag between the period for the receipt of the loan and the repayment period is not having the expected sign and also not sufficient. The coefficient indicates that a unit increase in the repayment time will decrease the log odd of loan repayment by 0.2894. The old ratio indicates that for a one-unit increase in the variable Loret, the odd of loan repayment would decrease by 1.0354.

Training/Business enhancement Programme (trapro)

The variable trapro that represent the training/business enhancement programme is not significant but has the expected sign. This indicates that the coefficient shows a one unit increase in the level of training of the borrower would increase the log odds of loan repayment by -0.16487 and the odd ratio depicts that for a one unit increase in the level of training gained by the borrower, the odd of loan repayment increase by a factor of 0.8480 holding other factors constant.

CONCLUSIONS AND RECOMMENDATIONS

From the result it can be concluded that the age of the respondents, marital status and training/business enhancement programme are factors that have no influence in loan repayment among MEs in the study area while, gender (gende), marital status (Marsta), educational level (edulev), business experience, (busexp), family size (famsiz), type of business (typbuz), Interest Rate (intrat), Profit Level (prolev), lending method (lenmet), and loan repayment Time (loreți) are significant determinants of loan repayment in the study area.

It is therefore, recommended that when given loan out by microfinance banks these determining variables should be considered so that loan default can be reduced to the minimum level.

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