



# Determinants of Repayment of Loan Beneficiaries of Micro Finance Institutions in Southeast States of Nigeria

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## Abstract

The study investigated the loan repayment, its determinants and socio-economic characteristics of microfinance loan beneficiaries in the Southeast states of Nigeria. It was carried out in three states of the five southeast states. Using a multistage sampling technique, a total of 144 loan beneficiaries in the three segments of MFIs, namely; formal (commercial and development banks); semi-formal (NGOs-MFIs) and informal (ROSCAS, "Isusu" and co-operative societies) were randomly selected and interviewed in the three states. An ordinary least square (OLS) multiple regression analysis was carried out to isolate and examine the determinants of loan repayment from the respondents' perspective. Results showed that beneficiaries had low level of education, operated enterprises at a relatively small scale, had large family size and were of middle age. Further, it was found out that the majority of the respondents were involved in farming enterprise (crop and poultry) even though trading was the most prominent single non-farming enterprise (trading, processing and artisanship). The result affirmed that the informal sector respondents recorded the best repayment rate, followed by the respondents of semi-formal and the banks brought the rear. Outstanding among the determinants of loan repayments from the respondents' perspective were; loan size, level of education, experience, profitability and portfolio diversity. These, therefore deserve special attention in loan administration of MFIs.

### Keywords:

*Determinants of Repayment of MFIs Loan Beneficiaries, Nigeria*

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## INTRODUCTION

Microfinance institutions are those institutions, which provide micro-credit, savings and other services to the productive poor. The focal point of many studies on microfinance dwells in the domain of poverty (Kanbur, 1987). Poverty is insufficiency of means relative to human needs. It is estimated that about 70% of Nigeria's population was poor and most of them live in rural areas and their major occupation is farming (CBN, 2002). Nigeria ranks as one of the 25 poorest countries in the world, having ranked 148 out of 173 countries surveyed.

Inadequate infra-structural facilities, poor social services, low technical education, unstable growth patterns of the economy and neglect of agriculture, among other factors are largely responsible for the despicable poverty situation in Nigeria. The fall in the quality of life of Nigerians to a reasonable extent is traceable to the neglect of the agricultural sector and the overdependence of the oil sector. The role of small-scale farming in economic development of developing countries such as Nigeria is inestimable. Apart from providing employment opportunities to about 80% of rural population, they supply food, fiber and raw materials for the populace, local industries and exporters. Production is characterized by small size of land (often less than one hectare) and use of crude implements, poor yielding seedlings, inefficient techniques, poor storage facilities, low level of education, to mention but a few. All these cumulated to poor income and resilient vicious circle of poverty. Similarly, micro-enterprises suffer from income anemia and vicious circle of poverty of the owners.

There is concern that poverty reduction strategy (PRS) to date have tended to emphasize the public provision of goods and services (roads, water, etc) and paid less attention to productive sectors (Cabral Lidia, 2006). To break these chains of poverty, ensure food security and industrial growth of developing nations, there is need for increase investment in the agricultural sector by both the government and the farmers. It therefore becomes imperative to expand and strengthen the financial institutions to play catalytic roles in this regard, especially in the area of providing machinery and tools, improved inputs and farmers' education. Several studies, including Feijo (2001) and Oyeyinka and Bo-

lalarinwa (2009) have identified the positive impacts of credit in the operations of rural farmers.

Unfortunately, the formal financial institutions, especially the banks that are equipped to carry out these functions shy away from financing these farmers, on grounds that they are high risk ventures and involve huge administrative costs. This provided the opportunity for the informal financial sector such as money lenders (with its obnoxious interest rates), local co-operative societies, credit unions and thrift schemes that are less equipped to carry out this intermediation function, to key in and intensify credit delivery functions. Confirming this, the Central Bank of Nigeria (2005) noted that the formal financial system provides services to about 35% of the economically active population while the remaining 65% are excluded from access to financial services. According to the apex financial body, these 65% are often served by the informal sector through NGO-MFIs, friends, relations and credit unions.

Surprisingly, these informal institution apart from their high cost of credit, are performing exceedingly well in terms of loan repayment (which is the nightmare of formal financial institution). Also, their strong attribute is fast and efficient credit delivery with much less bureaucracies like collaterals which is replaced with trust and faith.

Loan repayment has been a critical problem of formal financial institutions in Nigeria. Studies in Imo State by Njoku and Odii (1991) recorded 27% repayment rate of the farmers, Njoku and Obasi (2001) in which 33.72% was recorded as repayment rate. This situation weakens the virility of the MFIs. According to CBN (2005), the weak capital base of the existing financial institutions, particularly the community banks (now transformed to micro finance banks), cannot adequately provide a cushion for the risk of lending to farmers and micro entrepreneurs without collateral. Further, poor repayment rate of credit reduces lenders net return thereby decreasing the ability of the institution to generate resources internally for institutional growth. In extreme cases, this may result in distress condition or outright liquidation of the institution. Besley (1994) affirmed that the issue of enforcing repayment constitutes a major problem in credit market. According to the author, enforcement problem arises in a situation in which the

borrower is able but unwilling to repay the loan.

One way to tackle the loan repayment problem is to investigate the factors which affect the loan repayment of MFIs. Eze and Ibekwe (2007) in their study on determinants of loan repayment in Orlu Local Government of Imo State, South-east, Nigeria, identified; loan size, age of beneficiaries, household size, and number of years of formal education and occupation as the key determinants. Similarly, Dayanandan and Welde-selassie (2008) in their study on loan determinants of small farmers in Northern Ethiopia, agreed with Eze and Ibekwe (2007) that amount of credit, educational status and occupation (non-farm income) were potent factors in loan repayment. Other factors they isolated as potent were; experience, repayment period and ownership of livestock.

This study is aimed at providing answers to the hydra-headed repayment problem. It is reasonable to expect that an impressive loan repayment would be mutually beneficial to both the farmers/micro-entrepreneurs and the loan institutions. On the part of the farmers and micro entrepreneurs, good credit ratings would definitely attract more loans with which to procure improved inputs and implements. In such situation, efficiency would improve as well as profitability and these are capable of lifting them out of the vicious circle of poverty. For the financial institutions, which depend mainly on interest income for their institutional growth, prompt loan repayment would mean reduced cost and enhanced profitability and robust growth.

Therefore, the broad objective of this paper is to determine factors affecting repayment rate of loan beneficiaries of MFIs in the Southeast States of Nigeria. The study specifically investigated the social-economic characteristics of the respondents; determine their loan repayment rate and its determinants.

## MATERIALS AND METHODS

The study was carried out in Southeastern states of Nigeria comprising of Abia, Anambra, Ebonyi Enugu and Imo States. The area had a population of 25.9 million, which is about 30% of the national population (2006). The Southeast states are among the mostly densely settled area of the country, with average population density

of 247 persons per square kilometer as against the national average of 96 persons per square Kilometer (NPC, 2006).

The choice of the area was because of intense activities of self help groups in various economic activities, including agriculture in the area. Also, there is a high degree of socio-cultural homogeneity in the study area as the inhabitants are mainly Igbos, known mainly for their hard work, self-reliance and economic prowess.

Multi-stage sampling technique was employed in the selection of

respondents who were mainly loan beneficiaries of commercial, development, community (micro finance) banks, NGO-MFIs groups and the local Isusu, co-operatives, ROSCAs members. The sample frame was provided by the Central Bank of Nigeria for NGO – MFIs; the banks and the local extension agents of the local government council.

In stage one, three out of five south-east states were purposively selected based on intensity of MFIs activities.

Stage two involved the selection of MFIs, which were stratified into formal, semi-formal and informal. From each stratum, four institutions were selected randomly. Thus, giving a total of 12 MFIs per state and 36 MFIs for the three states selected.

Finally, from each of the 12 MFIs in a state, four respondents were selected, randomly. Thus, giving a total of 48 respondents per state, and 144 respondents for the three states, representing the south-east states. The respondents were selected from 28 out of 57 LGAs of the three states and this represented about 49% coverage of the total number of the LGAs. The 28 LGAs came into the sample by chance factor as no deliberate effort was made to choose them.

From the selected respondents, which involved five enterprise-types namely; crop and poultry farmers, traders, agro-processors and artisans; calibrated as farming and non-farming activities. Primary data were collected with the aid of a structured and pre-tested questionnaire. The secondary data were collected from journals, textbooks, annual accounts, return from banks, UNDP and CGAP (the consultative group to assist the poorest) websites.

The data collected were subjected to both descriptive and quantitative techniques, to realize

the objectives of the study. The OLS multiple regression analysis was used to determine factors which affected repayment rate of loan beneficiaries. The linear functional form was adjudged the most appropriate for a repayment function. The model is stated as follows:

$$Y = f(X_1, X_2, X_3 \dots X_{13}, e)$$

$Y_1$  = Repayment rate (%)

$X_1$  = Loan size (N)

$X_2$  = Dependency ratio (children as percentage of total households size)

$X_3$  = Level of education (year of formal education)

$X_4$  = Age (years)

$X_5$  = Enterprise type (dummy variable: farming enterprise = 0, and non farming enterprise = 1)

$X_6$  = Experience (years)

$X_7$  = Profitability of respondents enterprises (N)

$X_8$  = Training (total no. of days per year)

$X_9$  = Interest rate (%)

$X_{10}$  = Repeat loan (%)

$X_{11}$  = Gender factor (percentage of group members who are female)

$X_{12}$  = Shocks (No. of family emergencies, crop/income loss due to incidence of pests and diseases, major social

Table 1(a): Distribution of the mean values of some economic indices of the respondents

Socio-economic Characteristics	Mean Value
Majority of sex: female	63
Marital Status	80
Family size	10
Age (years)	41
Experience (years)	8.8

Table 1(b): Distribution of Number of Years Spent in School

No of Years Spent in School	Frequency	%
None	43	29.9
1 – 6	31	21.5
7 – 12	46	31.9
13 -16	24	16.7
<b>Total</b>	<b>144</b>	<b>100.0</b>

Table 1(c): Distribution of Primary Occupation

Occupation	Frequency	%
Trading	48	33.3
Crop farming	41	28.5
Agro – processing	17	11.8
Poultry farming	27	18.8
Poultry farming	11	7.6
<b>Total</b>	<b>144</b>	<b>100.0</b>

events that occurred in the previous 18 months)

$X_{13}$  = Portfolio Diversity (proportion of members that have secondary occupation).

$e$  = error term.

## RESULTS AND DISCUSSION

### Socio-economic characteristics

The socio-economic characteristics are important sign posts in explaining the behaviour of the farmers and micro entrepreneurs in certain actions such as management and loan repayment decisions. They complement the results of the technical or quantitative analysis such as OLS multiple regression. Some of these characteristics are summarized in the tables.

Table 1(a) is the distribution of the mean value of some economic indices of the respondents. The majority of the respondents (63.2%)

Table 1(d): Distribution of respondents by enterprises size (turnover: Naira for traders, agro processors and artisans)

Class	Frequency	%
Less than 20,000	1	1.32
21,000 -51,000	2	2.64
52,000 – 82,000	2	2.64
83,000 – 113,000	10	13.15
114,000 – 113,000	10	13.15
114,000 – 144,000	21	27.63
145,000 – 175,000	18	23.68
176,000 – 206,000	12	15.79
Greater than 206,000	10	13.15
<b>Total</b>	<b>76</b>	<b>100.0</b>

Table 1(e): Distribution of poultry farmers by enterprises size (stock of birds)

Class	Frequency	%
less than 50	1	3.7
51-101	15	55.6
102 -152	8	29.6
152-203	2	7.4
Greater than 203	1	3.7
<b>Total</b>	<b>27</b>	<b>100.0</b>

Table 1(f): Distribution of crop farmers by farm size (hectare)

Class	Frequency	%
01 or less	12	29.27
0.2 -0.4	18	43.90
0.5-0.7	7	17.07
0.8-1.0	3	7.32
Greater than 1.0	1	2.44
<b>Total</b>	<b>41</b>	<b>100.0</b>



were female and male constituted only 36.8 percent. Eighty percent of the respondents were married and by implication were likely to have families, while 20% were single. On age, about 55% of the respondents were of middle age bracket and above, with about 45% being youths. The respondents have relatively large family with 10 as mean family size as against the recommended national figure of six. Over 70% of the respondents had eight years and above in experience in work with a mean figure of 8.8 years.

Table I (b) is the distribution of the respondents by level of education. It showed that about 70% of the respondents are literate and about 30% were not literate. This suggested that education was still a problem. Literacy level impacts positively in productivity and efficiency of farmers through adoption of technology and innovations.

Table 1(c) is the distribution of respondents by primary occupation. It suggested that trading was the primary occupation of the greatest number (33%) of the respondents. However, on the aggregate, farming constituted about 60% of the respondents' primary occupation while non-farm enterprise constituted about 40%. About 40% of the non-farming respondents have farming as secondary occupation.

Tables 1(d), (e) and (f) are the distribution of respondents by enterprise size (Naira) for traders/processors/artisans; stock of birds for poultry farmers and farm size (hectares) for crop farmers, respectively. Table 1(d) showed that over 71% of the respondents had a turnover of less than N144, 000 per annum. This suggested that the respondents were of low income group. Table 1(e) showed that over 80% of the poultry farmers had not more than 152 birds in their

Table 2: Distribution of Respondents by Sources of Loans

Class	Frequency	%
Co-op Soc.	17	11.8
NGO/MFIs	53	36.8
Commercial Banks	15	10.4
ROSCAS	24	16.7
DFI (NACRDB)	21	14.6
Community Banks (MFBs)	14	9.7
<b>Total</b>	<b>144</b>	<b>100.0</b>

stock. The mean stock of birds for these farmers was 102 birds suggesting small-scale operations. Table 1(f) showed that over 90% of the crop farmers owned or cultivated not more than 0.7 hectares of land. The mean size of farm of the respondents was 0.46 hectare, suggesting that they were operating mainly on a small-scale.

### Sources of Loan and Repayment Rate

Table 2, showed the distribution of respondents according to sources of their loan. The NGO-Microfinance Institutions provided loan to 38.8% of the respondents. This was followed by Rotation Savings and Credit Association (ROSCAS) (16.7%), NACRDB (14.6%), co-operative societies (11.8%), commercial banks (10.4%) and Community Banks (or Microfinance Banks) (9.7%).

On loan repayment, this was segmented into prompt repayment (for those repayments that were effected as scheduled) and overall repayment (for those repayments that were effected not as scheduled and of course, which involved recovery costs on the part of the financial institutions) as indicated on Table 3(a). On prompt repayment, the respondents of informal institutions recorded an average of 90%, repayment rate followed by semi-formal institutions (NGO-MFIs) 73.57%

Table 3: Loan Repayment of Respondents

Enterprise (or MFI Category)	Frequency	Repayment(%)	
		Prompt	Overall
a) MFI Categorization			
Formal	12	43.04	56.58
Semi- Formal	12	73.57	84.91
Informal	12	90.00	100.00
b) Enterprise Type			
Crop Farming	41	55.47	
Poultry Farming	27	41.20	48.33 (AV.)
Trading	48	78.78	
Agro-processing	17	70.79	
Artisans	11	61.50	70.35 (AV.)

Table 4: Distribution of Respondents by reasons for Default

Item	Frequency	%
Item	17	11.8
Poor harvest due to crop failure	10	7.0
Low market price	41	28.5
Incidence of Pest and Diseases	24	16.3
Untimely loan disbursement	19	13.2
Family commitments	50	35.0
	<b>144</b>	<b>100.0</b>

and formal institutions (banks) 43.04%. On overall repayment, the respondents of informal financial institutions recorded 100% repayment rate. This was followed by semi-formal institutions 84.91% and formal institutions 56.58%. Table 3(b) indicated that the respondents in trading repaid about 79% of their loan promptly. This was followed by agro-processors (about 71%). In general, non-farming enterprises on the average repaid about 70% of their loan as against 48% of farming enterprises. This could be attributed to the complex and risky nature of farm enterprises.

Table 4 showed the reasons for default. It showed that family commitments ranked highest (35%) among the reasons adduced for default. This was followed by low market prices (28.5%), incidence of pests and diseases (16.3%), untimely disbursements (13.2%) and crop failure (7%). Family commitments (like school fees, extended family problems, burial and other cultural ceremonies) were a big burden on the respondents

as well as low market prices, especially during harvest, occasioned mainly from lack of poor storage facilities.

#### Determinants of Loan Repayment of Respondents

Table 5 showed the factors, which affected loan repayment and were calibrated as determinants of loan repayment. It indicated that out of 13 explanatory variables, five were the most potent factors. The Coefficient of Multiple Determination ( $R^2$ ) was 0.5022, suggesting that about 50% in the variation of loan repayment was accounted for by the variations of the explanatory variables. This suggests that there may be other factors not included in the model. If  $R^2 = 1$ , it implies that there was 100% explanation of the variation in loan repayment by the explanatory variables or regressand. However, if  $R^2 = 0$ , it means that the explanatory variables do not explain any changes in the criterion variable or loan repayment. The F-value is used to

Table 5: Determinants of Loan Repayments of Respondents:

VARIABLE	UNIT	COEFFICIENT	T-RATIO
Loan Size	Naira	12.0318	2.9272*
Dependency ratio	Percent	-7.1043	-1.1422
Level of education	Years	15.9122	2.6372*
Age	Year	-6.0359	-1.0751
Enterprise type	Dummy	8.2134	1.0359
Experience	Years	10.4494	3.3368*
Profitability Index	Number	17.0318	4.0632*
Training period	Days	9.4227	1.1725
Interest rate	Percent	-5.0389	-1.2260
Repeat loan	Dummy	9.1163	1.1339
Gender factor	Percent	11.0295	1.0870
Shocks	Likert Ranking	-15.0214	-1.0019
Portfolio diversity	Dummy	6.9943	3.3928*
Constant		39.9133	
$R^2$		0.5022	
F-value		10.0884	
N		144	
d.f.		130	

LOS = \*5%

test whether or not there is significant impact between the dependent variable and the independent variables. In regression equation, if F-calculated is greater than F-tabulated, then there is significant impact between the dependent variable and the independent variables. If otherwise, the reverse is the case.

The five potent variables which affected loan repayment were; loan size, level of education, experience, profitability and portfolio diversity and they are subsequently discussed.

### (a) Loan Size

Loan size was significant at the 5% LOS and was positively related to repayment rate. This implies, the greater the size of the loan, the lower the default. This was true up to a certain point as there was an optimum amount of loan (or funds) that would be required to break even in projects. Moreover, it is contended that bigger loans make possible larger investments with potentially higher returns. About 75% of the loan beneficiaries indicated that the sizes of their loans were inadequate, thus supporting this viewpoint. Also, [Njoku and Obasi \(2001\)](#) isolated loan size, among two other variables, that are important and have positive relationship with loan repayment under ACGFS in Imo State.

Similarly, [Olagunju \(2007\)](#) in his study on the impact of credit use, agreed with this view point.

The second perspective to this variable was the larger the loan, the higher is the borrower's cost of delaying payment. A larger loan is more difficult to repay if allowed to accumulate especially where there are compounding interest and sanctions. This second factor puts pressure on the borrower to reduce late payments and serious default. In the sample, recorded incremental penalty rate of interest for delay payment was minimal.

### (b) Level of Education

The level of education was significant at the 5% level, and was

positively signed as hypothesized. This suggests that as the level of education improved the beneficiary also improved the ability to read and write and in the process, improved dexterity in the occupation, which concomitantly improved profit and the capacity to repay loans. This is in agreement with [Coelli and Battese \(1996\)](#) in

India.

respondents were 6.4 while the figure for non literate respondents was 30%, which suggested that there were lots of room for improvement in their education status.

### (c) Experience

The coefficient of experience was positive and significant at 5% level suggesting that the length of experience in occupation was a potent factor in loan repayment. This was because experience provided the compass with which the entrepreneur navigated the turmoil business environment and was a veritable decision tool. The result and that of [Parikh and Mirkalan \(1995\)](#) supported this hypothesis. The respondents had eight or more years in terms of business experience. However, [Ogundare \(2009\)](#) reported a negative coefficient of age and farming experience, which implies that output decreased as each of these variables increased. It suggests that the more the years of experience of the farmer and by implication, the older in age and the less productive and the tendency of increasing risk aversion.

### (d) Profitability

The coefficient of profitability index was positive and significant at 5% level and was in consonance with hypothesis, which stated that profitability index (ratio of income to costs) had direct and strong relationship with repayment. This was because difficulties in repayment arose whenever a business in unprofitable. It is an indication or index of management ability. In the event of not making profit, enterprises including NGOs (which are expected to break-even), become unsustainable.

### (d) Portfolio Diversity

This indicates the proportion of beneficiaries who have secondary occupation. It is therefore an indicator of asset portfolio diversity within the group/respondents. The study showed that the majority (66%) of the respondents have trading as their secondary occupation. Due to diversity, income within groups tended to be less covariant, thus making it easier to bail out errant members. As hypothesized, the coefficient of the variable was positively signed and significant at 5% level, indicating strong relationship.

The linear equation can generally be represented thus:

$$Y1 = 39.9133 + 12.0318X1 - 7.1043X2 + 15.9122X3 - 6.0359X4 +$$

$$(2.93^*) \quad (2.64^*)$$

$$8.2134X5 + 10.44946 + 17.0318X7 + 9.4227X8 - 5.0389X9$$

$$(3.34^*) \quad (4.06^*)$$

$$+9.1163X10 + 11.295X11 - 15.0214X12 + 6.9943X13 + 6.0038$$

$$(3.39)^*$$

$$R^2 = 0.5022 \quad F\text{-Value} = 10.0884 \quad *1\%LOS$$

### CONCLUSION

The respondents are certainly micro/small scale operators with low income, poor educational background and relatively large family size and its attendant burden and challenges. The respondents were of middle age and females were predominant. Farming was the main occupation and trading constituted a third of the respondents' occupation. Nevertheless, half of the trading respondents have farming as their secondary occupation.

The major source of their loans were the informal sector namely; NGOs-MFIs and ROSCAs. The respondents of the informal sector performed most creditably in terms of loan repayments. This was followed by the semi-formal (NGOs-MFIs) and the banks brought the rear. This perhaps may be due to the fact that screening, monitoring and enforcement of payment were carried out by the group members themselves. In terms of enterprise type, trading was found to be the most important with respect to loan repayment. This was followed by agro-processors and artisan (others). Crop and poultry farming brought the rear. In general, non-farming enterprises performed better than farming enterprises in terms of loan repayment. The difference could be attributed to the complex and risky nature of farming, hence the need for extra ordinary support for farming enterprises.

In terms of loan administration and repayment, adequate attention should be paid to loan size, level of education, experience, profitability, portfolio diversity. These constituted the determinants of loan repayment from the respondents' perspective and therefore deserve more focus and attention.

Further, formation of autonomous cooperative societies, provision of storage facilities and re-

duction of some associated expenses that affect family commitments (e.g. school fees) will help reduce loan default.

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