

Determinants of Loan Repayment among Smallholder Farmers in Ogbomoso Agricultural Zone of Oyo State, Nigeria

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KEYWORDS Loan repayment, determinants, smallholder farmers, Oyo State, Nigeria.

ABSTRACT The study examined socio-economic factors influencing loan repayment among small scale farmers in Ogbomoso agricultural zone of Oyo State of Nigeria. Data collected from 100 farmers from 10 villages in 2 Local Government Areas from the zone through a multistage random sampling techniques were analyzed using descriptive statistics and Ordinary Least Square multiple regression analysis. Results revealed that farmers were on the average 47 years with fewer years of farming experience with credit use (average of 4 years). The average farm size of 3 hectares cultivated by the respondents indicate the small scale nature of their farming business. Results of multiple regression analysis showed that amount of loan obtained by farmers, years of farming experience with credit use and level of education were the major factors that positively and significantly influenced loan repayment. However, age of farmers influenced loan repayment negatively but significantly. The study recommends that for effective farm management and increase in agricultural production, further disbursement of loans should be targeted at young and better educated farmers who are more likely to adopt new innovations in agricultural production than their older counterparts.

INTRODUCTION

Agricultural lending involves giving out of credit (in cash and kind) to small-scale farmers for the purpose of farming (Abbot and Makeham, 1979). There is no doubt about the crucial roles of credit in economic development. In Nigeria, agricultural credit has long been identified as a major input in the development of the agricultural sector. One of the reasons for the decline in the contribution of agriculture to the economy is lack of a stable national credit policy and paucity of credit institutions which can assist farmers (Rahji, 2000). According to Rahji (2000) credit or loanable fund (capital) is viewed as more than just another resource such as labour land, equipment and raw materials. Shepherd (1979) opined that from its ability to energize or motivate credit determines access to all of the resources on which farmers depend. Credit can be considered from its ability to energize or motivate other factors of production. It can make the latent potential or under-used capacities functional. In such situation, credit acts as a catalyst or elixir that activates the engine of growth, enables it to mobilize its inherent potentials and to advance in the planned or expected direction.

One of the main objectives of any government

is to strive to become self reliant in food production. In pursuance of this, credit schemes are put in place to increase the access of small-scale farmers to credit facilities so that food and cash crop production would be increased. According to Ojo (1998) one of the problems confronting small-scale enterprises including farmers in Nigeria is inadequate capital despite the fact that small scale farmers produce the bulk of the food consumed locally and some export crops which generate foreign exchange to the country. This situation has attracted attention of Nigerian government and this has led the federal government of Nigeria into the creation of specialized institution such as the Nigeria Agricultural and Cooperative Bank (NACB) which later translated into the Nigeria Agricultural Cooperative and Rural Development Bank (NACRDB) to cater for credit needs in the agricultural sector (Oladeebo, 2003). Government had also mandated the commercial banks in Nigeria to give credit facilities to the agricultural sector of the country (Ajakaiye, 1998).

Thus, in Nigeria, in order to increase agricultural production and hence increasing food self sufficiency there is the need to pump more capital into agricultural sector. Availability of adequate and timely credit will help in expanding the scope of operation and adoption of new technology as

well as enhancing the purchase and use of some improved inputs which are not available on the farm.

In spite of the importance of loan in agricultural production, its acquisition and repayment are fraught with a number of problems especially in the small holder farming (Awoke, 2004). Osakwe and Ojo (1986) reported that large rate of default has been a perennial problem in most agricultural credit schemes organized or supported by Nigerian government. Most of the defaults arose from poor management procedures, loan diversion and unwillingness to repay loans. A lot of studies have noted the indispensability of credit in the process of socio-economic transformation (Osuntokun, 1980; Ewuola and Williams, 1995; Ijere, 1998; Nnadozie and Uzoigwe, 2002). None of these studies examined the influence of socio-economic factors on loan repayment in Ogbomoso agricultural zone of Oyo State, Nigeria.

Hence, the objectives of this paper were to describe some farmers' socio-economic characteristics as well as ascertaining which of these characteristics significantly influence loan repayment. This study is justified because understanding of determinants of loan repayment will provide basis for policy maker in developing appropriate policy mix which will ensure prompt loan repayment by small holder farmers as well as increasing agricultural production which may result in food self-sufficiency in Nigeria.

METHODOLOGY

The study was conducted in Ogbomoso agricultural zone of Oyo State. There are 5 Local Government Area (LGAs) in the zone namely; Ogbomoso North, Ogbomoso South, Ogo-Oluwa, Oriire and Surulere LGAs. The zone covered for the study have both the agro climatic and soil type conditions conducive to the cultivation of arable crops such as maize, cassava, yam, tomatoes, and cowpea. Small scale processing and manufacturing are also common in the area.

Multi-stage sampling technique was adopted in selecting the respondents. The first stage involved purposive selection of 2 LGAs in the zone where there were preponderance of small holder farmers that obtained loans for agricultural purposes. The second stage involved a simple random selection of 5 villages from each of the 2 LGAs selected. Thus, farm settlement, Ibapon, Ile-Titun, Owolaake and Sekona villages were

selected from Ogbomoso South LGA, while Adetunji, Adeogun, Ajaawa, Oolo and Odo-Oba were selected from Ogo-Oluwas LGA. The last stage involved random selection of 10 farmers from each of the 10 villages. Thus, 100 representative small holders farmers were used for the study.

The study made use of primary data obtained through structured questionnaire supplemented with oral discussion. Data covering socio-economic characteristics such as age, farm size, farming experience with credit use, amount of loan obtained, amount of loan repaid, income earned *et cetera* were elicited from the respondents.

Data collected were analyzed through the use of descriptive statistical tools such as means and percentages as well as multiple regression technique of analysis.

Model Specification: The estimated model for determinants of loan repayment is implicitly stated below:

$$Y = F(X_1, X_2, X_3, X_4, X_5, X_6, U) \dots \dots \dots (1)$$

Where

Y = amount of loan repaid (Naira)

X₁ = amount of loan collected and spent on agricultural production (Naira)

X₂ = annual net farm income

X₃ = age (years)

X₄ = farm size cultivated (hectares)

X₅ = farming experience with credit use (years)

X₆ = level of education (years spent in formal educational institution)

U = error term

Four functional forms of the specified model were tried and their *a priori* expectations are explicitly stated as:

Linear Form

$$Y = b_0 + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + b_6X_6 + U \dots \dots \dots (2)$$

Semi-logarithmic Form

$$Y = \ln b_0 + b_1 \ln X_1 + b_2 \ln X_2 + b_3 \ln X_3 + b_4 \ln X_4 + b_5 \ln X_5 + b_6 \ln X_6 + U \dots \dots \dots (3)$$

Exponential Form

$$\ln Y = b_0 + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + b_6X_6 + u \dots \dots \dots (4)$$

Double-logarithmic Form

$$\ln Y = \ln b_0 + b_1 \ln X_1 + b_2 \ln X_2 + b_3 \ln X_3 + b_4 \ln X_4 + b_5 \ln X_5 + b_6 \ln X_6 + u \dots \dots \dots (5)$$

Where Ln = natural logarithms b₀, b₁, ..., b₆ = estimated coefficients

RESULTS AND DISCUSSION

Socio-economic Characteristics: The results of socio-economic characteristics of loan recipients is summarized in Table 1. The average age of farmers is 47 years which indicates that

farmers are young and are in their productive age. Credit institutions might be willing to give loan facility to young and dynamic farmers who are more likely to adopt new innovations than the older farmers. The average family size of respondents is 8 which indicates large household size typical of a developing country like Nigeria. The means values of 3 years and 4 years obtained for farm size and years of experience with credit utilization respectively are indications of small scale nature of farming business and that farmers have not had a substantial years of experience in credit utilization.

Table 1 also shows that most of the respondents (38.0%) had secondary school education while only 7.0% of the respondents had no formal education. Majority of loan recipients are male (65.0%) while most of the respondents (56.0%) obtained loan to expand the scope of their farming operations. It could also be seen from table 1 that non-institutional sources is by far the major source of loans to the farmers (82.0%), while only 18.0% of the respondents obtained their loans from commercial banks (institutional sources).

Factors Influencing Loan Repayment:

Results of multiple regression analysis of the determinants of loan repayment for all the four functional forms tried are presented in table 2 below. Double-log functional form was chosen as the lead equation based on the high value of

adjusted R^2 , more significant coefficients and expected signs. Five out of the six variables in the regression had positive coefficients while the remaining one had negative coefficients. The amount of loan collected and spent on agricultural production (X_1) had a positive coefficient of 0.768 and was significant at 5 percent level of significance while the value of positive coefficients of farming experience with credit (X_5) and level of education (X_6) which were significant at 10 percent level of significant were 0.144 and 0.114 respectively. However, age had a negative coefficient of 0.194 and was significant at 10 percent level of significant. The adjusted R^2 value of 0.532 obtained indicates that about 0.53% of the observed variation in the amount of loan repaid by the farmers could be attributed to the combined influence of the independent variables included in the regression equation.

The implications of the positive and significant explanatory variables are that the larger the loan size, the more money the farmer has for investment. This might lead to increased possibility of adopting better technology which might enhance the income generating ability of the farmer, and consequently leading to more loans been repaid. Also, the importance of farming experience with credit use is emphasized in the results obtained because the more the farming experience with credit use, the more is its ability to generate enough funds to repay agricultural loans. This might arise from better management of funds, thus resulting in increased productivity which in turn leads to higher farm income and high repayment of loans. Literate farmers will repay more of the loans obtained than illiterate farmers having understood the advantages of prompt loan repayment and not regarding such loans as their own share of *national cake*. However, the negative but significant age variable implies that the older the borrower is the lower the probability of loan repayment.

CONCLUSION AND RECOMMENDATIONS

The results obtained in this study revealed that amount of loan collected, age, farming experience with credit use and level of education were the major significant socio-economic factors determining loan repayment in the study area. However, other socio-economic factors which did not have significant influence on loan repayment are gross farm income earned by respondents and

Table 1: Summary statistics of selected socio-economic characteristics of loan recipients

Variables	Values
Mean age (years)	47
Mean household size	8
Mean farm size (ha)	3
Mean years of experience with credit utilization	4
Educational level (in %)	
None	7.0
Adult education	18.0
Primary education	34.0
Secondary education	38.0
Post secondary education	3.0
Sex (in %)	
Male	65.0
Female	35.0
Reasons for obtaining loans (in %)	
To establish new farms	56.0
To hire more labour	40.0
To purchase farm chemicals	4.0
Sources of loan (in %)	
Friends and relatives	2.0
Money lenders and produce buyers	3.0
Farmers' cooperative thrift and credit society	77.0
Commercial banks	18.0

Source: Data analysis

Table 2: Regression results of determinants of loan repayment

Variables	Linear	Double-log	Exponential	Semi-log
Constant	-1752.04 (-0.380)	1.073 (0.874)	8.813 (48.44)	-197291 (-5.671)
Amount of loan Collected (X_1)	0.629* (6.466)	0.768* (7.392)	2.77×10^{-5} * (7.239)	15859.2 (5.405)
Annual net farm income (X_2)	0.163* (4.241)	0.135 (1.516)	2.803×10^{-6} ** (1.854)	7558.3* (3.000)
Age of respondents (X_3)	-123.93 (-1.375)	-0.194** (-1.811)	-2.10×10^{-3} (-0.579)	-7749.76 (-1.211)
Farm size cultivated (X_4)	313.96 (0.371)	0.101 (0.872)	3.109×10^{-2} (0.932)	2969.03 (0.907)
Farming experience with use of credit (X_5)	432.45 (1.080)	0.144** (1.981)	3.879×10^{-2} * (2.456)	2969.03 (0.619)
Level of education of respondents (X_6)	825.69 (1.227)	0.114** (1.865)	2.85×10^{-2} (1.074)	3077.87 (1.790)
R ²	0.578	0.561	0.571	0.465
Adjusted R ² F- value	0.550 21.20*	0.532 19.79*	0.543 20.62*	0.430 13.45*

Source: Data analysis

* Significant at 5% level

** Significant at 10% level

Values in parenthesis are the t- values.

cultivated farm size. Based on the results obtained in the study, it is recommended that further disbursement of loans should be directed at young and dynamic farmers who are more likely to adopt new innovations in agricultural production than their older counterparts. Adult education should be organized for non-literate farmers in the study area because literate farmers are also likely to adopt new innovations which may enhance their income and thereby positively influence loan repayment.

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