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DETERMINANTS OF CREDIT RATIONING: A STUDY OF FORMAL CREDIT GROUPS IN EKITI STATE FARMERS DEVELOPMENT UNION

SUMMARY

Failure of investment, failure of farmers to use borrowed funds for production and the refusal to return borrowed funds are some of the causes for low repayment performance: hence the need for credit rationing. The study was therefore aimed at determining factors affecting credit rationing among groups in Farmers Development Union (FADU) of Ekiti State.

The study was carried out in four local government areas (Ikere, Ado-Ekiti, Ayedun and Ijan Ekiti) in Ekiti State, Nigeria. A total sample size of 33 farmer groups within the union comprising of 10 members each were selected via sampling proportionate to size. Secondary data obtained from records of the groups spanning a single year period was used for the study in addition to interview schedule.

Findings, however, revealed that loan beneficiaries of FADU must be registered members of the organization and must have at least 25% loan request as savings before loans could be granted to them. Also, 66.7% of the beneficiaries were in their active working age and 84.8% of the groups consisted mainly of women with trading as their major occupation. All the beneficiaries were married with 36.4% of the women having a mean household size of 6 people. The regression analysis showed that educational level and income were socio-economic characteristics that positively affect repayment performance. Also, the probit model revealed that income, outstanding debt and leverage of beneficiaries were significant determinants of loan rationing. However, to fully harness the benefits inherent in credit rationing by microcredit institutions; proper monitoring of borrowed funds was encouraged as repayment performance and credit rationing are interwoven.

Keywords: Credit rationing, FADU, Probit model, Repayment performance and Leverage

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INTRODUCTION

Credit is essential in poor rural economies to foster economic development. It is required to finance working capital and investment in fixed capital, particularly among farmers too poor to accumulate much saving. Agricultural credit is therefore expected to play a critical role in agricultural development (Duong and Izumida, 2002). Farm credit has for long been identified as a major input in the development of the agricultural sector in Nigeria. The decline in the contribution of the sector to the Nigeria economy has been attributed to the lack of a formal national credit policy and paucity of credit institutions, which can assist farmers among other things. The provision of this input is important because credit or loan-able fund (capital) is viewed as more than just another resource such as labour, land, equipment and raw materials.

In Nigeria for instance, a maize farmer harvests his crops once or twice a year, whereas his consumption is continuous. For a livestock farmer, the interval between the realization of income and the act of expenditure is shorter and his income is more or less continuous, provided he has enough breeding stock and ready access to market facilities. There is also the problem of indivisibility of fixed capital – for instance construction of wells, purchase of pump sets, farm implements, bullocks, tractors and the improvement of soil and moisture availability all require large expenditures that cannot be divided into smaller payments unless credit is available.

Rationing means either a part of the credit applied is granted or sometimes the full amount applied for is disapproved. Credit rationing therefore, results from a situation where the demands for loans exceed supply at the prevailing interest rate. The credit rationing of farmers often results in credit constraint condition that leads to low productivity (Akinterinwa, 2005). Therefore, according to Von Pischke (1991), small holders may be perpetually trapped in poverty due to lack of finances needed to undertake productive investments. At a given interest rate, lenders may refuse to give credit to some applicants, while rationing or fully agreeing to the loan amount demanded by other applicants. Credit rationing policy is, however, regressive to the small-holder farm households as it has serious implication for growth and equity objectives of development policy. This is because when credit is rationed some borrowers cannot obtain the amount of credit they desire at the prevailing interest rate, nor can they secure more credit by offering to pay a higher interest rate.

In essence, the rationing of credit occurs when lenders grant the loans demanded by applicants who are identified as credit worthy borrowers while granting loans smaller than demanded to some applicants and completely rejecting other applicants willing to pay the interest rate demanded. Credit rationing behavior of financial institutions may theoretically be influenced by a number of factors which include the borrower's characteristics (age, gender, wealth, experience, credit history), firm characteristics (business experience, risk profile, earnings), and loan characteristics (amount demanded, loan maturity, collateral offered, interest rate). The reasons for low repayment were classified

into three: the failure of the investment, the failure of farmers to use borrowed funds for production and the refusal to repay. Each microfinance institution tries to maximize its repayment performance whether it is profit oriented or not.

It is therefore worthy of note that non-governmental organizations (NGOs) dominate the microfinance market and their services are directed at individuals and household of the lower income strata. The clients of microfinance institutions are predominantly small traders as well as small and medium sized entrepreneurs. For the purpose of this research work, attention is focused on the Farmers Development Union (FADU). FADU is a multisectorial membership organization, using the instrument of microfinance to organize the Nigerian low income informal entrepreneurs, largely women, around social issues (health, literacy, environment, family planning and youth development) to achieve better living conditions for its members.

Loan beneficiaries of FADU are guided by certain conditions which include; being a registered member of the organization, paying dues and savings regularly in the various groups they are involved with and having at least 25 percent loan request as savings among others. Rationing of loan becomes necessary because resources are limited and there are high covariant risks involved especially in agricultural production. Hence, it becomes imperative to carry out a study on the determinants of credit rationing among formal credit groups in Farmers Development Union (FADU) with the specific aim of highlighting key determinants in their decision making process and accessing factors influencing credit rationing decisions and loan repayment.

MATERIAL AND METHODS

Ekiti state is located in south western Nigeria. It is located between longitudes 4, 5 and 45⁰ East of the Greenwich meridian and latitude 7, 15 and 8, 5⁰ North of the Equator. It is bounded in the South by Kwara and Kogi States. In the east by Osun State and Ondo State in the South. Ekiti State has sixteen (16) local government areas. However, because the people of Ekiti state live mainly in towns, four (4) towns (Ikere, Ado-Ekiti, Ayedun and Ijan-Ekiti) were purposively selected within the FADU framework for the purpose of this study. The main occupation of the people in this area is mainly trading and agriculture which comprises of livestock and crop production. Data used for this study were mainly secondary data from 2010/2011 records of the groups kept at the head office of FADU and information extracted from interview with staff and management of the establishment. The information gathered include; (mean age, mean income etc.), loans issuing criteria, loan repayment performance status, loan repayment period for each borrower, loan repayment (₦), Savings (₦), Amount demanded (₦) and Amount supplied (₦) from a total of 33 farmer credit groups comprising of 10 members each within the FADU framework. Data collected were analysed using descriptive statistics, regression analysis and the probit model. Regression analysis was carried out to determine the effect of socio-economic characteristics of beneficiaries on repayment rates

The regression empirical model is expressed as:

$$Y = b_0 + b_1X_1 + b_2X_2 + b_5X_5 + b_6X_6$$

Where Y is the rate of repayment performance, b_0 = intercept

X_i = independent variables ($i = 1, 2, 5$ and 6) as defined below:

X_1 = Age

X_2 = Educational status

X_5 = Household size

X_6 = Income

However X_3 and X_4 which represent occupation and years of involvement respectively, were not included due to their invariance.

The Probit model was used to determine the factors of credit rationing

The model is expressed as:

$Y = \beta_0 + \beta_1 X_1 + \Sigma_i$ where β_0 = intercept, Σ_i = error term, X_1 = independent variables ($I = 1, 2, 3, \dots, 11$), β_1 = regression co-efficient and Y = dependent variable having values of 1 or 0, if the groups credit were rationed or not.

Where; Y = 1, if the group's credit was rationed

Y = 0, if the group's credit was not rationed

X_1 = Mean age of beneficiaries (Yrs.)

X_2 = Mean Educational level

X_3 = Occupation

X_4 = Years of involvement

X_5 = Mean Household size

X_6 = Mean income of beneficiaries (₦)

X_7 = Loan repayment (₦)

X_8 = Mean savings of groups (₦)

X_9 = Share of Women (%)

X_{10} = Group's outstanding debt (₦)

X_{11} = Mean leverage of the group (measured as outstanding debt/income)

RESULTS AND DISCUSSION

The socioeconomic characteristics of the respondents as shown in Table 1 revealed that more (84.8%) female groups were beneficiaries of FADU in Ekiti state than their male counterparts. Also, it was revealed that 66.7% of the beneficiaries were between the age bracket 35-39 years, showing that most of the beneficiaries are adults and in their economically active years. The average household size was 6 people with 69.7% of the beneficiaries having between 4-6 members. This reveals that there is a low tendency among the beneficiaries to consume the loans meant for production/investment in business thus enhancing loan repayment. All (100%) group beneficiaries of FADU were married indicating that there was a high degree of responsibility expected in implementation of loan and repayment subsequently.

The results from Table 1 further revealed that 66.7% of the FADU beneficiaries had basic primary education implying that they exhibited a certain

degree of literacy, thereby making communication flow easy and enable the beneficiaries grasp the intricacies of loan utilization and repayment. An appreciable proportion (81.8%) of FADU beneficiaries in Ekiti state are traders while a minute 18.2 percent invested in farming. This occupational pattern might not be unconnected with the fact most of the FADU beneficiaries were females. Also, 66.7% of the beneficiaries earned an average monthly income of ₦46,000 - ₦58,000. This implies that most of the loan beneficiaries of FADU in Ekiti state were low income earners hence, the need for credit facilities to help boost their production/investment capabilities.

Table 1. Socio-economic characteristics of FADU beneficiaries in Ekiti state, Nigeria

| Variables | Frequency | Percentage (%) |
|-------------------------|-----------|----------------|
| Gender | | |
| Male | 5 | 15.2 |
| Female | 28 | 84.9 |
| Age | | |
| 30 – 34 | 2 | 6.0 |
| 35 – 39 | 22 | 66.7 |
| 40 – 44 | 6 | 18.2 |
| 45 - 49 | 3 | 9.0 |
| Household size | | |
| ≤ 3 | 4 | 12.1 |
| 4 - 6 | 23 | 69.7 |
| ≥ 7 | 6 | 18.2 |
| Mean household size - 6 | | |
| Marital status | | |
| Married | 33 | 100 |
| Educational status | | |
| 5 – 7 | 22 | 66.7 |
| 8 – 10 | 8 | 24.1 |
| 11 and above | 3 | 9.0 |
| Occupation | | |
| Trading | 27 | 81.8 |
| Farming | 6 | 18.2 |
| Income (₦) | | |
| 33,000 – 45,000 | 6 | 18.2 |
| 46,000 – 58,000 | 22 | 66.7 |
| 59,000 and above | 5 | 15.2 |

Source: Secondary data (FADU, 2012)

Determinants of Credit Rationing

The probit model was employed to analyze factors that determine the rationing of credit for FADU beneficiaries. The results of the probit model show

that income of the beneficiaries, outstanding debt and leverage are significant variables that determine the rationing of credit among FADU beneficiaries in Ekiti state, Nigeria. The result in Table 2, shows that as income of FADU beneficiary increases, the probability of credit being rationed decreases by 0.0004. This implies that as the average income of loan beneficiaries within FADU increases, there is a higher probability of loan repayment and a low tendency for the group's loan to be rationed. This agrees with the study carried out by Sjostrom and Morelli (2002), that a decrease in wage (income) would increase the probability of credit rationing.

Furthermore from Table 2, the outstanding debt and leverage of the groups were significant at 10% level. This implies that a unit increase in the outstanding debt of the beneficiaries of FADU, will increase the probability of the group's loan being rationed by 0.00015. The leverage of the groups (outstanding debt service/income) was significant but negative denoting an inverse relationship. Therefore, as leverage of the groups reduces, the probability of credit rationing increases. The modal leverage was put at 1.10, which is relatively higher than 1, depicting that non-equity was greater than equity of the beneficiaries. A contrary view however from the study by Zeller (1994), is that the higher the leverage, the higher the probability of being constrained.

Table 2. Probit Analysis showing determinants of Credit Rationing

| Explanatory Variables | Description of variables | Regression coefficient | T-Value | Mean of variable (X) |
|-----------------------|--------------------------|------------------------|---------|----------------------|
| * | Constant | 29.481** | 2.600 | |
| X ₁ | Age | -0.100 | -1.118 | 38,788 |
| X ₂ | Education | -0.157 | -0.742 | 7.888 |
| X ₅ | H/H size | 0.452 | 1.199 | 5.303 |
| X ₆ | Income | -0.000** | -2.212 | 51354.545 |
| X ₈ | Savings | -0.000 | -0.667 | 1160.606 |
| X ₁₀ | Outstanding debt | 0.000* | 1.864 | 71060.758 |
| X ₁₁ | Leverage | -7.928* | -1.958 | 1.432 |

Source: Data analysis, 2012

** - Significant @ 5% ($t > 1.96 < 2.58$)

* - Significant @10% ($t > 1.64 < 1.96$)

Effect of Socio-Economic Characteristics of Respondents on Repayment Rate

The value of the coefficient of determination (R^2) is 0.87, implying that, 87 percent of the total variation in rate of loan repayment is explained by the explanatory variables included in the model. The F-value (47.29) is significant at 0.05 level depicting that the exogenous variables jointly explain the endogenous variable. Therefore, the regression model is significant/ is a good fit. Educational level and income status of the beneficiaries were significant at 5% level. The results from Table 3 clearly show that as educational level of the groups increase, so will repayment rate increase by 0.535. This implies that as more people within a group get educated and enlightened, repayment performance of such a group

will be enhanced as they won't see the loan granted to them as their share of the "national cake".

Ahlin and Townsend (2007) found that more productive groups, measured by their education, have better repayment performance. An explanation for our results may lie in the fact that highly educated groups are less credit rationed. FADU typically begins by lending small amounts to groups and then increasing the loan size for groups with satisfactory repayment performance. If a group faces a high degree of credit rationing it implies that this group has unfulfilled credit demand. Also, Bhatt and Tang (2002) conducted a study to investigate the determinants of loan repayments in microcredit programmes that applied the group lending approach and found that a higher education level was significant and positively related to better repayment performance.

Furthermore from Table 3, income of the beneficiaries was found to be positively significant to repayment performance @ 5 percent level.

Table 3. Regression analysis showing the effect of Socio-Economic Characteristics of Respondents on Repayment Rate

| Variables | Description of Variables | Regression Coefficient | Standard Error | T-Value |
|----------------|--------------------------|------------------------|----------------|---------|
| * | Constant | -7.955** | 3.069 | -2.592 |
| X ₁ | Age | 0.007 | 0.044 | 0.168 |
| X ₂ | Education | 0.535*** | 0.108 | 4.970 |
| X ₅ | Household size | 0.145 | 0.210 | 0.691 |
| X ₆ | Income | 0.000** | 0.000 | 2.168 |

Source: Data analysis, 2012

R² = 0.87, S.E = 0.84, DW = 1.05, F = 47.29

** - Significant @ 5% (t > 1.96 < 2.58)

*** - Significant @ 1% (t > 2.58)

Therefore as income of the beneficiary increases, the rate of loan repayment also increases. In relation to the study carried out by Bhatt and Tang (2002), income was shown to contribute positively to the groups repayment potentials. Also, Mohammad and Hooman (2009) in their study revealed income as having a significant and positive effect on repayment performance of farmers in Iran.

CONCLUSIONS

Income, outstanding debt and leverage of the beneficiaries were significant factors that determined the rationing of credit among groups in Farmers Development Union.

Information gathered from interview with the staff of the organization revealed that collaterals such as physical assets: land were not required unlike other formal or informal institutions, notice of any default was made to the village head in that local government area and if the response is negative, legal action would be taken to recover the loan.

Hence, the results show that formal lenders (FADU) use locally available information about the credit worthiness of groups in loan rationing such as debt servicing obligations (repayment performance/outstanding debt) and income.

Income was a significant factor in determining whether credit was to be rationed among groups in FADU, it is therefore expedient that the income generating activities of these groups be encouraged in other to boost their economic viability. Leverage of the groups was an important element of credit rationing, it is therefore necessary that checks and balances on loan utilization be put in place by the group members in other to raise their equity and reduce outstanding debt.

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