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DETERMINANTS OF ACCESS TO MICROCREDIT IN IJEBU - ODE LOCAL GOVERNMENT AREA OF OGUN STATE, NIGERIA

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ABSTRACT

Microcredit is an important input for enhanced productivity, employment and income generation among small and medium scale enterprises. Using stratified random sampling procedure; data were collected from 140 respondents in Ijebu-Ode Local Government Area of Ogun state on the determinants of access to microcredit. The data were analysed with the aid of logistic regression analysis. The study reveals that being a male, having higher level of education, owning assets as well as generating income enhanced the log-likelihood of accessing credit. Thus, suggesting that these variables are key in improving access to microcredit in the area.

Key words: microcredit, access, determinants, logit and Ijebu-Ode

INTRODUCTION

The evolution of microcredit came about as a result of the shortcomings in the formal and informal financial systems thus leading to innovations in the rural financial markets by designing low cost credit facilities that are formal but more accessible to the poor (Chirwa et al 1999). Micro credit is defined as the extension of small amounts of collateral free loans to individuals or groups for their self-employment and income generation (Berger, 1999; Rahman, 1999). It provides small-scale financial services to clients that are economically active in the urban and rural areas and has proven to be effective in fighting poverty by providing the entrepreneur the needed capital to start and expand their activities. The design is such that it delivers small loans to peer borrowers who are organized into small groups, provides them with more accessible deposit facilities and gives greater attention to risk management. It uses peer pressure monitoring and the joint liability structure to overcome the screening, monitoring and enforcement problems commonly encountered by formal lending institutions. These programmes are targeted at the

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resource poor and particularly rural women who in most cases do not have productive assets and property rights.

Recent study by Diagne and Zeller (2001) shows that poor rural households in developing countries lack adequate access to credit and this is believed to have significant negative implications on technology adoption, agricultural productivity, food security, nutrition, health and overall household welfare. Due to poor capital formation, most farmers are smallholder who could not take advantage of available packages of technology to boost productivity. This partly explains the preponderance of farmers using traditional manual technology of production. The bulk of capital utilized either come form the usually small owner's equity or from the traditional informal credit sources which are largely exploitative and therefore uneconomical. Unfortunately, the formal credits of financial institutions have remained largely inaccessible to these smallholder farmers. The emergence of microcredit programme is therefore anticipated to bridge the gap between demand and supply of credit. The rural household is also expected to grow in terms of total output or total income available to the family after borrowing through the accumulation of sufficient capital, which would have made him become independent and expand his operation. Following from the above, this study examines the determinants of access to microcredit in the Ijebu-Ode Local Government area of Ogun State, Nigeria. The paper built on the thesis by Diane and Zeller (2001) that identified socio economic variables and variables related to credit will have no significant effect on access to microcredit in the study area.

In the rest of this paper, section two contains the conceptual framework; section three discusses the methodology while the results are discussed in section four. The last section concludes the paper.

CONCEPTUAL FRAMEWORK

This section of the paper derives mainly from Diagne and Zeller (2001) and Zeller et al. (1997). Diagne and Zeller provide a distinction between access and participation in formal credit programmes. According to them, a household has access to a particular source of credit if it is able to borrow from that source, although for a variety of reasons it may choose not to. In this connection, the extent of access to credit is measured by the maximum amount a household can borrow (its credit limit). If this amount is positive, the household is said to have access .A household is however said to be participating if it is borrowing from a source of credit. They further submit that a household is credit constrained when it lacks access to credit or cannot borrow as much as it wants. Building on this, Zeller et al (1997) opine that a household member's access to formal and informal financial markets depend on a range of societal, community, household and individual variables. The key individual variables identified by them are gender, age, education, and the individual's control over income and over assets suitable for loan collateral. On the other hand, the main household determinants are expected to be its size,

structure, social status within the community and economic activities and wealth.

Quoting Wilk (1989) the authors maintain that access to credit or the capacity to save is mostly determined by ownership or control of assets (including human capital). They submit that assets held by households can be owned by the household or by its individual members while clan or community leaders, by relatives and friends, or through patron-client relationships, may temporarily supply other resources. Nonetheless, most of the households will have a mixture of communal, familial, or individual ownership, or user rights. However, only assets owned by the household and its members can suitably serve as loan collateral or be invested in savings. In land-rich, labor-scarce societies found in Africa and, to a lesser extent, in Asia, labor is often used to secure access to credit (Zeller et al 1997). Poor households pawn their labor and obtain, in exchange, credit during the hungry season. This study therefore uses identified variables by Zeller et al (1997) within the context of available data to determine access of respondents to micro-credit.

METHODOLOGY

Source of data and method of data collection

The data used in this paper was collected in Ijebu-Ode Local Government Area of Ogun State. It has a land area of 82,986.62 square kilometers and an estimated population of about 183,765. Primary data were collected from households through the use of pretested, well-structured questionnaires. Cross sectional data were collected on household income and expenditure, demographic characteristics and the credit utilization variables. 150 respondents were selected by stratified random sampling cutting across the three administrative quarters of Ijebu Ode - Porogun, "Iwade" and Ijasi, which are further delineated into thirty-seven administrative units called "Ituns". Three "Ituns" were randomly selected from "Porogun" and "Ijasi" and four selected from "Iwade" making a total of 10 "Ituns". Fifteen respondents were further selected from each "Itun". Fifteen questionnaires were voided due to wrong and or inappropriate completion thus, a total of 140 households were used for the analysis.

Analytical procedure

The logit model was used in the analysis. The model postulates the log likelihood that an individual will have access to microcredit programme is a function of an index zi is also the inverse of the standard logistic cumulative function of Pi i.e.

$Pi[y = 1] = [Fzi]$, where $Zi = \beta_0 + \beta_i X_i$

The Logit Model is express as:

$$y_i^* = \beta_1 + \beta_2 X_{2i} + \ldots\ldots + \beta_k X_{ki} + u_i \qquad 1$$

$$y_i^* \text{ is unobservable but } y_i = \begin{cases} 0 \text{ if } y_i^* < 0 \\ 1 \text{ if } y_i^* \geq 0 \end{cases}$$

$P(y_i = 1) = P(y_i^* \geq 0) = P(u_i \geq - \beta_1 - \beta_2 X_{2i} - \ldots\ldots - \beta kXki = F(\beta_1 + \beta_2 X_{2i} + \ldots\ldots + \beta_k X_{ki})$ where F is the cumulative distribution function of u_i. It is assumed that the probability density function of u_i is symmetric and e_i has what is known as a logistic distribution. The probability density function of u_i is given by

$$f(u_i) = \frac{e^{ui}}{(1 + e^{ui})^2}. \qquad 2$$

and the cumulative density function of u_i is given as:

$$F(u_i) = \frac{e^{ui}}{(1 + e^{ui})}. \qquad 3$$

From the above it can be readily seen that the probability of having access is given by:

$$P(y_i = 1) = P(y_i^* \geq 0) = P(u_i \geq - \beta_1 - \beta_2 X_{2i} - \ldots\ldots - \beta kXki$$
$$= F(\beta_1 + \beta_2 X_{2i} + \ldots\ldots + \beta_k X_{ki})$$
$$= \frac{e^{\beta 1 + \beta 2 X 2i + \ldots\ldots + \beta kXki}}{1 + e^{\beta 1 + \beta 2 X 2i + \ldots\ldots + \beta kXki}} \qquad 4$$

The probability of not having access is given by:

$$P(y_i = 0) = 1 - P_i = 1 - \frac{e^{\beta 1 + \beta 2 X 2i + \ldots\ldots + \beta kXki}}{1 + e^{\beta 1 + \beta 2 X 2i + \ldots\ldots + \beta kXki}}$$
$$= \frac{1}{1 + e^{\beta 1 + \beta 2 X 2i + \ldots\ldots + \beta kXki}}. \qquad 5$$

Therefore, $\frac{P(y_i = 1)}{P(y_i = 0)} = e^{\beta 1 + \beta 2 X 2i + \ldots\ldots + \beta kXki}$ 6

Equation 6 is the odd ratio in favour of access to microcredit. Because the dependent variable is binary and Pi is non-linearly related to X_i and the β_i the ordinary least square (OLS) cannot be used to estimate the parameters (Gujarrati, 1988) instead, the maximum likelihood method is adopted.

The marginal effect in the logit model is expressed as:

$$\frac{\partial P}{\partial Xji} P(y_i = 1) = F(\beta_1 + \beta_2 X_{2i} + \ldots\ldots + \beta_k X_{ki})\,\beta_j = \frac{e^{\beta 1 + \beta 2 X 2i + \ldots\ldots + \beta kXki}}{(1 + e^{\beta 1 + \beta 2 X 2i + \ldots\ldots + \beta kXki})^2}\beta_j \qquad 7$$

The independent variables specified for the logit model include the following:

- b_o = Constant
- X_1 = Sex of household head represented by dummy 1 for male and 0 otherwise
- X_2 = Age of household head (in years)
- X_3 = Educational status of household head captured by the number of years spent in school
- X_4 = Dependency ratio represented by the ratio of people not working within the household relative to household size.
- X_5 = Household size

X_6 = Occupation of household head represented by dummy 1 for agriculture and 0 non-agriculture
X_7 = Asset ownership
X_8 = Years in business enterprise.
X_9 = Credit limit (in naira)
X_{10} = Distance to location of credit source (in kilometers)
X_{11} = Household income.

The credit limit is defined, as the maximum amount the lender is willing to lend to the borrower. With respect to the *a priori* expectations, all the independent variables as specified are expected to increase the likelihood of the household having access to microcredit except the variable specified for distance of household to location of credit source and the household size. The likelihood of a household having access to microcredit is expected to decrease with an increase in the distance between that household and the source of credit while that of the household size is ambiguous.

RESULTS AND DISCUSSION

The result of the logit regression model is presented in table 1 below. The goodness of fit of the model is indicated by the chi-square statistic of 47.20, which is statistically significant ($P<0.01$). Four of the specified variables estimated in the model are statistically significant. The *a priori* expectations with respect to the signs of the coefficients were also met except for the business years' experience.

The regression coefficients are the marginal effects on probability (Y=1) computed at the means of the Xs. The constant term of -1.7892 represents the autonomous microcredit access level. The sex of the household head has a positive coefficient of 0.6116. This implies that belonging to a male-headed household is associated with higher levels of access to credit than female-headed households. Thus, the autonomous microcredit access level for male-headed households is increased by 0.6116 from -1.7892 to -1.1676.

The educational status of household head has a coefficient of 0.1137. The positive sign of the coefficient indicates that households whose heads are educated are faced with higher levels of access to microcredit. The autonomous micro credit access level for educated households is therefore increased by 0.1137. The level of educational attainment is known to indicate productivity potential on and off farm (Khandker, 1988;Abdullah and Delgado, 1999)

Years of formal education influences behaviour, values, exposure and opportunities of an individual .This is also known to affect credit demand and use in terms of being able to identify sources of credit and inherent opportunities.

Table 1
Logit regression result on determinant of access to microcredit

Variables	Coefficients	Standardized Error	P[1Z/>z]
Sex of the household head	0.6116	0.2190***	0.0052
Educational status of head	0.1137 0.7067 x 10^{-1}	0.592x10^{-1}*	0.0547
Occupational of household head	0.4660	0.4391x10^{-1}	0.1075
Asset Ownership	0.3191x10^{-5}	0.1876**	0.0130
Household Income	0.4957x10^{-5}	0.1432x10^{-5}**	0.0259
Credit Limit	-0.239510^{-2}	0.6295x10^{-5}	0.4310
Business years Experience	-0.1369x10^{-1}	0.1767x10^{-1}	0.8922
Age of household head	-0.9400x10^{-2}	0.1881x10^{-1}	0.4666
Household size	0.2212	0.3472x10^{-1}	0.7866
Dependency ratio	0.3144x10^{-1}	0.2376	0.3520
Distance to source of credit	-1.7892	0.2988x10^{-1}	0.2927
Constant		0.7716**	0.0204

Significance: 1 percent:***; 5 percent **; 10 percent *

Source: Computer print out of Logit regression.

The asset ownership coefficients of 0.4660 means that asset ownership by households enables such households have better of access to micro credit. The autonomous micro credit access level is increased by 0.4660. Asset ownership is unarguably an important determinant of access to credit particularly where credit worthiness is judged on the basis of wealth or assets with high economic returns since household with diversified asset portfolios are assumed to have more diversified incomes. This presumably will influence the rate of loan repayment.

The household income coefficient of 0.3191x10^{-5} implies that for every positive unit change in the income level of the household, the likelihood of the household having access to microcredit increases by 0.3191x10^{-5}.

Generally, the descending order of importance of the specified variables is the sex of the household head, asset ownership, household income and educational status.

CONCLUSIONS AND RECOMMENDATION

Microcredit programmes are expected to raise the welfare of the people and it may be quite helpful for opening up economic opportunities for the poor. However, the benefits of access to credit for the rural poor depend on array of socio-economic factors some of which may be time-variant. The full potential of access to credit in enhancing the economic status of beneficiaries can only be realized if it is accompanied by investments in social infrastructure and investment in human capital. This ultimately will make the long-term benefit from microcredit financing realizable. The following recommendations are suggested based on the findings of the study.

- Education plays a key role in determining access to microcredit. It is also known to be a key factor in determining success and profit levels of enterprises. It is therefore recommended that a two-prong approach to empowerment and education of the poor should be pursued. On the part of the government, a continuous investment in qualitative education for the children of the poor is desirable as this will help to avert the transmission of generational poverty. At the micro level, the credit group can incorporate training activities into their programmes. This will not only make their beneficiaries to be informed on the choice of productive enterprises they can engage in, it will also ensure a good return on their investment. Hence microcredit beneficiaries can save more and thereby have access to bigger volume of credit.
- That household income is a strong determinant of access to microcredit shows that households already engaged in income generating activities are better placed to benefit from access to microcredit. This in essence suggests the need for improved income generation by the households.

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