FACTORS AFFECTING FARMERS ACCESS TO AGRICULTURAL LOANS IN ANAMBRA STATE: AN ECONOMETRIC ANALYSIS

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ABSTRACT

This study was designed to examine the extent to which farmers have benefited from loans/credit activities of commercial banks in Anambra Agricultural Zone of Anambra State, as well as analysing the factors affecting accessibility of credit/loans. To do that, two sets of questionnaires were designed and administered to 64 small-scale farmers and six officials of the two banks in the Anambra Agricultural Zone of the state, to gather information and relevant data for study. The small-scale farmers and bank officials were also interviewed to licit more information on the claims and counter-claims on both sides. Simple descriptive tools and econometrics method were used to analyze the data collected and to examine the impact of certain socio-economic and other variables on loan/credit received. Access to bank loans in the area was found to depend largely on ability of the applicant to provide collateral security. Age, marital status, crop type, and income are also found to be important and significant determinants of access to agricultural loan in the Zone.

KEYWORDS: agricultural loan, small-scale farmers, regression analysis

INTRODUCTION

Inadequate agricultural funding has been identified as one of the major factors militating against food production in Nigeria. This has resulted in the recycling of poverty as farmers who are mostly rural-based lack the necessary collateral to access credit (from financial institutions) needed for increased production. This vicious cycle of poverty can only be broken if and only if a policy that can ensure higher level of credit investment into the agricultural sector is instituted.

Farmers cannot purchase the needed inputs such as pesticides, improved planting materials and agro chemicals such as herbicides, insecticides and fungicides. Most of the implements used by small-scale farmers are worn-out and needs replacements. The farmers need improved farm machinery and also require hired labour to supplement their family labour. All these require funds. All these problems have necessitated the increased funding by banks. This has become increasingly necessary for increased food and raw material production and a boost in the confidence of the farmers to increase hectarage under cultivation.

The government, realizing the difficulty of financing agricultural projects, has embarked on series of programmes to make fund available to farmers to enhance

increase in food production. These include the various loan schemes, agricultural credit banks and a host of other programmes and projects. But the expected change in increased food and fibre production did not occur. There are fears that in spite of efforts of the government, farmers may be having limited loan access through difficult demands by banks. This study therefore is aimed at assessing the extent to which small-scale farmers have benefited from bank loans in Anambra Agricultural Zone of Anambra State. This is important because preliminary investigations have indicated a high level of frustration among farmers on their attempts to obtain loans from banks in the area.

Objectives

The objectives of the study are: (a) To determine or examine the extent to which the small-scale farmers have benefited from loan facilities of banks in Anambra State based on results of 2001 and 2004 farm-level surveys, (b) to present and discuss the results of regression analysis that examines the effects of some socio-economic and other variables on the ability of farmers to obtain loans from commercial banks, (c) to draw conclusions based on the findings.

Methodology

Data sources and collection procedures

Data was collected from small-scale farmers in Anambra Agricultural Zone, of Anambra State and the *two* commercial banks in the zone. Multi-stage sampling technique was used in the selection of the study location and farmer-respondents. Three local government areas were randomly selected. From each of the selected three local government areas, five communities were randomly selected giving a total of 15 communities. Thereafter, a random selection of 5 farmers from each of the 15 communities was made, giving a total of 75. Three officials from each of the two banks in the area who are responsible for agricultural loans were included in the sample. Two sets of structured questionnaires were after prepared, and administered to them, one set for the farmers and the other for the bank officials.

Method of Analysis

A total of 70 questionnaires (64 from the farmers and six from the bank officials) were properly completed and returned, and are therefore used in the analysis. All the questionnaires returned were coded manually and descriptive statistics were extensively used in data analysis.

In order to understand the effect of the individual factors of age, sex, marital status, family size, level of education, type of crop grown, farm size, loan security provided, farmers' income, on the agricultural loan access to small-scale farmers, a multiple regression was run using these factors as independent variables and the amount of loans received by the farmers from the banks as the dependent variable.

The functional relationship of these variables is expressed thus:
$y = f(x_1, x_2, x_3, x_4, x_5, x_6, x_7, x_8 x_9)$ – equation 1

Where
Y = access to agricultural loans (amount of loan received)
X_1 = age of the farmer (years)
x_2 = sex (1 for male, 0 for female)
x_3 = marital status (1 marned, 0 for single)
x_4 = family size (Number per household)
x_5 = level of education (Number of years in school)
x_6 = type of crop grown (1 for annual, 0 for perenial)
x_7 = farm size (Hectares)
x_8 = loan security (1 for yes, 0 for no)
x_9 = income (Naira)

It is assumed that there is an approximately linear relationship between the dependent variable Y and the independent variables: x_1, x_2, x_3 X_4, x_5, x_6, x_7, x_8, x. Therefore, equation 1 is specified as:
$Y = bo + bjx_1, b_2x_2 + b_3x_3 + b_4x_1 + b_5x_5 + b_6x_6 + b_7x_7 + bgxg \div bc,xc,$ - equation 2

where bo = intercept term showing value of y when x_1, x_2, x_3, x_4, x_5 etc are zero. That is, the value y is predicted to have when all the independent variables are equal to zero.

b_1 to b_9 = the coefficients or multipliers *that* describe the size of the effect the independent variables (xi to xg) are having on the dependent variable, y

To make the model more realistic, the disturbance term u is introduced to get equation 3 from equation 2, thus:
$Y = bo + b_1x_1, b_2x_2 + b_3x_3 + b_4x_4 + ... + x_{11} + u$ • - equation 3

Findings and Results

Agriculture in the region is dominated by male farmers. Almost 80% of the respondents are males. There is a moderate distribution in the age range of the farmers. Nevertheless, most of the farmers (83%) are in the very active age brackets of 21-30 and 31-40. Almost all the farmers are married, 94% which indicates that farmers marry early to raise families that will provide labour and assist them in their farm work. The farmers have fairly large families. Over 80% has family sizes of over 10 persons. Indeed over one-third has family sizes of over 11 persons. The farm size of most of the farmers ranged from one to three hectares (62%), while the rest have farm size of 4 hectare and above. Thus, it is evident that they are purely small-scale farmers. Although 53% of the farmers had formal education, their educational levels were generally low, while almost half of them (47%), had no formal education. Almost all the responding farmers are engaged in the cultivation of annual crops (95%). The most common crops cultivated in the area are yam, rice, cassava, maize etc. The option of the farmers to

engage in annual crop cultivation could be due to the need to harvest the crops as soon as possible in order to pay back loans obtained from banks. Loans granted

them by the baths are usually for one cropping season. The rest of the responding farmers (5%) are engaged in perennial crops cultivation. To obtain loans from banks a most of the farmers *(95%)* were made to provide one of security or the other. The most preferred form of securities is guarantors and collateral securities (in the form of landed property or farm land). Only very few farmers reported that they did not provide any form of security before they were granted loans. Annual income level of the small-scale farmers in the area range from ₦10,000 to over ₦90,000. Those within the income range of ₦71,0004-₦90,000 has the highest percentage of 28% while those of between ₦10,000 and ₦30,000 has the lowest percentage of 12%, showing that the standard of living of an average farmer in the area is moderate. Majority of the farmers (66%) obtained their loan individually while others, 34% obtained theirs through membership of cooperative/farmers' association. There was no beneficiary through community loan schemes. The banks' response to loan requests by farmers in the zone has not been encouraging. Between 1999 and 2003 not more than *35%* of loan requests were granted by the banks in any of the four years. in fact, only t5% of the loan requests were granted in 1999. The banks refusal to increase their loan volume is unfortunate since repayment records (at the offices of the banks) by the farmers have been impressive.

The major reason advanced by banks for refusing loan requests by farmers is largely due to non provision of collateral security, compounded by low literacy level. Banks also are known to prefer short-term loans to businesses with minimal risk and comparable collateral security to agricultural loans with long maturity period lull of uncertainties. Other reasons for agricultural loan refusal include long repayment period and low interest rate. That provision of collateral security is indeed a major factor in the consideration of loan applications is evident from table 2 (appendix). Here, security provided by farmers is shown against approval and disbursement of loans. The farmers who provided landed property and farm lands as securities had better shares of the approvals/applications ratio (70% and 60%) Those that produced guarantors weren't given much attention as only 33% of the applications were approved and disbursed. Of the 698 applications that produced no security for the loan, only 9 percent of them had their applications approved. The applicants that produced landed property and farm land as their collateral security were favoured more in terms of individual amount received. An average amount of ₦11,532.00 and ₦11,796.00 respectively went to each of them as against an average of ₦9,500.00 and ₦6,397.00 that went to those that produced guarantors and those that did not produce any security respectively. The basics are more inclined to granting loans to literate farmers. Of the 173 loan applicants that have secondary education, 69% had their applications approved and disbursed. Also, of the *565* applications from farmers with primary education, 62% of them were approved. Those not approved could be as a result of other requirements not met. There were only 10 applicants with tertiary education and 7 of them benefited, which is about 70%. But for the illiterate farmers, out of a total of 2,216 loan applications made only *573* (or 26%) were approved. The implications of the above is that the banks are more at home with educated farmers hence, not only that majority of literate applicants were considered, but also average individual disbursement is higher for secondary and tertiary

education N12,532.00 and Nl2,000.00 respectively than that of illiterates which is just N9,8 19.00. Thus, poor educational background could be a militating factor in loan application consideration.

Model Results and Interpretation.
The estimates of parameters of the regression model are as follows:

	Coefficients	**Standard error**	**t-statistic**
(Constant)	-1702414		
(x) Age	371.97	(221.57)	(1.68)*
(x2) Gender	-1003.65	(4444.92)	(-0.23)
(x3) Marital status	2478.81	(7838.50)	(0.32)
(x4)Family size	-1247.36	*(655.38)*	(-1.90)*
(x5) Education	*-71.53*	(495.20)	(-0.14)
(x6) Crop type	24643.96	(2379.14)	(10.36)*
(x7) Farm size	-643.94	(1621.54)	(-0.40)
(x8) Loan security	1788.84	(1302.15)	(1.37)*
(x9) Income	2.70	(23.57)	(0.12)*

* Significant at 5% level
R^2 = 0.68
Adj. R^2 = 0.63
F* = 12.78*
DW = 1.60

The computed t-ratios for x_1-age, x_3-marital status, x_6-crop type, x_8-security and x_9-income, are found to be significant at the conventional 5% significant level. So changes in age, marital status, crop type, security and income will significantly influence the amount of loan received, while changes in other variables will not.

It is instructive to note that in spite of the data from the banks to the contrary, level of education is not a significant variable. Indeed the negative sign associated with the estimate suggests that those with higher education are not favoured in loan approvals.

The only possible explanation could be that the farmers lied about their educational status (to enhance their chances of approval) when they applied for loans. Again, the banks did not indicate that age, marital status, and income play any role in loan approval decisions, but the results of the estimates has shown that indeed they are important variables.

Another interesting observation in the results is that farm size appears not to be an important factor in loan application consideration. Though not significant, it does suggest that those with large farms are disadvantaged.

The multiple correlation coefficient $R^2 = 0.68$ shows a relatively high degree of relationship between the dependent variable and the independent variables x_1-x_9. In other words, there is high degree of association between the dependent and independent variables taken together. The adjusted R^2 was found to be 0.63. This implies that 63% of the variation in loan amount y is accounted for by changes in variables x1-x9. The remaining 27% can be attributed to omit explanatory and unquantifiable variables.

The result of the F-test (12.78) is significant showing that the joint effect of age, sex, marital status, family size, level of education, crop type, farm size, security and income (x_1 — x_9) on loan amount (y) is significant. The calculated DW value 1.60 lies between the theoretical value, du = 1.54 and 4-du = 3.46. This indicates that the model is free of auto correlation and multi-co linearity. In summary, the regression result shows that theft is a positive and significant relationship between loan amount disbursed to farmers and age, marital status, crop type, security and income. This goes to show that these variables have a positive effect on the current amount of loan given by the banks to the farmers.

Policy Implications and Conclusion

As the regression results show, there is a positive and significant relationship between loan amount and age, marital status, crop type, security and income. This indicates that these variables have a positive effect on the amount of loan given by the banks to the farmers in the agricultural zone under study.

Loan security, in particular, determines to a large extent the amount of loan a fanner can secure from banks. Many small-scale farmers cannot provide the banks' preferred collateral security. The implication is that they will continue to benefit marginally only and from the small holder loan scheme, which even that can only be given to them on the provision of guarantors as security. To improve agricultural production, government should through the Central Bank regulation on banks, increase the smallholder loan limit to farmers and/or appeal to banks to moderate on collateral demands.

Majority of the farmers are youths and this implies that an active lending policy in favour of the youths by the government will redirect the orientation of the youths towards agricultural production.

The study shows that most of the responding farmers are married. This goes to show that farmers engage in early marriage. Early marriage may affect the youth $ farmers psychologically in their attempt to actualize effective and efficient family and farm management. This is the more reason why the government should as much as possible assist the farmers achieve a moderate living standard. This could be achieved by way of loan liberalization in order for them to increase their production and attract increased income. The banks seem to be more disposed to annual crop farmers who incidentally are on the majority. The implication is that perennial/tree crops production will be seriously jeopardized. There is need to fashion out a credit scheme that will also encourage perennial crop production.

Farming as a business is capital intensive. For a farmer to break even in his farming activity, he needs enough capital to integrate the modem improved agricultural technology without which he will continuously remain at a peasant production level. In the light of the above, it becomes rational that loans/credit availability to small-scale farmers should be a priority to the government more so, when much of nation's total food production comes from them. Indeed a way of breaking out of the vicious circle of poverty will be to make it easier for rural farmers to have easier access to loan/credit.

References

Adegeye, A.J. and Dittoh, J.S. (1982). *Essentials of Agricultural Economics.* Centre for Agricultural and Rural Development, University of Ibadan. P. 152

Aryeetey, B. (1996) "Rural Finance in Africa: Institutional developments and access for the poor". The World Bank Annual Conference on Development Economics, 25-26 April, Washington, D.C.

Atieno, Rosemary (2001) Formal and informal institutions' lending policies and access to credit by small-scale enterprises in Kenya: An empirical assessment AERC Research Paper it 1 African Economic Research Consortium, Nairobi November 2001

Ikashuliza, A.K. and J.G. Kydd (1996) "Determinants of bank credit access for small holder farmers in Tanzania: A discriminate analysis application". *Savings and Development,* no. 3: *285—97.*

Okeke Daniel C. (2001) the role of banks in small-scale agricultural financing in Anambra Agricultural Zone of Anambra State. Unpublished M. Agric. thesis, Dept. of Agricultural Economics, Federal University of Technology, Owerri.

Udry, C. (1994) "Credit markets in Northern Nigeria: Credit as insurance in a rural economy". In K. hoff, A. l3raverman and J. Stiglitz, eds, *The Economics of Rural Organizations Theory and Policy.* London: Oxford University Press.

Zeller, M. (1994) "Determinants of credit rationing: A study of informal lenders and formal credit groups in Madagascar". *World Development,* vol. 22, no. 12: 1895— 1907.

APPENDIX

Table 1: 1999-2003 Agricultural Loan Demand, Disbursement, Repayment and Balance Outstanding

Year	Amount Applied For (A)	Amount Disbursed (B)	Amount Repaid (C)	Balance Outstanding (D)	Percentage Repayment (E)	% of(B) to (A)
1999	3,800,000	571,350	408,540	162,810	72%	15%
2000	9,500,000	3,158,050	2,581,032	577,018	82%	33%
2001	13,000,000	3,192,800	2,538,974	653,826	80%	25%
2002	5,000,000	1,596,320	1,190,092	406,228	75%	32%
2003	7,170,000	2,541,400	2,288,840	252,560	90%	35%

Source: Field Survey, 2004

Table 2: Security Requirement and Loan Disbursement

Security	No. of Applications Received	No. of Approvals Made	Amount Disbursed (A)	% of Approvals to Applications Received
Landed Property	502	352	4,056,000	70%
Farmland	270	163	1,911,000	60%
Guarantor	1494	493	4,683,500	33%
No Security	698	64	409,420	9%
Total	2,964	1,051,	11,059,920	

Source: Field Survey, 2004

Table 3: Effect of Education on Agricultural Loan Disbursement

Level of Education	No, of Applications Received	No. of Approvals Made	Amount Disbanded	% of Approvals to Applications Received
Primary	565	352	3,837,400	62%
Secondary	173	119	1,491,520	69%
Tertiary	10	7	105,000	70%
Illiterates	2,216	573	3,626,200	26%
Total	**2,964**	**1,051**	**11,059,920**	**35%**

Source:** Field Survey, **2004