

Determinants of Borrowing Capacity of Small Holder Farmers in Cross River State, Nigeria

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Abstract

This study examined the determinants of borrowing capacity of small holder farmers in Cross River State, Nigeria. A total of 455 farmers were randomly selected through a stratified random sampling technique. The study data was collected by well-structured questionnaire. Statistical tools such as simple descriptive statistics (table, frequency, percentage and mean) and a multiple regression analysis were used to examine the data. The results indicate that 60% of the farmers source their credit from informal financial sector while the mean borrowing capacity of the farmers was ₦550,500. The regression's result demonstrated that the determinants of the farmers borrowing capacity included asset value, debt outstanding, and value of equity in asset, educational index, farm size and family size. The study further revealed that the major problems facing farmers are high interest, lack for collateral, short repayment periods, among others. Therefore, it was recommended that small holder farmers should increase their financial asset and Real estate purchases, while financial services providers should carefully study the determinants favorable for lending to small holder farmers in order to increase agricultural financing.

Keywords: Determinants; Borrowing; Capacity; Small holder; Farmer

Introduction

For agricultural practice to be meaningful, one of the enabling factors is addressed by availability of adequate credit to finance agricultural production. The agricultural lending market in any country is made up of the participating financial institutions and units that can effectively lend resources to facilitate the production of farm produce, crops and livestock [1].

These markets are primarily made up of deposit money banks and other financial institutions, firms and individuals [2]. The market can be broadly segmented to formal, semi-formal and informal financial markets including specialized institutions such as Nigerian Agricultural Cooperative and Rural Development Bank (NACRDB), which are playing prominent role in agricultural financing.

The size of the borrower is of great importance in negotiating the terms and cost of credit and very few farmers are large. Infact, the problems of the various credit programmes include the following: inadequate number of beneficiaries, interest rate, uneven distribution of agricultural credit, inadequate monitoring and evaluation, under-developed production base, weak agricultural policies, high default rate and uncoordinated credit policies [3,4].

The formal and semi-formal financial institutions have specific and written procedures to administer farm credit and do have a legal backing. The major problems associated with these resources include scarce collateral, under-developed complementary institutions, covariant risk, enforcement problems, bureaucratization, inadequacy of trained personnel and loan misconceptions [5]. The informal sector loans are made directly on personal basis from lenders to borrowers, especially where the individuals are familiar with some level of confidence in one another, the methods of obtaining the loans are relatively cheaper with non-insistence of security by lenders basically devoid of legal procedures, the flexibility built into the repayment makes this source very popular among peers and farmers but they are more expensive supply of credit because of high interest rate [6].

Since credit plays a vital role in economic transformation and rural development, therefore, agricultural credit is a crucial input

required by small holder farmers to establish and expand their farms with the aim of increasing the income of the households and the nation in general [7]. Infact, for small holder enterprises to grow up to medium and large scale level, the need for credit from both formal, semi-formal and informal sources is indispensable [8]. Credit enables the poor farmer to tap the financial resources and take advantage of the potentially profitable investment opportunities in their immediate environment [9].

More so, the use of credit has been envisaged as one way of promoting technology transfer, while credit to the agricultural sector remains a veritable tool for agricultural transformation and economic growth [10]. Given the income level for the average small holder farmers in Nigeria and the constraint faced in accessing credit from both formal and informal financial sources, it becomes pertinently clear that accessibility, utilization, management and repayment of credit have been a major burden on the small holder farmers. It is based on this background that this paper tends to look at the borrowing capacity of small holder farmers in Nigeria focusing on Cross River State.

Objective of the Study

This study's broader objective is to examine the borrowing capacity of small holder farmers in Cross River State, Nigeria.

The specific objectives include:

- Identify the sources of credit facilities that are available to small holder farmers,

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- Estimate the farmers borrowing capacity,
- Determine the variables that affects farmers borrowing capacity, and
- Describe the problems of obtaining credit facilities in the study area.

The study's hypothesis

The study was guided by the following null hypothesis:

No significant relationship exists between the captured determinants/variables of small holder farmers and their borrowing capacity.

Methods

Study area, sampling and data collection

Cross River State is a coastal state, created in 1987 in the Niger Delta Region of Nigeria. The state lies between latitude 4°28' and 6°55' north of the equator and longitude 8°00' and 9°28' east of the Greenwich Meridian, and occupies an area of 20,150 km². It is bounded in the east by the Republic of Cameroon, in the North by Benue state, in the South by the Atlantic Ocean. The majority of the state has a tropical climate; it is only the Obudu plateau which is situated at an altitude of 1,595.79 m above sea level that enjoys a temperate climate. Rainfall is usually heavily and spans the month of April through November. Peculiarly, the state has at least 3 ecological/agricultural zones; consisting of Calabar municipality, Calabar South, Akamkpa, Biase, Odukpani and Bakassi L.G.As in zone one. Zone two comprises of Yakurr, Abi, Obubra, Ikom, Etung and Boki L.G.As. Zone three comprises of Ogoja, Obudu, Bekwara, Obanliku and Yala L.G.As, with mangrove swamp forest towards the cost, tropical rainforest towards the hinterland and the Savannah woodland of the Obudu Plateau which offer a Montana type of vegetation. Agriculture is the main occupation of the people. The crops grown by farmers in the state include rice, yam plantain, cassava, maize, banana, melon, pumpkin, pepper, water leaf, cocoa, oil palm and rubber. Within the state, the livestock kept include poultry, goats, pigs, and fishery. This is engaged in by relatively small proportion of the farming population some farm families undertake the marketing of farm produce and also engaged in buying from other producers, stored and re-sold to other marketers, retailers or consumers. The enterprises engaged in are most times more than one, with one being the lead enterprise, which may also be the main source of income for the farm family. There are often peak periods of financial needs in most of these business cycles. At such times, people usually make request for credit [11].

Sampling procedure and data collection/analysis

The study population included all registered farmers in Cross River State with the Agricultural Development Project (ADP). The stratified random sampling technique was used to select respondent. The study area was divided into three (3) strata based on the ADP zoning structure and in each strata, a random sampling technique was used to select the farmers. A total of four hundred and fifty five (455) farmers were selected for the study using the proportionate sampling method on each stratum.

Primary data were gathered by means of a well-structured questionnaire complimented with oral interview on farmers' socio-economic characteristics, sources of credit facilities and problems faced in obtaining credit, while secondary data were sourced from relevant

published and unpublished materials. Data collected were analyzed using descriptive statistical tools such as mean, percentage, frequency and table, and inferential statistic of multiple regressions.

The empirical model

The multiple regressions used were causality linear regression model specified as:

$$Y = b_0 + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + b_6X_6 + b_7X_7 + U$$

Where

Y=Credit capacity in naira (₦)

X₁=Asset value (naira)

X₂=Debt outstanding (naira)

X₃=Equity (naira)

X₄=Farming experience (years)

X₅=Educational index (numbers)

X₆=Farm size (hectares/numbers)

X₇=Family size (numbers)

B₀=Constants

B₁-b₇=Coefficient of parameters

U=Stochastic error term

Results and Discussion

Sources of agricultural credit available to farmers

The results of the sources of agricultural credit available to farmers were presented in Table 1. Accordingly, most of the farmers 60% source their credit from the informal financial sector which includes family members, friends, osusu, money lenders which are proven to charge very high interest rates, while 33% of the farmers' source their credit from semi-formal financial institutions such as microfinance banks, cooperative societies and credit consultant firms. Only about 7% of the respondent farmers secure their credit from formal financial institutions such as commercial banks, Nigerian Agricultural Cooperative and Rural Development Bank. This confirms earlier studies that most rural farmers do not gain access to the formal financial institutions that grant loans at a relatively lower interest rate (Table 1).

Estimates of borrowing capacity of farmers

Borrowing capacity is a measure of the farmer's assets and liabilities, an extrapolation of his/her net worth in determining the leverage and ability to borrow and repay borrowed credit. The study revealed that the mean borrowing capacity of farmers was ₦550,500 in the study area. Table 2 shows the distribution of respondents by borrowing capacity. However, it was observed that 46.59% of the respondent farmers borrowing capacity were below N600,000–1,000,000. Moreover, 15.38% of the respondents had a borrowing capacity ranging between

Source of Agricultural Credit	Frequency	Percentage
Informal	273	60
Semi-formal	149	32.75
Formal	33	7.25
Total	455	100

Source: Field survey data, 2017.

Table 1: Distribution of respondents by source of agricultural credit.

₦1,000,000–₦1,500,000. About 3.29%, 1.54%, 1.09% had a borrowing capacity ranging between ₦1,600,000–₦2,000,000, ₦2,100,000–₦2,500,000 and ₦2,600,000–₦3,000,000 respectively. Only 0.22% of the respondent had a borrowing capacity of above ₦3,000,000.

The results revealed that majority of the respondent farmers' borrowing capacity were low limiting their financial sourcing mainly to the informal financial sector (Table 2).

Determinants of borrowing capacity of farmers

The borrowing capacity of small holder farmers is known to be influenced by certain socio-economic characteristics/factors. In this study, the multiple regression analysis was used to determine the effect of these variables on the borrowing capacity of farmers.

The resultant regression model is as follows:

$$Y = 11.660 + 1.102 X_1 - 2.340 X_2 + 0.936 X_3 + 1.213 X_4 + 0.921 X_5 + 4.019 X_6 - 0.467 X_7$$

$$(44.241)^{xxx} (3.87)^{xxx} (4.12)^{xxx} (2.58)^{xx} (1.23)^x (2.48)^{xxx} (1.987)^x (3.87)^{xxx}$$

$$R^2 = 83\%, \text{Adj. } R^2 = 82\%, F\text{-Value} = 45.58^{xxx} \text{ and Standard error} = 0.5641$$

xxx, xx, x – indicates significance at the 1%, 5% and 10% levels, respectively.

The resulting regression model indicates the relationship between the dependent variable (borrowing capacity) and independent variables (asset value, debt outstanding, equity in assets, farming experience, educational index, farm size and family size) which was estimated through a linear multiple regression analysis.

An evaluation of the model indicates that it performed relatively well based on the R^2 , adjusted R^2 and f-ratio values. The value of R^2 and the adjusted R^2 are 0.834 (83%) and 0.821 (82%) which indicates that 82% of the variation in the dependent variable (borrowing capacity) occurred due to the variables captured in the model. A two-tailed test is used at a 1% level of significance to reveal the f-computed as 45.583 and the f-table as 2.58. As the calculated F is greater than the corresponding table value, we reject the null hypothesis (H_0 , at $P < 0.01$, $b'_s - 0$), which states no significant relationship exists between the variables captured and the borrowing capacity of small holder farmers. Thus, we accept the alternative hypothesis.

The significance of the parameter estimate of the model was evaluated by means of t-test at 1%, 5% and 10% levels of significance. Regarding the parameters included in the model, 6 of the 7 were statistically significant in their effect on borrowing capacity. These parameters include asset value (X_1), debt outstanding (X_2), value of equity in asset (X_3), educational index (X_4), farm size (X_5) and family size (X_7).

Borrowing Capacity	Frequency	Percentage
Below 600,000	212	46.59
600,000–1,000,000	145	31.87
1, 100,000–1,500,000	70	15.38
1,600,000–2,000,000	15	3.29
2,100,000–2,500,000	7	1.54
2,600,000–3,000,000	5	1.09
Above 3,000,000	1	0.22
Mean=N550,500		
Total	455	100

Source: Field survey data, 2017.

Table 2: Distribution of Farmers by Borrowing Capacity.

The coefficient of asset value was significant at 1% and positively related to the borrowing capacity of small holder farmers. This implies that as the value of farm assets increases, the borrowing capacity of farmer's increases. This conforms to *a priori* expectations and parallels the work of Eyo and Asuguo [12], which reported that high asset value is a pre-requisite by most formal financial institutions for granting credit. Even as they stated that farmers use only 9.88% of their credit borrowing capacity.

The coefficient for debt outstanding was significant at 1% level and negatively related to the borrowing capacity of farmers. Which indicates that the higher the amount of debt outstanding, the lower the borrowing capacity of the farmers. This parallels *a priori* expectations and conforms to Eyo's results [13], which reveal that farmer's liquidity value is a factor affecting his/her borrowing capacity. The author further opined that high debt outstanding negatively affects borrowing capacity as most financial institutions tend to avoid such client due to associated default rate.

The value of equity in asset had a positive coefficient and is significant at 5% level suggesting an increase in farmers' borrowing capacity as the value of equity in asset increases. This conforms to *a priori* expectations and also agrees with results from Olaitan [14] and Enimu et al. [15], who noted that the value of farmer's equity is a booster which leverages the borrowing capacity. The authors further stress that, higher farm equity is a signal that the business is operating optimally and can be able to repay loans.

The coefficient of educational index was significant at 5% level and positively related to borrowing capacity of farmers. This indicates that the higher the educational level of the farmer, the higher his borrowing capacity. This parallels *a priori* expectations and conforms to work by Enimu and Ohen [16], Enimu et al. [17]. Literate farmers understand the process and procedures required for accessing credit better than their illiterate counterparts and also possess a better knowledge of use of credit to facilitate repayment advantage.

Farm size displayed a positive coefficient and was significant at the 10% level which implies that the larger the farm size, the higher the borrowing capacity of farmers. Farm size in agriculture, is a major collateral requirement for securing loans in most formal and semi-formal financial institutions. This result also conform to *a priori* expectations and parallels with report [15,18,19], who stated that farm size had a positive and significant effect on sources of credit by small holder farmers.

Moreover, the coefficient of family size was significant at 1% levels, and negatively related to the borrowing capacity of farmers. This implies that the higher the family size, the lower the borrowing capacity. This result conforms to *a priori* expectations and parallels work [13,18,20] (Table 3).

Problems of obtaining credit facilities by farmers

Every human endeavor is usually plagued with problems, this is also evident in small holder farmer's capacity to borrow from financial institutions. Table 3 indicated that 98.7% of the respondent farmers regarded high interest rate as the major problem facing them, while 95.6% experience lack of collateral. However, 93.6% see short repayment period as a problem, while 91.4% observed evidence of saving account. Moreover, about 89.6%, 79.3%, 77.1%, 40.0% and 20.7% of the respondent stated that lack of trust, delay in disbursing loans, reluctance to give loans, farm inspection by banks, and guarantors respectively are the major problems of obtaining credit. Only 15.8%

Problems	Rank	Frequency	Percentage
High interest rate	1 st	449	98.7
Lack of collateral	2 nd	435	95.6
Short payback period	3 rd	426	93.6
Evidence of savings account	4 th	416	91.4
Lack of trust	5 th	407	89.6
Delay in disbursing loans	6 th	361	79.3
Reluctance to give loans	7 th	351	77.1
Farm inspection by bank	8 th	182	40
Problems of guarantors	9 th	94	20.7
Evidence of tax payment	10 th	72	15.8
Total		455	100

Source: Field survey data, 2017.

Table 3: Distribution of farmers based on problems of obtaining credit facilities.

of the farmers observed evidence of tax payment as a problem of obtaining credit in the study area.

Conclusion and Recommendation

Farmers in Cross River State, Nigeria have not fared well in obtaining credits from the available financial institutions. Infact, it is clear that borrowing from the formal financial market by the operators of the agricultural sector was consistently low. So far, the determinants of borrowing capacity have been felt, since it has gone a long way in determining the availability of external source of credit to the farmers. Consequently, the borrowing capacity provides an immediate source of liquidity to the farmer, but each time a farmer obtain a loan, the available borrowing capacity reduces and becomes more volatile in response to changes in the determinants. Therefore, a farmer with adequate borrowing capacity can obtain loans freely up to the limit specified by the financiers while those with low borrowing capacity cannot borrow. Based on the findings of this study, the following recommendations were made.

- Small holder farmers should increase their financial assets and real estate purchases in order to increase their borrowing capacity.
- Government should provide cheap credit to small holder farmers through cooperatives and microfinance banks and other social incentives.
- Financial services providers should study the determinants that are favorable for lending to small holder farmers in order to buffer agricultural sector financing.
- Small holder farmers should not be over reliant on credit, since it can jeopardize business survival and credit worthiness.

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