

DETERMINANTS OF SMALLHOLDER VEGETABLE FARMERS' ACCESS TO FORMAL CREDIT IN ISIALA NGWA SOUTH LOCAL GOVERNMENT AREA OF ABIA STATE, NIGERIA

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ABSTRACT

Access to formal credit is one of the major problems hindering agricultural productivity among smallholder farmers who apparently, are the major producers of food in the country. This study examines the socio-economic factors influencing smallholder vegetable farmers' access to formal credit in Isiala Ngwa South Local Government Area, Abia State; specifically, seeks to describe the socio economic characteristics of smallholder vegetable farmers, examine the level of credit access among beneficiaries and identify constraints faced by smallholder vegetable farmers. The study used primary data collected from one-hundred vegetable farmers across 10 purposively selected communities through the aid of structured questionnaires and oral interviews. The study employed descriptive statistics such as mean and percentage and a probit model as analytical tools. Results indicated that education and the level of farm experience at 10% level of significance had positive and significant influence on vegetable farmers' access to formal credit in the study area. Further analysis showed farmers were constrained with high interest rates, short repayment period and lack of collateral among others. The study recommends reduction in the interest rates of loans given by formal institutions and an extended repayment period as well as the need for a timely disbursement of fund. There is also need for policy aimed at provision of free and affordable education to enable farmers' access and process information on credit in the study area.

Keywords: Smallholder farmers, vegetables, production, and credit

Introduction

Agriculture is the main source of income for 90% of rural population in Africa (ECA, 2008). It is important to the Nigerian economy as it engages 70% of the labour force and contributes over 40% of the gross domestic product (GDP) (FMARD 2000). Prior to the discovery of oil, Nigeria was a major exporter of agricultural products such as palm produce, cocoa, groundnut, cotton, and rubber in addition to large amounts of food crops like yam, cassava, maize, millet, sorghum were produced (Oni, 2008). The country has a total land of about 98.3 million hectares out of which 71.2 million hectares (72.4%) are cultivable but only 34.2 million hectares (38.4%) is exploited for agricultural production (Opara, 2011). Agricultural production system in Nigeria is characterised by small holder farmers. Small holder farmers typically lack access to formal credit; receive little technical support and often have low productivity. According to FOS (1999), small holder farmers are farmers whose production capacity falls

between 0.1 – 4.99 hectares holding. Without doubt, enhancing agricultural productivity largely depend on the availability of finance to farmers; timely and easy access to credit enables farmers to purchase required inputs and machinery for carrying out farm operations and increasing production (Saboor, Hussain & Munir, 2009; Burgess & Pande, 2003). Agricultural financing is one of the important tools to develop rural economies in developing countries like Nigeria. Facilitation of access to credit plays a crucial role in the elimination of farmers' financial constraint. Availability of adequate timely credit will assist in expanding the scope of operations and adoption of new innovations and technology that will increase productivity for the wellbeing of the nation

Formal credits are loans obtained from the government, commercial banks or agricultural banks. Agricultural credit encompasses all loans and advances granted to borrowers to finance and service production activities relating to agriculture

(Odomenem and Obinne, 2010). The important role of credit in agricultural enterprise development and sustainability has prompted the Nigerian government to establish several programmes such as Rural Banking, Agricultural Credit Guarantee Scheme and Agricultural Credit Support Scheme aimed at enhancing availability of credit to rural populace especially smallholder farmers at affordable cost. However, the programmes have recorded little success as they are often influenced by political considerations. To develop strategies that reach a large populace and increase smallholder farmers' productivity, it is necessary that socio economic factors are investigated. Socio-economic factors directly influence social privilege and levels of financial independence. Such factors include health status, income, environment and education. Smallholder farmers are among the potential beneficiaries of agricultural credit in Nigeria, yet due to their low level of literacy, lack of information, bureaucratic bottlenecks, they are mostly unaware of existing formal credit facilities.

Smallholder farmers are the major suppliers of food to the table of Nigerians. They are the pillar of Nigeria agriculture sector and deserve every support to produce more food and supply more raw materials to the agro-industrial sector. Smallholder farmers often have to plough back their profit or rely on informal village money lenders to source funds needed to pay for the services of productive factors employed in farm activities. Smallholder farmers need credit to increase productivity and efficiency in production but institutional supply of credit remains inadequate and continues to impede the transfer of agriculture and investment in agriculture (Olagunji & Adeyemo, 2007). Thus, this study seeks to investigate the socioeconomic factors influencing smallholder vegetable farmers' access to formal credit with the specific objectives of describing the socioeconomic characteristics of smallholder farmers in vegetable production, examine the level of credit access among beneficiaries and identify factors constraining smallholder farmers' access to formal credit.

Agriculture in Nigeria is the most important sector of the economy from the standpoint of rural employment, sufficiency in food and fibre and export earnings. Nigeria is endowed with natural resources that are necessary for the development of agriculture; such resources as abundant land supply, humans and forestry resources. Agricultural sector is therefore a priority area for reducing poverty, sustenance of food production and attainment of food security (Nwaru, 2011). Vegetable production offers economic opportunity for reducing rural poverty and unemployment in developing countries. Vegetables

are seen as most affordable source of vitamins and minerals needed for good health. They are widely cultivated for food and income generation in Nigeria. Smallholder farmers cultivate them extensively. In Abia State, smallholder farmers are mostly involved in vegetable farming, producing fluted pumpkin, garden egg and cucumber. They cultivate less than one hectare of land, with crude implements, and lack extension services for new innovations. Use of modern technology is highly expensive and vegetable farmers often times cannot often afford to finance these. As a result, the utilization of agricultural technologies is often low. Vegetable farmers need to have access to finance to be able to increase their productivity through the use of improved seeds or better methods or techniques in production.

Many of the smallholder farmers in Abia State are often involved in vegetable production which are usually cultivated on small pieces of farm lands or as home stead gardening. Numerous socioeconomic factors affect smallholder farmers' ability to increase agricultural productivity and these include infrastructure, access to credit and markets. More often, gender, marital status and age influence access to formal credit especially in developing countries (Sebopetji & Belete, 2009). In addition, men tend to access formal credit more than women (Sebopetji & Belete, *ibid*). This is because women are mostly poor and illiterate and perhaps lack critical collateral for securing credit. Formal credit activities are controlled by the government which provides rules and regulations on how the funds are managed and the interest rate is usually not as high as those from informal sources of credit. Agricultural credit is often adapted to the specific financial needs of farmers which are determined by planting, harvesting, and marketing cycles. Short term credit and intermediate term credit are used for obtaining farm inputs such as fertilizer, improved seeds, breeding livestock and farm machinery while long term credit are used for real estate farming (Adebayo & Adeola, 2008).

Methodology

The study was carried out in Isiala Ngwa South Government Area in Abia State. The local government with a population of 134,762 covers an area of 258Km² (National Population Commission of Nigeria, 2006). The area is bounded by Umuocheala to the south, Nbutu to the east, Umunevo to the north and Owerrinta to the west. The people mostly engage in farming, producing yam, cassava, cocoyam, maize, and other tropical farm products. Isiala Ngwa South is made up of 48 communities (Isiala Ngwa South Geographical Setting, 2017). The population of the study comprised of all smallholder farmers in the Local Government Area. A two-stage sampling

technique was used. In the first stage, there was a purposive selection of 10 communities from 48 communities. In the second stage, a random selection of 10 farmers from each LGA was done with the aid of questionnaire supported with oral interview (giving a total of 100 farmers). Collected data was analysed with the use of descriptive statistical tools such as mean and percentage as well as the use of a probit model done with the help of Stata 12.0. The probit model constrains the estimated probabilities of the dependent variable to lie between 0 and 1.

$$\Pr (Z=1/Bi = \emptyset (x_i' \gamma)) \quad (1)$$

Where Pr denotes probability, Zi is the binary choice variable, that is access to formal credit and \emptyset is the Cumulative Distribution function. γ is a vector of unknown parameters. It is assumed that Z' can be specified as follows.

$$Z_i^* = \gamma_0 + \sum_{n=1}^N \gamma_n \beta_{ni} + u_i \quad (2)$$

$Z_i = 1$ if $Z_i^* > 0$ and $Z = 0$, otherwise

Where Xi represents a vector of explanatory variables γ is a vector of unknown parameter and u_i is a random disturbance term. N is the total sample size. The unknown parameters are estimated by the method of maximum likelihood.

Zi = access to formal credit (dummy variable; 1=yes, 0=no)
 β_1 = sex (dummy; male = 1 or female = 0)

β_2 = educational level (ordinal)
 β_3 = Marital status (dummy; single or otherwise = 1, married = 0)
 β_4 = Farming experience (years)
 β_5 = Household size (number)
 β_6 = farm size (ha)
 β_7 = Income (₦)
 β_8 = Farmers Association (dummy; member = 1, otherwise = 0).

Results and Discussion

The descriptive statistics of the socio-economic characteristics of the vegetable farmers in Isiala Ngwa South LGA are shown in Table 1.

The result shows that majority of the respondent in the study area are male as indicated by 65% and fewer females indicated by 35%. This is an indication that more males participated in the vegetable farming than females. The result shows that many (44%) of the farmers were between 40-49 years followed by 29% of the farmers who were in the age range of 30-39 years. This is an indication that most of the smallholder vegetable farmers were in their active

years. On educational level, 12% of the respondents had only primary education, 58% had secondary education and 15% of them had tertiary education. This showed that most smallholder farmers were literate. In addition, the result showed that 13% of respondents were single and 62% married, 25% of the farmers consist of widows and widowers. This supports the notion that vegetable production can be a good source of livelihood. Furthermore, the result shows that 33% of the farmers had household sizes of 1-5 persons while majority (65%) of them involved in vegetable production with a household size of 6-10 persons. The results showed that 42% of the farmers had 0.4ha – 0.6ha followed by 32% of them with 0.1ha - 0.3ha and 26% with more than 0.7 ha. Majority of the farmers farmed on owned lands as indicated by the result of 51% while 49% used hired farmlands. The result agrees with Quans (2011) that smallholder farmers often cultivate less than two hectares. Most of the farmers were engaged in other occupations as indicated by 52% who were involved in other businesses, 27% had no other source of income while 15% were civil servants and only 6% engaged as labourers. It is also shown that 55% of the farmers had been farming for about 11-20 years, followed by 28% with less than 11 years of farming experience. Majority (71%) of the farmers belonged to cooperative societies in contrast to 29% who were not members.

The probit regression analysis of socioeconomic determinants of smallholder vegetable farmers' access to formal credit is presented in Table 2.

The result shows that the probability of a farmer having access to formal credit increased significantly as the farmer attained higher educational level. The result agrees with Hussein (2007) and Owuor (2009) that educational level has a significant positive influence on farm household ability to access formal credit. Also, farmers' probability of accessing formal credit increased as they acquired more years of farming experience. This might be because the lenders see them as more credible than their counterparts with little or no experience.

The analysis of the level of credit access among smallholder farmers in Isiala Ngwa South LGA is presented in Table 3. Smallholder vegetable farmers were observed to be applying for loans to enhance their productivity, but only 25% respondents were granted loans compared to 67% that applied. Out of the few that obtained credit, 22% received between one to three times loans in their farming history and 3% had received loans four to six loans times in their farming years at different occasions. The result further shows that on the average, about ₦141,791 was requested but ₦79,000 was the average amount granted. This finding

is in conformity with Olagunju and Ajiboye (2010) that smallholder farmers are granted lower amounts of loans than they have applied for. It is observed that most of the loans had short repayment period of less than five years as indicated by 21% of the farmers and fewer persons (4%) indicated repayment period of more than five years. On average, four loan applications were made by the farmers through their farming years but they have only been successful on two occasions. This observation supports Nwaru (2011) that smallholder farmers are often constrained in accessing formal credit.

Furthermore, factors constraining the farmers' access to formal credit are shown in Table 4. It is shown in Table 4 that high interest rate was a reason for unwillingness to access formal credit as indicated by 58% of the respondents. Many (51%) of the farmers agreed that requirements for obtaining formal credit are high but 36% were in disagreement. In addition, 53% of the farmers did not make enough returns to repay their loans as against 35% of the respondents who were able to repay. On collateral, 47% of the farmers agreed that collateral requirement was a problem in contrast to 41% who didn't. About 44% of respondents disagreed that lack of knowledge on accessing formal credit was a constraint, yet 43% of the respondents indicated it as a reason for not being able to access credit from formal institutions. It was also observed that 50% of those that accessed credits had to pay back within a short period. On cooperative membership, 57% of the farmers did not agree that membership in cooperative societies influenced their application for credit compared to 29% who thought cooperative membership played a role.

Conclusion

The study investigated the socioeconomic factors influencing smallholder vegetable farmer's access to formal credit in Isiala Ngwa South Local Government area of Abia State. Education and farming experience were factors observed to have influenced their access to credit. It was deduced from the study that access to credit was limited to smallholder vegetable farmers, just as issues such as high interest rates and short repayment period among others discouraged the farmers from attempting to obtain formal credit. Consequently, the study recommends that institutions' interest rates should be reduced in order to enhance farmers' access to credit. There is need for longer loan repayment periods as well as credit education for farmers on how to access and use available credits. This education may be done through extension agents' dissemination of information to rural farmers on new innovations and improved technology.

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Table 1: Socio-economic characteristic of surveyed farmers (N=100)

Variables	Frequency	Percentage (%)
Gender		
Male	65	65
Female	35	35
Age		
30-39	29	29
40-49	44	44
50-59	21	21
60-69	6	6
Educational level		
Primary education	12	12
Secondary education	58	58
Tertiary education	15	15
No formal education	15	15
Household size		
1-5	33	33
6-10	65	65
11-15	2	2
Farm size		
0.1-0.3	32	32
0.4-0.6	42	42
0.7 and above	26	26
Land ownership		
Owned	51	51
Hired	49	49
Other occupation		
None	27	27
Business	52	52
Civil servant	15	15
Labourer	6	6
Marital status		
Single	13	13
Married	62	62
Widower/widowed	25	25
Farming experience		
1-10	28	28
11-20	55	55
21 and above	17	17
Cooperative membership		
Yes	71	71
No	29	29

Source: Field survey, 2018

Table 2: Probit model regression estimates of the determinants of access to formal credit among the respondents in the study area

Variables	Coefficient	Std. Error	Z	p-value
constant	-1.106	1.012	-1.092	0.275
gender	0.138	0.284	0.487	0.626
education	1.184	0.578	2.048	0.041*
age	0.018	0.025	0.698	0.485
marital status	0.578	0.345	1.675	0.094
household size	- 0.069	0.079	-0.879	0.379
farm size	- 0.456	0.663	-0.688	0.492
Farming experience	- 0.077	0.034	-2.213	0.027*
Cooperative	0.105	0.342	0.306	0.759
Pearson goodness of fit test	6.462		0.040	

*at 10% level of significance

Table 3: Level of credit access among surveyed farmers

Variables	Frequency	Percentage (%)	Mean
Number of loans ever applied for			
1-3	30	30.0	4.0
Above 6 loans	37	37.0	
Number of loans granted			
1-3 loans	22	22.0	
4-6 loans	3	3.0	2.036
Amount of loan applied for (₦)			
50,000 – 100,000	20	20.0	
100,001-200,000	37	37.0	141,791.0
Above 200,000	10	10.0	
Amount of loan received (₦)			
Below 50,000	1	1.0	
50,000 – 100,000	22	22.0	79,000.0
100001-200,000	2	2.0	
life span of credit (loan period)			
Below 5 years	21	21.0	
Above 5 years	4	4.0	3.4

Source: Field survey, 2018

Table 4: Factors constraining surveyed farmers access to formal credit

Variables	Frequency	Percentage (%)
High Interest rate		
Yes	58	58.0
No	30	30.0
Too much requirements		
Yes	51	51.0
No	36	36.0
Inability to pay back		
Yes	53	53.0
No	35	35.0
Lack of guarantees		
Yes	47	47.0
No	41	41.0
Poor knowledge of credit application process		
Yes	43	43.0
No	44	44.0
Short repayment period		
Yes	50	50.0
No	38	38.0
Membership in cooperative societies		
Yes	29	29.0
No	57	57.0

Source: Field survey, 2018