Accessibility Constraints Of Small-Scale Fish Farmers To Formal Credit In The Nzema East Municipality.

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Abstract.

In Ghana, among other things, limited access to agricultural finance has remained one of the fundamental problems that hamper production, productivity and related agribusiness investments in rural communities and farm households. This study sought to empirically investigate smallholder farmer's accessibility to formal credit and constraints they encounter in the process. A multi stage sampling method was employed to select eighty farmers from Nzema East Municipality for the study. Descriptive statistics, logit regression model and Kendall's coefficient of concordance were used in analyzing the data. The output from the study indicates that 30 (37.5%) of the sampled farm households were formal credit users, whereas the remaining 50 (62.5%) were non-users. The empirical results from the logit model analysis of the study indicated that age, education, income levels, distance to the financial source, family size, credit awareness level and farming experience were highly important in influencing access to formal credit.

Keywords: Credit Accessibility, Logistic Analysis, Nzema East Municipal

1. Introduction

Since Ghana's independence in 1957, various efforts have been made over the years by different governments to introduce modernization and increase the contribution of industrial sector in the areas of output, foreign exchange and employment.

Despite all these efforts, agriculture has maintained its enviable position as a major contributor to the national Gross Domestic Product (GDP) accounting for an average of 30.5percent of the country's total GDP during the period 2006 – 2010. It also accounts for 75 percent of export earnings and currently employs about 42 percent of the total labour force. Agriculture also provides more than 50 percent of the total income for most rural households in Ghana (Ghana Statistical Service, 2003).

The main economic activities in the study area are fishing and crop farming, organised on an artisanal scale. The fishery industry in general serves as source of employment, a way of life not only for coastal sectors but also inland and aquaculture sector in Ghana. It also has strong forward and backward linkages with other economic activities within both rural and peri-urban areas of the country. The artisanal sector provides over 70% of the total fish requirement and consequently the bulk of the country's protein requirement. Like other artisanal sectors of the economy, the fishery industry is confronted with many problems that have accounted for low levels of production and productivity. Prominent among these are financial constraints and limited accessibility to credit in particular (Acquah and Abunyuwah 2011, Swinnen and Gow, 1999). Agriculture credit is expected to play a critical role in agriculture and has long been identified as a major input in the development of agricultural sector (Duong and Izumida, 2002). Despite efforts by development partners and governments through advocacy, creation of enabling environment, policy incentives among others to overcome the widespread limited accessibility to financial services, especially among smallholder farmers in developing countries, majority of farmers are still confronted with difficulties in financing their private initiatives. To understand the complexities in accessing credit and its socio-economic implications on the livelihood opportunities of the people in the study area, the study assesses the socio – economic, demographic and institutional factors that affect the accessibility of credit by small scale farmers in NzemaEast Municipality amidst the recent surging up-spring of micro-finance institutions in the country. From farmers perspective problems/constraints encountered in contracting credit from financial institutions are also assessed and ranked.

2.0 Related Literature

From studies on formal credit and its accessibility many factors have been identified to explain farmers' accessibility to credit. Major among them include educational level of the individual, high interest rate on loan, types of collateral security required by the lender and borrower behaviour.

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Philip et al (2009) concluded that character is in a sense synonymous of credit. They argue that borrowing money can be thought of as exchanging the borrower's credit for the lender's money. A dishonest and untruthful individual or business with the reputation of lack of integrity in business dealings and sluggishness in loan repayments or meeting other financial obligations is not creditworthy.

Another critical issue in securing loans from any formal credit institution is the lack of knowledge on the part farmers; of how to prepare and present a loan application to a bank and what specific information the bank might require (Adegbite 2009). As emphasized, a bank will lend money only if it is convinced that the project is profitable. The borrower's repayment capacity will be best addressed with the elaboration of a good business plan.

Similarly, banks regard collateral in farming as compared to the rest of the economy, as inadequate. This is partly due to slower progress made in reforming property rights and land titling than other parts of the economy. The lack of an effective rural land market in Ghana is a significant constraint in this regard. Rural banks assign more importance to the lending risks and losses, than the potential loss of customer (Okojie 2010).

Diagne and Zeller (2002) and Foltz (2004), indicate that high interest rates charged by banks are commonly disincentive to borrowing in sub-Saharan Africa. They attribute this to a number of reasons including; perceived high risks of the venture being financed and lack of collateral, lack of a properly functioning market in financial services, high rates of default on loans, inefficient means of outreach resulting in high transaction costs, the rediscount rates of the central banks and high inflation rates prevailing in most sub-Saharan African economies. Thus high interest rates charge by the banks discourages most farmers in sub-Saharan Africa to access credit.

Finally, the type of financial institution and its policy will often determine the access to credit. Where credit duration, terms of payment, required security and the provisions of supplementary services do not fit the needs of the target group, potential borrowers will not apply for credit (Yitayal (2004).). This is manifested in the form of prescribed minimum loan amounts, loan terms, complicated application procedures and restrictions on credit for specific purposes and conditions imposed by lenders.

3. Empirical model

In many empirical analyses involving a limited dependent variable, a qualitative dependent response model such as the logit or probit model is used. For the purpose of this study, the logit model is employed (see Greene, 2000; McFadden et al 2002). Thus, whether a farmer has accessed formal credit FCA (FCA = 1) or not (FCA = 0) is explained by observable individual demographic and socio-economic characteristics (X) within the logit framework. The Kendall's coefficient of concordance was used in ranking the order of constraints associated with contracting credit particularly from the formal sectors. The standard model for the logit estimation is specified in equations (1), (2) below.

If Xi,………..Xn are the characteristics to be related to the occurrence of the outcome, then the logistic model can be given as

$$P_i = P_r(Y = 1 \mid X = x_i)$$

$$P_i = Prob(Y_i = 1) = \frac{1}{1 + e^{-(\beta_0 + \beta_i X_u + \ldots \beta_k X_{ki})}} = \frac{e^{(\beta_0 + \beta_i X_u + \ldots \beta_k X_{ki})}}{1 + e^{-(\beta_0 + \beta_i X_u + \ldots \beta_k X_{ki})}} \quad (1)$$

Similarly,

$$P_i = Prob(Y = 0) = 1 - Prob(Y = 1) = \frac{1}{1 + e^{(\beta_0 + \beta_i X_u + \ldots \beta_k X_{ki})}} \quad (2)$$

Where Pi is the probability that Y takes the value 1 and then (1 − Pi) is the probability that Y is 0 and e the exponential constant.

4. Data presentation

The data analyzed in this study was collected randomly from 80 farmers ((both crop farmers and fishermen) in Nzema East Municipal Area (NEMA) in mid-March 2012. The research instrument was designed to assess farmer's formal credit accessibility and its associated problems during application for credit/loan. Specifically,

respondents were asked whether they have applied for credit over the past five years, were given the credit applied for or not given by formal credit institutions within the municipality given their socio-economic and demographic characteristics at the time of the loan application. Socio-economic and demographic information including age (AGER); sex of respondent (SEXR); literacy level (EDUC);household size (HHSS); income levels (INCO); distance to the financial source (DIST); level of credit awareness (CAWA);type of collateral security possessed by farmers (COLL)farmers collateral status were grouped into formal or informal type based on usual collateral forms that are demanded by lenders; farm size (FRMS)and marital status (MARR) were selected as independent variables to explain the farmers state of formal credit accessibility.

5. Results and Discussion.

The average age of the respondents in the surveyed area is about 36 years ranging from 21 – 60. Of the total number of respondents (n =80), 31.2 percent (n =25) were female and 68.8 percent (n = 55) were males. Out of the 68.8 percent males, only 18.75 (n=15) engaged in crop production as their major economic activity whiles the rest 50.05 percent (n = 40) were for fishing. During the study, no female reported to be engaged in fishing. This could be due to the nature of the fishing work, which is more demanding in terms of strength.

The farm size was expressed in terms of the amount of land actually cultivated in any farming season. The average farm size of the sampled household is 2.66 acres.

In explaining the farmers stated levels of FCA, the logit analysis was performed as indicated above. The results of the final model, which included twelve independent variables, namely; age (AGER), educational attainment in years (EDUC), marital status (MARR), sex (SEXR), monthly income (INCO), household size (HHSS), major occupations grouped into crop farming and fish farming sectors (OCCR), Farm size (FRMZ)), type of collateral security (COLL), distance to financial source (DIST), level of awareness (CAWA) and farming experience (FEXP) are presented in Table 1 below.

Table 1: Results from Logistic Regression Analysis

VARIABLE	β(statistics)	STARDARD ERROR	SIGNIFICANT LEVEL
AGER	0.514	0.299	0.036*
SEXR	0.390	0.703	0.580
MARR	0.667	0.899	0.488
EDUC	0.176	0.077	0.022*
FRMZ	1.812	0.754	0.013*
FEXP	0.189	0.508	0.018*
COLL	3.6781	0.072	0.011*
DIST	- 0.034	0.302	0.011*
HHSS	- 0.911	1.192	0.046*
INCO	0.274	0.388	0.040*
OCCU	0.897	0.956	0.456
CAWA	0.3044	0.0411	0.001**
Constant	-3.719*	1.896	0.045*

Note: *, ** is significant level at 5% and 1% probability level respectively. The variable farm size (FRMZ) was computed with respect to acreage of land cultivated by the crop farmer in a given cropping season and number of basket of fish catch by the fisher folks though it was very difficult to measure

The empirical results of this study indicate that three socio-economic variables, education, income and occupation strongly predict farmer's access to formal credit (FCA) (Table 1).

The results from the analysis indicate a positive and significant relationship between credit accessibility and age (AGE).This relationship was expected because the older people are always risk averse and would not like to enter into debt obligations. Educational level (EDUC) variable was found to be a significant variable that explains farmers' chances to accessing credit from formal institution. This implies that being literate would improve one's chances to access credit as literate farmers are more capable to interpret credit information, easily understand and analyze the situation better than the illiterate farmers. This result is in line with other previous studies such as the findings by Lelissa and Mulate (2002) andYitayal (2004).

The co – efficient of the variable Farm size (FRMZ) was found to be significant to influence the chance of credit accessibility from the logistic regression analysis as in the case of small scale – holder farmers. It is positively related to credit accessibility. This indicates that farmers of small farm size have poor chances to credit than farmers of larger farm size as they would usually have a higher capital requirement and this could entice the farmer to look for external financing opportunities.

Location or distance of an individual to a credit source (DIST) was also found to be an influencing factor to credit accessibility from the results of the regression analysis. It shows that there is a significant relationship

between an individual location/distance and ones' chances to accessing credit from formal sector. The negative sign of the coefficient (β) of (DIST) indicates an inversely relationship between distance and the chance to access credit from the formal institution. Thus, farmers of long distances to the financial facility source have poor access to credit from the formal institution

The co – efficient of the variable farm experience (FEXP) was also found to be positive and significant in predicting credit accessibility. This indicates that farmers with more farming experience have good access to credit than farmers with less experience in farming.

The type of collateral security (COLL) required by the formal credit sector before granting loans was also found to be a significant factor that influences ones' chances to credit accessibility. This is negatively related to credit accessibility. This is not unexpected because many farmers (both crop and fishermen) do not have these collateral securities such as banks account and in some cases houses and building to qualify them to access credit easily from formal institution. This variable was measured by grouping farmers into those that had formal assets such as guarantor, registered assets or bank account as collateral security.

Family size (HHSS) was found to be negatively related to credit accessibility. The larger the number of family labour, the more the labour force available for production purpose. The more the labor force available, lower is the demand for hired labor, this means no or low cost for hired labour. If demand for hired labor decreases due to availability of family labor then need for credit also decreases.

The relationship between income levels (INCO) and access to credit was also found to be significant at the 5% significant level. Awareness on credit availability had a positive significant relationship with access to credit, implying that those individuals who are aware of the availability of credit services have better chances to access credit than those who are not aware. The p-values for the coefficients of Gender (SEXR) and marital status (MARR) variables from the regression analysis show that there is no significant relationship between these and farmers' chances to accessing credit from the formal Sector. The main occupational activity (OCCU) was expected to be significant because it was thought that type of activity and investment requirement could influence individual decision to request for additional money and hence to credit. However, the coefficient of the main occupation was not significant. This indicates that whether crop farmer or fishermen does not influence ones chances to access credit from any formal credit institution.

These findings correspond to previous studies such Miller (1997), Omonona et al (2010), Sai et al (2010) who found in their studies that AGER, EDUC, FRMZ, COLL, INCO, FRMZ, HHSS of farmers' are important factors that influence an individual chances to access credit from the formal credit institutions.

The constraints /problems associated with contraction of loan from formal and informal credit source according to the respondent farmers are summarized and ranked order of the problems limiting the smallholder crop farmers and fishermenaccess to credit in the study area as obtained during the study are presented in table 2 below.

Table 2: Summarized and Ranking order of credit accessibility constraints.

Type of Problem	Mean	Rank Position
Short time given to repay loan	1.55	1st
High interest rate	1.55	1st
High transactional cost	1.52	3rd
Delay in loan approval	1.51	4th
Risk of repaying loan	1.50	5th
Complicated procedure	1.49	6th
Lack of trust	1.42	7th
Need of witness	1.39	8th

No. of observation = 80, Kendall's W = 0.5835, P – value = 0.001.

The output from the Kendall's analysis provided Kendall's W coefficient of concordance of 0.5835 and probability level of 0.001 from table 2 above reviews that 58.35 percent of the total respondents (n = 80) agreed on the ranking order that short time given to borrowers to repay loan, high interest rate, high transactional cost, delay in loan approval in order of ranking are the most critical problems hindering their accessibility to credit from the formal institutions.

6. Conclusion

Ghana like many other developing economies, with weaker institutional structures and policies have side stream small scale farmers during strategic distribution of credit facilities, but the smallholder   farming dominates the overall national economy and its population is subject to extreme poverty. To bring farmers on board in this direction to break the viscous cycle of poverty in the country, it requires that they should be included within the broader framework of food security and poverty alleviation strategies/policies of the country. This study,

therefore, aimed at providing insights into the factors and the problems that influence small-scale farmer ability to access credit from formal institutions in (NZEMA). The results from the study based on logistic regression analysis show that among twelve explanatory variables, which were included in the model, only three variables were statistically insignificant while the remaining nine variables tested significant in explaining the level of credit accessibility.

The analysis shows that the probability of accessing formal credit was significantly influenced by age (AGEC), education (EDUC), income levels (INCO), distance to the financial source (DIST), family size (HHSS), the type of collateral security (SECU) required by the banks and level of awareness of credit information (AWAR). This implies that strategies to address FCA educational programmes should be localized and designed to reach the poor small-scale farmers living in the rural societies. A key finding of this research is that those farmers who are likely to suffer most from FCA problem are the poor, the rural and low educated farmers. This has strong implications on the depth of outreach of credit facilities to the farmers. Any programme or message intended to influence farmers access to formal credit should target these groups of people that contribute immensely to the development of the economy and to increase the level of awareness among small – scale farmers on credit campaign on the media such as the radio and television stations. Finally, to sustain and improve production efficiency and food security in Ghana, the poor smallholder farmers under the existing credit constraint conditions require an improvement of access to credit facilities and other resources.

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