# Factors Affecting Farm Households' Access to Credit in the Afigya- Kwabre District of Ghana

#### Shadrack Owusu

Bureau of Integrated Rural Development (BIRD), Kwame Nkrumah University of Science and Technology (KNUST), Ghana

Corresponding Author: Shadrack Owusu

#### Abstract

his study assessed the factors that affect access to credit by farm households in the Afigya-Kwabre District of Ghana. Primary data were collected from a random sample of 166 farm households consisting of 76 with access to credit and 90 without access to credit in the 2016 production year, with the aid of a questionnaire. Descriptive statistics and binary probitmodel, were employed to analyse the collected data. Results of the probit model showed that access to credit was significantly influenced by sex, age, household size, farming experience, level of education, farm size, hired labour, extension service and farmer-lender distance. The study recommends that adult education and other forms of literacy programs should be organised for cassava farmers in order to improve their level of formal education so that they could appreciate new ways of improving production including the decision to access credit. Also, the District's Ministry of Food and Agriculture MoFA should adequately equip extension officers, for instance supplying them with motor bikes, so that the officers could regularly visit the cassava farmers and educate them to access credit and use improved technologies, as well.

Keywords: Credit, Access, Poverty, Farm households, Probit

# **Background to the Study**

Economic development is severely hampered by the phenomenon of poverty. The bulk of the world's poor population lives in the rural areas and mainly depends on agriculture, as a means of livelihood (World Bank, 2004). Despite their contribution to the development of the economy, these farm households lack access to credit. In view of this, they are unable to acquire inputs of production such as planting materials abour and afford effective maintenance practices needed to raise production (Akwaa-Sekyi, 2013). Therefore, these farm households tend to produce below capacity.

Farm households lack assets mainly collateral that could enable them to be credit worthy (Adjei et al., 2009). A report prepared by the World Bank (2004) pointed out the lack of physical assets as both the primary cause and effect of poverty. The inability of many rural dwellers to access credit facilities has been cited as one of the major reasons for which poverty continues to entrench in the rural areas (Adjei et al., 2009).

In some cases, farm households are compelled to sell off their available assets or are unable to replace their productive assets which are lost through natural disasters (World Bank, 2002). Moreover, financial institutions channel much of their resources to the cities and towns leaving the rural areas and small holder farmers at a disadvantage (Akwaa-Sakyi, 2013.

The degree of poverty stemming from lack of capital for production among the growing population in the developing countries prompted governments, Non-Governmental Organizations (NGOs) and development planners to embark upon poverty reduction as a tool to promote economic development (Adjei et al., 2009). To address the issues of poverty, access to credit was contemplated as a rural development strategy with the view to extending financial resources to the rural households which is dominated by small holder farmers.

# Literature Review Concepts of Credit

The term credit has been used variously by different scholars. Feder et al. (1990) define credit as the capacity to obtain the capital of another backed by the future promise of repayment. This definition of credit is in line with Latifee (2003) who sees credit as a contract between two people where one party transfers money, goods or services to the other with the promise of future resettlement. Moreover, Ellis (1992) sees credit as an undertaking in which case an amount of money is transferred to a debtor who promises to pay back in future. On the bases of the above definitions, it can be concluded that credit is transferred from a lender to a borrower who in turn uses it as an indirect input of production.

#### **Sources of Credit to Farmers**

Basically, there are two main sources of rural credit. They are the formal or institutional and the informal or non-institutional sources.

# Non-institutional/Informal Sources of Credit

A number of individuals or groups make up the non-institutional credit providers (Awunyo-Vitor and Abankwah, 2012). They include the category of relatives, friends, landlords, money lenders, traders, Rotating Savings & Credit Association (ROSCA) and so on (Aryeetey, 2008; Owusu-Antwi and Antwi, 2010). Non-institutional credit providers do not operate under the regulation of any central monetary authority and access to non-institutional credit is predominantly based on social networks (Helunke and Levitsky, 2003). Most often, the well-to-do households in the farming communities has the capacity to transfer loans to the poor rural farmers (Osei-Assibey, 2009). Loans offered by the non-institutional lenders normally do not require any strict regular payment schedule (Fichera, 2010). Even though, there are no formal mechanisms in place to compel borrowers to conform strictly to payment timelines, borrowers who fail to portray creditworthiness may be refused any opportunities for future loans (Fichera, 2010). Money lenders are mainly farmers or traders who have accumulated surplus income from their productive activities (Aryeetey (2008). Where they need to meet clients' high demand for loans; money lenders may use their savings as security to acquire bank loans (Fichera, 2010, 2010).

Even though money lenders do not require collateral securities, they offer loans at very expensive rates (Duflo et al., 2008). This explains why they are mostly treated as a last resort after other avenues have proven unsuccessful (Akwaa-Sakyi, 2013). Aryeetey's (2008) opinion is no different as he reckons that money lenders are more particular about their interest on their transaction than their motive of offering loans to the poor. According to Stiglitz (1990), money lenders take the trouble to assess the socio-economic characteristics of borrowers before granting them loans. This provides money lenders with detailed information about borrowers so that they may determine high risk and low risk borrowers. The effect of this that they may be able to know which clients may have the ability to repay the loan.

# Institutional/formal Sources of Credit

In order to achieve sustainable rural development, there is the need for the provision of large institutional sources of credit to the rural areas. Institutional credit sources are provided by the commercial banks, Development Banks, Rural Banks and so on. These are formal institutions which are regulated under the control of a central bank (Fichera, 2010). Thus they operate within a specified framework of a recognized financial institution. Clients require to present collateral mostly in the form of a land or house as a security before loans could be granted to them (Owusu-Antwi and Antwi, 2010). Clients need to formally apply before they have access to their services (Duflo et al, 2008). In a research conducted by Mohieldin and wright (2000) in Egypt, they asserted that the chunk of institutional credit is allocated to the productive areas to trigger agricultural, trade and industrial investment. A similar study by Atieno (2001) in Kenya reveals that institutional credit was allocated for purposes of st formal loan is channeled into productive activities with 30% being allotted for consumptive purposes. According to Osei-Assibey (2009) banking institutions have now taken the trouble to extend their services to the remote and rural areas which largely remains unbanked. However, they are very unwilling to provide lending services to farmers as they consider them not creditworthy (Owusu-Antwi and Antwi, 2010). Hence they prefer lending out loans to corporate entities since they seek to maximize profit and minimizes risk (Aryeetey, 2008.). This increases the capacity of the rural dwellers to engage meaningfully in economic activities and improve the rural economy as well.

#### Factors that Determine Farmers' Access to Credit

Factors which determine farmers' access to credit can be categorized into two; they are household or individual characteristics and the financial institutions characteristics. Among the individual or household characteristics are sex, age, level of income and education whilst the attributes of financial institutions that may affect the individual or a household's decision to access credit include interest rate, terms of the credit and distance from the provider.

# Individual/ Household Characteristics

Age: There is the likelihood for young farmers to have access to credit in order to engage in a number of economic activities, unlike the old farmers (Mpuga, 2004).. This implies that access to credit decreases with increase in age. However, Nwaru (2011) undertook a study in Nigeria which revealed that age has no effect on access to credit access credit. Diagne (1999) observed that an increase in the age of female farmers reduces their likelihood of access to credit. According to Auma and Mensah (2014), there is a negative relation between age of female farmers and the likelihood of access to credit from the formal lending sources. The implication is that as the age of a female farmer increase, their likelihood of access to credit declines.. This means that, the ageing female farmer may not be able to generate enough income to meet the credit repayment (Mpuga, 2008).

Gender: The engagement of men and women in different economic activities has impact on their probability of access to credit. As defined by social roles and norms, women engage in farm activities and household chores, unlike men who engage largely in incomegenerating activities (Ilahi, 2001). This is the result of custom barriers which restrict women ownership and control of economic resources. Because women lack control and ownership of productive resources, they lack the required collateral to secure loans from the formal financial lenders. Again they feel pessimistic on their ability to repay the credit (Tefera, 2004). However, a few women may break the traditional barriers and take up independent and entrepreneurial roles. This may therefore positively affect their likelihood of access to credit (Auma and Mensah, 2014). If they do, there is the tendency for the society to see them as neglecting their traditional roles (Fletschner and Carter, 2008).

Married Status: Widows, divorcees and unmarried farmers are highly disadvantaged in terms of building social capital. Therefore, they tend to face difficulties in access to credit (Auma and Mensah, 2014). According to a survey conducted by Japella (1990), unmarried individuals or single-headed houses are more likely to be 3.4 % likely to be credit constrained than married individuals. He further stated that married couples are less mobile to be located and again the loan repayment will be jointly made by the married couples.

**Distance**: The proximity of the farmer to the source of credit is one of the most important factors that determine a household's access to credit. Farm households are reluctant to access credit from far located lenders (Hussien, 2007). According to Hussien (2007), the cost of transport could be a major deterrent to poor households.

Household Size: The relationship between household size and access to credit can be either positive or negative (Mpuga, 2008). In his study to identify the possible factors that influence household's demand for financial services, Bendiget. al. (2009) using multivariate probit regression method to analyse responses from respondents found out that there is a positive effect of household size on access to credit. Similarly, Bizoza et al. (2007) argue that the larger the size of the household, the more the farmer becomes endowed with family labour, thereby reducing the cost of labour. Conversely, according to Tang et al. (2010), there is a negative correlation between household size and access to credit. To them, the large size household tends to spend huge portions of credit on the livelihood of the family, particularly children and the elderly.

**Education**: Access to credit is largely influenced by the level of education of the farmer. He further stated that access to credit from the formal lending institutions requires a cumbersome process of application. Therefore, a farmer with low level of education is less likely to have access to credit from the formal lenders (Nguyen, 2003). Tang et al. (2010) found a positive influence of education on a household's access to credit. In their study above, they found out that an additional year of education would increase the probability of access to credit by another 2.5 percent and doubling land endowment would increase the likelihood of access to credit by 5.6 percent. They further stated, however, that these variables may not have influence on access to credit especially from the informal lending sources. For instance, education may influence access to credit from the formal lending sources but not from the informal sources. Chen and Chivakul (2008) also argue that, whilst primary and secondary level education may have a positive influence on access to credit, at primary and secondary level may affect demand positively, but at four-year university level education may affect access to credit both negatively and insignificantly. This implication may be that well-educated farmers may be high income earners and therefore have no need to access credit. Bendig et al. (2009) however proved that welleducated farmers are more likely to access credit from the formal sources. Also, Tin et al. (2010), studying rural households' workers in Vietnam concluded that because most of them work in unskilled sectors their access to credit may not have any correlation with education.

**Extension Contact**: Extension contact is another important variable which influences a farmers' access to credit. Hussein (2007) asserted that farmers' contact with services from extension officers is capable of improving their level of technology and having exposure to new ways of farming. This has the potential to raise the level of productivity of farmers.

**Household Assets**: The assets of a household are a strong determinant of the decision to access credit (Auma and Mensah, 2014). A work undertaken by Duflo et al. (2008) revealed there is a negative influence of household assets on access to credit. They further added

that a house endowed with assets may not have any need for credit. However, the findings of Mpuga (2004) is a sharp contradiction, as according to him, it is the value of the assets which counts and not the number. In one study conducted in Malawi, Diagne (1999) concluded that the composition of household assets was much more important in determining household access to formal credit than the overall value of the assets.

Farm Size: Farm size is the total land owned by the household in acres. According to Binswanger *et al.* (1989) land remains the most important asset to serve as collateral in order to access credit from the formal lending sources. They further argued that households with more land are more likely to have access to credit. On the contrary, a study by Diagne (1999) concluded that the value of land amongst the total household assets had a negative correlation with access to credit, although it was found to be statistically significant. Farmers in the rural areas majority of who are peasants and smallholder are landless. This implies that they may find it difficult to meet the collateral requirements of lenders.

Membership of Farm Based Organization: Since majority of farmers lack collateral, lenders tend to overcome the risk of default through group borrowing. Members of the group are jointly liable for the repayment of loans (Al-Mamun et al., 2011). According to Aryeetey (2005), the group membership is the surest way to ensure the implementation of loan contracts. Through group lending creditors are able to distinguish between good and bad borrowers (Ghatak, 1999). Because members are jointly liable to the credit repayment, the system of group lending has been extended to the remote areas in order to reach poor farmers including women with the objective of improving their socio-economic status (Zhang, 2008).

**Interest Rate**: Access to credit is much also determined by the interest rate charged by lenders. Interest rate is the price paid by the farmer or borrower for obtaining the loan. All other things being equal, if the interest rate charged on the credit is high, it deters the borrower from having access to the credit (Mpuga, 2004).

**Savings:** Savings imply keeping money or assets aside in order to meet future needs or cost. Savings enhance the capacity of farmers to insulate themselves against shocks, stress and other vulnerable conditions such as floods, drought, and crop failure among the most common. However, farmers find it extremely difficult to save since they lack the capacity to do so (Rutherford, 1999). As a result of the potential high risk, lenders especially institutional creditors fail to target the poor as beneficiaries of the financial services they seek to offer. In order to encourage saving habits among poor rural farmers in Bangladesh, a research conducted by Tefera (2004) revealed that Islam Banks provided credit to beneficiaries who developed the efforts of saving with the financial institution.

#### **Institutional Characteristics**

Institutional or formal credit lenders are mostly guided by policies on their lending activities. Even though, lending policies of financial institutions may differ, there exist some common characteristics regarding the credit lending activities. These factors have

constituted what is known as the Five "C's" used by financial institutions to determine the credit worthiness of borrowers.

Collateral: Collateral may include tangible assets, chattel mortgages, legal mortgages and life policies (Brown, 2004). These securities are to enable the bank lower the high risk involved in advancing loans to households (Brown, 2004). However, farmers find it difficult to meet such requirement as they lack the necessary collateral (Hossain, 1988). In their study conducted in Malawi, Aliou and Zeller (2001) it was found that formal credit lenders restricted advancement of loan facilities to the urban dwellers who could meet collateral requirement.

**Capital**: Capital involves the equity households need to make investment into their farm businesses. With capital, farmers may have a cushion during periods of stress and shocks. Lenders consider the debt to equity ratio of households since that is the most guaranteed way to ensure stability of businesses (OECD, 2006).

**Capacity**: Capacity implies the ability of households to repay loans. To this end, institutional lenders review the credit history and records on previous financial participation programs of households in order to assess their credit worthiness (Brown, 2004). In the absence of such records, lenders become reluctant to advance loans.

Character: The character of households involves the households' experience in business and their business management skills. The qualities indirectly affect the ability of households to reduce the possibility of loan default (Brown, 2004).

**Conditions**: Conditions refer to the national economic environment within which the borrowers operate their businesses. Credit lenders assess the economic situations within which the business operates in order to determine whether or not borrowers' businesses have the capacity to withstand the potential risk the economy may pose(Brown, 2004). This implies that a sound and vibrant economy creates the enabling environment which is required to guarantee the success of entrepreneurial activities in the agricultural sector.

# Methodology

# Population and Sampling

The target population includes all the cassava farmers in the study area. Four of the cassava producing communities (Abroma, Pentng, Kyekyewere and Aboabogya) were randomly selected. A total of 166 cassava farm households comprising 76 with access to credit and 90 without access to credit were randomly selected from the four communities. Using a semi-structured questionnaire, primary data were collected from the respondents. Data collected included household and farm characteristics.

#### **Data Analysis**

Socio-economic characteristics of respondents were summarized using descriptive statistics whilst access to credit was analysed using the probit model.

#### **Probit Model**

The development of a probability model with binary response involves the use of three approaches; namely the Linear Probability Model (LPM), the Logit Model and the Probit Model. The probit model was used since the dependent variable (credit) is treated as a binary variable (access=1, no access=0). In the analysis of dichotomous outcome variable, the probit model is preferable to others, since it can constrain probabilities within the range of 1 and 0 (Mpuga, 2008).

# Specification of the empirical model

 $Y_i = c + \beta 1(SEX) + \beta 2(AGE) + \beta 3(MRST) + \beta 4(YRSFMEDU) + \beta 5(HSESZE) + \beta 6(FMEXP) + \beta 7(FMSZE) + \beta 8(HDLB) + \beta 9(EXT) + \beta 10(FBO) + \beta 11(DIST) + \mu$ 

Where  $Y_i$  = (the dependent variable which defines access to credit by cassava farmers = 1 and 0 = otherwise, c= constant of the equation;  $\beta 1(SEX) = Sex$  (1 if male, 0 if female(+));  $\beta 2(AGE) = Age$  (years (+/-));  $\beta 3(MRST) = Marital$  status (1 if married,0 if otherwise(-));  $\beta 4(YRSFMEDU) = Years$  in formal education (years(+));  $\beta 5(HSESZE) = Household$  size (number of people(+/-));  $\beta 6(FMEXP) = Farm$  experience (years(+));  $\beta 7(FMSZE) = Farm$  size (acres(+));  $\beta 8(HDLB) = Hired$  labour (number of people(+)) =  $\beta 9(EXT) = Extension$  services visit (1 if yes, 0 if no(+));  $\beta 10(FBO) = Membership$  of Farm Based Organisation (1 if yes, 0 if no(+));  $\beta 11(DIST) = Distance$  (km(-));  $\mu = Error$  term.

#### **Results and Conclusions**

The descriptive statistics of the socio-economic characteristics of the respondents are presented in Tables1.1 and 1.2. Out of the total respondents, 46% had access to credit whilst the remaining 54% did not have access to credit for the 2016 production season. This is because they lack collateral, guarantors and do not have bank accounts (Salami et al., 2010). Because the poor rural farmers are credit-constrained, they are unable to obtain production inputs such as labour and land leading to low production levels.

#### Sex

Male and female farmers with access to credit constituted 65% and 35%, respectively whereas the cassava farmers who did not have access to credit consisted of 63% males and 37%, females. This reaffirms the assertion by Minot et al. (2006) that male farmers have more access to credit than the female counterparts. Lands which could be used as collateral to secure loans are mostly owned and controlled by male farmers.

## **Marital Status**

Eighty-four percent (84%) of the respondents who had access were married as against 86% married cassava farmers without access to credit. This could be the case that married farmers may need credit to meet the consumptive needs of the family, particularly where the size of the family is large with majority being children (Auma and Mensah, 2014).

# Farm Based Organization

Thirty-two percent (32%) of households with access to credit were members of FBO whilst 33% of those without access were also members of FBO. This implies that the bulk of cassava farmers in the study area did not belong to FBO.

#### **Extension Service**

Sixty-eight percent (68%) of the cassava farmers with access to credit received visit from extension officers whereas 56% of cassava farmers without access to credit had contact with extension officers.

# Age

The mean age of household heads with access to credit was 38.11 years and that of household heads without access to credit was 44 at 1% significance difference.

#### **Years of Formal Education**

Cassava farmers with access to credit had an average of 6.47 years of formal education whilst those without access to cassava spent 4.79 years of formal education. This shows a significant difference at 1% level. This implies that households in the treatment group have spent more years in formal education than farmers in the control group.

#### Household Size

The mean household size was 6.78 for cassava farmers with access to credit and 4.79 for those without access to credit. This indicates 1 % significant difference in the household sizes of cassava farmers with access to credit and those without access to credit.

#### **Farm Experience**

The difference in farm experience between households with access to credit and those without access to credit is not significant as the latter (about 16 years) had more farm experience than the former (about 15 years). This implies that farm experience of the two groups is nearly the same.

#### Farm Size

The average farm size of farmers with access to credit was 3.20 acres. On the other hand, farmers without access to credit have an average farm size of 1.82 acres. The difference of the distribution is significant at level 1%. The difference in the size of land was partly the basis of the increase in probability of access to credit. According to Binswanger *et al.* (1989) that land remains the most important asset since it serves as collateral in order to have access to credit. Most of the cassava farmers who did not own land or own a small acre of land did not have access to credit and could lead to low cassava productivity.

#### Hired labour

Cassava farmers with access to credit were found to hire more labour than those without access to credit. Those with access to credit hired an average of 10 labours as against an average of 6labours by cassava farmers without access to credit. The results therefore show a significant difference at 1% level. .

#### Distance

Whilst the average distance between households with access to credit and credit lenders was 3.26km, the average of distance between households without access to credit and lenders was 6.16km. The difference in the distance was 1% significant.

Table 1: Socio-economic characteristics of respondents. (Comparisons of Categorical Variables)

	Access		No access		t-value
Variable	Freq	%	Freq	%	
sex					0.01
male	49	65	57	63.3	
female	27	35	33	37	
Total	76	100	90	100	
Marital Status					-0.01
married	66	86.8	77	85	
unmarried	6	7.9	2	2.5	
divorce	1	1.3	9	10	
widow	3	3.9	2	2.5	
Total	76	100	90	100	
FBO					-0.02
yes	24	32	30	33	
no	52	68	60	67	
Total	76	100	90	100	
Extension					0.13*
contact					
yes	52	68	50	56	
no	24	32	40	44	
Total	76	100	90	100	

Table 2: Comparisons of Continuous Variables

variables	Access		No access			Mean diff. (t value)	
variables	min	max	Mean (Std.Dev.)	min	max	Mean (Std.Dev.)	(t value)
Age	22	60	38.11 (7.81)	31	51	43.63 (6.33)	-5.53 (-5.04)***
Years in formal education	3	12	6.47 (3.86)	2	9	4.79 (3.63)	1.69 (2.89) ***
Household size	2	12	6.78 (2.41)	2	13	8.01 (1.69)	-1.24 (-3.86)***
Farm experience	2	38	14.58 (8.39)	4	33	16.39 (7.65)	-1.81 (-1.45)
Farm size	1	5	3.20 (1.40)	1	3	1.82 (0.55)	1.38 (8.59)***
Hired labour	4	15	9.76 (3.65)	2	11	6.06 (2.02)	3.73 (8.31)***
Distance	1	8	3.26 (2.43)	1	10	6.16 (2.95)	-2.93 (-6.89)***

#### Determinants of household's access to credit

The results of the probit model on the determinants of access to credit are presented below in Table 3.

Variable	Coefficient	Std Error	Marginal effect	z-value
Sex	0.6729*	0.3878	0.2613	1.78
Age	-0.0577**	0.0258	-0.0225	-2.24
Marital Status	-0.5722	0.5929	-0.2063	-0.97
Years of formal education	0.1684***	0.0637	0.0655	2.64
Household size	-0.16638*	0.0965	-0.0647	-1.73
Farm experience	0.0599*	0.0332	0.0233	1.80
Farm size	1.0167***	0.3505	0.3955	2.90
Hired labor	0.1551**	0.0764	0.0603	2.03
FBO Membership	-0.5730	0.4171	-0.2238	-1.37
Extension contact	0.9974***	0.3706	0.3799	2.69
Distance to credit center	-0.4111***	0.0789	-0.1599	-5.21
Constant	-1.0561	1.2464	1 10 500	-0.08

Number of obs= 166 Pseudo R<sup>2</sup> = 0.6183Log likelihood=43.6937 LR Chi<sup>2</sup> (10) = 141.56Prob> Chi<sup>2</sup> = 0.0000

Source: Field survey, 2017

**Note:** \*\*\* significant at 1%, \*\* significant at 5%, and \* significant at 10% of significance levels.

The dependent variable indicates access to credit as 1 and no access as 0. Access here implies farmers who applied for credit and got it. The results of the probit model show that sex, age, years of formal education, household size, farming experience, farm size, hired labour, extension contact and farmer-lender distance were statistically significant factors which influenced the household access to credit. On the other hand, marital status and membership of FBO were not statistically significant in access to credit for cassava production in the study area. The result show that the sex of the cassava farmer has positive influence on access to credit and was significant at 10%. This implies that being a male is likely to have positive effect on access to credit by 26%. This is consistent with the apriori expectation and findings of Minot et al., (2006); Awunyo-Vitorand Abankwa, (2012).

The result disproves the hypothesis as age was found to be significant at 5% but negatively affect access to credit among cassava farmers. This implies that as age increases by one year, the probability that a cassava farmer would have access to credit decreases by 2%. This is consistent with the findings of Mpuga (2004). Years of formal education was statistically significant at 1% and shows a positive influence on access to credit and this result supports the apriori expectation and findings of Nguyen (2003) that age has a significant positive effect on access to credit. The implication is that an additional year spent on formal education increases a cassava farmer's likelihood of access to credit by 6%.

Household size was found to be significant at 10% but have a negative influence on access to credit. The indication is that a unit increase in the size of the household has the probability of reducing a cassava farmer's access to credit by 6%. The result is consistent with the findings of Oyedele et al. (2009). Farming experience of the household has a positive effect on access to credit and was significant 10% level. An additional year to the experience of a cassava farmer increases their probability of access to credit by 2%. This result confirms the apriori expectation and findings of (Njoku, 1997).

Farm size was found to have a positive effect on access to credit and significant at 1%. This implies that a unit increases in the farm size increases the likelihood of household's access to credit by 39%. This is in line with the apriori expectations and findings of Binswanger et al. (1989). Hired labour was also significant at 5% level and influence access to credit positively. As hired labour increases by one unit, household's access to credit increases by the probability of 6%. This is supported by the conclusions of Hofferman and Polland (1983) and the apriori expectation.

Extension service contact positively and significantly affects access to credit by 38% at 1% significant level. This is in line with the apriori expectation and findings of Hussein (2007). Farmer-lender distance was significant at 1% and showed a negative influence on access to credit by 16%. The implication is that a kilometre increase in distance reduces the likelihood of access to credit by 16%. This supports the apriori expectation and findings of Hussein (2007).

#### **Conclusions and Recommendations**

The study sought to assess the factors that affect access to credit by farm households in the Afigya-Kwabre District of Ghana. A semi-structured questionnaire was used to collect primary data from 166 farm households comprising 76 with access to credit and 90 without access to credit in the 2016 production year. Using the probit model, the resultss showed that sex, age, household size, farm size, hired labour, level of formal education, farm experience, extension service visit and distance were the variables that significantly influenced access to credit. Marital status and FBO membership did not significantly affect access to credit. The study recommends that adult education and other forms of literacy programs should be organised for the farm households in order to improve their level of formal education so that they could appreciate new ways of improving production including the decision to access loans. The form of education should empower the cassava farmers to read and understand the terms of accessing the credit. The Ministry of Food and

Agriculture (MoFA) should adequately equip extension officers, for instance supplying them with motor bikes, so that the officers could regularly visit the cassava farmers and educate them and improve the technological capacity of farmers, as well.

#### References

- Adjei, J. K., Arun, T.G., & Hossain, F. (2009). *Microfinance in asset-building and poverty reduction: the case of sinapi aba trust of Ghana*. BWPI. The University of Manchester, United Kingdom: World Poverty Institute.
- Akwaa-Sekyi, E. K. (2013). Impact of microcredit on rural farming activities: The case of farming communities within Sunyani area, *Management Science and Engineering*, 7 (4), 23.
- Aliou, D., & Zeller, M. (2001). *Access to Credit and its impact on welfare in Malawi*. International Food Policy Research Institute, Washington DC.
- Al-Mamun, A, et al., (2011). Examining the critical factors affecting the repayment of microcredit provided by AmanahIkhtia Malaysia: *International Business Research*, 4 (2), 93-102.
- Aryeetey, E. (2005). Informal finance for private sector development in Sub-Saharan Africa.
- Aryeetey, E. (2008). From informal finance to formal finance in Sub-saharan Africa; Lessons from linkage efforts. Paper presented at the High-Level Seminar on African Finance for the 21<sup>st</sup> Century Organized by the IMF Institute and the Joint African Institute Tunis, Tunisia.
- Atieno, R. (2001). Formal and informal institution' lending policies and access to credit by small-scale enterprises in Kenya: an empirical assessment. *African Economic Research Consortium, Nairobi*. Research Paper III
- Auma, D., & Mensah, P. (2014). *Determinants of access and demand among smallholder farmers in tigray region, Ethiopia*. Unpublished Master's Thesis. Norwegian University of Life Sciences, School of Economics and Business.
- Awunyo-Vitor, D. & Abankwa, V. (2012). Substitutes or compliments? formal and informal credit demand by maize farmers in Ashanti and Brong Ahafo Regions of Ghana. *International Journal of Agriculture and Forestry*, 2 (3), 105-112.
- Bendig, M., Giesbert, L., & Steiner, S. (2009). Savings, credit and insurance: Household demand for formal financial services in rural Ghana. German Institute of Global and Area Studies Working Papers, No.94.
- Binswinger, H., Khandker, S., & Rosenzweig, M. (1989). *How infrastructure and financial institutions affect agricultural output and investments in India*. Washington DC: World Bank working paper 163. World Bank.

- Bizoza, A., Ortmann, G., Lyne, M. (2007). Determinants of Potato Yield in Gikongoro Province, Rwanda. Africa *Insight*, 37 (1).
- Brown, K. (2004). *Practice of reforming the business environment: the case of business environment strengthening for Tanzanian progress (BEST*). Tanzania: President Office, Planning Privatization, Dar as Salaam.
- Chen, K.C., & Chivakul, M. (2008). What drives household borrowing and credit constraints? Evidence from Bosnia & Herzegovina. IMF working paper (European Department) WP/08/202.
- Diagne, A. (1999). Determinants of household access to and participation in formal and informal credit markets in Malawi.
- Duflo, E.B., Crepon W., Pariente & Devoto, F. (2008). Poverty, access to credit and the determinants of participation in a new microcredit program in rural areas of Morocco. *Impact Analysis Series*, 2, 1-40.
- FAO. (1994). Rural poverty in the 1990's" in rural development special No.15. Accra,: Ghana Universities Press.
- Feder, G., Lau, I., Lin, J., &Luo, X. (1990). The relationship between credit and productivity in Chinese agriculture: A microeconomic model of disequilibrium. *American Journal Agricultural Economics*, 72 (5), 1151-1157.
- Fichera, E. (2010). An analysis of household credit markets in Ethiopia and Malawi (doctoral dissertation). University of Nottingham.
- Ghatak, M. (1999). Screening by the company you keep: Joint liability lending and the peer selection Effect. Mimeo: University of Chicago.
- Heffernan, P. J, & Pollard, S. K. (1983). The determinants of credit use among smallholder farmers in Jamaica. *Social and Economic Studies*, 32 (1), 23-41.
- Helmke, G., & Levitsky, S. (2003). *Informal institutions and comparative politics: A research agenda*. Technical Report, South Bend, IN: Kellog Institute for International Studies, Notre-Dame University.
- Hossain, M. (1988). Credit for alleviation of rural poverty: The Grameen Bank in Bangladesh. *IFPRI Research Report*, 65. Washington, DC: IFPRI
- Hussien, H. (2007). *Farm household economic behavior in imperfect financial market*. Doctoral thesis, Swedish University of Agricultural Sciences, Uppsala.

- Ilhahi, N. (2001). *Children's work and schooling*: Does gender matter? Evidence from Peru LSMS panel data. A paper prepared for the policy research presentation on gender.
- Jappelli, T. (1990). Who is credit constraint in the US economy? *The Quarterly Journal of Economics CV 1*, 219-234.
- Latifee, H. (2003). *Microcredit and Poverty Reduction*. A paper presented at the International Conference on Poverty Reduction through Microcredit held at Ceylan Intercontinental Hotel, Taksim Istanbul, Turkey.
- Mohieldin, S., & Wright, W. (2000). Formal and Informal Credit Markets in Egypt. *Center for Economic Policy Research*, 48 (3), 657-670. Six Institutions. *Journal of International Development*, 16 (3), 467-500.
- Minot, N., Epprecht, M., Trananh, T., & Trung, L. Q. (2006). Income diversification and poverty in the northern uplands of vietnam. Washington DC: International food policy research institute. http://www.hpai-research.net. Web page viewed 12 March 2017.
- Mpuga, P. (2008). Constraints in access to and demand for rural credit: Evidence from Uganda. A paper for presentation during the African Economic Conference (AEC) 12-14 November 2008 Tunis, Tunisia.
- Mpuga, P. (2004). *Demand for credit in Rural Uganda: who cares for the peasants?* Center for the Study of African Economies.
- Nguyen, V. (2008). Effects of the value of assets on farming household's Access to credit in rural Vietnam: The case of Chan Thanh a district, can Tho Province. M.A Thesis, the Vietnam Netherland Project, Ho Chi Minh City.
- Njoku, J. (1997). Determinants of loan repayments under the special emergency loan scheme. *African Review of Money Finance and Banking .1*, pp.39-51.
- Nwaru, J. C. (2011). Determinants of informal credit demand and supply among food crop farmers in AkwaI bom State, Nigeria. *Journal of Rural and Community Development*, 6 (1), 129-139.
- Organisation of Economic Cooperation and Development (OECD) (2006). *Improving access to finance in Kazakhstan's agribusiness sector.* Kazakhstan Sector Competitiveness Strategy Phase II. Private Sector Development Policy Handbook.
- Osei-Assibey, E. (2009). Financial exclusion: What drives supply and demand for basic financial services in Ghana? *Savings and development*, 3.

- Owusu-Antwi, G., & Antwi, J. (2010). The analysis of rural credit market in Ghana. *International Business and Economics Research Journal*, 9 (8).
- Oyadele, G. A., Akintola, J. O., Rahji, M.A.Y., & Omonona, B. T. (2009). Credit constrained conditions of farm households and profitability of agricultural production in Nigerian agriculture. *Journal of Agricultural and Food Sciences*, 4, 192-201.
- Oyateye, E. T. (1980). The Nigerian banking system and credit needs for development. Lagos: Nigeria.
- Rutherford, S. (1999). *The Poor and their Money: an essay about financial services for the poor people*. UK: Manchester,. Institute of Development Policy Management (http://www.microfinancegateway.org/content/article/detail/1737)
- Stiglitz, J. (1990). Peer Monitoring and Credit Markets *World Bank Economic review 4*, 351-366. Studies, University College Swansea Summit Campaign, 2002.
- Tang, S., et al. (2010). Formal and informal credit markets and rural credit demand in China. Selected paper presented for presentation at the Agricultural and Applied Economics Association AAEA, CAES and WAEA Joint Annual Meeting, Denver, Colorado, July 25-27, 2010.
- Tefera, D. (2004). *Determinants of smallholder farmers demand for Non-formal Credit: The case of Farta Woreda*. Unpublished MSc thesis, Alemaya University, Ethiopia.
- World Bank (2002). *Engendering Development Policy Research Report*, Washington DC.
- Zeller, M., Schrieder, G., Braun Von, J., & Heidhues, F. (1997). Rural finance for food security for the poor. *Food Policy Review*, 4. Washington, DC. International Food Policy Research Institute.
- Zhang, Z. B., & Xu, P. (2008). Discussion on security of water and food in China. *Chinese Journal of Eco-Agriculture*, 16 (15), 1305-1310