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Determinants of Constraints to Credit Access among Cocoa Farming Households in Osun State, Nigeria

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Abstract: Access to credit is a major problem facing the rural farmers while, credit constraints affect farmers' investment behaviors, productivity and expansion of farms negatively. Now in Nigeria, the cocoa farming households can only access adequate credit with acceptable real estate collaterals, which most of the farming households lack. However, for the dearth of information regarding the effects of social capital on constraint to credit access among cocoa farmers in Osun State, Nigeria. This study therefore, examined the determinants of Credit Constraints (CC) and also ranked the constraints identified by the Cocoa Farming Households (CFHs) in the study area. Primary data were collected from 150 randomly selected CFHs from the two cocoa producing Agricultural Development Project (ADP) zones with the aid of well structured questionnaire using multistage sampling procedure. Data collected include socio-economic, social capital and credit characteristics. Analysis was done using descriptive statistics, social capital indices and censored Tobit regression model. Social Capital (SC) index was 25.81% indicating low level of SC among the CFHs. Also, unit increases in request for collaterals and gender of household head increases ($p<0.05$) CC by 83.03 and 195.82%, respectively for the CFH while, units increases in educational status, years of experience, presence of savings and decision making index (index of participation) in association reduces ($p<0.05$) CC by 6.76, 4.61, 173.62 and 2.71%, respectively. The study conclude that social capital although low now among the cocoa farming households, if improved will go a long way to reduce their constraints to credit access.

Key words: Credit constraints, social capital, cocoa farming households, censored regression

INTRODUCTION

A household is constrained if it lacks access to credit or cannot borrow as much as it wants. Credit constraints can affect farmers' investment behavior (Eswaran and Kotwal, 1990a, b; Rosenzweig and Wolphin, 1993; Fafchamps and Pender 1997). Social capital has been reported to improve access to credit. Social capital, which refers to the ability of people to derive benefits by virtue of their membership in associations (Portes, 1998). Such benefits include having access to services and other resources.

Feder *et al*. (1990) used cross-sectional household level data from a study in Northeast China to measure productivity differences between farmers who are credit constrained and those who are not. The study reported that a significant proportion of credits were actually utilized for consumption so that the productivity effect is smaller than expected. Kochar (1997) also measured the effect of credit on productivity by examining the impact of credit constraints on land leasing decisions and found that credit does not play as important a role as ownership of irrigated land in India. Narayan (2001) in a study on role of credit in determining land-leasing decision of farmers in India observed that contrary to the assertion of Feder *et al*. (1990) and Kochar (1997), credit does constrain agricultural production and can have a positive impact on productivity. The study further revealed that credit had a positive effect on land-leasing for farmers with smaller holdings of land. Debela (2001) found out, in a study of impact of credit on soil conservation and farm productivity in Nepal, that providing credit for investment and production at affordable terms had great positive impact on both soil conservation investment and productivity, especially for farmers classified as credit constrained. Furthermore, Benu (2001) discovered that an increase in agricultural credit as well as a reduction in the cost of production had a positive impact to the tune of 60% on agricultural productivity in Indonesia.

Croppenstedt *et al*. (2003) in a study on technology adoption in Ethiopia found that large-scale supply of credit, transportation, health and education investment program had 55% positive impact on smallholder productivity and household welfare. However, in as much

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as production credit can enable farmers increase their agricultural production and enjoy a worthwhile, increase in their net income; Miller (1977) believed that with the increase in farmers' net income, loan default is likely to be reduced.

In Nigeria, defaults on loans have been found to be a key limiting factor to credit access and studies carried out show that loan delinquency plague small-farmers credit programmes in Nigeria. According to Adejobi (1999) high default rate characterized the Agricultural Credit Corporation of Oyo State credit scheme. Also, Balogun and Alimi (1988) revealed that high default (in the region of 55-90%) crippled the agricultural credit program in Lagos State. Olomola (1990) equally reported that a sizeable portion of the purchasing power of available loan volume was lost to the ravages of loan default among small-scale farmers in Ondo State. With this background, constraint to credit access among cocoa farmers need to be studied in relation to social capital as a means of assessing the effect that strengthened network among individuals, households and communities would have on credit access constraints.

MATERIALS AND METHODS

Primary data were collected from 150 randomly selected CFHs from the two cocoa producing Agricultural Development Project (ADP) zones (Osogbo and Ife/Ijesa) with the aid of well structured questionnaire using multistage sampling procedure. In the first stage, six Local Government Areas (LGAs) were selected proportionate to the number of LGAs in each zone. In the second stage, five villages were randomly selected from the chosen LGAs using the ADP list of villages. In the last stage, 150 households were randomly selected proportionate to the number of households in the villages selected. Data collected include socio-economic, social capital and credit characteristics. Analysis was done using descriptive statistics, social capital indices and censored Tobit regression model.

Tobit regression model on credit constraint of cocoa farmers: The model follows the general form of OLS and is stated as Eq. 1 and 2:

$$C_{At} = \alpha V_i + \mu_i \text{ if } \alpha V_i + \mu_i > 0 \quad (1)$$

$$C_{At} = \alpha V_i + \mu_i \text{ if } \alpha V_i + \mu_i \leq 0 \quad (2)$$

where:

α = Vector of unknown parameters
C_{At} = Constraints to credit access by ith cocoa farmer (%)
V_i = Vector of explanatory variables
μ_i = Random error term

RESULTS AND DISCUSSION

Households' socio-economic characteristics: The households included in the sample have varying socio-economic characteristics.

Table 1 presents, socioeconomic characteristics of cocoa farming households in the study area. Most cocoa farming households are headed by males with 91.33% of the total respondents interviewed, 8.67% are females. This means that in Osun State, most cocoa farming households are headed by males. About 38.67% of the cocoa farming household heads are in the age bracket of 51-60 years

Table 1: Households' socio-economic variables

Characteristics	Frequency	Percentage	SD
Gender of household head			
Male	137	91.33	
Female	13	8.67	0.28
Age of household head (years)			
30-40	12	8.00	
41-50	28	18.67	
51-60	58	38.67	9.75
61-70	45	30.00	
Above 70	7	4.67	
Educational status of household head			
Primary	46	30.67	
Secondary	25	16.67	
Tertiary	11	7.33	1.78
None	68	45.33	
Occupation of household head			
Cocoa Farming	125	83.33	
Non-C Farming	25	16.67	2.67
Household size			
1-4	19	12.67	
5-8	74	49.33	
9-12	43	28.67	3.72
Above 12	14	9.33	
Farm size (ha)			
<1	12	8.00	
1-2	53	35.33	
>2-3	36	24.00	3.14
>3-4	16	10.67	
Above 4	33	22.00	
Age of cocoa farm (years)			
1-10	13	8.67	
11-20	53	35.33	
21-30	37	24.67	11.91
31-40	35	23.33	
41-50	8	5.33	
Above 50	4	2.67	
Year of cocoa farm experience			
1-10	11	7.33	
11-20	34	22.67	
21-30	48	32.00	11.24
31-40	46	30.67	
Above 40	11	7.33	
Membership of association			
Yes	126	84.00	
No	24	16.00	0.37
Those having savings			
Yes	134	89.33	
No	16	10.66	0.30
Acceptable collateral			
Yes	28	18.67	
No	122	81.33	0.42

Source: Field survey

Table 2: Ranking of identified constraints to credit access by cocoa farming households

Constraints to credit access	Frequency	Percentage	Ranking
Long time lag between application and disbursement of credit facility	26	17.33	1st
Lack acceptable physical collaterals	13	8.67	2nd
Inadequacy of credit (not obtaining as much as demanded)	12	8.00	3rd
Fear of high interest rate	11	7.33	4th
Problem of both high interest rate and time lag of disbursement	8	5.33	5th
Problems of both time lag and inadequacy of credit	7	4.67	6th
None availability of credit facility (money)	4	2.67	7th
Bureaucratic bottlenecks and process sing	4	2.67	7th
Lack of guarantors	3	2.00	9th
None application for credit	3	2.00	9th
None approval of loan	3	2.00	9th
Lack of access to finance house	1	0.67	12th
No constraints	55	36.67	13th
Total	150	100.00	

Source: Field survey

while, 4.67% above 70 years. This is an indication that the future of cocoa production in the producing zones is in danger because most of the producers are getting old and have passed their productive and active stage of life. Majority (45.33%) of the household heads have no formal education, while those with the primary education are only 30.67% of the total, 16.67% have the secondary education, while 7.33% have tertiary education. This is an indication that most cocoa farming household heads did not attend school from the onset and have been primarily engaged in cocoa farming from their childhood, this indicates more expertise in cocoa production practices.

About 83% of the respondents are primarily engaged in cocoa farming while, 17% are involved in cocoa farming as a secondary occupation. This is also, an indication that most of the respondents have been involved from their childhood since they did not really have advanced educational training. About 49% of the cocoa farming household heads have 5-8 persons in their households. This is also indication that the cocoa farming households may spend less on hired labor rather they will enjoy family labor. Majority 35.33% have between 1-2 ha farm size while, 22% have above 4 ha of farmland. This means most cocoa farms are small and fragmented and this may be due to the fact that most cocoa farming households cannot maintain large plantations due to the constraint of credit facilities they have. About 35% of the cocoa farms are between 11-20 years of age while, 8% are between 41-50 years of establishment. This has an implication that there are prospects for increase in cocoa production output in the state because there are younger plantations, which will give better yields than the aging and moribund plantations. Thirty two percent of the household heads have 21-30 years of cocoa farming experience while, 7.33% have above 40 years experience. This means more expertise in cocoa production because they have been involved in cocoa farming from their childhood. Eighty four percent belong to one form of association (s). Eighty nine percent have forms of savings in either Ajo groups, cooperatives or the bank, while 10.66% have no form of savings at all. Only 18.67% have acceptable collateral in terms of cocoa farms, houses/landed properties, regular salary from an employer while, 81.33% have no acceptable physical collateral. This is an indication that most cocoa farming households do not have acceptable physical collaterals for accessing credit facilities. Thirty percent source their credit from cooperatives, 29% source from community/social association, 23% source from farmers association and only 18% source from the bank. The cooperative society is the most important association to the cocoa farming households. This is an indication that most cocoa farming households belong to one association or the other and also get such credit benefits from them this result corroborates the assertion of Portes (1998) who said social capital stands for ability of people to secure benefits by virtue of their membership in social networks or other social structures.

Ranking of constraints to credit access by cocoa farming households in Osun State, Nigeria in order of magnitude: The identified constraints to credit access among cocoa farming households range from 1-12:

- Lack of guarantors
- Fear of high interest rate
- Lack acceptable physical collaterals
- Lack of access to finance house
- Long time lag between application and disbursement of credit facility
- Inadequacy of credit (not getting as much as demanded)
- None approval of loan
- None availability of credit facility (money)
- Bureaucratic bottlenecks and processing
- Problems of both time lag and inadequacy of credit
- Problems of both high interest rate and time lag of disbursement
- None application for credit

According to the result shown in the Table 2, 36.67% of the respondents indicated not having any

Table 3: Determinants of social capital and credit access constraint for Osun State

Variables	With additive social capital index	With multiplicative social capital index
Constant	-24.7611(-0.18)	78.9104(0.68)
Age of household head	2.8428 (1.49)	0.9454 (0.52)
Gender of household head	195.8212(2.25)**	108.4143 (1.88)*
Household size	5.7466 (0.99)	0.0538 (0.01)
Literacy	11.3447(0.30)	16.80542 (0.44)
Educational status	-6.7604(-2.34)**	-6.9397 (-2.40)**
Years of experience	-4.6108(-2.64)**	-4.2030(-2.61)**
Age of farm (years)	-1.0923(-0.82)	-0.6090 (-0.46)***
Farm size (ha)	-4.0703(-0.73)	-7.1886 (1.18)
Amount requested	6.05e-06(1.01)	2.29e-06(0.58)
Disbursement lag	-1.7524(-0.81)	-2.0933(-0.98)
Interest rate	7.20268 (0.65)	18.0421(1.58)
Request for collateral	83.0325(2.22)**	72.8102(1.85)*
Type of collateral	-3.4624 (-0.54)	-5.19797(-0.77)
Presence of collateral	-49.68564 (-1.28)	-35.3084 (-0.90)
Presence of savings	-173.6247(-2.26)**	-102.3774 (-1.69)
Land tenure	-1.2553(-0.73)	-1.6170(-0.89)
DM (%)	0.8598(1.52)	-
HI (%)	-0.6834(-0.69)	-
DMI (%)	-2.7041(-2.06)**	-
MAI (%)	0.1429(0.42)	-
CC (%)	-1.1233 (-1.10)	-
LC (%)	-0.7929 (-0.57)	-
Social capital index	-	-0.2898 (-1.27)
LR Chi^2	33.09	26.92
Prob>Chi^2	0.0452	0.0424
Pseudo R^2	0.1364	0.1169
Log likelihood function	-104.7200	-101.6790

Figures in parenthesis are t-values significant at ***1, **2 and *10%, Dependent variable, percentage of credit constraint. Number of observations 150. Source: Computed from field data

constraints/problems in accessing credit. It is believed that the 36.67% are among those that source their credit from the cooperatives, friends/relatives and community associations. These groups of people know and have all that their group requires of them to access credit, most especially their membership. The ranking showed long time lag between application and disbursement of credit facility (17.33%) as the major constraint of cocoa farming households getting access to credit then followed by the problem of acceptable collaterals (8.67%) and thirdly by the problem of inadequacy or credit rationing to the farmers (8.00%). The least of the constraints faced by cocoa farming household as stated is the problem of access to finance house (0.67%).

Pooled data: Table 3 shows the result of the Tobit analysis for Osun State. The result shows that Chi square is 33.09 with pseudo $r^2 = 0.1364$; hence, the Chi square is statistically significant ($p<0.05$). This indicates that the model has a good fit to the data.

Gender had a positive significant coefficient of 195.8212 ($p<0.05$) meaning that the more male-headed cocoa farming households increases, the credit access constraints reduces by 195.82%. This implies that gender is positively related to credit access in the zone. This observation therefore, means that there is bias towards male headed households and that the few female headed households are marginalized when credit facility is being given out to cocoa farming households.

Educational status had a negative coefficient of -6.7604 ($p<0.05$), which implies that a unit increase in the educational status of the CFH head, results in a reduction of 6.76% in the constraint faced in credit access by CFH. This may be due to beliefs that the more educated the household head, the more focused they will be towards achieving set target for which, demand for credit is made.

Years of experience had a negative coefficient of -4.6108 ($p<0.05$), which implies that a unit increase in the CFHs experience in cocoa production will reduce the constraint to credit access faced by the households by 4.61%. This is because it is believed that the more experienced the household head, the more proficient they will be in cocoa production and the judicious use of the credit being demanded.

The request for collaterals as a basic requirement for credit access had a positive significant coefficient of 83.0325($p<0.05$) implying that the higher the demand for collateral when cocoa farming household are applying for credit facility, results in a 83.03% increase in the constraints to credit access This observation can be explained because the demand for collateral on its own is a barrier to credit access or even application for loans among cocoa farming households. Request for collateral is positively related to credit access constraint.

Presence of savings had a negative coefficient of -173.6247 ($p<0.05$), which implies that the presence of savings will reduce credit access constraint of CFH by 173.63%. This observation is true because savings is a form of security when demanding for credit facility. Presence of savings is negatively related to credit access constraint.

Decision making index has a negative coefficient of -2.7041 ($p<0.05$), which means that increased active participation in decision making by the members of the CFH in associations will reduce their constraints to credit access by 2.70%. This is because increased participation in decision making by the CFH is seen as a form of commitment in association, which can help reduce their constraint to credit access in Osun state.

CONCLUSION

This study found that the female-headed cocoa farming households are marginalized in accessing credit that is, they are more constrained than their male counterparts when accessing credit.

This study also concludes that social capital can go a long way to reduce the credit access constraints faced

by cocoa farming households if they improve on their memberships in associations, savings and decision making index in their associations.

Also, the government should launch campaign that attract the youth into cocoa production because this group of farmers will be more receptive to adoption of technologies that can improve their productivity and output.

RECOMMENDATIONS

The study also recommends that cocoa farmers should improve their level of education coupled with the years of cocoa farming experience to their credit; they will be less constrained to access funds for their cocoa production activities.

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