

Determinants of Coffee Producing Farmers' Access to Formal Credit in Bodji Dirmeji District of West Wollega Zone, Northwest Ethiopia

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Abstract

This study was aimed at analyzing determinants of access to formal credit to coffee farmers in Bodji Dirmeji district of West Wollega, Ethiopia with specific objectives to identify the sources of formal credit to coffee farmers, and identifying the determinants of coffee producing farmers' access to formal credit. Multi-stage sampling technique was employed to select coffee producer households for the study. The primary data for this study were collected from 168 coffee farmers. Formal sources include the CBE, MFI, and cooperatives. Probit estimation method was used to identify the determinants of access to formal credit. Specifically, access to formal credit is positively influenced by level of education, sex and extension contact frequency, and negatively influenced by the family size, lack of opportunity to second loan, perception of group lending and perception of lending procedures. Therefore, policy aimed to accelerate coffee farmers in the area could be successful if these factors and problems are taken into consideration.

Keywords: coffee, formal credit, probit

1. INTRODUCTION

Coffee is one of the most important commodities in the international agricultural trade, representing a significant source of income to several countries of Africa, Asia and Latin America. Ethiopia is a leading Arabica coffee producer in Africa, ranking the fifth largest Arabica coffee producer after Brazil, Vietnam, Columbia and Indonesia and tenth in coffee export worldwide (ICO, 2010).

Currently, coffee contributes up to 24% of the country's export (Minten *et al.*, 2014). Smallholder farmers produce 95 percent of Ethiopia's coffee (Abu and Teddy, 2013). Ethiopian coffee is sold both at local level and at the international market, the latter mainly through the newly established Ethiopian Commodity Exchange (ECX) market and directly to international buyers through specialty market channels by coffee cooperative unions (Dempsey 2006).

According to Yunus (2007), in Ethiopia, among other things, lack of finance is one of the fundamental problems hampering production, productivity and income of rural farm households. Farmers are typically excluded (or credit-rationed) by banks and formal financial institutions, and they opt to get access to alternative informal sources which often worsen their financial situation.

Even though coffee is economically and socially important, there is limited research on credit constraints, for the target study area, where great level of production exists. There are marketing and credit constraint of several coffee farmers in the study area, which needs specific focus of researchers. Hence, this study aimed at filling this research gap by answering the following research questions.

1.1. Research Questions

- What are the sources of formal credit to coffee farmers?
- What factors influence coffee producing farmers' access to formal credit?

1.2. Objectives of the Study

The general objective of the study is to analyze determinants of access to formal credit to coffee farmers in the study area.

The specific objectives of the study are:

- To assess the sources of formal credit to coffee farmers;
- To identify the determinants of coffee producing farmers' access to formal credit;

2. METHODOLOGY

2.1. Description of the Study Area

Figure 1 gives geographical location of the study area. Bodji Dirmeji district is one of the 21 districts in West Wollega zone and predominantly known for growing coffee. It is located 472 km west of Addis Ababa and about 48 km west of Gimbi town. It has an estimated area of 65,662 hectares; surrounded by Bodji Chokorsa district, Nejo district, Benishangul-Gumuz Region, and Lalo Asabi district in the south, west, north and east, respectively. The number of agricultural households in the district was 9,420 (7485 male headed (79.46%) and 1935 female

headed (20.54%) while the total population of the district was 55,217 from which 26,844 (48.62%) are males and 28,373 (51.38%) females in 2007(CSA, 2009).

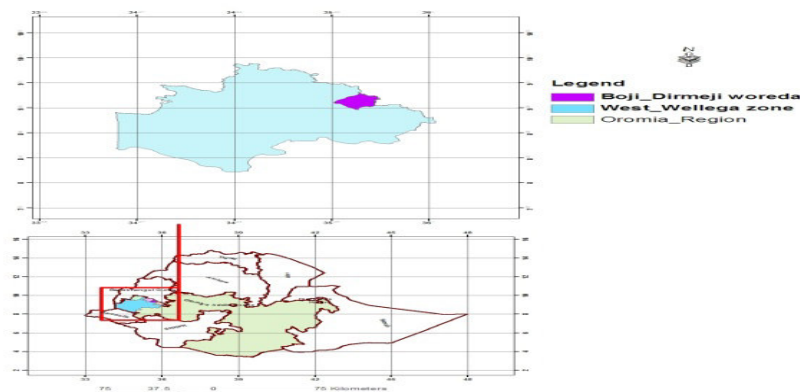


Figure 1: Geographical location of the study areas

2.2. Sampling Procedure and Sample Size

Two-stage sampling technique was employed to select coffee producer households for the study. In the first stage, three coffee producing *Kebeles* were randomly selected from the available 17 coffee producing *Kebeles* in the district. In the second stage, simple random sampling was used to select the sample coffee-producing farmers' households. Probability proportional to size (PPS) was used to determine the number of farmers. As a result, 168 coffee producer farmers were selected for the purpose of the study.

2.3. Methods of Data Analysis

Descriptive and econometric analyses were used for analyzing the data collected from farmers in the study area.

2.3.1. Descriptive analysis

These methods of data analysis refer to the use of percentages and frequency distribution in the process of describing credit services.

2.3.2. Econometric analysis

Probit model was used to analyze the determinants of coffee producer farmers' access to formal credit.

The Probit Model

The choice of an econometric model for analysis depends mostly on the nature of the dependent variable. Following from Balangun and Yusuf (2011), the probit model through the maximum likelihood estimation method is employed in this study. For the probit models, we assume an individual is faced with two alternatives, access to formal credit or not. This is expressed as (Nagler, 1994).

We assume Y can be specified as follows:

$$Y = \beta_0 + \beta_1 x_{1i} + \beta_2 x_{2i} + \dots + \beta_{12i} x_{12i} + U_i$$

And that: $Y_i=1$ if $Y>0$, i.e. if the household has access to formal credit and $Y_i=0$ Otherwise.

Where X_1, X_2, \dots, X_{12} represent vector of random variables, β represent a vector of unknown parameters and U_i represent a random of disturbance terms (Nagler, 1994). Econometric analysis of the data was done with STATA 12 software.

3. RESULT AND DISCUSSIONS

3.1. Formal credit sources in coffee farmers

In the study area, the formal credit sources were CBE, MFI (OCSSCO), and Coop. Not a great proportion of loans originated from the formal sources as only 38.1% of total loans obtained were extended from the formal sources. The reasons for this observation could be that, since majority of farmers (51.8%) as indicated in table1 have never had any education, they tend to shy away from applying for credit from the formal sources since these sources require more papers to fill as noted by Togba (2009). Also it is possible that the formal sector is refusing to lend to the farmers given the risky nature of agricultural production as noted by (Owusu-Antwi and Antwi, 2010). In the formal sector, the MFI (OCSSCO) is the second most important source of credit by extending 70.3% of all loans obtained from the formal source as indicated in table1.

Table 1: Formal sources of credit to surveyed coffee farmers

Source	N	%	Interest rate
CBE	2	3.1	9.5%
MFI(OCSSCO)	45	70.3	17%
COOP	11	17.2	Negotiation of members
From both MFI and COOP	6	9.4	
Total	64	100	

Source: Survey result, 2015

One striking feature observed is that, no farmer has reported borrowing from both formal and informal source. A possible explanation for this could be that, farmers aim is to obtain credit for their coffee farming activities and once they are able to borrow from one credit source there is no need for them to borrow from the other credit source. This is consistent with the finding by Mohieldin and Wright (2000), who maintain that in Egypt, people who borrow from one credit source rarely also borrow from the other credit source for the same purpose, especially if the loan is for production purposes.

3.2. Econometric Model Outputs

This section provides an interpretation of the regression results from the probit estimates. The probit estimation result of the overall access to formal credit is presented in table 12.

3.2.1. Probit regression estimates of determinants of access to formal credit

In the preceding section, variables characterizing the farm households and their differences among the formal credit user and non-user groups were identified. Twelve variables were hypothesized to explain determinants of smallholder farmer's access to formal credit. Six of the variables were found to be significant affecting the determinants of formal credit, while the remaining six were less significant in explaining the variations in the dependent variable.

Table 2: Probit regression estimates of determinants of access to formal credit

VARIABLES	Coef.	Std.err	Marginal effect
Sex of the respondents	1.081*	0.574	0.112
Age of the household	0.029	0.316	0.003
Education level of the respondents (illiterate)			
Read and write	3.334***	0.787	0.607
Grade (1-8)	4.099***	1.039	0.701
Grade (9-12) and above	4.161***	0.910	0.727
Extension contact frequency	1.248***	0.857	0.127
Experience in year	-1.043	0.482	-0.004
Distance from credit institutions	-0.426	0.377	-0.043
Attitude toward risk	0.244	0.524	0.025
Perception of group lending	-1.251**	0.516	-0.117
Perception of loan repayment period	-0.556	0.608	-0.056
Perception of lending procedure	-1.081**	0.503	-0.109
Perception of loan size	-0.477	0.535	-0.048
Family size of the household	-0.112*	0.058	-0.011
Constant	8.191***	2.703	
Observations	168		

LR chi2 (15) = 170.56, Prob > chi2 = 0.0000, Pseudo R2 = 0.7342, Log likelihood = -30.87 Standard errors in parentheses, *** p < 0.01, ** p < 0.05, * p < 0.1 Source: Survey result, 2015

The maximum likelihood estimates of the probit regression model show that education level of the household (EDUCLVL), sex (SEXHH), family size (FMLYSZ) extension contact frequencies (EXTNCONFRQ), perception of group lending (PERCGRPLNDNG) and perception of lending procedure (PERCLNDPROCDR) were significantly influencing coffee producer farmers access to formal credit.

3.2.1.1. Interpretation of significant explanatory variables

Educational level of household headed (EDUCLVL): influence the coffee producer farmers' access to formal credit positively at 1% significance level. The result confirmed that if the educational level of household heads increasing from illiterate to read and write, grade (1-8), and grade (9-12) and above, the probability of using credit access from formal source increased by 0.607, 0.701, and 0.727, respectively. 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. Education is believed to

give individuals with the necessary knowledge that can be used to collect information, interpret the information received, and make productive and marketing decision. The low level of education of the farm households may have contributed for limited use of formal sector credit by farm households. This result is in line with Jari (2009), who stated that people with higher educational levels are more able to interpret information much better than those who have less education or no education at all. In addition, Awunyo, Vitor and Abankwah (2012), stated that farmers levels of education to be a positive and significant determinant of access to formal credit. They defended this position by explaining that the decision access to formal credit improves with increased level of education as education enables individuals to understand and follow policies and procedures of formal financial institutions. Hussein (2007) also explained that education is more likely to increase the information base and decision making abilities of the farm households, including the ability to compare pros and cons of choosing appropriate credit and production technology.

Extension contact frequency (EXTNCONFREQ): positively influences the coffee producer farmers' access to formal credit at 1% level of significance. This result depicts that as the frequency of household head's access to extension works increases, the probability of access to formal credit increases by 0.127. Extension visit are more likely to increase the information base and decision making abilities of the farm households including the ability to choosing appropriate credit and production technology. This result is similar to Hussein (2007), who found that the probability of choosing the formal credit sector is positively affected by extension visit. The latter is in line with Sisay (2008), Adeola and Ayoade (2009), who noted that technology adoption and decision making abilities of the farm household are significantly influenced by extension contact.

Perception of group lending (PERCGRPLNDNG): influences negatively at 5% significance level. The result confirmed that as perception of group lending increases, the probability of access to formal credit by farmers' decreases by 0.117. Smallholder farmers are expected to form a group (that can serve as collateral) to take credit from the formal credit sources. However, farmers perceived that group lending is difficult to access credit from these sources. If a single individual defaults, all the members of the group were forced to default and denied access to the next round of loan service. This result is similar to Sisay (2008), who stated that some of the farmers especially the very poor (with no asset) were facing problems to form a group because others do not want them in their group due to fear of risk in case of default. Getaneh (2005a) also found that group lending approach effectively ration out some groups of farm households (the poorest of the poor). That is co-borrowers tend to self select themselves into a group of homogenous members that effectively discriminates against some others to reduce risk of carrying the burden of repayment incase of defaults of co-borrowers. Therefore, farmers who are unable to form a group or deprived of membership by the group were not able to use formal credit.

Perception of lending procedure (PERCLNDPROCDR): influence access to formal credit negatively significant at 5% significance level. This result confirmed that as perception of lending procedure increases, the probability of access to formal credit decreases by 0.109. To get formal loans farmers are expected to pass through different processes, which is time-taking, cumbersome and sometimes difficult to understand. Rather they prefer to take from the informal credit institutions for the sake of ease even if it charges higher interest rates. Schmidt and Kropp (1987) reported that in most cases the access problem, especially among formal financial institutions, is one created by the institutions mainly through their lending policies. This is in line with Tsai (2004), suggests that informal credit services might be more attractive due to its characteristics, including the size of loans, the repayment terms, and lower direct and indirect transaction costs. Yitayal (2004) also stated 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.

Sex of the household (SEXHH): It influences positively and significantly determinants of formal credit at 10% significance level. The result also confirmed that if the household head is being a male, the probability of access to formal credit increases by 0.112. Men tend to borrow more from the formal sources than women do. This is because women control few assets; cultivate smaller acreages with low productivity which does not give them collateral security to demand formal credit which is one of the major requirements for obtaining formal credit. With this background including the existing gender differences; male headed households have mobility, participate in different meetings and have more exposure to information; therefore it was concluding that male headed households have more access to use formal credit. This result is in line with Awunyo-Vitor and Abankwah (2012), established from their study that men are more likely having access to formal credit as compared to female counterparts.

Family size of the household (FSIZE): negatively influence the coffee producer farmers' access to formal credit at 10% level of significance. This result depicts that as the family size increases by one adult equivalent, the probability of access to formal credit decreases by 0.011. This result is similar to Messah and Wangai (2011), who found that larger household sizes are less likely to borrowed credit from a formal financial institution compared to those with smaller family size. They explain that larger household size implies more consumption needs resulting in less ability to save income and making subsequent repayment of loan limited. With limited ability to repay loan, larger households are less likely access to formal credit.

4. SUMMARY, CONCLUSION AND RECOMMENDATIONS

4.1. Summary and Conclusion

A number of interesting findings emerged from the study. The study identified different formal sources of credit to coffee farmers. Formal sources include the CBE, MFI (OCSSCO), and Cooperatives. The output from the study indicates that 64 (38.1%) of the sampled farm households were formal credit users, whereas the remaining 104 (61.9%) of the sampled farm households were non users.

The study further reveals that from probit result, access to formal credit is positively influenced the coffee producer farmers by sex, levels of education and extension contact frequencies, and negatively influenced by the family size, perception of group lending and perception of lending procedures.

Therefore, in this study we examined the various factors affecting households' access to formal credit. The results indicate that education is believed to give individuals with the necessary knowledge that can be used to collect information, interpret the information received, and make productive and marketing decision. With limited ability to repay loan, larger households are less likely access to formal credit. Factors such as lack of opportunity to second loan, perception of group lending, perception of lending procedure decreases the probability of access to formal credit in the study area. The study also implies that the close relationship between farmers and buyers becomes an element of loan surety.

4.2. Recommendations

A number of observations emerge from the study which requires close attention in government and other stakeholders' efforts to increase coffee farmers' access to credit.

To increase access to formal credit by farmers, policy makers should initiate specific policies that will either mandate or motivate formal financial institutions to get representatives in coffee producing villages explain to farmers their lending procedures and also assist farmers to fill loan application forms. In addition, it is better if the formal financial institutions have agents from rural community for mobilization. Formal financial institutions will however carry out this policy only if it is profitable to them, therefore government should provide incentives such as tax breaks, subsidies and grants in order to motivate them to carry out this policy. By so doing access to formal credit by coffee farmers will increase.

The future financing scheme of coffee farmers should be with the involvement of cooperatives, unions, commercial banks and MFIs. Cooperatives further extend loan to farmers, to be settled from the coffee payment. Similarly, linkage could be created further between the unions and the cooperatives. MFIs are collecting the repayment through the union. Promoting potentially collective organizations (cooperatives) are assumed to play important role in improving the bargaining position of the producers and creating, lowering transaction costs, reducing the level of oligopolistic market type by creating competitive market.

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