Factors Affecting Microcredit Borrowing Decision by Rural Small Scale Farmers in Matara District: Logistic Regression Approach

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ABSTRACT

Inadequate capital is a major problem confronting small scale farmers. Agricultural credit plays a major role as financial input in cultivation. Microcredit is a unique innovation of credit delivery for income generating activities. Consequent upon the foregoing, this study determined access of formal microcredit by small scale farmers in Matara district. Specifically, it sought to describe the socio-economic characteristics of loan beneficiaries; to determine factors that influence credit accessibility of farmers; to identify the farmer perception on credit facilities provided by the state and private banks. Primary data were collected by means of face to face interviews, supported by a structured questionnaire with 150 small scale farmers who obtained formal microcredit and 50 small scale farmers who did not obtain formal microcredit. Chi-square analysis showed that the microcredit accessibility was associated with age, level of education, land extent, monthly farming income, income sufficiency, relationship with other credit sources, awareness on microcredit and distance between home and loan source. The results of the Binary Logistic Regression showed that the coefficient of age, income sufficiency and relationship with other credit sources were statistically significant. According to the responses given by the loan recipients, altering the loan repayment and providing loan in time were the most significant factors to encourage access of formal microcredit. Formal microcredit accessibility of small scale farmers could be increased by providing more beneficial credit schemes in order to satisfy the demands of farmer borrowers.

KEYWORDS: Credit accessibility, Formal microcredit, Perception, Small scale farmers

INTRODUCTION

Agriculture remains a vital economic driver for developing countries and would play a critical role in eradicating poverty especially in low income countries. Sri Lanka is a developing country with agricultural based economy. The agriculture sector plays a significant role by contributing 11.2% to the total Gross Domestic Production (GDP) and generates 32.9% of employment opportunities (Anon, 2011). It is reported that 83.7% of the total population of Sri Lanka lives in rural areas. Almost 90% of this portion is considered poor in which most of them are farmers (Anon, 2004).

Many farmers, especially who involved in cultivation of paddy and other short term crops are poorer and resort to some subsidies from government or loans from various financial institutes and pawning their properties. They are still in poverty cycle which does not allow some to develop beyond the poverty line. Incentives and subsidies from government or loan at lower interest rate have been identified as a better helping hand to break the poverty cycle of poor farmers. In 2011, government and private banks have granted Rs. 3,355 million short term and long term agricultural credit for agriculture (Anon, 2011).

One of the problems confronting small scale enterprises, including farmers in developing countries is inadequate capital. Access to credit is regarded as one of the key elements in raising agricultural productivity (Anyiro and Oriaku, 2011). With the introduction of credit facilities for the agriculture sector in 1947, the government has been trying to develop and expand its availability (Bandara et al., 2006).

Rural financial sector is considered basically of two parts as formal and informal rural financial markets (Sanderathne, 2002). Most important formal institutions are banks, saving and loan associations, insurance companies etc. Similarly informal financial intermediaries include money lenders, boutique keepers or shop pawn brokers, land lords, richer individuals etc. Only 10% of credit requirement of farmers is fulfilled by formal financial market while informal financial market contributes to the rest (Bandara et al., 2006).

Microcredit is the name given to small loans made to poor borrowers. It enhances the production capacity of the poor resource farmers through financial investment in their human and physical capital (Anyiro and Oriaku, 2011).

In general it is accepted that microfinance services are provided by three types of sources: formal institutions such as banks and cooperatives, semiformal institutions such as non-government organizations and informal

sources such as money lenders and shopkeepers.

The services provided by the microfinance institutions broadly can be categorized into two as financial and social intermediation. Financial intermediation generally includes savings, credit, insurance, and payment services while social intermediation includes group formation among members, leadership trainings and cooperative training.

To provide these services in Sri Lanka, several microfinance institutions came forward in last few years. Some commercial banks and licensed specialized banks play a significant role in providing credit facilities to small scale enterprises including farmers. The problem is that whether the poorer farmers get the support of microcredit provided by conventional banks satisfactorily.

With this background, this study was carried out with the four objectives 1) to determine the socio-economic characteristics of farmers who obtained microcredit from banks 2) to determine factors that influenced credit accessibility of farmers 3) to identify the farmers' perception on the credit facilities provided by the banks 4) to suggest best approaches and promotion of most effective rural microcredit schemes through state and private banks.

METHODOLOGY
Data Collection

Face to face interviews were conducted with regional bank managers of the lending banks who granted cultivation loans in Matara district according to the Central Bank Annual Report 2011. According to the findings, only three state banks and two private banks were identified as the cultivation loan providers for paddy and other food crops in Matara district (Names of the banks are not exposed due to ethical consideration). Study was carried in 16 purposively selected branches of selected banks from Akuressa, Hakmana, Kirindapuhulwella, Matara, Kamburupitiya, Thihagoda and Weligama district secretariat (DS) divisions.

Total sample of 150 credit beneficiaries were selected using simple random sampling techniques from each bank using the list of farmers obtained from the bank who have benefited from the microcredit lending. Number of the farmers selected from each banks was determined according to the number of loan issued. For comparative analytical purposes another 50 neighboring farmers were selected who did not obtain microcredit from state or private banks.

Before conducting the main survey a preliminary survey was carried out, using a sample of 10 farmers to find the validity of the questionnaire.

Field survey has been conducted in order to achieve the said objectives. Information gathered from the target respondents by face to face interview using a structured questionnaire.

Data Analysis

Data were analyzed using both descriptive and inferential statistics. Data were analyzed with statistical package Minitab version 15. Chi-square test and Binary Logistic Regression (BLR) were used to identify different factors associated with microcredit accessibility and determine the influencing factors for accessibility of microcredit.

The Binary Logistic Regression model measuring the probability that a farmer is willing to borrow a microcredit is expressed as below:

$$P_i = F(MC_i) = F(X_i\beta + \varepsilon_i) = \frac{1}{1 + e^{-MC_i}}$$
$$= \frac{1}{1 + e^{-(X_i\beta + \varepsilon_i)}}$$

P_i is the probability function and MC_i is willingness to borrow microcredit where, 1 (One) indicate that an individual who borrowed microcredit and 0 (Zero) who did not borrow microcredit. X_i is a vector of socio-demographic, attitudinal and behavioral variables, β is a vector with the corresponding estimated variables' coefficients. The error vector ε_i consists of unobservable random variables.

Variables of X vector considered in the model have been defined below.

X_1= Age of farmer (years)
X_2= Educational level (years)
X_3= Land extent (acres)
X_4= Monthly farming income (Rupees)
X_5= Income sufficiency
    (1=Yes; 0=No)
X_6= Relationship with other credit sources
    (1=Yes; 0=No)
X_7= Awareness on microcredit
    (1=Yes; 0=No)
X_8= Distance between home and source
    (Kilometers)
ε = Error term

The five point likert scale was used in this study to evaluate the perception and attitudes towards microcredit facilities provided by the state and private banks. For that, farmers were requested to state their

response to each statement on the five ranks namely, strongly agreed, agreed, neither agreed nor disagreed, disagreed and strongly disagreed. Strongly agreed to strongly disagreed was given the numeric value of 5 to 1 respectively.

RESULTS AND DISCUSSION
Descriptive Statistics of the Sample

The results of socio-economic characteristics of loan recipients and non-loan recipients are summarized in Table 1.

Table 1. Descriptive summary of the sample

Variable	Category	Percentage L	NL
Gender	Male	69	80
	Female	31	20
Age (years)	16 - 25	0	0
	26 - 35	13	4
	36 - 45	31	18
	46 - 55	37	44
	55 <	19	34
Educational Level	Primary	20.7	42
	Secondary	78	48
	Higher	1.3	10
Farming Pattern	Full Time	47.3	46
	Part Time	52.7	54
Land Extent (Acres)	< 1	19.3	16
	1 - 5	76	68
	5 <	4.7	16
Farming Income (Rs.)	< 10,000	18.7	20
	10,000 - 50,000	80	70
	50,000 <	1.3	10
Income Sufficiency	Yes	42.7	66
	No	52.3	34
Awareness on Microcredit	Yes	100	44
	No	0	56

Note: L-Farmers who obtained microcredit from bank; NL-Farmers who did not obtain microcredit from banks

Majority (69%) of loan recipients were male. These results revealed that majorly of the small scale farming is carried out by males. The majority of loan recipients were in between the age of 46 and 55 (37%) and at least with secondary education (78%). Most of the loan recipients (52.7%) were engaged in part-time farming and most of them (76%) cultivated crops in between 1 and 5 acres.

Majority of respondents earned a monthly farming income between Rs.10,000 and Rs.

50,000. Out of the total farmers who did not obtain microcredit (56%) had no any knowledge on microcredit. Majority (52.3%) of loan recipients had not sufficient income for day to day financial operations. Most of the non loan recipients (66%) had sufficient income but all of them obtained credit from other credit sources such as friends, money lenders, pawning and other financial institutions.

Factors Affecting to the Microcredit Accessibility of Farmers

The results of Chi-square test of the determinants of access to microcredit are shown in Table 2. The results revealed that the microcredit accessibility of farmers is significantly associated with the age, educational level, land extent, monthly farming income, income sufficiency, relationship with other credit sources, awareness on microcredit and distance between home and loan source.

Table 2. Association of microcredit accessibility with socio-economic factors

Variable	Chi-square	P-value
Gender	2.364	0.124
Age	9.891	0.02*
Education	19.399	0.000*
Farming type	0.027	0.87
Land extent	6.972	0.031*
Farming income	8.567	0.014*
Income sufficiency	8.174	0.004*
Other credit sources	10.735	0.001*
Awareness	97.674	0.000*
Distance to the bank	15.579	0.000*

Significant at 0.05 level

Binary Logistic Regression (BLR) was used to investigate the most significant factors that influence microcredit accessibility of farmers from state and private banks.

The results of BLR analysis are shown in Table 3. The results revealed that the coefficient of age, income sufficiency and relationship with other credit sources were statistically significant at 5% probability level while distance between home and loan source were significant at 10% level. More

Table 3. Results of Binary Logistic Regression

Predictor	Coefficient	SE	P	Odds Ratio
Constant	-13.97	5875.4	0.998	
Age	-0.684	0.339	0.045**	0.50
Land Extent	0.131	0.222	0.558	1.14
Education	0.006	0.564	0.992	1.01
Farming Income	-0.000	0.000	0.415	1.00
Income Sufficiency	-2.029	0.652	0.002**	0.13
Awareness	24.24	5875.4	0.997	3.37E+10
Distance	-0.920	0.555	0.097*	0.40
Other sources	-3.580	0.827	0.000**	0.03

*SE-Standard Error; ** Variables significant at 5.0% * Variables significant at 10.0%*

specifically, the negative coefficient of age (-0.684) and distance between home and loan source (-0.920) imply that the chances of the farmers in accessing credit decrease with age and distance between home and loan source. The results revealed that farmers who did not have sufficient income for day to day financial operations and had less relationship with other credit sources have increased probability of accessing microcredit from banks.

Perceptions of Farmers towards Microcredit Facilities Provided by State and Private Banks

Table 4 presents the farmers perception towards microcredit facilities. According to the farmers' views, nearly 50% of the farmers having positive perception on easy access and simple administrative procedure, less processing time, adequate loan for the customer for their needs and friendly customer service.

Table 4. Perception of loan recipients on the credit facility provided by the bank

Statement tested for perception	SA (%)	A (%)	NAD (%)
Can get loans easily/ simple administrative procedure	46.7	44.7	8.6
Can get loans quickly	46.7	46.7	6.6
Can get adequate loans for the needs	48	45.3	6.7
Can alter the loan repayment	27.3	49.3	23.3
Provides loan in time	36	53.3	10.7
Friendly customer service	48.7	48	3.3

Note: SA-Strongly agreed, A-Agreed, NAD-Neither agreed nor disagreed

Factors Affecting the Rejection of Obtaining Microcredit from State and Private Banks by Small Scale Farmers

Factors affecting with the rejection of formal microcredit by small scale farmers were shown in Table 5. According to the farmers' views, lack of required collateral was the most significant factor affecting with the rejection of formal microcredit. More than 50% of the farmers reject the formal microcredit due to unwillingness to fill loan applications and crop insurance requirement.

Table 5. Factors affecting with the rejection of formal microcredit

Statement	Percentage		
	SA/A	NAD	D/SD
Unwillingness to fill loan applications	64	26	10
Need crop insurance	78	22	0
Difficulties in finding guarantors	30	12	58
Lack of required collateral	96	4	0
Farmers (>55 years) should open joint accounts	34	18	48
Strong relationship with other financial institutes	36	12	52

Note: SA/A-Strongly agreed/agreed, NAD-Neither agreed nor disagreed, D/SD-Disagreed /strongly disagreed

CONCLUSIONS

The results of this study revealed that age, educational level, land extent, farming income, income sufficiency, relationship with other credit sources, awareness on microcredit and distance between home and loan source were associated with microcredit accessibility.

It was also discovered that the chances of the farmers in accessing credit from state and private banks decreases with age, monthly farming income, income sufficiency for day to day financial operations, distance between home and loan source and relationship with other credit sources. The chances of the farmers in accessing credit increases with land extent, educational attainment and awareness on microcredit as proved by the study.

This study further revealed that providing loan in time and altering the loan repayment were the most significant factors to improve the accessibility of farmers towards micro credit. Most of the small scale farmers tended to borrow credit from informal financial sector due to some barriers in formal financial sector.

Based on the findings of this study, it is recommended that formal banking sector should ensure timely disbursement of loans to young and educated farmers who are more likely to utilize resources efficiently. And also they should expand their branch network in rural areas.

By providing more beneficial loan schemes in a market friendly manner and implementing effective financial policies to satisfy the demands of farmer borrowers, formal microcredit accessibility of small scale farmers could be increased.

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