Chapter 2

Determinants of Borrowers of Microcredit for Villages and Communities in Thailand

From the 1990s, microcredit has become an international strategy for poverty alleviation in many countries. Microfinance institutions state their main mission as helping the poor households by delivering small loans and other financial services. Evidently, there are debates on the important issue of who really receives the benefits from microcredit program between the poor and non-poor. The purpose of this chapter is to investigate the determinants of borrower and aims to find whether poor households are taking part in the village funds, which is recognized as the largest microcredit for village and urban community fund (MVC) in Thailand.

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ABSTRACT

This paper investigates the determinants of borrowers of microcredit for village and urban community fund (MVC) in Thailand. Previously, it was controversial who really got benefits from the MVC program between the poor and non-poor. This paper investigates the issue by applying Logit model to study the characteristics of borrowers. It aims to find whether being poor is significant for borrowing the loan. The data are from Thailand's Socioeconomic Survey at household level in 2009. Major findings figure out that MVC program targets two groups, the near poor and the moderate-income households. It does not target the poor. Therefore, it cannot say that the MVC program is pro-poor.

However, the program has its merits when targeting at women and less educated of household head. For the near-poor, farm operating households especially landless farmer in rural area with income slightly above the poverty line are more likely to be borrowers. For the moderate-income group, households which can access to other sources of credit have high probability to borrow from the MVC program. These findings show that the MVC program supports the non-poor and prevent them to fall into poverty again.

Keywords: Microcredit, Village Fund, Urban Community Fund, Rural Development, Poverty Reduction

2.1 Introduction

Microcredit, which is a program that provides small loans for self-employment and consumption to the poor, especially women who do not have access to formal financial services, has become an international tool for poverty alleviation

in developing countries such as in Bangladesh, Bolivia and Indonesia. It has experienced a significant growth in the 1990s (Robinson, 2001). In 1997, the first Microcredit Summit was established in Washington, D.C. More than 2,900 delegates from 137 countries participated and made a commitment to reach the world's poorest families with microcredit. Later, the United Nations declared the year 2005 to be the "International Year of Microcredit" and they linked microcredit to the achievement of the Millennium Development Goals (MDGs). Their goals for 2015 are reaching 175 million of the world's poorest families with credit for self-employment and other finance and business services, as well as helping to raise 100 million families above the US$ 1 a day threshold. Hence, most microcredit programs state that their main mission is to alleviate rural poverty by delivering credit and other financial services to poor households. And it has become more significant when Muhammad Yunus, the founder of the Grameen Bank, received the Nobel Peace Prize in 2006 for his efforts to create economic and social development from the bottom up. According to Daley-Harris (2009), the Microcredit Summit Campaign Director, he stated that microcredit had reached one hundred and fifty million individuals worldwide in 2007. Evidently, the empirical study of Khandker (2005) found that microcredit can reduce poverty in Bangladesh, a successful prototype of the microcredit as the poor took the loans for income-generate activities, education and health, which, significantly increased the well-being of their members. It also resulted in local economic growth as well. Hence, it can be seen that the microcredit program, which was originally designed to serve the unbanked poor, is an important tool for poverty reduction.

In Thailand, the government has supported microcredit programs for more than 30 years. Most of the programs have been developed from community-based credits that focused on social capital in the community (Worakul, 2006). In 2001, the Village and Urban Community Fund, otherwise known as the microcredit for village and community (MVC) program, was introduced as a part of the government's poverty alleviation policy. It is the largest government's microcredit program in Thailand. The Thai Government allocated one million baht per village as a fund for the community.

Empirical studies have shown the positive effects of microcredit. For example, microcredit can raise household income and reduce poverty (Berhane &

Gardebroek, 2011; Nader, 2008; Khandker, 2001). It can improve household consumption such as health and education (Coleman, 1999; Nader, 2008). However, a critical aspect is that only some people take part in the program and receive the benefits. There are, of course, debates on the important issue of who really receives the benefits from the MVC program between the poor and non-poor. Many studies have shown that major borrowers who get benefits from microcredit are poor households (Boonperm, et al., 2009; Khandker, 2005) while some studies argue that non-poor households and wealthier villagers are more likely to receive loans (Coleman, 2006; Li, et al., 2011; Suriya, 2011a). Therefore, this unanswered question leads to the following two research question in this study - what are the determinants of borrowers in the MVC? Are the poor households included in the MVC program? The answers will help the government decide on how to improve the program to be more effective in helping the poor and reduce poverty.

2.2 Literature Review

2.2.1 The Village and Urban Community Fund in Thailand

The microfinance programs studied here are the Village and Urban Community Fund, the largest government microcredit program in Thailand that has been operational since 2001. The Village Fund is one of populist policies and it creating clear politics popularity for Thai Rak Thai Party. The government revolutionized the local credit market by allocating one million Baht (about $22,500)[1] per village to over 77,000 villages and urban communities throughout the country. This program is the semi-formal financial institutions. It is the second-largest microfinance programs in the world (Boonperm et al, 2012). It put approximately 1.5 percent of the Thai GDP to the economy. Moreover, after the general election in 2011, the government announced an attractive policy to increase accessibility to the microcredit market by increasing the MVC program to two million Baht (about $65,800)[2] for each village. As a result, this program is highly important in credit markets especially in rural areas and for people who cannot obtain access to formal financial services.

[1] In 2001, average exchange rate was $1 = THB 44.5
[2] In 2011, average exchange rate was $1 = THB 30.4

The Village and Urban Community Fund operated under the philosophy of values and wisdoms of local communities. The focus of the MVC program is on community empowerment and self-reliance, which is based on flexible and adjustable rules that meet the community's needs. It is linked between public, private and civil society to develop the rural economy through credit market and awareness in local communities. The official objectives according to the "Act of National Village and Urban Community Fund B.E. 2547" are the following: First, the fund will be used as a source of fund for investment, job creation, income generation, welfare improvement and reducing expenses. Second, it will be used as an emergency fund. Third, the village fund provides deposit services for members. Fourth, it will be supplied as loans to other village funds for strengthening its economy and society. Finally, it aims to develop the rural economies.

The organization consists of two levels of administration. First, the national committee of the central government, including 76 provincial and 928 district sub-committees will take care of the fund at the national level. The central regulation states that the loan size cannot exceed THB 20,000 per borrower. In some case, it can be extended to THB 50,000 and emergency loans cannot exceed THB 10,000[3]. The interest rate must be less than or equal to 15 percent per year. The repayment has to be made within one year[4]. Repayment must be guaranteed by at least two people. A borrower will receive the money and repay the debt via the Bank for Agriculture and Agricultural Cooperatives (BAAC)[5], and the Government Savings Bank (GSB)[6].

Second, the local committee at the village level consists of around 9 to 15 members that have been elected from the villagers who have lived in the respective area for at least 2 years. Half of local committee members must be women. They play an important role of the establishment of regulations, as well as the rules

[3] The "Act of National Village and Urban Community Fund B.E. 2555" The central regulation states that the loan size cannot exceed THB30,000 per borrower. In some case it can be extended to THB75,000. In addition, emergency loans cannot exceed THB15,000.

[4] The "Act of National Village and Urban Community Fund B.E. 2552" stated that the repayment has to be made within two years.

[5] In 1966, the government established the Bank for Agriculture and Agricultural Cooperatives (BAAC) as a state-owned enterprise in order to extend credit directly to individual farmers and farmer institutions.

[6] King Vajiravudh (Rama VI) introduced saving services to Thailand and established the savings office in 1913. The office was renamed to the Government Savings Bank (GSB) in 1947.

and procedures concerning the management of their own funds. The local committee will decide who should receive the loans. The conditions basically include the members' ability to repay, the purpose of borrowing, and the loan size. The close relationship between the local committee and members reduces the risk because they know each other very well. In particular, the committee is able to identify the risk of each borrower and also his or her ability to repay the loan (Boonperm, et al., 2009; Kaboski & Townsend, 2009; Menkhoff & Rungruxsirivorn, 2011).

2.2.2 Determinants of Microcredit Borrowers

Previous empirical studies have been done to analyze the factors that affect households' participation in microcredit. Households and individuals with similar characteristics, e.g., age, education, household size and income might have different levels of entrepreneurial spirit or ability. These may lead to a difference in the probability to borrow. For example, Evans, et al. (1999) presented a conceptual framework of barriers to participation in the microcredit program in Bangladesh. A program-related barrier such as membership requirements and a client-related barrier such as health, household size, dependency ratio, income and assets of households were taken into account. The study found that determinants of borrowers were gender, education, household size, and land ownership. Khandker (2001, 2005) examined determinants of participation in microfinance program in Bangladesh, the results showed that resource-poor households, both in landholding and formal education, demand more loans from microfinance programs than households that are resource rich. This means that the landless households were likely to receive more loans from microfinance programs than landed households.

In a study of financial exclusion in Canada, Simpson and Buckland (2009) concluded from Probit that unbanked households had lower income, wealth and education. They were older, more likely to have a larger family with fewer earners and more likely to have a single parent with children aged around 5-17 years old. Blasio and Nuzzo (2010) used data from an Italian survey of household income and wealth to identify determinants of social behavior. Their results suggested that age, sex, education, employment, home ownership and urban residence were determinants of participation in groups and associations.

In addition, Li et al. (2011) conducted an empirical study to investigate the accessibility to microcredit of rural households in China. The analysis which was based on the Logit model showed that the demographics and socio-economic characteristics of rural households such as income, dependency ratio, location of household, access to other credit sources, and attitude towards debt were determinants of the access to microcredit. Supply side factors such as interest rate and loan processing time were also determinants. However, their results found that even though participating in microcredit programs helps improve household income and consumption, the main beneficiaries of China's microcredit programs are non-poor households. They also concluded that the significant impacts of microcredit on increasing household welfare do not necessarily mean that microcredit can reduce poverty since the program does not target the poor population.

In Thailand, Coleman (2006) investigated the determinants of village bank members in Northeast Thailand. He used the Logit model to analyze whether household characteristics and credit worthiness scores influenced the decision to be members. The results found that credit worthiness scores, value of land owned by women, and female household heads were significant determinants. Moreover, there is an evidence indicated that the poor are less likely to participate than the wealthier in microcredit program.

Previous studies of the MVC program conducted by Chandoevwit and Ashakul (2008) and Boonperm et al. (2009) focused on evaluation of the impact of the MVC program. They used household variables to construct the propensity score to match the non-participants with household characteristics similar to those who participated in MVC program. They included characteristics of the household's head such as gender, age, status, education, and household characteristics such as size, number of income earners, marital status, assets and main sources of household income. Menkhoff and Rungruxsirivorn (2011) compared characteristics of borrowers between the MVC program and six other financial institutions in three provinces in Northeast Thailand using the Multinomial Logit. They found that age, female household head, number of children, occupation, income, assets, landholding, ratio of defaulted loan and loan characteristics were determinants of the decision to choose the source of loans.

Suriya (2011a) pointed out from the survey data of a village in the North of Thailand that most of the poor households reached the limit of loans because they did not return the previous loans, and then could not apply for a new credit. Only the richest or second richest quintiles of households in a village were capable of applying for microcredit. In this study, the attempt is on answering "who get benefits from the MVC program by including household head characteristics, demographics, socio-economic occupations, income and assets, and other related factors" as the control variables to test the significance of the determinants of borrowers of MVC program. It also includes poverty index, poverty gap, and interaction term of being poor and being unable to have access to other credits, as key testing variables to test the significance of the accessibility to microcredit by the poor households. The extent of poverty of this study follows the Foster-Greer-Thorbecke (Foster et al., 1984) concept which measures poverty as follows:

(1) Poverty index: $$P_0 = \frac{1}{N}\sum_{i=1}^{N} I(y_i < Z)$$

(2) Poverty gap: $$P_1 = \frac{1}{N}\sum_{i=1}^{N} \frac{G_i}{Z}$$

where *I(.)* is an indicator function that can be set to 1 if the bracketed expression is true, and 0 otherwise. y_i is average monthly consumption expenditure per capita which include food, beverages, tobacco and other good and services. $G_i = (Z - y_i).I(y_i < Z)$ and Z is the poverty lines in 2009 were quoted from the National Economic and Social Development Board of Thailand (NESDB) and the decomposition of the lines for a particular province was calculated (Appendix A).

2.3 Research Methodology

2.3.1 The Logit Model

Logit has been used frequently in cases which have a dependent variable that is binary. It assumes the logistic distribution of the error term. It provides a good estimator which is consistent and efficient (Li, et al., 2011; Maddala, 1983). This paper chooses Logit over Probit because it is more convenient to read its coefficients as the log of odd ratio and easier to see the marginal effects (Suriya,

2011a). In addition, when sample size gets large, the results from Logit and Probit will be very close (Maddala, 1983).

Logit is commonly used to examine households' accessibility to credit (Li, et al., 2011). The household chooses to borrow when utility of borrowing exceeds utility of not borrowing and their difference depends upon a vector of household characteristics (X). Let $\Pr(Y=1)$ be the probability that a household chooses to borrow from microcredit, which is written as:

$$\Pr(Y=1) = f(X) \tag{2.1}$$

This study uses the observed information of household's choice (borrow or not borrow) and household's characteristics to estimate the probability of the household's choice conditional on the household characteristics using the Logit model. The empirical model can be expressed as follows (Maddala, 1983):

$$\Pr(Y=1) = \frac{1}{1+\exp(-X\beta)} = \frac{\exp(X\beta)}{1+\exp(X\beta)} \tag{2.2}$$

It is clear that the dependent variable, Y, is binary choice which the borrower of MVC program is classified as one, otherwise it is zero. Explanatory variables, X, is a vector of household characteristics include household head characteristics, demographics, socio-economics class, income and assets and other variables.

Equation (2) represents the cumulative logistic distribution function in a non-linear form, which is difficult for interpreting the coefficients. For the purpose of interpretation, its coefficients can also be read as the log of odd ratio (Maddala, 1983). With a transformation, the estimated model becomes a linear function of the explanatory variables, which is expressed as follows:

$$\log\left(\frac{\Pr(Y=1)}{\Pr(Y=0)}\right) = X\beta \tag{2.3}$$

where the parameters, β, is a vector of coefficients for the explanatory variables. It will estimated by maximum likelihood.

2.3.2 Data Collection

The data in this study are from the Thailand Socioeconomic Survey in 2009 conducted by the National Statistical Office. The survey interviewed 43,844 households (both borrower and non-borrower) throughout the country. A special part

about participation in the Village Fund program has been included since 2009. The key question is “During the previous year, do any of household members have debt from the Village and Urban Community Fund? This question can extract the data into borrowing and non-borrowing households. Household with one or more members have debt or borrow from the Village Fund program is classified as borrowing household. Household with all members did not have any debt from the Village Fund program is classified as non-borrowing household. The data were collected every month throughout the year. The survey collected a variety of household socio-economic data including detailed information on household income and expenditure.

The survey found that 10,214 households or 10,562 people were borrowers of the MVC program. The average loan size was THB 16,148. The mean annual interest rate was 6.0 percent. Around 40 percent of borrowers used the loan for farm business. Only 17 percent used it for non-farm business and almost 6 percent of borrowers used the loan for refinance and house improvement. About eight hundred people or 7.5 percent were overdue on the repayments.

After missing observations on various household characteristics were dropped, the sample consisted of 41,296 households. Among them, 9,827 households which covered 10,162 people were borrowers. People may choose not to borrow because they do not want to go into debt or they may not be satisfied with the extremely small amount of loan, while potential borrowers choose to borrow. The results are presented in the next section.

2.4 Results

2.4.1 Characteristics of the Households

Table 2.1 summarizes the household characteristics. Out of 41,296 samples, 9,827 households borrowed from the MVC and 31,469 were non-borrowing households. It uses t-test to determine whether the mean values of household variables between borrower and non-borrower were statistically different. It uses chi-square to test the relationships between the groups of household variables and the borrowing. The t-test results are statistically significantly at the 99 percent level except for dependency ratio. This demonstrates that the mean value of age of household head, household size and numbers of motorcycle in borrower households are significantly

higher than non-borrower households. Education of household head, household monthly income and numbers of car in borrower households have less mean value than that of non-borrower households.

Table 2.1: Characteristic of the Respondents (Borrower and Non-borrower)

	Non-borrower		Borrower		All respondents		Statistical
	count	%	count	%	count	%	test
Household head characteristics:							
Age[1]	50.60		52.30		51.01		t = -11.7**
Women							
Yes	11,115	35.3	2,876	29.3	13,991	33.9	χ^2 = 122.5**
No	20,354	64.7	6,951	70.7	27,305	66.1	
Education (in year) [1]	8.16		5.84		7.60		t = 55.2**
Single	3,586	11.4	206	2.1	3,792	9.2	χ^2 = 953.4**
Married	20,977	66.7	7,860	80.0	28,837	69.8	
Widowed/ divorced/ separated	6,906	21.9	1,761	17.9	8,667	21.0	
Demographics:							
Household size[1]	3.02		3.69		3.18		t = -36.3**
Dependency ratio[1]	0.36		0.37		0.36		t = -0.4
Socio-economic occupations:							
Landed farmers	2,536	8.1	2,280	23.2	4,861	11.7	χ^2 = 3,100.0**
Landless farmers	440	1.4	695	7.1	1,135	2.7	
Fishery and agricultural services	436	1.4	200	2.0	636	1.5	
Entrepreneurs	7,701	24.5	2,070	21.1	9,771	23.7	
Professional and technical services	4,686	14.9	555	5.7	5,241	12.7	
Farm and general workers	1,070	3.4	402	4.1	1,472	3.6	
Other employees	9,103	28.9	2,265	23.1	11,368	27.5	
Unemployed	5,497	17.5	1,360	13.8	6,857	16.6	
Income and assets:							
Monthly income[1] (THB1,000)	24.82		17.36		23.05		t = 22.6**
Land tenure							
Yes	21,888	69.5	9,189	93.5	31,077	75.3	χ^2 = 2,300.0*
No	9,581	30.5	638	6.5	10,219	24.7	
Home business							
Yes	6,791	21.6	2,293	23.3	9,084	22.0	χ^2 = 13.4**
No	24,678	78.4	7,534	76.7	32,212	78.0	
Number of motorcycles[1]	1.08		1.40		1.16		t = -33.3**
Number of cars[1]	0.49		0.36		0.46		t = 16.8**
Other variables:							
Rural household							
Yes	9,484	30.1	6,036	61.4	15,520	37.6	χ^2 = 3,100.0**
No	21,985	69.9	3,791	38.6	25,776	62.4	

Table 2.1 (Continued)

	Non-borrower		Borrower		All respondents		Statistical test
	count	%	count	%	count	%	
Accessibility to other sources of credit							
Yes	14,081	44.8	6,580	67.0	20,661	50.0	$\chi^2 = 1{,}500.0^{**}$
No	17,388	55.2	3,247	33.0	20,635	50.0	
Difficulty to get emergency loan							
Yes	5,298	16.9	2,019	20.5	7,317	17.7	$\chi^2 = 70.7^{**}$
No	26,171	83.1	7,808	79.5	33,979	82.3	
Total	31,469		9,827		41,296		

Notes: [1] entry for mean values. ** and * represent significant level at 1% and 5%, respectively.

Borrower's households are strongly associated with women, marital status, socio-economic occupations, land tenure, home business, rural household, accessibility to other sources of credit, and difficulty to get emergency loan because the chi-square tests on these variables were all significant at the 99 percent level.

Table 2.1 shows that around 80 percent of the borrowers and 66.7 percent of the non-borrowers were married. The proportion of the single borrowers was only 2.1 percent which was much lower than that for non-borrowers (11.4 percent). The chi-square test in table 2.1 indicates a strong association between borrowing and socio-economic occupations. A number of 11,368 respondents or 27.5 percent relied on employment in commercial, service, production and construction sectors. Around 23.7 percent worked in business, trade, industry, and service sectors. For agricultural sector, 15.9 percent of the respondents were engaged in landed farmers, landless farmers and fishery and agricultural services. The results also suggested that borrowers were more likely to engage in agricultural sector than non-borrowers (32.3 percent and 10.9 percent). Professional, technical, and managerial services, usually were clients of formal financial institutions, had a ratio of non-borrowers around 14.9 percent which is higher than that of borrowers (5.7 percent).

Borrowers were more likely to have own houses or land (93.5 percent). They also used home for business purposes more than non-borrowers (23.3 percent and 21.6 percent). However, non-borrowers appear to be higher income than

borrowers, non-borrowers have monthly income 24.82 Million Baht per household whereas 17.36 Million Baht per household for borrowers.

Majority of borrowers, 61.4 percent, lived in rural area while 69.9 percent of non- borrowers lived in urban area. The accessibility to other sources of credit shows that borrowers were more able to access alternative credit sources (67.0 percent and 44.8percent). In emergency case, borrowers have more difficulty to get loan (20.5 percent and 16.9 percent).

2.4.2 Determinants of borrowers of the MVC

This study includes the set of testing variables that are the poverty index, poverty gap, and interaction term, it presents those poor households who cannot gain access to other sources of credit (microcredit's target groups). To avoid the multicollinearity problem, among poverty index, poverty gap and their interaction we conducted 3 models with different testing variables similar to the results in table 2.2. The Logit model successfully predicted the probability of borrowers in all 3 models. It rejects the null hypothesis that the parameters estimated in the model are equal to zero at the 99 percent level of significance. It can be concluded that the explanatory power of Logit model is satisfactory and the model can explain the probability of borrowers.

Even most microfinance programs state that their primary goal is to alleviate rural poverty by delivering credit and other financial services to the poor households. Table 2.2 shows the results that it has no evidence of those poor households receiving benefits from the MVC program. All 3 models show that the poor households have insignificance to determine probability to borrow from the program. These results indicate the failure of microcredit to include the poor, especially for those who cannot access to other sources of credit. Although some of the poor households reported in choosing not to borrow from the Village Fund, many others were excluded against their wishes because nobody was willing to grant a loan or to make a personal guarantee on loans that the poor people wanted to take out (Anuchitworawong, 2007).

Table 2.2: Logit Estimates for Household Borrowing from the Village Fund

Dependent variable[a]: Household borrowing during 2008			
Independent variables	**Model 1**	**Model 2**	**Model 3**
Testing variables:			
Poverty index (Being poor)	0.0062		
	(0.10)		
Poverty gap		-0.2559	
		(-0.96)	
Being poor and cannot access to other credits			0.1097
			(1.46)
Household head characteristics:			
Age	-0.0047**	-0.0047**	-0.0047**
	(-3.58)	(-3.58)	(-3.59)
Women	0.0792*	0.0787*	0.0798*
	(2.39)	(2.38)	(2.41)
Education (in year)	-0.0641**	-0.0640**	-0.0641**
	(-13.35)	(-13.33)	(-13.35)
Single	-0.9264**	-0.9263**	-0.9260**
	(-11.90)	(-11.90)	(-11.90)
Widowed/ divorced/ separated	-0.2560**	-0.2558**	-0.2555**
	(-6.39)	(-6.39)	(-6.38)
Demographics:			
Household size (persons)	0.1298**	0.1325**	0.1276**
	(12.21)	(12.57)	(12.34)
Dependency ratio	-0.4486**	-0.4480**	-0.4493**
	(-8.87)	(-8.86)	(-8.88)
Socio-economic occupations:			
Landless farmers	0.5199**	0.5209**	0.5188**
	(6.96)	(6.97)	(6.94)
Fishery and agricultural services	-0.4971**	-0.4938**	-0.5011**
	(-4.92)	(-4.89)	(-4.96)
Entrepreneurs	-0.4583**	-0.4622**	-0.4552**
	(-9.82)	(-9.91)	(-9.77)
Professional and technical services	-0.6482**	-0.6504**	-0.6471**
	(-9.78)	(-9.81)	(-9.76)
Farm and general workers	-0.6791**	-0.6814**	-0.6770**
	(-9.32)	(-9.35)	(-9.29)
Other employees	-0.6135**	-0.6172**	-0.6103**
	(-14.19)	(-14.28)	(-14.13)
Unemployed	-0.3489**	-0.3508**	-0.3473**
	(-7.16)	(-7.20)	(-7.13)
Income and assets:			
Monthly income (THB1,000)	-0.0146**	-0.0147**	-0.0145**
	(-7.00)	(-7.07)	(-7.03)

Table 2.2 (Continued)

Dependent variable[a]: Household borrowing during 2008			
Independent variables	**Model 1**	**Model 2**	**Model 3**
Land tenure	1.3330**	1.3338**	1.3325**
	(27.24)	(27.26)	(27.23)
Home business	0.2503**	0.2505**	0.2505**
	(7.11)	(7.11)	(7.11)
Number of motorcycles	0.1495**	0.1469**	0.1515**
	(8.86)	(8.70)	(9.00)
Number of cars	-0.1715**	-0.1730**	-0.1707**
	(-5.85)	(-5.89)	(-5.80)
Other variables:			
Rural household	0.7441**	0.7435**	0.7445**
	(26.29)	(26.28)	(26.33)
Accessibility to other sources of credit	0.9028**	0.9012**	0.9122**
	(31.39)	(31.34)	(31.06)
Difficulty to get emergency loan	0.2116**	0.2127**	0.2102**
	(6.13)	(6.16)	(6.09)
Constant	-2.1516**	-2.1493**	-2.1588**
	(-22.02)	(-22.00)	(-22.07)
Pseudo R-squared	0.1995	0.1995	0.1995
Log pseudo likelihood	-18,139.6	-18,139.1	-18,138.5
Wald chi2 (23)	6,325.7**	6,322.2**	6,331.5**
Total observations	41,296	41,296	41,296

Notes: [a] Dependent variable equals to 1 if household had borrowed from MVC and zero otherwise. Numbers in parenthesis indicate z-statistics. ** and * represent significant level at 1% and 5%, respectively.

To determine borrower characteristics, the results show that a household with a younger female head was more likely to be a borrower. In addition, less educated of household head was more likely to borrow from the program. The significant negative signs on marital status indicated that households which the head was single, widow, divorced, or separated had a lower probability to borrow from Village Fund program compared with married household head. A larger household with less dependency ratio was more likely to borrow from Village Fund program.

Dummy variables for socio-economic occupations of household conclude that farm-operating household tends to have a higher probability to be a borrower. The effect is particularly upon households who mainly landless (rented the land).

Low income household seem to be a client of the Village Fund program. Assets of households are the factors determine borrower. The result indicates that home ownership increased probability to be a borrower. Furthermore, households which use their home for business purposes were more likely to be borrowers. For the vehicle, household with high number of motorcycles was more likely to be a borrower. While household with high number of cars was less likely to be a borrower.

Rural household tend to be a client of the Village Fund program. Moreover, household which can access to other sources of credit and difficulty to get emergency loan had more probability to borrow from the program.

Table 2.3 summarizes marginal effect of Logit model which provide a direct effect of explanatory variables on borrower household characteristics. For example, the marginal effect of age indicates that an additional age of household head would decrease the probability of borrowing by 0.07% on average. Whereas the marginal effect of household size indicates that an additional member increase in the family would increase the probability of borrowing by 1.83% on average. In addition, the probability of borrow from the Village Fund program would increase 1.12% on average when women household head. Probability of borrower would increase 15.14% on average when they owned land and 12.80% on average when they have accessibility to other sources of credit. Rural household would increase the probability of borrower by 11.14% on average.

Table 2.3: The Marginal Effect of the Logit Estimates for Household Borrowing

Dependent variable: Household borrowing during 2008			
Independent variables	**Model 1**	**Model 2**	**Model 3**
Testing variables:			
Poverty index (Being poor)[a]	0.0009		
	(0.10)		
Poverty gap[a]		-0.0360	
		(-0.96)	
Being poor and cannot access to other credits[a]			0.0160
			(1.41)
Household head characteristics:			
Age	-0.0007**	-0.0007**	-0.0007**
	(-3.58)	(-3.58)	(-3.59)

Table 2.3 (Continued)

Dependent variable: Household borrowing during 2008			
Independent variables	**Model 1**	**Model 2**	**Model 3**
Women[a]	0.0112*	0.0112*	0.0113*
	(2.37)	(2.36)	(2.39)
Education (in year)	-0.0090**	-0.0090**	-0.0090**
	(-13.15)	(-13.13)	(-13.16)
Single[a]	-0.1009**	-0.1008**	-0.1008**
	(-16.29)	(-16.28)	(-16.28)
Widowed/ divorced/ separated[a]	-0.0343**	-0.0343**	-0.0342**
	(-6.73)	(-6.72)	(-6.71)
Demographics:			
Household size (persons)	0.0183**	0.0186**	0.0179**
	(12.37)	(12.74)	(12.47)
Dependency ratio	-0.0631**	-0.0630**	-0.0632**
	(-8.93)	(-8.91)	(-8.94)
Socio-economic occupations:			
Landless farmers[a]	0.0853**	0.0855**	0.0851**
	(6.09)	(6.10)	(6.07)
Fishery and agricultural services[a]	-0.0593**	-0.0590**	-0.0597**
	(-5.89)	(-5.85)	(-5.96)
Entrepreneurs[a]	-0.0595**	-0.0600**	-0.0591**
	(-10.56)	(-10.66)	(-10.50)
Professional and technical services[a]	-0.0775**	-0.0777**	-0.0774**
	(-11.41)	(-11.45)	(-11.38)
Farm and general workers[a]	-0.0770**	-0.0772**	-0.0768**
	(-11.85)	(-11.90)	(-11.80)
Other employees[a]	-0.0789**	-0.0793**	-0.0785**
	(-15.25)	(-15.35)	(-15.18)
Unemployed[a]	-0.0454**	-0.0456**	-0.0452**
	(-7.70)	(-7.74)	(-7.66)
Income and assets:			
Monthly income (THB1,000)	-0.0021**	-0.0021**	-0.0020**
	(-7.19)	(-7.26)	(-7.21)
Land tenure[a]	0.1514**	0.1514**	0.1513**
	(35.50)	(35.51)	(35.49)
Home business[a]	0.0369**	0.0369**	0.0369**
	(6.80)	(6.81)	(6.81)
Number of motorcycles	0.0210**	0.0207**	0.0213**
	(8.86)	(8.71)	(9.01)
Number of cars	-0.0241**	-0.0243**	-0.0240**
	(-5.78)	(-5.81)	(-5.73)
Other variables:			
Rural household[a]	0.1114**	0.1113**	0.1114**
	(24.42)	(24.42)	(24.48)

Table 2.3 (Continued)

Dependent variable: Household borrowing during 2008			
Independent variables	**Model 1**	**Model 2**	**Model 3**
Accessibility to other sources of credit[a]	0.1276**	0.1274**	0.1289**
	(31.41)	(31.36)	(31.03)
Difficulty to get emergency loan[a]	0.0311**	0.0313**	0.0309**
	(5.85)	(5.88)	(5.81)

Notes: [a] dy/dx is for discrete change of dummy variable from 0 to 1. Numbers in parenthesis indicate z-statistics. ** and * represent significant level at 1% and 5%, respectively.

2.5 Discussion

The non-poor households, especially near poor and moderate-income groups, could access to the fund more than the poor households (as shown in Table 2). These findings confirm empirical evidence previously reported by Anuchitworawong (2007). Although some of the poor households reported choosing not to borrow from the Village Fund, many others were excluded against their wishes because the committee or a personal guarantee felt they cannot repay debt.

The result shows that women borrowers whom the local committee felt they can repay debt have higher chances of borrowing. However, marital status of household head is important to determine borrower of the Village Fund program. Single, widowed, divorced and separated household heads had a lower probability to borrow from the Village Fund. This finding is consistent with Coleman (1999) who studies the group lending in Thailand. Coleman (1999) argued that they were viewed as lack of credit worthiness and their households seem to be unstable. This is because they would not be able to ask their couples to repay the loans.

Household size was also influential for borrowing. Households with more members had more probability to borrow. This is because households have additional sources of income and are more capable to repay debts. Households with high dependency ratio tend to borrow less in Village Fund program. They allocated some money to take care of children, elder people, and disable persons which might affect the ability to repay the loans.

Farmer is the Village Fund program's target, one explanation is that rural farm households were familiar with financial loans offered by the Bank for

Agriculture and agricultural Cooperatives (BAAC). Moreover, other occupations can easier to access other financial services such as bank and non-bank personal loan.

Although there is no evidence to show that the poor households could access to the Village Fund more than the non-poor households. The result shows that the lower income households were more likely to be borrowers. As found by Menkhoff and Rungruxsirivorn (2011) that the Village Fund reached the group of lower income households and commercial banks appear to serve households with higher income.

Home ownership was associated with Village Fund borrowing. This confirms the suggestion from Grameen Bank in Dowla (2006) that *"A house is like a factory building where all household-based production occurs and as such owning a house is an important input of production"*. Households with higher number of motorcycles were more likely to borrow.

Even the Village Fund program spread money throughout the country, rural households were more likely to borrow from this program. Furthermore, accessibility to other formal, semi-formal, and informal sources of financial institutions also increases the probability of borrowing. Moreover, since the emergency fund is one of objective of Village Fund program, households which have difficulty to get emergency loan can borrow from the program.

The principle of microcredit programs to fight against poverty focuses on providing loans to the poor. However, the Village Fund, the largest government microcredit program in Thailand, differs from those microcredit programs. The funds are motivated by political objectives from the beginning and it creating clear politics popularity for Thai Rak Thai Party since 2001 election. The funds are not claimed to target for the poor, only to provide new source for people in the village and urban community who may not be able to access to other funding sources. In addition, very few poor households are able to access to the village fund, while the near-poor and the moderate income households, which are the majority voter, are the major borrowers (Anuchitworawong, 2007). These may lead to the founding that the poor do not have the opportunity to borrow more than those who are not poor.

2.6 Conclusion

Drawing upon a national-level and cross-sectional household data set from the Thailand Socioeconomic Survey of 2009, this paper investigates the determinants of borrowers of the Village and Urban Community Fund which is the largest microcredit scheme of the Thai government. To do so, we apply Logit model and the results indicate that the poor household whose total expenditure is below the poverty line is not significant determinant of borrower. The same estimates show overall results of the borrower's characteristics indicate that the village fund program targets at younger, women, uneducated of household head. Households with larger household size but less dependency ratio are more probability to be borrower. Farmer is more likely to be a borrower, especially landless farmer. Furthermore, Households which less income (but not poor) with back-up assets such as land tenure and number of motorcycles are more likely to be borrower. Entrepreneur spirit which can be observed from the operation of home-business is a determinant of the borrower. Households with higher accessibility to other sources of credit and are more likely to be borrower. Finally, households which have difficulty to get emergency loan have high probability to borrow from the Village Fund program

Our findings indicate that the Village Fund program does not reach the poor. However, it targets two groups that are the near poor and the moderate-income households. The near poor households are household with uneducated household head, landless, lower income, location in rural area, and difficulty to get emergency loans. Whereas, households which have land tenure, home business, motorcycles, and accessibility to other sources of credit are defined as the moderate-income households. The loan does not lend to high income household but it does not reach the poor too. Focusing on the marginal effect the near poor receive less benefit than the moderate-income group. The reasons behind these phenomenons might be because of the ability to repay the loan. The near poor are more capable to repay the loan than the poor. However, they are less capable than the moderate-income households to make the repayment.