The Impact of Microfinance on Poverty Reduction in Oudomxay, Northern Province, Lao PDR

By

Souphathone Phonesavanh

September 2015

Thesis Presented to the Higher Degree Committee

of Ritsumeikan Asia Pacific University

in Partial Fulfillment of the Requirements for the Degree of

Master of Science in International Cooperation Policy

ACKNOWLEDGEMENT

I am indeed indebted to my academic adviser Professor KIM Sangho for his insightful comments and support. I also would like to sincerely thank the professors who taught me and gave comment on their creations and tips on doing my research. I also would like to express my gratitude to RCAPs for providing me financial support in conducting an oversea research study in Lao PDR.

In addition, I would like to thank my boss, Mr. Bounthai Souphatthone, the Director General, Bank of Lao PDR, Oudomxay Province, Northern Branch, Lao PDR, who provided me with valued guidance, feedback and tremendous support for my survey in Laos.

Furthermore, special thanks to my friends, APU master students who assisted me in working with my thesis, chiefs of 13 villages who provided me village information, warm welcome and gathered villagers for our interviews, Mr. Visanoukone Phimavong, Chief of Economic-Monetary and Foreign Currencies Management Division, my four colleagues, Mr. Vilaysack Chanthalangsy, Mr. Somvixay Laungxaysouk, Miss. Sengchanh Oulayseng and Mr. Sayphet Xaymany who helped me interview villagers during my survey in Oudomxay province, Lao PDR. Moreover, I would like to thank Japan International Cooperation Agency (JICA) and Japan International Cooperation Center (JICE) for the financial support during my

study in Japan. Finally, I would like to truly thank my beloved parents, my dear wife and daughter for always supporting me.

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LIST OF ABBREVIATIONS

APB	:	Agricultural Promotion Bank
ADB	:	Asian Development Bank
ACCU	:	The Association of Asian Confederation of Credit Unions
BRAC	:	Bangladesh Rural Advancement Committee
BIDS	:	Bangladesh Institute of Development Studies
BOL	:	Bank of Lao PDR
DGRV	:	German Cooperative and Raiffeisen Confederation
FIAM	:	Foundation for Integrated Agriculture Management, a Thai
NGO	:	Non-Government Organization
GIZ	:	GermanDeutsche Gesellschaft für Internationale Zusammenarbeit GmbH
INGOs	:	International Non-Government Organizations
LDC	:	Least Developed Country
LECS	:	Lao Economic Census
MFIs	:	Microfinance Institutions
MPI	:	Ministry of Planning and Investment
NERI	:	National Economic Research Institution
NGOs	:	Non-government Organizations
NGPES	:	National Growth and Poverty Reduction Strategy
SCUs	:	Savings and Credit Unions

UNDP/CDF	:	United Nations Development Program/Capital Development Fund
RD-12	:	Rural Development Project -12
RMFC	:	Rural Microfinance Committee
SBFIC	:	Savings Banks Foundation for International Cooperation
T-MF	:	Total Microfinance
VFs	:	Village Funds
WB	:	The Work Bank

ABSTRACT

Several countries acknowledge that microfinance is one of the tools for poverty eradication as it plays an important role in economic development. Accessing basic financial services, such as a place where we can make saving deposits and obtain loans, is significant for the development of rural and urban areas of Lao PDR. In consequence, the Government of Lao PDR recognizes that access to rural financial services is one of the important tools for poverty reduction of the country and as a result, has pushed microfinance sectors into one of the top development programs for the agriculture and forestry sectors with the purpose of sustaining economic growth and poverty reduction as identified in the framework of the National Growth and Poverty Reduction Strategy (NGPES).

This study aims to evaluate the impact of microfinance on income and expenditure by applying the fixed-effect model to estimate the microfinance effects in Oudomxay, Northern Province, Lao PDR during the periods of 2009 to 2013. The estimations also include differences and changes in household yearly income and expenditure between member and non-member, and change in household yearly income and expenditure of member and non-member over the years. The study also investigated sources of microfinance services in the process, including whether or not households encounter in sourcing loans, repaying loans, and money saving deposits.

The estimated results found a highly positive and significant effect of microfinance loans on household yearly income and expenditure over the years. Difference and change in household yearly income and expenditure between member and non-member were totally large over the years. Significantly, change in household yearly income and expenditure of member was also totally large and greater than change in household yearly income and expenditure of non-member over the years from those microfinance loans. The study also found formal microfinance and semi-formal microfinance were the main sources of microfinance services and also found households had encountered the problems when in sourcing loans, repaying loans, and money saving deposits with those three finance providers. However, based on the estimated results, microfinance can be a viable strategy for poverty reduction and it might reduce poverty in Oudomxay province in the northern part of Laos.

CHAPTER 1

INTRODUCTION

1.1. Issues

Many countries recognize that microfinance significantly helps poor people through income generation and asset creation. It provides an essential source of funds for poor people to commence their economic activities, upgrading their enterprise, improving their livelihood and their daily consumption. People also believed that microfinance is one of the crucial tools for fighting against poverty and significantly contributes in boosting economic growth. On the other hand, being poor and having low income pose a difficulty in borrowing credit from commercial banks as they need high collaterals and have sophisticated steps.

Therefore, there is a high demand for small-scale commercial financial services for the poor in sourcing credit and deposit in the developing countries. These and other financial services definitely assisted people who have low incomes in upgrading their households, business administration, raising their effective production, smoothing their income liquidity and daily expenditure costs, magnifying and increasing their small enterprises as well as maximizing their income (Robinson, 2001).

Several studies showed that microfinance programs have a significant and positive impact on income, expenditure and poverty reduction. On the other hand, some studies have revealed that microfinance programs have a negative impact on

poverty reduction. Many studies, such as by Nudamatiya, Giroh and Shehu (2010); Mosley (2001); Nawaz (2010); Kindker (1998, 2003 & 2005); Khandker and Samad (2013); Coleman (2002); Abbas, Sarwar and Hussain (2005); Cong Lu and Hasan (2011); Kondo, Orbeta, Dingcong and Infantado (2008); Copestake, Bharotha and Johnson (2001); Katsushi and Shafiul (2011); Nguyen, Van den Berg and Vu (2007) showed that microfinance has a positive impact on income, expenditure and poverty reduction. However, studies by Angelucci, Karlan and Zinman (2013); Morduch (1998); Inpaeng (2012); Kongpasa (2014); Coleman (1999) revealed that microfinance has negative and insignificant impacts on income, expenditure and poverty reduction.

The Lao People's Democratic Republic (Lao PDR) is a landlocked counrty in Southeast Asia. The country has a population of 5.6 million people (Census 2005) and a land area of 236,800 square km. Lao PDR is one of the Least Developed Countries (LDCs) and the country is one of the poorest countries in East Asia. About 71% of the population lives on less than $ 2 US dollars a day, and 23% on less than $ 1 US dollar a day in 2004 (The World Bank Vientiane Office, 2006). The population of Lao PDR living in rural areas is estimated at about 71% of national population, and these areas have 82% of the poor (Ministry of Planning and Investment, Department of Statistics, 2010).

Currently, the government of Lao PDR is making efforts to implement the 7th National Social-Economic Development Plan (2015-2020) as eradicating poverty and graduating from Least Developed Country (LDC) status by the year 2020. In order to achieve this goal, the government of Lao PDR has specially concentrated on

developing the microfinance sectors as it is supposed to boost the economic growth of Lao PDR and thereby contributes to poverty reduction of the country.

Access to basic financial services, such as a place where we can make a deposit savings and obtain loans, is a significant tool in generating and increasing of incomes, building enterprises, and improving the livelihood. Therefore, the government has concentrated on promoting and implementing the development of microfinance sectors, especially promoting and providing microfinance services access to remote areas by increasing their outreach in order to meet the needs of those without direct access to formal banking services (Rural and Microfinance Committee, Bank of Lao PDR, 2003). In addition, the government of Lao PDR believes that access to microfinance can be a significant tool for poverty reduction; thus, it has placed microfinance activities to be one of the top development programs in the agriculture and forestry sector with the purpose of sustaining economic growth and poverty reduction identified in the framework of the National Growth and Poverty Reduction Strategy (2004).

In the past few decades, there were several organizations from domestic and international fronts that have implemented many microfinance programs in Lao PDR, coupled with the government's subsidized credit lending programs. However, the microfinance sector in Lao PDR is in an infant stage and it needs to develop constantly. Though the government of the Lao PDR and the international donors have worked assiduously to develop the microfinance sector, this sector is still developing slowly. Acording to the report on the national conference on microfinance for the poor in Lao

PDR (2005), the proportion of people who could access to microfinance services remained low at around one million of economically active people who require access to formal or semi-formal microfinance services. However, most poor people could not access to them, with only around 300,000 people who could access loans and savings. Only 21% of that 300,000 people could access formal microfinance, 33% relied on semi-formal microfinance and project initiatives and the rest depended on informal microfinance. Besides this, microfinance in Lao PDR was faced with a decentralized government system, underdeveloped infrastructure, low density of population as well as a lack of cohesion (Microfinance Capacity Building and Research Programme, 2005).

Very few empirical research have been conducted to estimate the impact of microfinance at individual, household, enterprise, village, community and macroeconomic levels in Laos and to examine whether or not microfinance can be one of the important tools for poverty reduction. Some of the recent empirical studies in Lao PDR, such as Kongpasa (2014) evaluated the impact of saving groups in Naxaythong city (semi-areas of Vientiane capital) on household welfare, including household income, expenditure and asset. He applied Coleman's method (1999) as studied in village banks in the Northeast Thailand to solve program placement bias and endogeneity problem. The results showed that the saving group participants increased their asset, their income from self-employment activities and effectively supported the education of children. However, the programs had no clear overall impact on the total household incomes and expenditures. Inpaeng (2012) examined the

impact of Village Development Funds (VDFs) on poverty reduction in Sukuma district in Champasack province, southern Laos and also applied Coleman's method (1999) as studied in village banks in the northeastern Thailand. The results also showed a negative impact on income, expenditures and savings of VDFs' members. On the other hands, these studies used cross-section data to evaluate the effects of saving groups and village development funds; their estimated results might not predict the long-term effect of the programs.

In this study, however, we estimated the effect of microfinance which included microfinance institution loans, microfinance bank loans and village fund loans on household yearly incomes and expenditure by using household survey panel data collected from the survey during the month of July-September 2014 in Oudomxay, Northern Province, Lao PDR. The estimations also included difference and change in household yearly income and expenditure between member and non-member, as well as change and difference in household yearly income of member and non-member during the periods of 2009 to 2013. Interestingly, our study might predict the long-term effects of microfinance programs.

1.2. Research Objective

The main objective of this study is to estimate the impact of microfinance on household yearly income and expenditure of microfinance member and non-microfinance member. The estimations also included differences and changes in income and expenditure between member and non-member and change in income of

member and non-member over the period 2009-2013. Sources of microfinance services are investigated in the process, including whether or not households encounter the problems in sourcing loans, repaying loans, and money saving deposits.

1.3. Research Questions

This research attempts to address the following research questions:

- Main Research Question:

1) How does microfinance impact poverty in the beneficiary villages?

- Sub-Research Questions:

1) What sources of microfinance services are available in the villages?
2) What problems do villages encounter insourcing loans, repaying loans and money saving deposits with microfinance providers?

1.4. Hypothesis

Most poor and lower-income people join microfinance (microcredits) in Lao PDR because they can access fund sources (credits) with an interest rate that is lower than obtaining credits from informal microfinance and commercial bank. Moreover, it is easy to access, borrow money, and repay loan back and saving deposits. Therefore, the hypothesis is that member who obtained loans with microfinance providers (i.e., microfinance banks, microfinance institutions, and village funds may increase or change the level of their incomes and expenditures.

1.5. Methodology

To achieve the research objective, we applied the fixed-effect model with and without control variables (including both household and village characteristics), the member dummy variables, the time dummy variables and the after having loan dummy variables for estimating the microfinance effects on household income and expenditure, difference and changes in income and expenditure between member and non-member, and change in income of member and non-member over the period of 2009-2013. The author conducted a survey of 381 households in thirteen villages at seven districts in Oudomxay province in the north of Lao PDR. The survey sample included members and non-members from each of three microfinance programs (including Banks, Microfinance Institutions and Village Funds). Member who obtained loans from Banks (Agricultural Promotion Bank and Policy Bank), Microfinance Institutions (MFIs) and Village Funds and finally, for non-member who did not obtained loans from those three microfinance providers or households who did not borrow money at all.

1.6. Structure of the Paper

The rest of the study is organized as follows: Section 2 is microfinance in Lao PDR; Section 3 presents a literature review of the impact of microfinace studies on household yearly income and expenditure; Section 4 presents the surveyed areas, survey design, and characteristics of the survey household (i.e., social-economic data, sources of microfinance services, and purpose of using microfinance loans; Section 5 is the impact of microfinance on income and expenditure in Laos (the empirical

analysis includes the empirical model, data and variables, the impact of microfinance on household yearly income, expenditure, and a conclusion); and Section 6 draws a conclusion and recommendation for policy implication.

CHAPTER 2

MICROFINANCE IN LAO PDR

Many developing countries recognize that microfinance can play an important role for poverty reduction as poor people can access small amounts of money in order to establish their economic activities through income generation and asset creation. Several studies show that microfinance can increase income, expenditure, and improve the livelihoods of the poor.

Recently, the government of Lao PDR has afforded much effort into the implementation of the 7th National Social-Economic Development Plan (NSEDP) (2015-2020) to eradicate poverty and graduate from being a Least Developed Country (LDC) by the year 2020. In addition, the government of Lao PDR assumed that microfinance can boost economic growth and contribute to poverty reduction of the country. It has further pushed microfinance sectors into one of the top development programs in the agriculture and forestry sector with the purpose of sustaining economic growth and poverty elimination identified in the framework of the National Growth and Poverty Reduction Strategy (2004).

Therefore, this chapter will describe: a country brief; overview of microfinance development; microfinance providers – including formal, semi-formal and informal microfinance; govermental and international support program – to include the

government initiatives and program support for international programs and projects in Laos; and finally the conclusion.

2. 1. Country Brief

The Lao People's Democratic Republic (The Lao PDR) is a landlocked country in Southeast Asia. It borders five countries: China in the north, Burma in the northwest, Thailand in the southwest, Cambodia in the southeast, and Vietnam in the east. The unit of Lao currency is called the *Kip* (around 8,000 kips equal U.S.$1). The Lao PDR has a population of 5.6 million people (census 2005) living throughout 17 provinces; most people still live in rural areas, accounting for 71 percent of the total. The country is covered largely by mountains, with the natural resources along the Mekong plains. The Mekong River flows from north to south and gives beautiful views as it joins the border with Thailand (around 60% of its length). Though Lao PDR is still in a status of a Least Developed Country (LDC), the country has witnessed significant poverty reduction over the last decades, contributing to a decline in poverty rates from 46% in 1992 to 27.6% today. Therefore, Lao PDR is on the way to accomplish the Millennium Development Goal (MDG), aiming to reduce poverty by half by the year 2015.

2.2. Overview of Microfinance Development in Lao PDR

Since the beginning of its economic reform programs - termed as the New Economic Mechanism – Lao started a wide range of cooperation with various organizations in order to accelerate the implementation of various policy reforms

including the financial sector. In the early 1990s, Lao PDR was supported by domestic and international donors for the creation of village microcredit programs and village funds. Initially, these programs mainly focused on ensuring food security. In 1993, one of the majore banks of Lao PDR called the Agriculture Promotion Bank was established as a policy bank. The major objectives of this bank were financing and lending to farmers as well as implementing savings mobilization that started operating in 1997. In the following years, Non-Government Organizations (NGOs) and various organizations were involved in supporting this sector. In 1996, there were over 20 international organizations implementing rural credit funds across 17 provinces. These projects mainly operated at district levels and collaborated with the Lao Women Unions (LWUs), agriculture and forestry offices, and other local authorities. Most projects primarily emphasized credits and did not consider the long term sustainability of the projects. Until 1997, the new idea of the savings mobilization had been promoted (MPI, NERI and BOL, 2012).

In addition, the government of Lao PDR has collaborated with various organizations through bilateral and multilateral agencies in order to develop the sector continuously. However, for the last decade, the development of microfinance sectors mainly provided subsidized loans, especially implementing the village revolving funds. Importantly, the government of Lao PDR issued a new bank called Policy bank (in Lao terms: NAYOBY Bank). This bank was issued by the bank of Lao PDR to implement and lend the government's loans to 47 poor districts, particularly providing fund sources for farmers and the poor.

As in the last decades, there were several organizations from domestic and international fronts that have implemented many microfinance programs in Lao PDR, coupled with the government's subsidized credit lending programs. However, the microfinance sector in Lao PDR is in an infant stage and it needs to develop constantly. Though the government of the Lao PDR and the international donors have worked assiduously to develop the microfinance sector, this sector is developing slowly.

Microfinance services in Laos are in huge demand; around one million of economically active people need access to formal or semi-formal microfinance services. Approximately 300,000 people can access to semi-formal or formal microfinance services. Only 21% could access formal microfinance, 33% relied on semi-formal microfinance and project initiatives, and the rest depend on informal microfinance. It is best demonstrated by the fact that 80 percent of the population in Laos lacks access to finance services, a long side the fact that new job creations– at an estimated rate of 900,000 positions per year – also need to access financial services. In addition, microfinance in Lao PDR is also facing several challenges: a dis-centralized government system, underdeveloped infrastructure, a low density of population as well as lacking cohesion (Microfinance Capacity Building and Research Programme, 2005).

2.3. Microfinance Providers in Lao PDR

Microfinance providers in Lao PDR consist of formal sectors, semi-informal sectors and informal sectors as follows:

2.3.1. Formal Microfinance Sector

Formal microfinance sectors consist of State-Owned Commercial Banks such as the Agricultural Promotion Bank (APB) and Policy Bank (in Lao named as NAYOBY Bank, or NBB). The Agricultural Promotion Bank was established in 1993 in order to provide loans for farmers, especially in remote areas that have difficult access to financial sources. APB is also one of the largest banks in Lao PDR in terms of clients and branches. The headquarters is located in Vientiane capital, and it has 17 branches with 79 units that service 16 provinces. The Policy Bank (NAYOBY bank) was established in 2006 under Degree law No: 03/BOL, dated 15/09/2006. It is a special red bank, which played an important role in poverty reduction. It is guided by the state to provide government loans in order to solve poverty reduction – the priority of 47 poor districts as set by the Government. The headquarters is also located in Vientiane capital, and it has 10 branches based in 17 provinces.

2.3.2. Semi-formal Microfinance Sector

The semi-formal microfinance sector in Laos has been supported by the government and international organizations through many channels since the late 1990s. Several semi-formal microfinance institutions have gradually become independent microfinance institutions and some microfinance institutions are poorly developed and rely on the support from the Government and international organizations. However, in Laos, the semi-microfinance sector is composed of Microfinance Institutions (MFIs), Savings and Credit Unions (SCUs), village funds,

microfinance initiatives, and illustrative NGO and INGO initiatives, as well as local authority programs such as Lao Women Union Credits.

Microfinance Institutions (MFIs) in Lao PDR consist of state-owned microfinance institutions and private microfinance institution. Some of the MFIs in Lao PDR developed and shifted from village funds with the support and assistance from the government and international organizations. Until 2008, BOL created a new regulation for 3 patterns of microfinance institutions (MFIs): Microfinance Institution (deposit taking)[1], Microfinance Institution (non-deposit taking)[2], and Savings and Credit lending Union (SCU). These MFIs are licensed and supervised by BOL.

A. Number of MFIs and MFI clients by Regions

Figure 2.1 shows the proportion of Microfinance Institutions with Deposit taking, Microfinance Institutions with Non-deposit taking, and Savings and Credit Unions (SCUs) by region. In 2011, at national level there were 42 microfinance institutions, which was up from 26 in 2009, including 9 microfinance institution (deposit taking), 15 microfinance institution (non-deposit taking) and 18 savings and credit unions. The central part is composed of 25 MFIs in operation, the north with 13 MFIs, and the south with 4 MFIs (MPI, NERI and BOL, 2012).

[1] Microfinance Institutions (deposit taking) mean an institution was licensed by Bank of Lao PDR accordance with the provision of Regulation for deposit taking microfinance institution, No. 04/BOL, Date 20/June/2008 (Bank of Lao PDR).

[2]Microfinance Institutions (non-deposit taking) mean an institution has Certificate of Registration issued by Bank of Lao PDR, not allowed to mobilize savings from general publics and its members (Bank of Lao PDR, 2008).

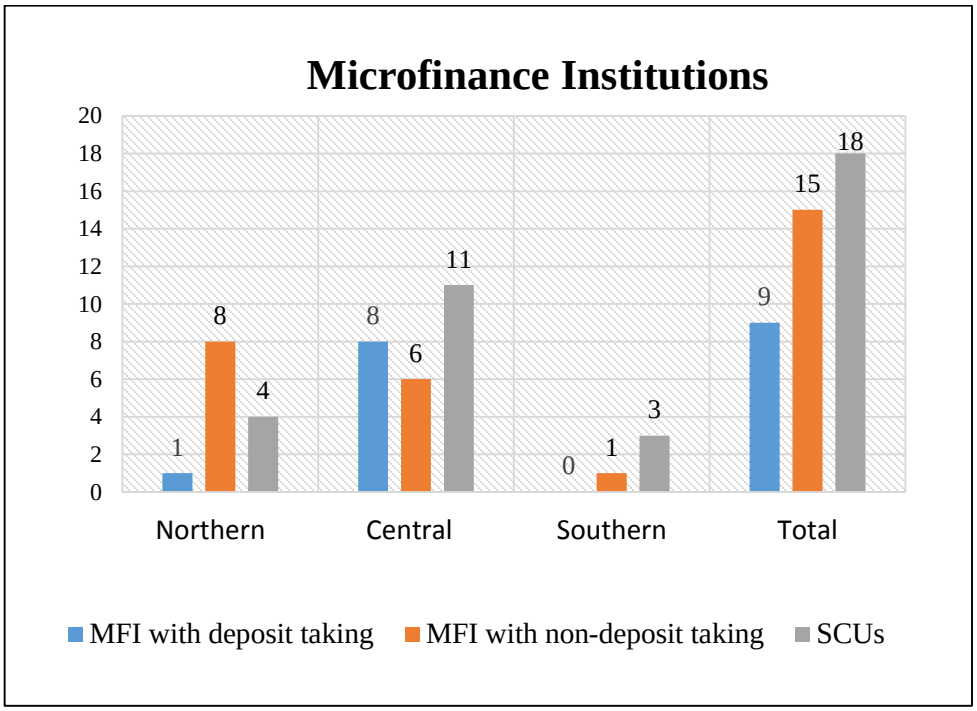


Figure 2.1. Proportion of Microfinance Institutions by Regions (Source: Ministry of Planning and Investment, National Economic Research Institutions, and Bank of Lao PDR, 2012).

Figure 2.2 shows the MFI clients in 2011 by regions, microfinance institutions with deposit taking, microfinance institution (non-deposit taking), and savings and credit unions. The total MFI clients in these three regions in 2011 was 68,140 clients, including 32,835 MFI clients (deposit taking), 22,652 MFI clients (with non-deposit taking), and 12,653 SCU clients. However, MFI clients in the central have the largest number at 46.397 clients at national level, following is 19,197 MFI clients in the north, and 2,546 MFI clients in the south (MPI, NERI and BOL, 2012).

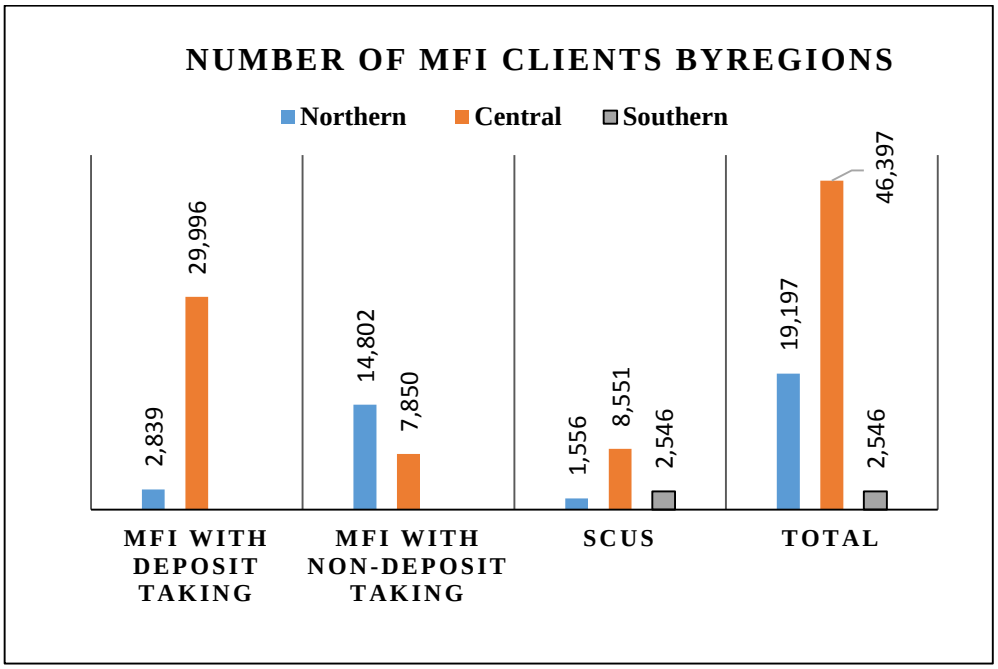


Figure 2.2. Proportion of MFI Clients by Regions
(Source: Ministry of Planning and Investment, National Economic Research Institutions, and Bank of Lao PDR, 2012).

B. Microfinance Institution Outreach

Table 2.1 shows the proportion of beneficiary villages and members covered by microfinance institutions in 2011, including microfinance institution (deposit taking), microfinance institution (non-deposit taking), and savings and credit unions. The microfinance institution (deposit taking) has the largest outreach with 1,158 villages, accounted for 46% of the total MFI outreach in the country; followed by the microfinance institution (non-deposit taking) with 605 villages (24%), and the savings and credit unions with 732 villages (29%) (MPI, NERI and BOL, 2012).

Microfinance institution (with deposit taking) also have the largest members among those MFIs, as shown in the Table 2.1. Therefore, those microfinance institutions could serve around 2,495 villages (29%) of 8,636 villages in the country. However, these microfinance institutions employed 431 people, including 211 microfinance institutions (with deposit taking), 70 microfinance institution (non-deposit taking), and 115 savings and credit unions, as shown in Table 2.1 (MPI, NERI and BOL, 2012).

Table 2. 1. Microfinance Institution Outreach

Microfinance Outreach	Microfinance Institution (Deposit taking)	Microfinance Institution (Non-deposit taking	Savings and Credit Union (SCUs)	Total Microfinance Institutions
No. Village benefited	1,158	605	732	2,495
Percent (%)	46	24	29	99
No. Clients/Members	32,835	22,652	12,653	68,140
Percent (%)	48	33	19	100
Employment	211	70	115	431

Source: the Ministry of Planning and Investment, National Economic Research Institutions, and Bank of Lao PDR, 2012.

C. Village Funds

When Lao PDR opened up to a market-oriented economy in the 1990s, the Government cooperated with many international organizations in order to establish village-based credit programs and village revolving funds. Many international

organizations cooperated with the Government to develop the microfinance sectors, particularly developing village funds.

As a result of good cooperation with international donors and Lao Women's Union (LWU) and other authorities, around 5,000 village funds came into existence, which accounted for over 50% of the total villages in Lao PDR (MPI, NERI and BOL, 2012). In addition, the growth of village funds had an increase in number and membership as the government had injected an amount of 41.4 million kip, equivalent to US $ 5million in order to create and support village funds for the 47 poorest districts between 2003 and 2007 (MPI, NERI and BOL, 2012).

In 2011, there were 4,434 village funds at the national level with 430,623 members, accounting for 97 members per village fund on average. Most village funds are based in the north of Laos, accounting for 39 percent of that 4,434 village funds; followed by the central (38 percent); and the south (23 percent). 34 percent of village fund members is located in the northern part of Laos with an average size of at least 85 members per village fund; 46 percent is located in the central part with 118 members per village fund on average; and 20 percent of village fund members is located in the south with 84 member per village fund (MPI, NERI and BOL, 2012).

2.3.3. Informal Microfinance Sector

Informal microfinance sectors are money lenders, traders, rich persons and rotating savings and credit lending schemes (locally known as Houai). Traditionally, rotating savings and credit lending (Houai) is very popular among local people in Lao

PDR as it can provide emergency money and is easy to access. In addition, moneylenders are significant fund sources, particularly in both rural and slum areas. Mostly, moneylenders set up close to markets and crowded communities. However, the practical interest rates charged in these groups are particularly high compared to other sources of microfinance. A money lender in Lao PDR is not critically supported by the Government as it seems to be illegal money lending and disturbs the formal or semi-formal microfinance sectors.

2.4. Governmental and International Support Programs

This section will briefly describe the Government initiatives and project support; international programs and projects, including multilateral and bilateral agencies.

2.4.1. Government Initiatives and Program Supports

The Government of Lao PDR has assiduously worked on the development of microfinance sectors by creating the government initiatives and illustrative government projects to develop the sectors. Until 2003, the Fourth Ordinary Session of National Assembly of Lao PDR signed the National Growth and Poverty Eradication Strategy (NGPES) and identified 47 priority districts for poverty reduction in Lao PDR. The government injected 25 billion kip for the creation of village funds to implement poverty reduction in the districts and expected that village funds can be fund sources to assist the poor in their production and services. This provided a new

path and hopes for the poor and farmers to upgrade their production and services, and it can bring a better technology to their production as well as responding to the market demand. However, the government expected in return from this project to reinforce communities and their development prospective identified in the framework of National Growth and Poverty Eradication Strategy (MPI, NERI and BOL, 2012).

In addition, the government established village fund steering committees at the national and local levels in order to monitor and supervise the budget. From 2003 to 2007, the government also injected 41.7 billion Kip more to develop village funds through the 17 provinces. The budget was divided separately into the development of village funds; 10 percent of the funds were allocated for technical support at both the national and local levels (provincial and district), and 10 percent was utilized as a fund source for village funds. In 2009, the government had supported 528 villages and 34,865 families in 47 districts (MPI, NERI and BOL, 2012).

2.4.2. International Programs and Projects

A. Multilateral and Bilateral Agencies

The Asian Development Bank (ADB) was significantly involved in the financial institution development of Lao PDR in the early 1990s, and it especially focused on banking sectors and assisted and supported in regulating the microfinance sectors. From 2007 to 2012, ADB had implemented the Rural Financial Sector Development Programs (RFSDPs). The project was implemented and cost US$ 2.3 million for improving existing policy; US$ 0.7 million for providing technical

assistance; and lastly US$ 1.98 million and US$ 0.742 million for project funds. More importantly, ADB essentially assisted the upheaval of the Agricultural Promotion Bank (APB) from a subsidized loan lender to a commercial bank. Furthermore, in 2003, ADB also assisted in creating a microfinance policy framework and also was involved in the creation of a microfinance division in the Bank of Lao PDR (MPI, NERI and BOL, 2012).

German Deutsche Gesellschaftfür Internationale Zusammenarbeit GmbH (GIZ) had initially implemented Rural Development in Mountainous Areas (RDMAs) since 1998 in the three provinces, Bokeo, Laungnamtha and Sayaboury provinces. GIZ also provided technical assistance in cooperation with the International Fund for Agricultural Development (IFAD), Laos Government and Norwegian Church Aid (NCA), accounting for 7.2 billion Kip. 56 percent of that 7.2 billion was allocated to Bokeo province (MPI, NERI and BOL, 2012).

The International Labour Organization (ILO) supported in the establishment of village banks in five provinces – Borikhamxay, Champassack, Savanakhet, Khammouane, and Sayaboury – in close partnership with the Lao Community Sustainable Development Promotion Association (LCSDPA) and the local relevant authorities. In addition, ILO also was involved in two technical supporting projects that implemented reducing the issues of human trafficking, the promotion of woman entrepreneurship and gender equality (MPI, NERI and BOL, 2012).

The United Nations Development Program/Capital Development Fund (UNDP/CDF) initiated a microfinance round table and acted like the organizer for the

communication among international organization in the mid-1990s. In 1996, UNDP/CDF conducted the first survey on microfinance and the survey reported a total of 1,640 village funds. Most village funds were rice banks and 28 projects. The survey also found the noticeable revolving fund methods caused a huge problem of sustainability. In 2010, UNCDF and UNDP started a joining program with BOL which focused on wide access to financial sources for the poor with the project funds of US$ 7 million. The program provided a fund source and technically was supported to increase access to financial sources for poor households and small entrepreneurs on sustainable bases (MPI, NERI and BOL, 2012).

The Work Bank (WB) provided financial and implementing support in the development of village funds through its network projects within the Community Driven Development (CDD) project, such as the Khammuane Development Project (KDP). This project was to implement the provincial capacity building and local development, which contributed to 27 villages of three districts by supporting their agricultural production. The Work Bank also provided supporting implementation through its network projects and worked closely with the Lao Women Union (MPI, NERI and BOL, 2012).

B. Non-government Agencies

The Association of Asian Confederation of Credit Unions (ACCU) has its headquarters based in Bangkok, Thailand. ACCU has assisted in the development of Savings and Credit Unit (SCU) in Lao PDR since 1992. The programs focused on

building the capacity of village and improving Savings and Credit Union (SCUs). Main partners of ACCU were the Bank of Lao PDR (BOL) and the relevant authorities based in Laungprabang, Xayaboury, Oudomxay and Laungnamtha provinces, as well as two Dutch NGOs, including Agriterra and Rabobank Foundation (MPI, NERI and BOL, 2012).

German Cooperative and Raiffeisen Confederation (DGRV) has started support in the development of Naxaythong Rural Development Cooperative, Vientiane Capital, Lao PDR. Currently, these programs are the largest microfinance cooperatives in Laos. The programs also supported capacity building for village fund and their network programs, including the Lao Women Union. DGRV also assisted in the creation of a Village Bank Service Center (VBSC), which acted as a helpfully control network supporting institutions for Champhone district in Savannaketh province (MPI, NERI and BOL, 2012).

In addition, many non-government agencies have implemented and assisted in the development of microfinance sectors in Laos, such as Foundation for Integrated Agriculture Management, a Thai NGO (FIAM); Savings Banks Foundation for International Cooperation (SBFIC) etc.

2.5. Conclusion

Lao PDR is a country that has no road access to the sea, and the country is also one of the poorest countries in Southeast Asia. The Government of Lao PDR highly recognizes that microfinance is one of the tools for poverty reduction as it can boost the economic growth of the country. Thus, the government has placed the microfinance sector in to the first priority development program in the agriculture and forestry sectors.

Since then, the government opened up the country and embarked on economic reform programs called "New Economic Mechanism". Laos started a wide range of cooperation with various organizations – both local and international – in order to accelerate the implementation of various policy reforms including the financial sector. Many governmental programs and international supporting programs (including multilateral and bilateral programs) have been implemented in Laos since the 1990s. Most government and international programs initiated the development of village fund, village credit lending groups, and savings and credit unions, village rice banks as well as supporting the creation of FMI legal framework in collaboration with local government authorities.

Therefore, the microfinance sector in Laos is still developing slowly from its infant stage, and in high demand, around one million of economically active people need access to formal or semi-formal microfinance services. Only approximately 300,000 people can access semi-formal or formal microfinance services. Only 21% could access the formal microfinance sector, 33% relied on semi-formal microfinance

and project initiatives, and the rest depends on informal microfinance (Microfinance Capacity Building and Research Programme, 2005).

Microfinance institutions grew up at 62 percent (from 26 MFIs in 2009 to 42 MFIs in 2011), including: microfinance institution (deposit taking), which increased from 5 to 9; microfinance institution (non-deposit taking), which also grew up from 8 to 15; and savings and credit unions, which grew from 13 to 18. In the central part of the country, 25 MFIs accounted for 68 percent of the total MFIs in the country covered the large amount of MFIs, followed by the north with 13 MFIs (28 percent) and the rest is the south. MFI outreach also increased by 12 percent from 61,043 members in 2009 to 68,140 members in 2011. In addition, the number of village funds also increased by 8 percent from 4,113VFs in 2011 to 4,434 VFs in 2011, and their member outreach also increased by 20%, from 359,608 members in 2009 to 430,623 members in 2011 (MPI, NERI and BOL, 2012).

CHAPTER 3

LITERATURE REVIEW

Several studies have evaluated the microfinance impact on poverty reduction in developing countries. Most of them particularly focused on analyzing the impact of microfinance based on social-economic indicators[3]. These indicators have been popularly used for measuring the impact of microfinance at various levels and purposes. Furthermore, many methods were used for analyzing the microfinance impact studies, including qualitative and quantitative. Popular variables that have been used for microfinance impact studies on poverty reduction were income, expenditure, consumption, assets, educational status, genders, and health. Some of variables as mentioned above were used for evaluating the impact of microfinance in this study are discussed below:

3.1. Impact of Microfinance on Income

The impact studies on income have been popular and useful in the field of microfinance on poverty reduction. These impact studies are analyses of the change in

[3] Economic indicators, changes in income, level and patterns of expenditure, consumption and assets were used for microfinance impact measurement. For social indicators measured in microfinance impact had been popular in the beginning of 1980s, for instance, educational status, access to health services, nutritional level, anthropometric measures and contraceptive use (Hulme, 2000).

income of individuals, households and enterprises. Nudamatiya, Giroh and Shehu (2010) conducted a survey in Adamava state in Nigeria. The study randomly selected 88 beneficiaries from four microfinance institutions and the results showed that microcredits had a positive impact on beneficiaries' incomes. The main beneficiaries were females, whom accounted for 70% (these beneficiaries were in the active age of 26-34 years old).

Mosley (2001) assessed the impact of microfinance on poverty by conducting a small survey of four microfinance institutions; two microfinance institutions were from urban areas and the other two were from rural areas of Bolivia. The results showed that, on the average, those microfinance institutions examined with the net microfinance impact, was positive in relation to borrower income. However, the net impact for poorer borrowers was smaller than richer borrowers.

Hulme and David (1996) conducted many case studies of various microfinance programs in several countries, including Bolivia, Indonesia, Bangladesh, and Sri Lanka. The studies showed that there were significantly increased in borrower income. Copestake, Bharotha and Johnson (2001) found significant impacts on borrower income higher than pipeline participant income as they conducted a survey on urban microcredit programs in Zambia. The borrower incomes increased faster (37% and 28% for Cohorts 1 and 2 respectively) compared to pipeline participants (19%) over the previous years.

Khandker (1998) analyzed socioeconomic impact of microcredit programs by using data from numerous target household survey in Bangladesh. The survey was

conducted in collaboration with the Bangladesh Institution of Development Studies (BIDS) and the World Bank. The survey analyzed three main credit programs: Grameen Bank, BRAC, and RD-12. The results showed that household incomes in program villages (excepted RD-12) from Grameen Bank increased 29 percent, BRAC by 33 percent, and other programs (traditional banks) by 45 percent. Subsequently, Khandker (2005) also studied the microfinance impacts on poverty reduction in Bangladesh using panel data from both treatment groups and control groups to compare their outcomes. The study showed that microfinance increased borrower outcomes and contributed to poverty reduction as well as provided benefits to non-borrowers from the growth of local income.

Abbas, Sarwar and Hussain (2005) conducted a survey in Faisalabad district, Pakistan. They interviewed the correspondents from three branches of the National Bank of Pakistan. The study investigated two groups: agricultural (who take loans for purchasing agricultural inputs) and non-agricultural (who have all incomes that are not from farming). Their empirical analyses found a strong correlation between microfinance and change in income. Cong Lu and Hasan (2011) collected data from 200 members by randomly selecting 50 members from each of four main microfinance programs from Monirampur Upazila under Jessore district in southern of Bangladesh. The study indicates that microfinance members from the Association for Social Advancement (ASA), Bangladesh Rural Advancement Committee (BRAC), Bangladesh Rural Development Board (BRDB) and Grameen Bank (GB) were better off on income if compared to before obtaining the microcredits. Nguyen, Van den

Berg and Vu (2007) estimated the effect of subsidized loans which were provided through Vietnam Bank for Social Policies. The study relied on data conducted by General Statistics of Vietnam in the year 2002 and 2004. The results of the fixed-effect estimations showed that the program seemed to increase in household participant incomes (by 30% of the loan), and increases in loan sizes were positively effected as well.

Nawaz (2010) studied the impacts of microcredit borrowers in a village of Camilla district in Bangladesh. The study statistically compared both borrowers and non-borrowers of microfinance by measuring various socio-economic indicators. The results showed that microfinance moderately reduced the poverty of borrowers. Another result indicated that microfinance was more likely to increase in household borrower income than non-household borrower income. Nawaz (2010) studied the impact of microcredit borrowers in a village of Camilla district in Bangladesh. The study statistically compared both borrowers and non-borrowers of microfinance by measuring various socioeconomic indicators. The results showed that microfinance moderately reduced the poverty of borrowers. Other results similarly showed that microfinance was more likely to increase in household borrower income than non-household income.

Coleman (2002) had evaluated the impact of two microfinance programs in northeastern Thailand. The survey included program participant (who received loans) from the treatment villages, participants from the control village referred to who did not receive loans and also non-participants from both villages. The results showed the

positive effects of the village bank programs on village committee member's welfares' income. Khandker and Samad (2013) investigated the microcredit programs in Bangladesh; these program have operated for over 20 years and have a positive long term effect on household income and poverty reduction. The results showed that microcredit programs could help in increasing the participation incomes and shift them out of poverty. Katsushi and Shafiul (2011) studied microfinance institution loan on poverty reduction using household panel data from 1997 to 2004 (covering 4 rounds) as nationally representative. The study applied the fixed-effect model for the effect estimations of microfinance institution loans (MFI loans). The results showed positive effects of MFI loans on income and poverty reduction in the case that the loans were used for productive purposes.

However, many studies also found that microfinance has a negative and insignificant impact on income. Angelucci, Karlan and Zinman (2013) studied the impact of microcredit program placement by measuring various impact of Compartamos Banco which operated in north-central Sonora in Mexico. Their study did not find a positive impact of microcredit on borrower income, even though the high-income group of borrowers was weaker than other groups of borrowers. Morduch (1998) also found no significant impact on microfinance programs in Bangladesh on income and poverty reduction. Inpaeng (2012) estimated the effect of microfinance loans by conducting a survey on village development funds at Sukuma district, Champassack province in southern Laos and also applied Coleman's method (1999) to study village banks in northeastern Thailand. The results showed an insignificant

impact of the program on member incomes. Kongpasa (2014) studied the effects of Savings and Credit Unions (SCUs) in Vientiane vicinity which was initially based on a household survey conducted in 2005. The study interviewed 251 households in six villages in a semi-urban area of the Naxaithong district, sixteen kilometers away from the capital of Vientiane, Lao PDR. The surveyed sample included both members and non-members. The author grouped the members into "treatment" (households who borrowed credits or gained profits from the programs) and "control" (household who had no benefit from the programs). The results from the fixed-effect estimations showed that the programs had no clear overall impact on the total household incomes.

3.2. Impact of Microfinance on Expenditure

Kondo, Orbeta, Dingcong and Infantado (2008) studied the impact of Rural Microenterprise Finance Project (RMFP) in the Philippines. The project was to assist the Government of the Philippines by providing assistance of employing Grameen Bank's Method in order to strengthen rural finance institutions and reduce poverty. The survey contained two types of areas: the treatment area where the loans were lent and expansion areas where no loan was lent. Several household outcomes, including per capita income, per capita expenditure, per capita saving and food expenditure as well as many dependent variables had been estimated. The linear fixed effect estimation of the study also found positive effects on richer borrower expenditures. In contrast, there were negative and insignificant impacts for the poorer borrower expenditures. Nguyen, Van den Berg and Vu (2007) estimated the effect of subsidized

loans which were provided through Vietnam Bank for Social Policies. The study relied on data conducted by the General Statistic of Vietnam which supported the Work bank in the year 2002 and 2004. The results of the fixed-effect estimations showed that the program seemed to increase in household participant expenditures and increased in loan sizes had positively effected this as well.

Khander (2003) studied microfinance loans in long-term effects on consumption, poverty and non-land assets by using a household panel data. The survey was conducted in Bangladesh in 1991-92. The study applied household fixed-effect model to estimate total per capita expense, per capita food expense, and per capita non-food expense, the incident of moderate and extremely poor as well as household non-land asset. The results indicated that the microfinance loans from female borrowing had much stronger effects than from male borrowing and returns to female borrowings were decreased 10.5% from 18%, according to cross-sectional estimation data from 1991-92. The study also found some positive effects on household non-food expenses and the programs could help in reducing the extreme poverty rather than moderate poverty.

Khandker and Samad (2013) also found a positive long-term effect on household expenditure as the results indicated that microcredit programs could increase the participation's consumption in Banglades. The study by Coleman (2002) in northeastern Thailand also showed a positive impact of the village bank programs on expenditure. Similarly, Kongpasa (2014) studied the impact of the Savings and Credit Unions in Laos and also found the programs have positive and significant

impact on educational expenses and household asset. Katsushi and Shafiul (2011) studied microfinance institution loan on poverty reduction using the nationally representative household panel data from 1997 to 2004 (covering 4 rounds). The study applied the fixed-effect model for the effect estimations of microfinance institution loans (MFI loans). The results showed that there was a positive impact of MFI loans on income, expenditure and poverty reduction in the case of loans were used for productive purposes.

Pitt and Khander (1998) conducted a research on the impact of the three main group-based credit-lending programs (Grameen Bank, Bangladesh Rural Advancement Committee and Rural Development-12). They conducted quasi-experimental survey in 87 villages of 29 sub-districts in rural areas of Bangladesh from 1991-1992. The study estimated the effects of gender participations in each of those three group-based credit lending programs on various outcomes, such as a labor supply for women and men, schooling, and expenditure and assets for boys and girls. The results found the positive and significant effect on females' per capita expenditure and it also showed that loans lent to women had more effective behaviors than loans lent to men.

However, there were some studies that found microfinance loans had negative and insignificant impact on household expenditures. Coleman's (1999) study of a village bank lending program in northeastern Thailand also found that there was insignificant impact on socio-economic aspects of members such as physical aspect, savings, production, sales, productive expenses, labor time, health care expenditure

and education. Inpaeng (2012) also found that village development funds in Laos have insignificant impact on member expenditure, and also Kongpasa (2014) found the Savings and Credit Union (SCU) programs in Vientiane vicinity of Laos had the unclear complete effects on the total household expenditures.

CHAPTER 4

SURVEY AND FINDINGS

4.1. Survey Area

The survey was conducted in Oudomxay, northern province, Lao PDR. The rationale for selecting Oudomxay province is that it is one of the poorest provinces in the north of Lao PDR. The total number of households of Oudomxay province are 51,165, of which 20,172 (39.43%) are poor households (Oudomxay Province Statistic Center, 2013). According to Lao Economic Census (2007/2008), Oudomxay province's poverty ratio was 33.70 % and it was high rate compared to other provinces in the same region (northern part of Lao PDR). At the same time, Oudomxay province ranked as the fourth poorest province among the northern provinces of Lao PDR (Ministry of Planning and Investment, Vientiane, 2011).

Oudomxay province is mountainous (85%) and the infrastructure is really under developed, especially road access to remote areas. As a result, many rural community development programs funded by the government and international organizations were implemented in this area, mainly to contribute to poverty reduction by implementing job alternative and income generation activities as well as empowering productivity capacity building. Oudomxay province is made up of seven

districts: Xay[4], Lah, Namor, Nga, Bieng, Houn and Parkbieng. The province is the heart of the upper northern provinces of Lao PDR and its location is significantly convenient for trading with neighboring provinces and other neighboring countries, especially China and Vietnam.

Agriculture is extremely significant economic activity for the local communities in this province as it is a main source of food, income and job creations. Oudomxay province mainly depends on rice planting (including upland rice planting), livestock, maize and rubber planting. Agricultural cultivation practiced in Oudomxay province is generally subsistence farming. It is a traditional agriculture practicing which relies heavily on the weather conditions and rain fall. Most of the households are settled in small districts, excluding Xay district, their main source of income depend on rice, maize and livestock. The main sources of farming labors are family members of the household: household head, children and other relatives.

Agriculture is very important for boosting economic growth of the province, accounting for 50 per cent of GDP of the province (ODX, PID, 2012)[5]. However, agriculture in Lao is a small scale activity relying heavily on traditional methods of cultivation. What's more, it has become a risky job as it could have low returns to farmers due to uncertainty weather, agro climate and lack finance sources for purchasing agricultural inputs.

[4] Xay district is the centre of Oudomxay province where the provincial administrative office located and it is the biggest district of Oudomxay province.
[5] Planning and investment department, Oudomxay province.

Therefore, many households in this province they worked through farming and non-farming occupations. For farming work usually involved in rice, maize and bean planting and livestock. As mentioned previously, rice, maize and bean planting and livestock are ones of the main activities for nonagricultural production in the areas. All most of households in the survey villages own agricultural land, rice field and land for gardening. For non farming work, when household heads finish working with their agricultural production, they continuously keep working as non farming for the coming season in order to earn more money for their livelihood expenditure, consumption, school fee and clothing for their children. Some households travel to big cities to work as construction worker and others hunt animals and non-timber forest based products for their daily consumption and income generation.

4.2. Survey Design

During the months of July to September 2014, a survey was conducted of 381 households in thirteen villages in seven districts in Oudomxay, northern province of Lao PDR. The surveyed sampling contained two groups, including member and non-member from each of three microfinance providers (including microfinance banks, microfinance institutions and village funds) in each village of those thirteen villages. The chosen villages were well designed and Toro Yamane (1967) [6] method was used for determining sample size in this study, and then we used stratified sampling

[6] Toro Yamane (1967): $n = N/(1 + N * e^2)$, where *n* is the total sample size, N is the total population, and e is an error term (e= 0.05).

technique[7] to get our sampling MF member and non-member from each of the 13 villages. The survey interviewed 381 households as already have been said at the beginning, which including 126 non-members and 255 microfinance members as shown in Table 4.1

The survey was conducted by the researcher and with the supporting of three specialist staff members from the Bank of Lao, northern branch, based in Oudomxay province. Our survey teams were technically trained before implementing the survey. The questionnaires were administered to households by our survey teams. The researcher used the same questionnaires to interview both non-microfinance member and microfinance member. The interviews focused on interviewing household heads or other people in the family, who have knowledge of household, earnings, daily consumption and other aspects.

[7] First, we have to divide the sample size for the villages: $ni = \frac{N_i * n}{N}$, $which\ i = village\ 1,2, \ldots 13$, where ni is sample size for the village i, N_i is the total population in the village i, and N defined as before. And then we divide the sample size of member for the village i as $ni_{member,} = \frac{ni * \%\ of\ member)}{100}$ and the sample size for non-member for the village i as $ni_{non-member,} = \frac{ni * \%\ of\ non-member)}{100}$, where ni defined as before.

Table 4.1. Sampling Size and Population

	Households in the Villages			Sampling Size (Households Interviewed)		
No.Villages	Household Obtained MF Loans	Household Who did not Obtain MF Loans	Total Households in the Villages	Household Obtained MF Loans	Household who did not Obtain MF Loans	Total Households Interviewed
Nasenkham	73	107	180	16	11	27
Fan	79	63	142	10	8	18
Luk 32	197	161	358	20	22	42
Phouthong	97	5	102	20	1	21
Hat An	*26*	*71*	*97*	10	8	18
Done An	307	38	345	37	11	48
Mang	92	113	205	5	8	13
Na Nguao	39	70	109	15	10	25
Vangtang	141	31	172	21	2	23
Somphone	148	60	208	10	14	24
Sibounheuang	629	16	645	61	16	77
Xaysana	230	8	238	20	8	28
Phoulaung	160	10	170	10	7	17
Total	2218	753	2971	255	126	381

Source: Oudomxay Province Statistic Center, October 2013, MF data from Microfinance Institutions and MF banks in Oudomxay Province, July 2014, and the Calculations.

Two questionnaires were used: the first questionnaire was for household interviews, which included two groups: microfinance members and non-microfinance members. The questionnaire contained social-economic characteristics of households, household yearly incomes and household yearly expenditures, loan characteristic, the problems encountered in sourcing loans, repaying loan and making saving deposits

with microfinance providers (MFPs), as shown in Appendix. The second questionnaire was for interviewing village chiefs and collecting information about each village. This included village characteristics, including whether the village has a market, irrigation, electricity, road access, school, health care, and hospital. Also included were distance from a village to district center, wages, number of households and population, as also shown in Appendix.

As the study covered two groups, called: member and non-member and covered three microfinance providers such as microfinance banks[8], microfinance institutions and village funds in Oudomxay province, Lao PDR. These microfinance providers are significant in the region because they provide microcredits to farmers to supporting agricultural production and economic activities.

4.3. Characteristics of the Surveyed Household: Social-Economic Data

Table 4.2 presents the demographic and characteristic of the surveyed household, including social-economic data of the surveyed households. The section is to identify the social-economic status of the surveyed households.

[8] Microfinance banks means banks that provide microfinance to farmers, including Agricultural Promotion Bank and Policy Bank (special red bank) for this study.

Table 4.2. Characteristics of Household Data

Characteristic		Number	%
Sex of Household Heads			
	Male	307	80.58
	Female	74	19.42
Total		381	100
Marital Status			
	Married	378	99.21
	Separate	3	0.79
Total		381	100
Age Group			
	18-25	26	6.81
	25-35	126	33.07
	36-45	85	22.29
	45-55	92	24.15
	56-65	41	10.75
	66+	11	2.87
Total		381	100
Literacy			
	No	58	15.22
	Yes	325	84.78
Total		381	100
Education Level			
	Illiteracy	58	15.22
	Primary School	206	54.07
	Secondary School	103	27.03
	Vocational School	9	2.36
	College	3	0.79
	University	2	0.52
Total		381	100
Household Size			
	Small (Below 4)	55	14.43
	Medium (Between 4 and 8)	242	63.52
	Large (More than 8)	84	22.04
Total		100	381
Agriculture Land Owner			
	Yes	28	7.35

	No	353	92.65
Total		381	100
Household Business			
	Yes	27	7.09
	No	354	92.91
Total		381	100
Household Business Type			
	Retailing shop	19	70.37
	Rubber planting	4	14.81
	Maize trade	1	3.7
	Food stand	1	3.7
	Motorcycle repairing	2	7.41
Source of Income			
	Rice planting	209	54.86
	Maize planting	322	84.51
	Livestock	179	46.98
	Retailing	81	21.26
	Wholesaling	9	2.36
	Civil Servant (Salary)	47	12.34
Other Sources of Income			
	Selling Crops	3	2.44
	Handicrafts	2	1.63
	Constructing	15	12.2
	Fishery	1	0.81
	Non-timber Forest Products	102	82.93

Source: Field Survey, July-September 2014

The survey was targeted for this study was household heads and the majority (80.58%) of household heads interviewed were male, while female household heads were minority (19.42%). In our simple interviews, most of them were married (99.21%) and 0.79% were separate. The majority (33.07%) of household heads were

between the ages of 25 and 35. Household heads from the ages of 45 to 55 represented 24.15% of those surveyed. The percentage of household heads between the ages of 18 to 25 was 6.81% and 2.8% were between the age of 56 to 65. For education, 84.78% of total surveyed households were literate (able to read and write) and 15.22% were illiterate.

The surveyed households (54.07%) who completed primary school (five or six years of education), 27.03% completed secondary school (9 years of schooling), and 2.36% received over ten years of schooling (vocational schools). 0.79% and 0.52% of the surveyed households completed college and university respectively. Education level is one of the important elements for poverty reduction. Low education level may encounter problems in running and building their business and fund allocation. Attaining a higher education level can assist a respondent to access sources of funds and identifying and building businesses through profits from microfinance.

In our study, most households owned agricultural land, which accounted for 92.65 %, of which member (63.78%) and non-member (28.87%). They owned at least from 0.25 hectares up to 8 hectares. The agricultural land was mainly used for rice planting, maize planting, gardening and rubber planting and rice upland plantation. According to the survey, 7.09% of total surveyed households owned business. The majority of their businesses are retailing shops (70.37%), rubber planting (14.81%), motorcycle repairing (7.41%), maize trade and food stand (3.7%). All of these households have different and multiple sources of incomes, the majority of sources of incomes are from maize planting (84.51%), rice planting (54.86%), and livestock

(46.98%), and retailing (21.26%), salary (12.34%). In addition, they also had other sources of incomes, including selling crops (2.44%), handicrafts (1.63%), constructing (12.2%), fisheries (0.81%), and non-timber forest products (82.93%). In order to evaluate the effect of microfinance on households' outcomes, we should understand sources and terms of loans and purposes of using loans.

4.4. Sources of Microfinance Services

The survey results indicates that households have obtained microfinance from different sources at various times over the years during the period of 2009 to 2013. In order to investigate the sources of those microfinance services, we defined sources of microfinance from Agricultural Promotion Banks and Policy Banks as formal microfinance providers; sources of microfinance from Microfinance Institutions (MFIs) and Village Funds as semi-formal microfinance providers. We considered source of microfinance from money lenders and relatives as informal microfinance providers and sources of loans from commercial banks (or state-owned commercial banks) as non-microfinance providers.

Table 4.3 presents the share of microfinance sources from formal microfinance providers (53.13%) is bigger than that of semi-microfinance providers (15.29%), informal microfinance providers (5.26%) and non-microfinance providers (2.76%) of the total of sources. The remaining is the share of households who do not borrow money at all (23.56%).

Table 4.3. Sources and Terms of Loans

Items	*Microfinance Providers*	*Number*	*%*
Members	*Formal Microfinance:*	*212*	*53.13*
	Banks (Agricultural Promotion Banks and Policy Banks):	212	53.13
	Semi-Formal Microfinance:	*61*	*15.29*
	Microfinance Institutions (MFIs)	35	8.77
	Village Funds (VFs)	26	6.52
Non-members	*Informal Microfinance:*	*21*	*5.26*
	Money Lenders	16	4.01
	Relatives	5	1.25
	Non-Microfinance Providers:	*11*	*2.76*
	Commercial Banks (CMBs)	11	2.76
	Not Borrowing at all	94	23.56

Source: Field Survey, July-September 2014

Based on our survey, the reasons why members obtain loans from formal and semi-formal microfinance providers were as follows: 47.47% said that they require funds for their agriculture production; 33.33% found the interest rates were low compared to other sources, particularly interest rates from policy banks (interest rates were between 3% and 10%); 16.80% did not need to provide collateral for obtaining the loans from some microfinance providers, especially those obtained from policy banks and village funds; and 2.40% of them said that the procedures for obtaining loans was easier than other sources.

For non-members, who did not borrow money from formal or semi-formal microfinance providers, 53.13% found the loan sizes were too small and the total amount available to be loaned was limited, 28.13% of them found that they lacked clear lending-borrowing information, and 18.75% of them indicated that it took long process to complete the loan approval meant and they could not get the loans in time to purchase their agricultural inputs.

However, non-members obtained loans from other sources such as money lenders, relatives and commercial banks. Of there, 40% reported they could get loans immediately when they needed money, 34.29% said they could get larger loans and 25.71% found they required funds for their economic activities and household consumption. On the other hand, of non-member households who did not borrow any loans, 78.72% said that they did not want to incur debts, 8.51% had irregular earnings, 7.45% did not have family members who can help in the fields, which would not allow repayment and 5.32% faced difficult processes in obtaining any loans.

According to the interview, the surveyed household heads' ideas about using microfinance facilities included whether they encountered any problems in obtaining loans, repaying loans, and depositing money with microfinance providers, particularly microfinance banks, microfinance institutions and village funds. Of the total household surveys, 74.02% said "yes" and only 25.98% said "no" for when asked if they had problems obtaining loans from those microfinance providers. 66.89% of that 74.02% indicated that the time to obtain a loan (including paper work and loan approval) did not match the time the loan was used, 16.72% found the difficult

borrowing procedures, 11.04% said the lenders lack confidence in borrowers, and 5.03% said that cost for getting loans were high. 50.39% of the total surveyed households said "yes" for repaying loans that encounters problems. 42.78% of that 50.39% stated that their products were sold on credit, while 16.49% said their products are difficult to sell and 40.72% reported that they used the loans for other purposes other than economic income generation activities and agricultural production. Of the total surveyed households (39.11%) said "yes" indicated problems on depositing money with some microfinance providers, 17.61% of that 39.11% had irregular income, 7.95% had unclear account record, 14.77% took a long procedure, 11.93% lacked information, 9.09% said microfinance providers were located far away from their villages and 38.63% reported having difficulty in withdrawing money.

4.5. Purpose of Using MF Loans

Figure 4.1 presents the purposes of using loans by microfinance members. It showed that 64.27% of members had utilized loans for agricultural production purposes, only 7.76% of members had used loans for retailing trade. 10.53% of members had taken loans for household consumptions, 8.59% of members had taken loans for health care (hospitalization), and 6.93% of members had used loans for education of family members.

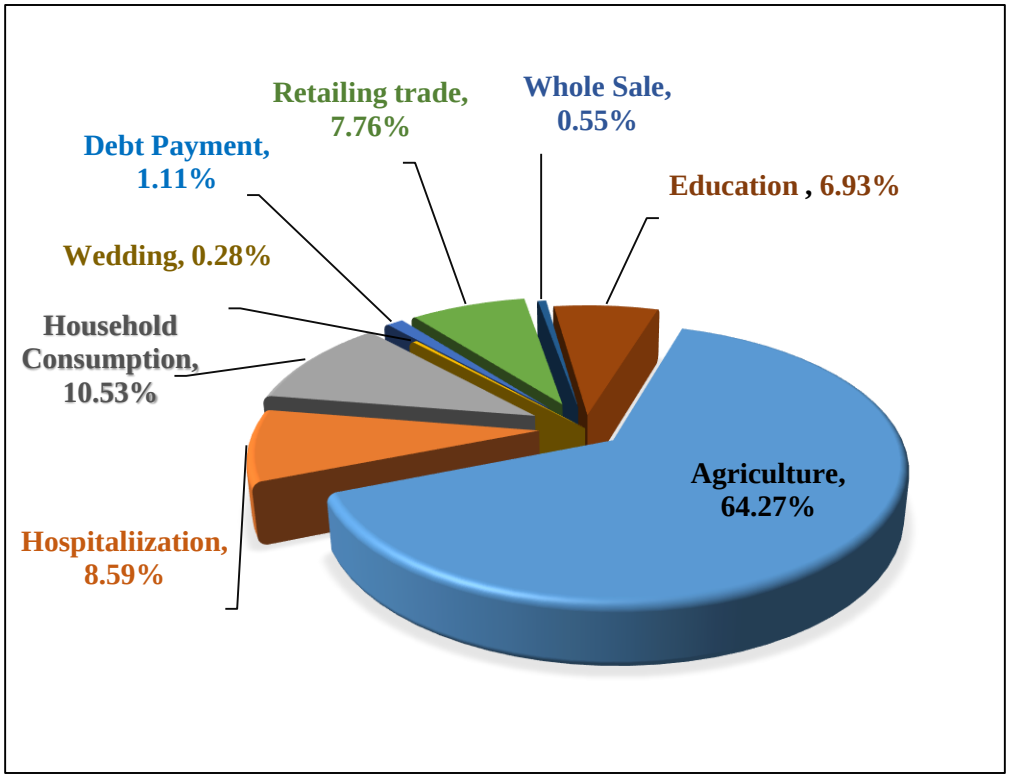


Figure 4. 1. Purposes of Using Loans by Microfinance Members

(Source: Field Survey, July-September 2014)

CHAPTER 5

IMPACT OF MICROFINANCE ON INCOME AND EXPENDITURE IN LAOS: EMPRICAL ANALYSIS

This paper will examine the impact of microfinance on household yearly income and expenditure during the period 2009-2013. This will test the hypothesis that members who obtained microfinance loans – including loans from microfinance banks, microfinance institution, and village funds – may increase or change in the level of their income and expenditure during the period 2009 to 2013. Thus, this chapter will present the empirical model, data and variables, as well as the impact estimation of microfinance on income and expenditure as explained bellow:

5.1. Empirical Model

The primary objective of this study is to estimate the impact of microfinance on household outcomes such as household yearly income and household yearly expenditure. The author applied the fixed-effect models by using a set of household panel survey data collected in Oudomxay, northern province of Laos, during the months of July to September 2014.

The fixed-effect models with dummy variables – including the member dummy variables, the time dummy variables and the after having loan dummy variables – were used for the effect estimations of microfinance on household yearly

income and household yearly expenditure. The impact of after having loans was properly defined as members' after years are interacted with members and year interaction, compare that with non-members, as follows:

$$Y_{it} = \alpha + X_i\beta + V_i\gamma + D_m\delta + D_t\tau_t + D_m D_t D_a \rho_t + F_i + \varepsilon_{it} \quad (1)$$

Where Y_{it} is an outcome of households in village *i* (*i* = village 1~ village 13) at time *t* (*t*= 2009 to *t* = 2013), which the author wants to evaluate the impact of microfinance programs (estimate in Lao currency); α is a constant value; X_i is vector of household characteristics at village *i*, including age, age-squared, gender, household head, household size, education level, business ownership, agricultural land ownership, agricultural land size; V_i is vector of village characteristics that includes roads access to village, a primary school and a market present in the village, distance of villages to the district centers; D_m is the member dummy variable equal to 1 when a member or a household *i* receives microfinance loans, and otherwise equal= 0; β, γ and δ are parameters to be estimated; τ_t is a parameter measures the impact of microfinance loans at time *t*; ρ_t is a parameter measures the effect of after having loans at time *t*; D_t is the time dummy variable (*t* = 2009 to *t* = 2013) equal to 1, otherwise = 0; D_a is the after having loan dummy variable equal to 1, otherwise = 0, which the author want to capture the effects of after having borrowed loans; F_i represents the fixed-effects; and ε_{it} is error terms in the village *i* at time *t*.

Based on the coefficient estimations of the equation (1), corresponding to the fixed-effect model, we can estimate the expected outcomes of members in 2009 as: $E(y_{m,2009}) = \hat{\alpha} + \hat{\delta}\,, D_m = 1$ and non-members as: $E(y_{n,2009}) = \hat{\alpha}$. So the differences in outcomes between member *(m)* and non-member *(n)* in 2009 estimate is:

$$Diff(\hat{y}_{2009}) = E\left(\hat{y}_{m,2009}\right) - E\left(\hat{y}_{n,2009}\right) = \hat{\delta} \qquad (2)$$

Where $\hat{\alpha}$ and $\hat{\delta}$ are defined as before, $Diff(\hat{y}_{2009})$ is difference in the expected household outcomes between member and non-member at the time of *t= 2009*, $E\left(\hat{y}_{m,2009}\right)$ is the expected household outcomes of member at the time of *t= 2009*, and $E\left(\hat{y}_{n,2009}\right)$ is the expected household outcomes of non-members at the time of *t= 2009*. And the expected outcomes of members in 2010 (or for $t \geq 2010$) is estimated as: $E(y_{m,t,a}) = (\hat{\alpha} + \hat{\delta} + \hat{\tau}_t + \hat{\rho}_t)$, $D_m = 1$, and non-members as: $E\left(y_{n,t}\right) = (\hat{\alpha} + \hat{\tau}_t)$. Then, difference in the expected outcomes between member and non-member in 2010 (or $t \geq 2010$) estimate as:

$$Diff(\hat{y}_t) = E(y_{m,t,a}) - E\left(y_{n,t}\right) = \hat{\delta} + \hat{\rho}_t\,, where\ \ t \geq 2010 \qquad (3)$$

Where $\hat{\alpha}, \hat{\delta}, \hat{\tau}_t\ and\ \hat{\rho}_t$ are defined as before, $Diff(\hat{y}_t)$ is difference in the expected outcomes between member and non-member at the time $t \geq 2010$, and $E(y_{m,t,a})$ is the expected outcomes of member after having loans at the time of $t \geq 2010$, $E\left(y_{n,t}\right)$ is difference in the expected outcomes of non-member at the time of $t \geq 2010$. From

t = 2009, the change in expected outcomes over the year between member and non-member is estimated as:

$$Ch(\hat{y}_t) = Diff(\hat{y}_t) - Diff(\hat{y}_{2009}) = \hat{\rho}_t\,, \quad t \geq 2010 \tag{4}$$

Where $\widehat{\delta}, \widehat{\tau}_t,\ \hat{\rho}_{t,}\ Diff(\hat{y}_t)\ and\ Diff(\hat{y}_{2009})$ are defined as before; $Ch(\hat{y}_t)$ is change in the expected outcomes between member and non-member at the time of $t \geq 2010$. And change in the expected outcome of member over the years from t = 2009 is estimated as:

$$Ch(\hat{y}_{m,t,a}) = E(\hat{y}_{m,t,a}) - E(\hat{y}_{m,2009}) = \hat{\tau}_t + \hat{\rho}_t\,, \quad where\ \ t \geq 2010 \tag{5}$$

Where $\hat{\alpha}, \hat{\delta}, \hat{\tau}_t, \hat{\rho}_t\ and\ E(y_{m,t,a})$ are defined as before; $Ch(\hat{y}_{m,t,a})$ is change in the expected outcome of member over the years from *t = 2009* to $t \geq 2010$; $E(\hat{y}_{m,2009})$ is the expected outcome of member at the time of *t = 2009*. Also, change in the expected outcomes over the years of non-member from t = 2009 is estimated as:

$$Ch(\hat{y}_{n,t}) = E(\hat{y}_{n,t}) - E(\hat{y}_{n,2009}) = \hat{\tau}_t\,, \quad where\ t \geq 2010 \tag{6}$$

Where $\hat{\alpha}, \hat{\delta}, \hat{\tau}_t, E(\hat{y}_{n,t})\ and\ E(\hat{y}_{n,2009})$ are defined as before; $Ch(\hat{y}_{n,t})$ is change in the expected outcome of non-member over the years from *t = 2009* to $t \geq 2010$.

5.2. Data and Variables

The data used for this study was drawn from the household panel data survey during the months of July – September 2014 in Oudomxay, northern province of Lao PDR by using household questionnaires administered to 381 households in thirteen villages. The survey collected households' outcomes, including household yearly income and household yearly expenditure, in order to estimate the impact of microfinance loans on poverty reduction. Household yearly income included income in cash and in kind, including rice planting, maize planting, livestock, fishery and non-fishery, non-timber forest products, handicraft, retailing, repairing, rice mailing service, constructing work, vehicle rental, salary and house and land renting. Household yearly expenditure included income in cash and in kind from food, rental, transportation (e.g., travel fares, gasoline for motorcycles, cars etc.), education, hospitalization, household furniture and other expenditures. All values of household yearly income and household yearly expenditure are in local currency – Lao currency (*Kip*).

The explanatory variables that are used for the study on microfinance loan impacts were grouped under household's characteristics of both member and non-member, loan and village characteristics as shown in Table 5.1.

Under household's characteristics include loan membership, household head age, literacy, education level, agricultural land ownership, agricultural land size, household size, and business ownership. The age of household head is represented as a household age. Loan memberships are represented as dummy variables, which are

related to households who obtained microfinance assigned to 1 and for those who did not obtained any loans from microfinance providers (e.g., banks provide microfinance, microfinance institutions and village funds), were assigned to 0. Households with the female household heads are assigned to 1, and others are assigned to 0. Household heads who can read and write were assigned to 1, and those who could not were assigned to 0. For education level, households who attend schools are assigned to 1, and those who did not attend schools were assigned to 0. Households who had and owned agricultural land were assigned to 1, and those who did not have or own any agricultural land were assigned to 0. Households who have businesses were also assigned to 1, and those who do not have any businesses were assigned to 0 as shown in Table 5.1.

Loan characteristics included averaged amount of loans obtained by household from each of three microfinance providers, including total microfinance loan, microfinance bank, microfinance institution, and village funds. The amount of loan size is collected as Lao currency (*Kip*) as shown in Table 5.1.

Village characteristics included variables such as the presence of market in the village, schools, road access in two seasons, and distance from villages to district centers. If the village has a market, it is assigned to 1; otherwise, it is assigned to 0. Villages that have schools, such as primary schools, secondary schools (3 or 5 years), are assigned to 1; otherwise, they are assigned to 0. Villages that have roads (or routes) access in two seasons are assigned to 1; for those villages that have no road access,

they are assigned to 0. The villages that are located close to district centers are assigned to 1; otherwise, they are assigned to zero as shown in Table 5.1.

Table 5. 1. Summary Statistics for Variables on the Estimation of the Impact of Microfinance (Number, Mean, Percentage and Standard Deviations)

Variables	Definition	Construction	Non-member	Member
Household's Outcomes (Y)				
Observation	No. of observation	Number of household head interviewed	126	255
Household Income in 2009	Total value of household income per year in Lao currency (Kip).	Household income in cash and in kind	14300000 (15300000)	15500000 (14000000)
Household Yearly Income in 2010	Total value of household income per year in Lao currency (Kip).	Household income in cash and in kind	16000000 (16100000)	16700000 (14300000)
Household Yearly Income in 2011	Total value of household income per year in Lao currency (Kip).	Household income in cash and in kind	17600000 (16700000)	18600000 (16300000)
Household Yearly Income in 2012	Total value of household income per year in Lao currency (Kip).	Household income in cash and in kind	19100000 (18700000)	21100000 (17400000)
Household Yearly Income in 2013	Total value of household income per year in Lao currency (Kip).	Household income in cash and in kind	21300000 (18900000)	24500000 (19100000)
Household Yearly Expenditure in 2009	Total value of household expenditure per year in Lao currency (Kip)	Food, rental, transportation (fare, gas), education, hospitalization, household furniture and others.	9064762 (10400000)	8980196 (9478387)

Household Yearly Expenditure in 2010	Total value of household expenditure per year in Lao currency (Kip)	Food, rental, transportation (fare, gas), education, hospitalization, household furniture and others.	10000000 (11400000)	10000000 (9656554)
Household Yearly Expenditure in 2011	Total value of household expenditure per year in Lao currency (Kip)	Food, rental, transportation (fare, gas), education, hospitalization, household furniture and others.	11000000 (11900000)	11000000 (10800000)
Household Yearly Expenditure in 2012	Total value of household expenditure per year in Lao currency (Kip)	Food, rental, transportation (fare, gas), education, hospitalization, household furniture and others.	12600000 (13400000)	12500000 (12100000)
Household Yearly Expenditure in 2013	Total value of household expenditure per year in Lao currency (Kip)	Food, rental, transportation (fare, gas), education, hospitalization, household furniture and others.	13200000 (14000000)	14300000 (12900000)
Household Characteristics				
Age	Age of household head	Age of household head in years	40.20 (12.56)	42.42 (11.73)
Household Head	Total number of household head	Number of household head (Yes = 1, otherwise 0)	117	240
Sex	A female household head	Female = 1, otherwise=0	31	43
Literacy	Literacy of household head	Literacy of household head (Yes= 1, otherwise= 0)	104	221

Education Level	Education level of household head	Education level completion of household head	2.23 (.956)	2.2 (.700)
Household Size	Total number of people in the household	Total number of family members living regularly in the household	5.60 (2.727)	6.18 (2.365)
Agricultural Land Ownership	Households who owned agri. land	Total households owned agricultural land (Yes= 1 and otherwise = 0)	110	243
Agricultural Land	Size of agricultural land owned by households	Number of hectare of agricultural land owned by households	1.94 (1.261)	2.65 (1.471)
Household's Business	Business run or owned by households	Number of household owned business (Yes= 1, otherwise = 0)	18	9
Village Characteristics	**Definition**	**Construction**	**Number**	**Percent/ Std. Dev.**
Markets	Villages have markets	Total number of villages have markets(Yes =1, otherwise=0)	3	23.08%
Road	Villages have roads access to in two seasons	No. of villages have roads access	11	84.62%
School	Villages have schools	Number of villages have school (Y=1, otherwise = 0)	11	84.62%
Location of Village	Villages far from district centers (km)	Distance from villages to district centers (km)	15.769	(13.435)
Loan Size	**Definition**	**Construction**	**Loans**	**Std. Dev**
Banks (Provide microfinance)	Averaged loan size obtained by households	Averaged loan size obtained by households in Lao currency (*Kip*)	7882075	(7882075)

Microfinance Institutions	Averaged loan size obtained by households	Averaged loan size obtained by households in Lao currency (*Kip*)	5248571	(3788091)
Village Development Funds	Averaged loan size obtained by households	Averaged loan size obtained by households in *Kip*	1615385	(846495)
Commercial Banks	Averaged loan size obtained by households	Averaged loan size obtained by households in Lao currency (*Kip*)	30000000	(16100000)
Money Lender	Averaged loan size obtained by households	Averaged loan size obtained by households in Lao currency (*Kip*)	12900000	(5909033)
Money Relatives	Averaged loan size obtained by households	Averaged loan size obtained by households in Lao currency (*Kip*)	3300000	(3834058)

Source: Field Survey, July-September 2014 (Note: Standard Deviation are in Parenthesis).

5.3. Impact of Microfinance on Household Yearly Income

Table 5.2 shows the analysis of the effect estimations of microfinance on household yearly income, corresponding to the fixed-effect model in the equation (1) without control variables. The coefficient of the member dummy variables (D_m) in household yearly income in the equation (1) without control variables from the total microfinance loans, microfinance bank loan was positive, but it was not statistically significant for at least the 10 percent level. Similarly, the coefficient of village fund loans was negative and insignificant as shown in Table 5.2. However, if we looked at *p-value* level of the member dummy variables (D_m) from microfinance bank loans (*0.0908, p = 0.168*) and village fund loans *(-0.3132, p = 0.164*), we can see that these coefficients were acceptable at 16.8 percent for microfinance bank loans and 0.164 percent level for village fund loans. As a result, being members of microfinance bank and village funds could slightly increase household yearly incomes. Therefore, only the coefficient of the member dummy variables in the equation (1) without control variables from microfinance institution loans was positive and significant at 5 percent level (*0.2202, p = 0.033*). It implies that there were correlation between the member dummy variables (D_m) from microfinance institution loans and household yearly incomes, corresponding the fixed-effect model without control variables.

The coefficient of the time dummy variables (D_t) from those microfinance loans had a highly positive and significant effect on household yearly income over the years, particularly when *t = 2011, t = 2012 and t = 2013,* corresponding to the fixed-

effect model in the equation (1) without control variables as shown in Table 5.2. Interestingly, only the coefficient of the time dummy variables (D_t) from the total microfinance loans (*t = 2010*) was positive and significant at 5 percent level (*0.1283, p = 0.015*).

In the following years (*t = 2011, t = 2012* and *t = 2013*), the coefficient of the time dummy variables (D_t) were highly positive and significant at 1 percent level for the total loans. The time dummy variables (D_t) for microfinance bank loans (*t = 2011*) was also positive and significant at 5 percent level as well as significance at 10 percent level (*t = 2012* and *t = 2013*) as shown in Table 5.2. The coefficient of the time dummy variables (D_t) from microfinance institution loans (*t = 2011, t = 2012*) was positive and significant at 10 percent level. In the following year (*t = 2013*), it was also positive and significant at 5 percent level. Besides, the coefficient of time dummy variables (D_t) from village fund loans (*t = 2011*) was positive, but it is not statistically significant at least at 10 percent level. On the other hand, it is positive and significant at 10 percent level in the following years (*t = 2012 and t = 2013*), as shown in Table 5.2.

The coefficient of the effect after having loan ($D_m \times D_a \times D_t$) was highly positive and significant at 1 percent level at the time of *t = 2011, t = 2012* and *t = 2013*. At *t = 2010,* this was not statistically significant at least at the 10 percent level, corresponding to the fixed-effect model without control variables as shown in Table 5.2. Therefore, it implies that microfinance loans had increased household yearly incomes after they obtained microfinance loans over the years, particularly when *t =*

2011, *t = 2012* and *t = 2013*, corresponding the fixed-effect model in the equation (1) without control variables.

Table 5.2. The Fixed-Effects OLS Regression on Household Yearly Income without Control Variables

Variables	Total Microfinance Loan	Microfinance Bank Loan	Microfinance Institution Loan	Village Fund
$D\ m$	0.1452	0.1443	0.2202**	-0.3133
	(0.1400)	(0.1189)	(0.0911)	(0.2114)
D_{2010}	0.1283**	0.1136	0.0326	-0.0011
	(0.0451)	(0.1043)	(0.1351)	(0.1438)
D_{2011}	0.3971***	0.3825**	0.3014*	0.2678
	(0.0741)	(0.1244)	(0.1608)	(0.1703)
D_{2012}	0.4293***	0.4147*	0.3336*	0.3000*
	(0.0763)	(0.1196)	(0.1641)	(0.1727)
D_{2013}	0.5068***	0.4922*	0.4111**	0.3775*
	(0.0983)	(0.1312)	(0.1799)	(0.1878)
$D_m \times D_a \times D_{2010}$	0.0813	0.0796	0.1152	0.1124
	(0.0887)	(0.0823)	(0.0675)	(0.0677)
$D_m \times D_a \times D_{2011}$	0.3006***	0.2978***	0.3348***	0.3317***
	(0.0819)	(0.0758)	(0.0622)	(0.0635)
$D_m \times D_a \times D_{2012}$	0.4115***	0.4124***	0.4419***	0.4446***
	(0.0855)	(0.0807)	(0.0685)	(0.0668)
$D_m \times D_a \times D_{2013}$	0.5280***	0.5288***	0.5584***	0.5613***
	(0.0833)	(0.0755)	(0.0680)	(0.0661)
Constant	15.6484***	15.6912***	15.6802***	15.8339***
	(0.0569)	(0.0540)	(0.0818)	(0.1015)
Total Number of Observations:	381	381	381	381
Member	255	212	35	26
Non-member	126	169	346	355
R-Squared	0.2517	0.2524	0.2525	0.2531
Root MSE	0.7578	0.75743	0.75741	0.75711

Source: Field Survey, July-September 2014

*Note: The table includes village dummies and Standard errors clustered at the village level. Standard errors are in parenthesis. *, ** and *** represent coefficients are significant at the 10%, 5% and 1% respectively.*

Table 5.3 presents the effect estimations of microfinance on household yearly income, corresponding to the fixed-effect model in the equation (1) with control variables. Ages of household heads were negative and insignificant, corresponding the fixed-effect in the equation (1), as shown in Table 5.3. It implies that there was no correlation between household head age and household yearly incomes from those microfinance loans. Household head age-squared, being a household head and having a female household head were positive, but it is statistically insignificant at least at 10 percent as shown in Table 5.3. It also indicates that there was no relationship between household head age squared, being a household head, having a female household head and household yearly incomes, corresponding to the fixed-effect in the equation (1) with control variables.

The education level of household heads has a positive and significant impact on household yearly income. Its coefficient is statistically significant at 5 percent level for the fixed-effect in the equation (1) with control variables. The results can be explained that household heads who achieved or attained higher education level could be more confident in allocating their loans or doing their business - especially in new ways effectively.

The size of households has a highly positive and significant impact on household yearly income. It is statistically significant at the 1 percent level,

corresponding to the fixed-effect in the equation (1) with control variables, as shown in Table 5.3. It is explained that more members in the household could provide labor allocation in the farms and increase household yearly incomes. It also implies that an increase in household size by one person could increase household yearly income from those microfinance loans as shown in Table 5.3.

Holding agricultural land is essential for households to generate and increase their incomes through agricultural production and land leasing. Hence, it can be seen that the coefficient of holding agricultural land was statistically significant at 5 percent level, regarding the fixed-effect in the equation (1), as shown in Table 5.3. The results also showed that there was a relationship between agricultural land holding and household yearly incomes from those microfinance loans.

The size of agricultural land and business ownership was highly positive and statistically significant at 1 percent level from those microfinance loans, corresponding to the equation (1) as shown in Table 5.3. It implies that there was a high relationship between agricultural land size, business ownership and household yearly incomes. These results are also explained that, for instance, that an increase in size of agricultural land increase by one hectare could push up household yearly incomes increased as shown in Table 5.3. Significantly, households who own business might gain more beneficiaries than households who do not have any business as microfinance can upgrade and increase their investment.

Turning to village characteristic explanatory variables, the presence of markets in the villages was highly positive and significant at 1 percent level from those

microfinance loans as shown in Table 5.3. It also indicated that there was a highly correlation between markets presented in the villages and household yearly incomes. The coefficient of village with road access in two seasons, the presence of primary schools in the villages and distance from villages to district centers was also highly significant at 1 percent level as shown in Table 5.3. The results showed that there were strong relationship between village has a road access to in two seasons, the presence of schools in the villages, distance from villages to district centers and household yearly incomes. It also indicates that with the presence of schools in the villages, household head or members in the household could attain a higher education level. It means that households who attained a higher education level could help them confidently in doing their economic activities and using their loans effectively. Similarly, a village with road access in two seasons and that is located near the district centers are also significantly contribute to income generation activities.

The coefficient of the member dummy variables (D_m) in household yearly income in the equation (1) with control variables from the total microfinance loans, microfinance bank loans was also positive, but it was not statistically significant at least at the 10 percent level, and the coefficient of village fund loans was negative and also an insignificant level. However, if we looked at *p-value* level of the member dummy variables (D_m) from village fund loans (*-0.2228*, $p = 0.133$), implying that the coefficient were acceptable at 13.3 percent level for village fund loans. As a result, being members of village funds slightly increased in household yearly incomes.

However, only the coefficient of the member dummy variables from microfinance institution loans was positive and significant at the 5 percent level (0.1727, $p = 0.059$). It implies that there were correlation between the member dummy variables (D_m) from microfinance institution loans and household yearly incomes, corresponding to the fixed-effect model with control variables.

Table 5.3. The Fixed Effect OLS Regression on Household Yearly Income with Control Variables

Explanatory Variables	Total Microfinance Loan	Microfinance Bank Loan	Microfinance Institution Loan	Village Fund
Age	-0.0070	-0.0072	-0.0064	-0.0064
	(0.0263)	(0.0263)	(0.0260)	(0.0260)
Age-Squared	0.0001	0.0001	0.0001	0.0001
	(0.0003)	(0.0003)	(0.0003)	(0.0003)
Being a Household Head	0.0765	0.0752	0.0719	0.0620
	(0.1326)	(0.1306)	(0.1315)	(0.1284)
Sex (Female=1, Otherwise= 0)	0.0030	0.0032	0.0007	-0.0089
	(0.1809)	(0.1806)	(0.1813)	(0.1815)
Education Level	0.1256**	0.1276**	0.1190**	0.1225**
	(0.0422)	(0.0427)	(0.0398)	(0.0426)
Household Size	0.0356***	0.0355***	0.0366***	0.0352***
	(0.0115)	(0.0117)	(0.0110)	(0.0117)
Agricultural Land Holding	-0.5517**	-0.5523**	-0.5485**	-0.5530**
	(0.2240)	(0.2241)	(0.2257)	(0.2257)
Agricultural Land Size	0.1489***	0.1484***	0.1502***	0.1504***
	(0.0287)	(0.0280)	(0.0288)	(0.0287)
Business Ownership	0.4173***	0.4129***	0.4109***	0.3994***
	(0.0742)	(0.0705)	(0.0700)	(0.0659)
Village has Market	0.9585***	0.9496***	0.9951***	0.9187***

	(0.0515)	(0.0482)	(0.0478)	(0.0657)
Road Access in Two Seasons	-0.1260***	-0.1084***	-0.1708***	-0.0752
	(0.0398)	(0.0345)	(0.0450)	(0.0488)
Village has Primary School	-0.8587*	-0.8393***	-0.9085***	-0.8084***
	(0.0450)	(0.0467)	(0.0581)	(0.0610)
Distance from District Centers	-0.0043*	-0.0047***	-0.0036***	-0.0045***
	(0.0013)	(0.0013)	(0.0013)	(0.0012)
$D\ m$	0.0930	0.0908	0.1727**	-0.2228
	(0.0972)	(0.0619)	(0.0828)	(0.1384)
D_{2010}	0.1259**	0.1148	0.0707	0.0450
	(0.0437)	(0.0819)	(0.0999)	(0.1073)
D_{2011}	0.3921***	0.3811***	0.3368**	0.3111**
	(0.0709)	(0.1029)	(0.1243)	(0.1318)
D_{2012}	0.4215***	0.4105***	0.3660**	0.3403**
	(0.0722)	(0.0985)	(0.1249)	(0.1313)
D_{2013}	0.4959***	0.4848***	0.4403***	0.4145**
	(0.0935)	(0.1107)	(0.1389)	(0.1444)
$D_m \times D_a \times D_{2010}$	0.0395	0.0392	0.0610	0.0595
	(0.0931)	(0.0882)	(0.0778)	(0.0782)
$D_m \times D_a \times D_{2011}$	0.2606**	0.2596***	0.2820***	0.2801***
	(0.0890)	(0.0841)	(0.0733)	(0.0740)
$D_m \times D_a \times D_{2012}$	0.3832***	0.3843***	0.4014***	0.4037***
	(0.0866)	(0.0826)	(0.0748)	(0.0738)
$D_m \times D_a \times D_{2013}$	0.4957***	0.4969***	0.5139***	0.5162***
	(0.0816)	(0.0752)	(0.0682)	(0.0669)
Constant	16.3368***	16.3339***	16.4278***	16.3723***
	(0.4612)	(0.4580)	(0.4730)	(0.4788)
Total Number of Observations	381	381	381	381
Member	255	212	35	26
Non-member	126	169	346	355
R-Squared	0.3524	0.3526	0.3531	0.3532
Root MSE	0.7067	0.7065	0.7063	0.7063

Source: Field Survey, July-September 2014
*Note: The Table includes village dummies and Standard errors clustered at the village level. Standard errors are in parenthesis. *, ** and *** represent coefficients are significant at the 10%, 5% and 1% respectively.*

The coefficient of the time dummy variables (D_t) from those microfinance loans had a highly positive and significant effect on household yearly income over the years, particularly when *t = 2011, t = 2012 and t = 2013,* corresponding to the fixed-effect model in the equation (1) with control variables as shown in Table 5.3. Interestingly, only the coefficient of the time dummy variables (D_t) with control variables from the total microfinance loans (*t = 2010*) was also positive and significant at 5 percent level (*0.1259, p = 0.014*). The other time dummy variables (*t = 2010*) with control variables from microfinance bank loans and microfinance institution loans were also positive, but it is not statistically significant at least at the 10 percent level.

In the following years (*t = 2011, t = 2012* and *t = 2013*), the coefficient of the time dummy variables (D_t) in the equation (1) with control variable were highly positive and significant at the 1 percent level for the total loans and microfinance bank loans were also highly positive and significant at the 1 percent level at the time of *t = 2011, t = 2012* and *t = 2013,* as shown in Table 5.3. The coefficient of the time dummy variables (D_t) from microfinance institution loans (*t = 2011, t = 2012*) was positive and significant at the 5 percent level. In the following year (*t = 2013*), it was highly significant at the 1 percent level. In addition, the coefficient of time dummy variables (D_t) in the equation (1) with control variables from village funds was positive and

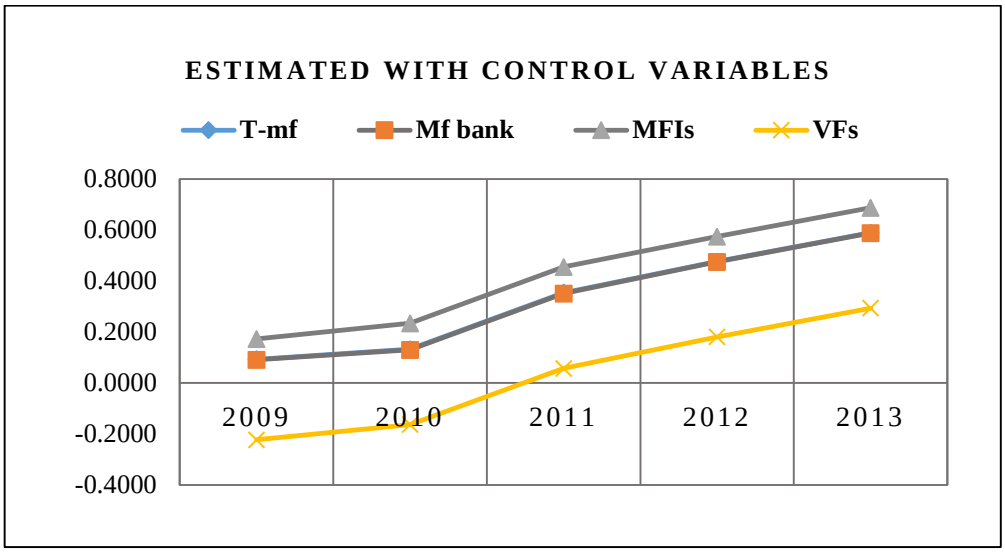
significant at the 5 percent level at the time of *t = 2011, t = 2012 and t = 2013* as shown in Table 5.3.

The coefficient of the effect after having loan ($D_m \times D_a \times D_t$) was also highly positive and significant at 1 percent level at the time of *t = 2011, t = 2012* and *t = 2013*. The time at *t = 2010* was not statistically significant at least at the 10 percent level, corresponding to the fixed-effect model in the equation (1) with control variables as shown in Table 5.3. However, it also implies that microfinance loans increased household yearly incomes after they had obtained microfinance over the years, particularly when *t = 2011, t = 2012* and *t = 2013,* corresponding the fixed-effect model in the equation (1) with control variables.

5.3.1. Difference in Income between Member and Non-member

The estimation of difference in household yearly income between member and non-member over the years (2009 to 2013) is done employing the equation (2) and (3) with the coefficient from the equation (1) with and without control variables. We find difference in household yearly income with and without control variables between member and non-member from microfinance loans were totally large over the years, particularly at the time of *t = 2010, t = 2011, t = 2012* and *t = 2013* as shown in Figure 5.1 and, Appendix 1 and 2.

Figure 5.1 shows that difference in household yearly income between member and non-member had a slight difference at the time of *t = 2009*. In the following years (at the time of *t = 2010, t = 2011, t = 2012 and t = 2013*), difference in household yearly income between member and non-member was totally large, corresponding to the fixed-effect variable model in the equation (1) both with and without control variables, as shown in Figure 5.1 and Appendix 1 and 2. Interestingly, microfinance institution loans had the largest difference in household yearly income over the years. Moreover, according to Figure 5.1, difference in household yearly income between member and non-member from microfinance bank loans and the total microfinance loans followed the same trends over the years, while village fund loans had the smallest difference over the years (2009-2013), corresponding to the fixed-effect without and with control variables as shown in Figure 5.1 and Appendix 1 and 2. In addition, the difference in household yearly income between member and non-member estimated with the coefficient from the equation (1) without control variable was larger than the difference in household yearly income between member and non-member estimated with control variable as shown in Figure 5.1 and Appendix 1 and 2.



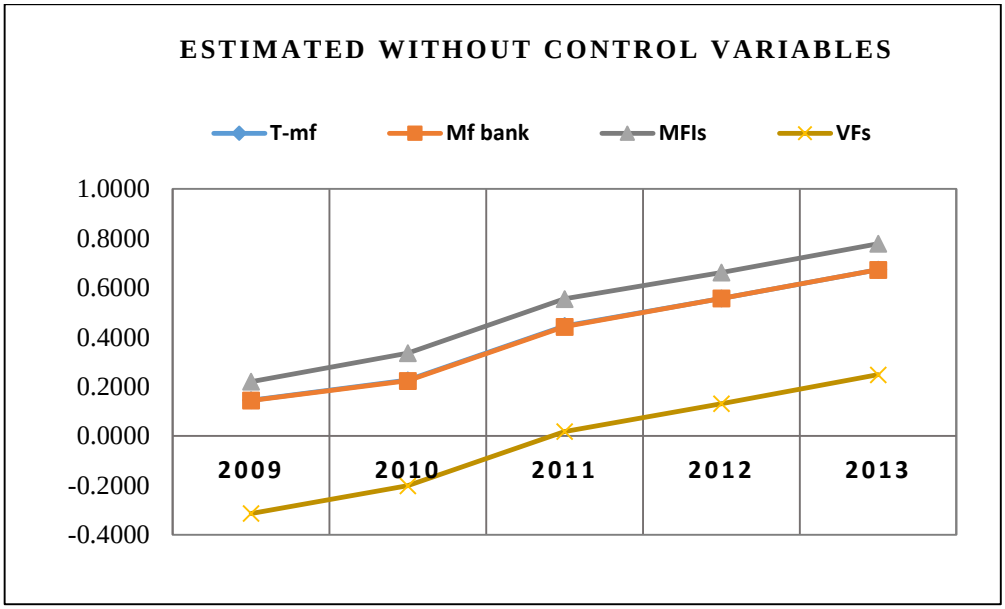
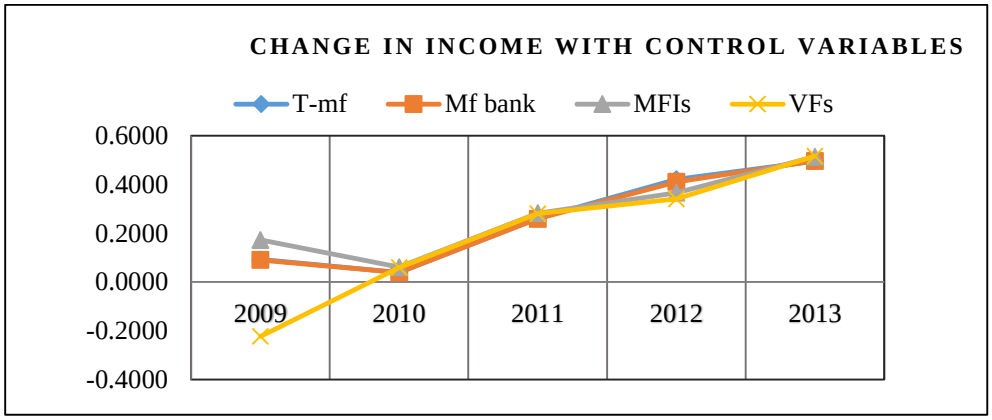


Figure 5. 1. Difference in House Yearly Income between Member and Non-member (Source: Field Survey, July-September 2014).

5.3.2. Change in Income between Member and Nonmember

The estimation of change in household yearly income between member and non-member employs the equation (4) with the coefficient of the equation (1) both with and without control variables. We find change in household yearly incomes between member and non-member – both with and without control variables - had significantly changed over the years from those microfinance loans as shown in Appendix 1 and 2.



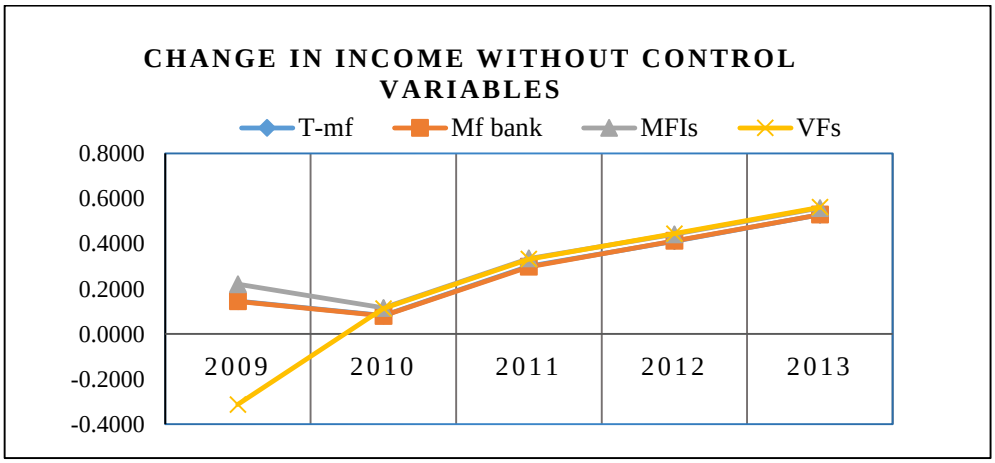


Figure 5.2. Change in Household Yearly Income between Member and Non-member (Source: Field Survey, July-September 2014).

Figure 5.2 shows that change in household yearly income between member and non-member from *t = 2009 to t = 2010* had only a slight change. Interestingly, change in household income from *t = 2009 to t = 2011, t = 2009 to t = 2012, and t= 2009 to t = 2013* was significantly larger from those microfinance loans. However, change in household yearly income between member and non-member from MFI loans was greater than change in household yearly income between member and non-member of MF bank loans and VF loans, while MF bank loans had the smallest change over the years as shown in Figure 5.2 and Appendix 1 and 2. In addition, the change in household yearly income between member and non-member in the fixed-effect model without control variables was larger than the change estimated with control variables as shown in Figure 5.2 and Appendix 1 and 2.

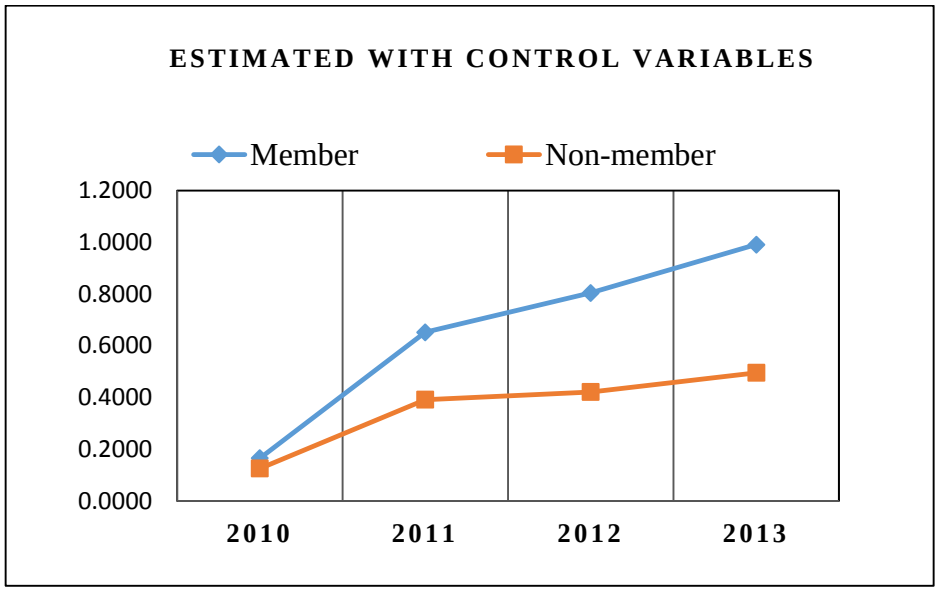
5.3.3. Change in Income of Member and Non-member

The estimation of change in household yearly income of member and non-member also based on the coefficient of the impact estimation in the equation (1) with and without control variables. We applied that coefficient into the equation (5) and (6) for the estimation of changes in household yearly income of member and non-member, respectively, over the years. The results showed that change in household yearly income of member and non-member both had a slight change from *t = 2009 to t = 2010;* but in the following years from *t = 2009 to t = 2011*, *t = 2009 to t = 2012*, and *t = 2009* to *t = 2013*, change in household yearly income of member and non-member

was significantly larger from those four microfinance loans as shown in Appendix 1 and 2.

Figure 5.3 shows the estimation of change in household yearly income of both member and non-member from microfinance loans. The results showed that the change in household yearly income of member was greater than the change in household yearly income of non-member income over the years. Change in household yearly income of member and non-member had a slight change from *t = 2009 to t = 2010*. Interestingly, in the following years from *t = 2009 to t = 2011*, *t = 2009 to t = 2012* and *t = 2009 to t = 2013*, changes in household yearly income of both member and non-member were significantly larger as also shown in Figure 5.3 and Appendix 1 and 2. Therefore, change in household yearly income of MF bank borrowers was larger than change in household yearly income of MFI and VF borrowers as shown in Appendix 1 and 2.

In addition, change in household yearly income of member were larger than change in household yearly income of non-member incomes, corresponding to the fixed effect model in the equation (1) with and without control variables from those microfinance loans. The estimated results in the equation (5) and (6) also indicated that change in household yearly income of both member and non-member estimated without control variable was greater than change in household yearly income of both member and non-member estimated with control variables.



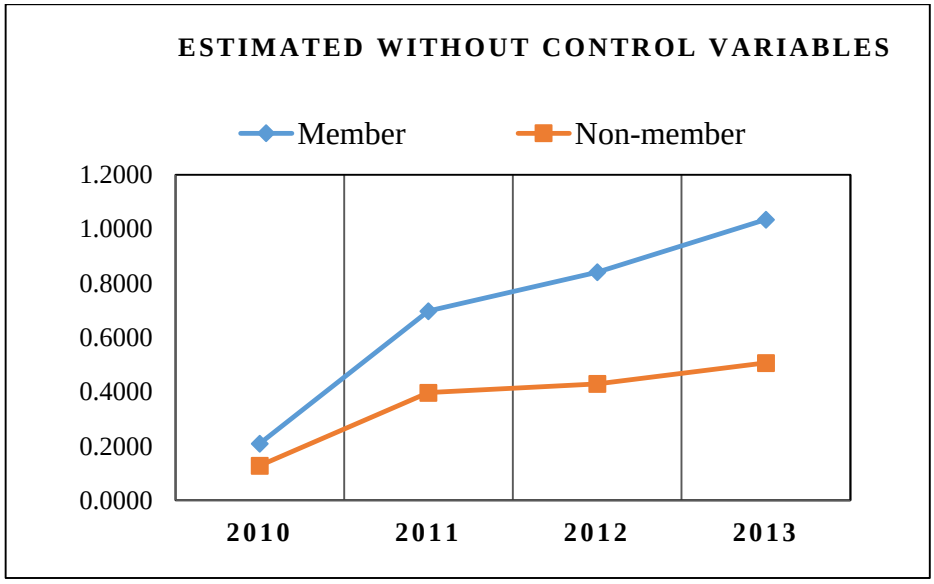


Figure 5. 3. Changing in Household Yearly Income of Member and Non- member (Source: Field Survey, July-September 2014).

5.4. Impact of Microfinance on Household Expenditure

Table 5.4 presents the estimated results of the fixed-effect model in the equation (1) without variables on household yearly expenditures. The coefficient of the member dummy variables (D_m) on household yearly expenditure in the equation (1) without control variables for the total microfinance loans, microfinance bank and village fund loans was not statistically significant, as shown in Table 5.4. Only the coefficient of the member dummy variables in the equation (1) without control variables for microfinance institution loans was highly positive and significant at 1 percent level (0.3427, $p = 0.005$). It implies that there was a high correlation between the member dummy variables from microfinance institution loans and household yearly expenditure, corresponding to the fixed-effect in the equation (1) without control variables.

Table 5.4. The Fixed Effects OLS Regression on Household Yearly Expenditure without Control Variable

Explanatory Variables	Total Microfinance Loan	Microfinance Loans from Banks	Microfinance Institutions	Village Funds
$D\ m$	0.1355	0.0831	0.3789***	-0.3540
	(0.2116)	(0.1378)	(0.1191)	(0.3121)
D_{2010}	0.1397**	0.0917	0.0621	0.0153
	(0.0586)	(0.1451)	(0.1433)	(0.1612)
D_{2011}	0.4181***	0.3701**	0.3405**	0.2937
	(0.0565)	(0.1486)	(0.1552)	(0.1740)
D_{2012}	0.5048***	0.4568***	0.4272**	0.3804**
	(0.0369)	(0.1454)	(0.1560)	(0.1732)
D_{2013}	0.4725***	0.4245**	0.3949**	0.3480*
	(0.0452)	(0.1533)	(0.1732)	(0.1891)

$D_m \times D_a \times D_{2010}$	0.1066	0.1166	0.1409*	0.1357*
	(0.0979)	(0.0725)	(0.0662)	(0.0679)
$D_m \times D_a \times D_{2011}$	0.3124***	0.3218***	0.3473***	0.3416***
	(0.1012)	(0.0784)	(0.0673)	(0.0711)
$D_m \times D_a \times D_{2012}$	0.4407***	0.4521***	0.4688***	0.4721***
	(0.0727)	(0.0517)	(0.0491)	(0.0478)
$D_m \times D_a \times D_{2013}$	0.5406***	0.5520***	0.5688***	0.5721***
	(0.0905)	(0.0684)	(0.0640)	(0.0621)
Constant	15.1434***	15.2077***	15.1112***	15.3314***
	(0.1044)	(0.0758)	(0.0712)	(0.1161)
Total Number of Observations	381	381	381	381
Member	255	212	35	26
Non-member	126	169	346	355
R-Squared	0.2366	0.2363	0.2406	0.2384
Root MSE	0.83995	0.84014	0.83778	0.83895

Source: Field Survey, July-September 2014
*Note: The table includes village dummies and Standard errors clustered at the village level. Standard Errors are in parenthesis. *, ** and *** represent coefficients are significant at the 10%, 5% and 1% respectively.*

The coefficient of the time dummy variables (D_t) was positive and significant at 5 percent level at the time of *t = 2010*, and it was highly positive and significant at 1 percent level at the time of *t = 2011*, *t = 2012* and *t = 2013* for the total microfinance loans, corresponding to the fixed-effect model without control variables as shown in Table 5.4.

The coefficient of the time dummy variables (D_t) estimated in the equation (1) without control variables for microfinance bank loans was positive and significant at 5 percent level (*t = 2011* and *t = 2013*), and it was highly positive and significant at 1

percent level (*t = 2012*) as shown in Table 5.4. The time dummy variables from microfinance institution loans (*t = 2011, t = 2012 and t = 2013*) was positive and significant at 5 percent level in the equation (1) without control variables. In addition, the coefficient of the time dummy variables from village fund loans (*t = 2012*) was also positive and significant at 5 percent level (*t = 2012*), and it is also significant at 10 percent level (*t = 2013*) for the estimation without control variables, as shown in Table 5.4.

The coefficient of the after having loan dummy variables from microfinance loans in the fixed-effect model in the equation (1) without control variables was highly positive and significant at 1 percent level, particularly at the time of *t = 2011*, *t = 2012* and *t = 2013*, as shown in Table 5.4. Only the coefficient of microfinance institution loans and village fund loans was positive and significant at 10 percent level at the time of *t = 2010*, as shown in Table 5.4.

Table 5.5 shows the analysis of the microfinance effect estimations on household yearly expenditure, corresponding to the fixed-effect model in the equation (1) with control variables. The coefficient of household head ages, household head age-squared, being a household head and having a female household head was not significant on household yearly expenditures from those microfinance loans as shown in Table 5.5. It implies that there was no correlation between household head age, age squared, being a household head, having a female household head and household yearly expenditures from those microfinance loans, corresponding to the fixed-effect model in the equation (1).

Education level of household head was highly positive and significant at 1 percent level on household yearly expenditures. It showed that there was a strong correlation between education level and household yearly expenditure from the microfinance loans. It also implies that, for instance, if education level of household heads increased one year it would effect an increase in household yearly expenditures as shown in Table 5.5. Indeed, household who achieved higher education level could help them confidently in investment (particularly physical assets) and business effectively.

The size of household has a highly positive and significant effect on household yearly expenditure. It is statistically significant at 1 percent level from those microfinance loans as shown in Table 5.5. It means that there was a strong relationship between household size and household yearly expenditures. It is also explained by the fact that more members in the household could help them work in the farms, thus they could get more labor allocation for their agricultural production. Traditionally, households in rural areas of Lao PDR considered that having many family members in the household could help them expand and increase their productions.

The coefficient of holding agricultural land was also highly significant at 1 percent level from those microfinance loans as shown in Table 5.5. This means that there was a strong relationship between agricultural land holding and household yearly expenditures from those microfinance loans. It also implies that holding agricultural land is very crucial for agricultural production. In other words, household who own

agricultural land would have the ability in doing their agricultural production rather than households who do not have any agricultural lands.

Size of agricultural land was highly positive and significant at 1 percent level from those microfinance loans as shown in Table 5.5. The results indicated that there was also a highly relationship between agricultural land size and household yearly expenditures. It can be explained that size of agricultural land is essential for agricultural production as it could increase in the quantity of production. Similarly, business ownership was also positive and significant at 5 percent from those microfinance loans as shown in the Table 5.5. It also implies that household who own business would probably gain more benefits from the microfinance loans as they could allocate the loans to upgrade their business more effectively.

Interestingly, village characteristic explanatory variables such as the presence of markets, villages with road access in two seasons, the presence of school in the villages and distance of the villages from the district centers were highly positive and significant at 1 percent level from those microfinance loans as shown in Table 5.5. It showed that there was a highly correlation between those village characteristic explanatory variables and household yearly expenditures.

Table 5.5. The Fixed Effects Linear Regression with Controlled Variables on Expenditure

Variables	Total Microfinance Loan	Microfinance Loans from Banks	Loans from Microfinance Institutions	Loans from Village Funds
Age	-0.0021	-0.0019	0.0016	-0.0017
	(0.0257)	(0.0256)	(0.0253)	(0.0253)
Ages	0.0001	0.0001	0.0001	0.0001
	(0.0003)	(0.0003)	(0.0003)	(0.0003)
Household head	0.1617	0.1597	0.1565	0.1457
	(0.1404)	(0.1402)	(0.1361)	(0.1350)
Sex of Household Head	-0.0216	-0.0225	-0.0243	-0.0352
	(0.1797)	(0.1807)	(0.1777)	(0.1807)
Education Level	0.1191***	0.1186***	0.1077***	0.1160***
	(0.0344)	(0.0329)	(0.1777)	(0.0334)
Household Size	0.0508***	0.0510***	0.0522***	0.0501***
	(0.0143)	(0.0148)	(0.0139)	(0.0146)
Agricultural Land Holding	-0.7699***	-0.7688***	-0.7662***	-0.7723***
Agricultural Land Size	0.1643***	0.1652***	0.1646***	0.1653***
	(0.0243)	(0.0230)	(0.0244)	(0.0239)
Business Ownership	0.3267**	0.3217**	0.3228**	0.3084**
	(0.1302)	(0.1283)	(0.1271)	(0.1187)
Village has Market	0.8602***	0.8628***	0.9236***	0.8094***
	(0.0523)	(0.0423)	(0.0343)	(0.0729)
Road Access in Two Seasons	0.1527***	0.1570***	0.0615	0.2126***
	(0.0440)	(0.0372)	(0.0495)	(0.0662)
Village has Primary School	-0.7701***	-0.7663***	-0.8692***	-0.7101***
	(0.0431)	(0.0479)	(0.0508)	(0.0759)
Distance from District Centers	-0.0041***	-0.0043***	-0.0027***	-0.0044***
	(0.0011)	(0.0011)	(0.0012)	(0.0010)
$D\ m$	0.0706	0.0173	0.3427***	-0.2662
	(0.1758)	(0.0878)	(0.1006)	(0.2169)
D_{2010}	0.1375**	0.0967	0.1112	0.0704
	(0.0595)	(0.1212)	(0.1108)	(0.1306)
D_{2011}	0.4136***	0.3727**	0.3871***	0.3463**

	(0.0578)	(0.1258)	(0.1234)	(0.1431)
D_{2012}	0.4978***	0.4569***	0.4712***	0.4304***
	(0.0384)	(0.1198)	(0.1226)	(0.1410)
D_{2013}	0.4629***	0.4219***	0.4362***	0.3954**
	(0.0436)	(0.1264)	(0.1375)	(0.1540)
$D_m \times D_a \times D_{2010}$	0.0645	0.0752	0.0840	0.0801
	(0.0940)	(0.0721)	(0.0626)	(0.0641)
$D_m \times D_a \times D_{2011}$	0.2737**	0.2841***	0.2932***	0.2889***
	(0.1045)	(0.0851)	(0.0747)	(0.0775)
$D_m \times D_a \times D_{2012}$	0.4141***	0.4250***	0.4275***	0.4306***
	(0.0720)	(0.0537)	(0.0466)	(0.0449)
$D_m \times D_a \times D_{2013}$	0.5111***	0.5220***	0.5245***	0.5275***
	(0.0899)	(0.0710)	(0.0644)	(0.0625)
Constant	15.4112***	15.4425***	15.5230***	15.4292***
	(0.4723)	(0.4748)	(0.4812)	(0.4897)
Member	255	212	35	26
Non-member	169	169	346	355
R-Squared	0.3396	0.3394	0.3433	0.3409
Root MSE	0.78311	0.7832	0.7810	0.7824

Source: Field Survey, July-September 2014
*Note: The table includes village dummies and Standard errors clustered at the village level. Standard Errors are in parenthesis. *, ** and *** represent coefficients are significant at the 10%, 5% and 1% respectively.*

The coefficient of the member dummy variables (D_m) on household yearly expenditure in the equation (1) with control variables for the total microfinance loans, microfinance bank and village fund loans was not statistically significant, corresponding to the fixed-effect model as shown in Table 5.5. Therefore, only the coefficient of the member dummy variables in the equation (1) with control variables for microfinance institution loans was highly positive and significant at 1 percent level (*0.3789, p=0.008*). It implies that there was a highly correlation between the member

dummy variables from microfinance institution loans and household yearly expenditure, corresponding to the fixed-effect in the equation (1) with control variables.

The coefficient of the time dummy variables (D_t) was positive and significant at 5 percent level at the time of *t = 2010*, and it was highly positive and significant at 1 percent level at the time of *t = 2011*, *t = 2012* and *t = 2013* for the total microfinance loans, corresponding to the fixed-effect model with control variables as shown in Table 5.5.

The coefficient of the time dummy variables of microfinance bank loans with control variables was also positive and significant at 5 percent level (*t = 2011*) and it was highly positive and significant at 1 percent level (*t = 2012* and *t = 2013*) as shown in Table 5.5. In addition, the time dummy variables from microfinance institution loans with control variables was highly positive and significant at 1 percent level (*t = 2011*, *t = 2012*, and *t = 2013*). In addition, the coefficient of the time dummy variables of village fund loans was positive and significant at 5 percent levels (*t = 2011* and *t = 2013*). Interestingly, it was highly positive and significant at 1 percent level (*t = 2012*) as shown in Table 5.5.

The coefficient of the after having loan dummy variables from microfinance loans in the fixed-effect model in the equation (1) with control variables was highly positive and significant at 1 percent level, particularly at the time of *t = 2011*, *t = 2012* and *t = 2013*, as shown in Table 5.5. While at the time of *t = 2010*, no coefficient of

those microfinance loans was positive and significant at 10 percent level, corresponding to the fixed-effect model with control variables as shown in Table 5.5.

5.4.1. Difference in Expenditure between Member and Non-member

The estimation of difference in household yearly expenditure between member and non-member is also done employing the equation (2) and (3) with the fixed-effect model in the equation (1) without and with control variables. We find that difference in household yearly expenditure between member and non-member were totally large over the years, particularly at the time $t = 2010$, $t = 2011$, $t = 2012$ and $t = 2013$ for those microfinance loans. We also find difference in household yearly expenditure estimated without control variable was larger than the difference that estimated with control variable from those microfinance loans as shown in Appendix 3 and 4.

Figure 5.4 presents the estimated results of difference in household yearly expenditures between member and non-member with and without control variables. The estimated results showed that difference in household yearly expenditures between member and non-member was slightly different at the time of $t = 2009$. Therefore, in the following years at the time of $t = 2010$, $t = 2011$, $t = 2012$ and $t = 2013$, differences in household yearly expenditure between member and non-member was totally large as shown in Appendix 3 and 4. Interestingly, microfinance institution loans had the largest difference in the household yearly expenditures, while village fund loans had the smallest difference over the years, corresponding to the fixed-effect

model with and without control variables, as shown in Figure 5.4 and Appendix 3 and 4.

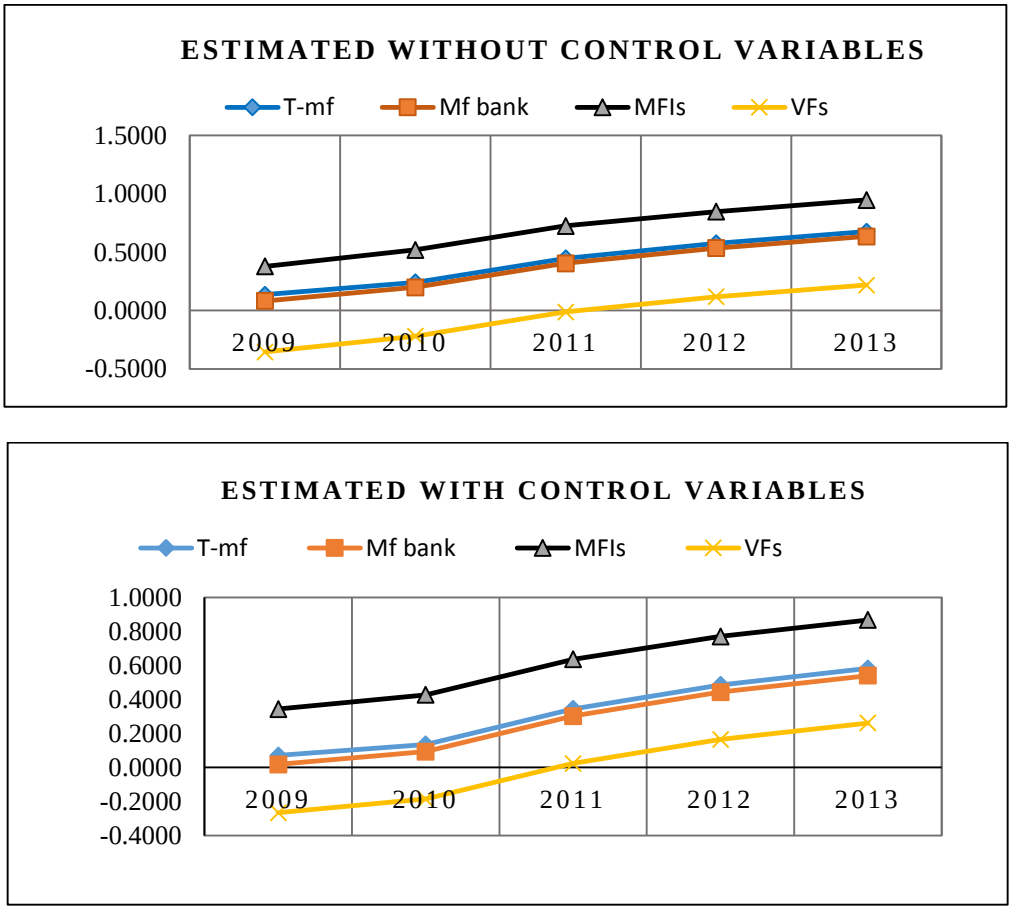


Figure 5.4. Difference in Household Yearly Expenditure between Member and Non-member (Source: Field Survey, July-September 2014).

5.4.2. Change in Expenditure between Member and Non-member

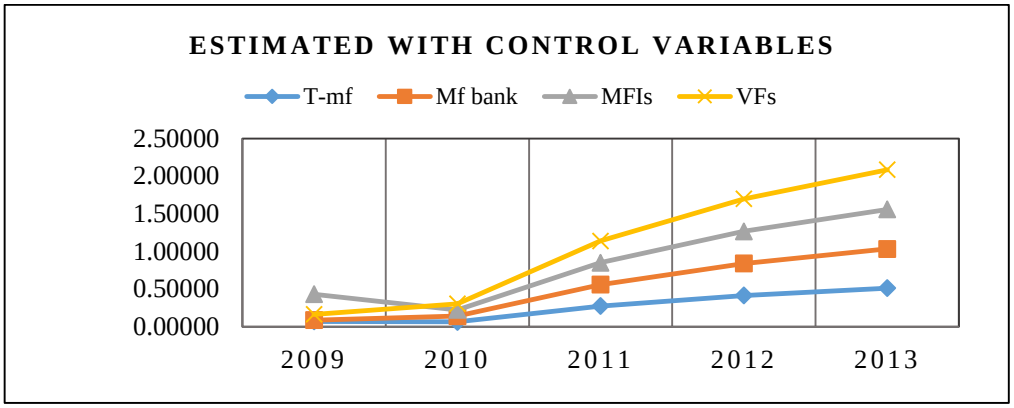
Based on the coefficient estimation in the equation (1), the fixed-effect model, both with and without control variables, we estimated change in household yearly expenditures between member and non-member with the equation (4). The results

showed that changes in household yearly expenditures between member and non-member was totally large over the years, especially from *t = 2009 to t = 2011, t = 2009 to t = 2012, and t = 2009 to t = 2013* from those microfinance loans, as shown in Appendix 3 and 4.

Figure 5.5 showed that change in household yearly expenditures between member and non-member from microfinance loans (including the total microfinance loans, village bank loans, microfinance institution loan and village fund loans) from *t = 2009 to t = 2010* had a slight change. Interestingly, in the following years from t = 2009 to *t = 2011, t = 2009 to t = 2012* and *t = 2009 to t = 2013*, change in household yearly expenditures from those microfinance loans was totally large, corresponding to the fixed-effect with and without control variables, as also shown in Figure 5.5 and Appendix 3 and 4. Change in household yearly expenditure of MFI borrowers was larger than change in household yearly expenditure of MF bank borrower over the years, and also greater than change in household yearly expenditure of village funds from *t= 2009 to t= 2010, and t= 2009 to t= 2011*. From t= *2009 to t= 2012, and t= 2009 to t= 2013*, village funds had the largest change in household yearly expenditure between member and nonmember from those MF loans.

In addition, change in household yearly expenditures between member and non-member without control variables was larger than change in household yearly expenditure estimated with control variables, corresponding to the equation (4), as also shown in Figure 5.5 and Appendix 3 and 4. However, when we look at the changes in Figure 5.5, village fund loans had the largest change in each year from *t= 2009 to t=*

2010, t= 2009 to 2011, t= 2009 to t= 2012 and *t= 2009 to t= 2013* on household yearly expenditure between member and non-member.



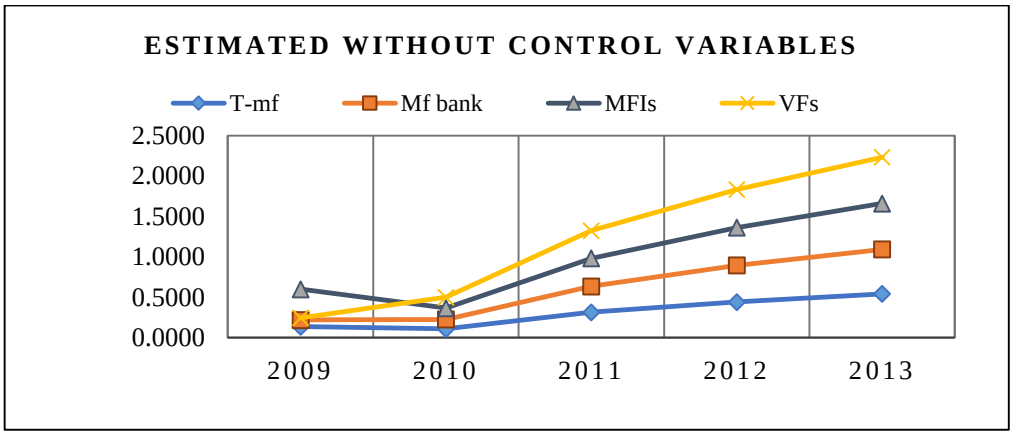


Figure 5.5. Change in Household Yearly Expenditure between Member and Non-member (Source: Field Survey, July-September 2014).

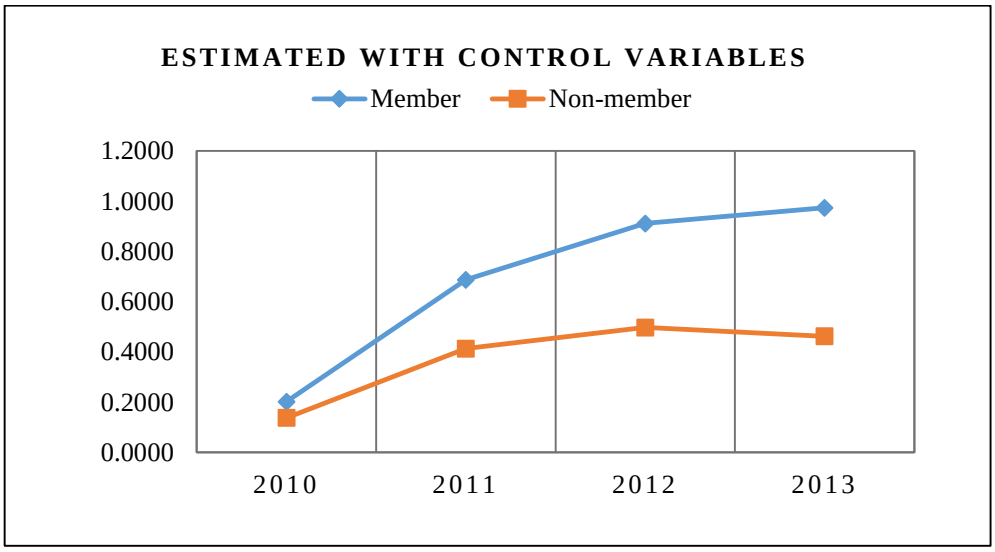
5.4.3. Change in Expenditure of Member and Non-member

Figure 5.6 shows the estimation of change in household yearly expenditure of member and non-member. The estimation is also based on the coefficient estimation of the equation (1) with and without control variables. We estimated that coefficient

with the equation (5) and (6) respectively for the estimation of change in household yearly expenditure of member and non-member over the years.

The results showed that change in household yearly expenditure of member and non-member had a slight change from *t= 2009 to t = 2010*, but in the following years from *t = 2009 to t = 2011*, *t = 2009 to 2012* and *t= 2009 to t = 2013*, change in household yearly expenditure of member and non-member was totally large from those microfinance loans, corresponding to the equation (5) and (6), as also shown in Appendix 3 and 4. However, the change in household yearly expenditure of member was larger than the change in household yearly expenditure of non-member, corresponding to the estimated results of the equation (5) and (6) from those microfinance loans. Change in household yearly expenditure of MF bank borrowers was also larger than change in household yearly expenditure of MFI and VF borrowers over years as shown in Appendix 3 and 4.

In addition, the results of the equation (5) and (6) also indicate that the change in household yearly expenditure of member and non-member estimated without control variable was greater than the estimated change in household yearly expenditure of member and non-member with control variables.



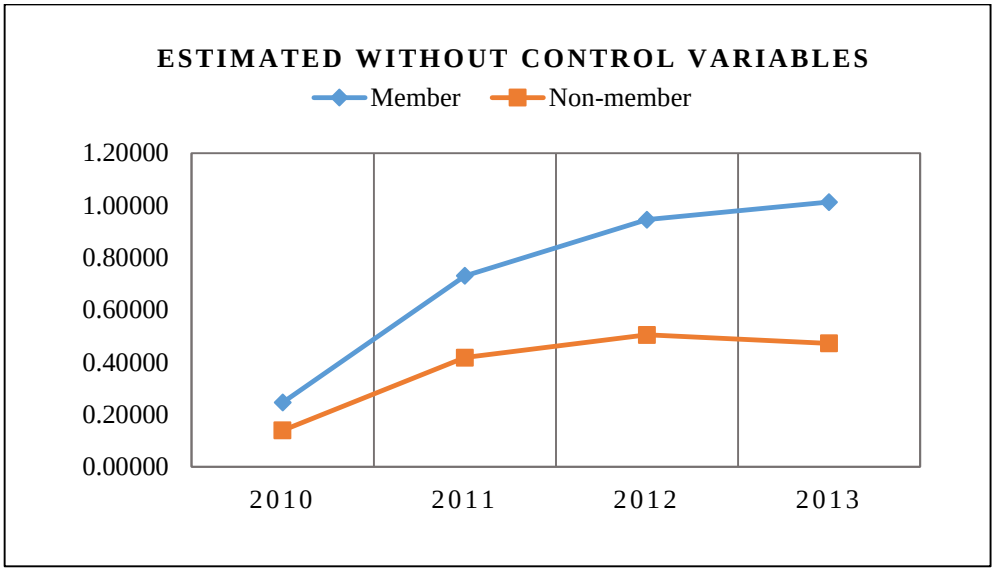


Figure 5.6. Change in Household Yearly Expenditures of Member and Non-member (Source: Field Survey, July-September 2014).

5.5. Conclusion

To conclude, microfinance has many highly positive and significant impact on household yearly income and expenditure, corresponding to the fixed-effect model in the equation (1) with and without control variables. The estimations showed the member dummy variable of microfinance institution were highly positive and significant on household yearly income and expenditure. The time dummy variables and the after having loan dummy variables were also highly positive and significant on household yearly income and expenditure, especially at the time of *t = 2011*, *t = 2012* and *t = 2013*. In addition, many explanatory variables such as household head education level, household size, agricultural land holding, agricultural land size, business ownership, village with a market, road access in two seasons and the distance of village to district center have highly significant impact on household yearly income and expenditure.

The estimations also found that the difference in household yearly incomes and expenditure between member and non-member was totally large, especially at the time of *t = 2010, t = 2011, t = 2012 and t = 2013*. Moreover, the difference in household yearly income and expenditure between member and non-member of MFI loans was larger than the difference in household yearly income and expenditure of MF bank loans and village funds as shown in Appendix 1-4.

The change in household yearly incomes and expenditure between member and non-member was totally large over the years, particularly from *t = 2009 to t= 2010, t = 2009 to t= 2011, t= 2009 to t= 2012, and t = 2009 to t= 2013*. From *t= 2009 to t=*

2010, and *t= 2009 to t= 2011*, the change in household yearly income and expenditure between member and non-member of MFI loans was greater than MF bank and VFs. Interestingly, from *t= 2009 to t= 2012,* and *t= 2009 to t= 2013,* VFs had the largest change as also shown in Appendix 1-4.

The change in household yearly income and expenditure of member and non-member were also totally large over the years, particularly from *t = 2009 to t = 2011, t = 2009 to 2012 and t = 2009 to t = 2013* from those microfinance loans. From those three loans, the change in household yearly income and expenditure of MF bank members was larger than the change in household yearly income and expenditure of MFI and VF borrowers over the years in Appendix 1-4. Significantly, the change in household yearly income and expenditure of member was also totally large and greater than change in household yearly income and expenditure of non-member over the years from those microfinance loans, corresponding to the fixed-effect model in the equation (1) without and with control variables in Appendix 1-4.

However, these empirical results have many essential implications: Firstly, the positive and significant impact that the member dummy variables of microfinance institutions has on household yearly income and expenditure suggest that microfinance institutions significantly contributed to an increase in household income, expenditure, and improved livelihood of borrowers more than obtaining loans from other sources. Secondly, many highly significant impacts of the explanatory variables such as household head education level, household size, agricultural land holding, agricultural land size, business ownership, village with a market, road access in two seasons and

distance of village to district center, on household yearly income and expenditure, suggest that providing good infrastructure such as schools, markets, road access, and capacity-building to remote areas is important to income generation through economic activities, job alternatives, and significantly contributions to poverty reduction in Laos.

Thirdly, the highly positive and significant effect of those microfinances on household yearly income and expenditure, the large difference and change in household yearly income and expenditure between member and non-member, and the large change in household income of member and non-member over the years from those microfinance loans suggests that microfinance programs in Oudomxay, northern province of Lao PDR had significantly increased household income and expenditure of members who obtained microfinance loans. It could be a viable strategy for poverty reduction, and it might reduce poverty in Oudomxay, northern province, Lao PDR. This is also agreed with the framework of the National Growth and Poverty Eradication Strategy (NGPES) (2004) of the Government of Lao PDR that has placed microfinance sectors into one of the top development programs in the agriculture and forestry sectors.

Fourthly, based on the estimated results of difference and changing in household yearly income and expenditure between member and non-member as well as change in household of member and non-member from those three MF loans over the years, this suggests that MFI loans were highly significant for household yearly income and expenditure rather than loans from MF banks and village funds.

Besides, policy should focus on addressing the issues of inadequate fund sources access to rural areas and reach to the poor. It is also recommended for the development of village funds by providing more funds and technical assistances. The microfinance development should consider both growth and sustainability. The microfinance providers should provide explicit information on credit lending, borrowing and money depositing to borrowers, particularly in rural areas. Policy makers and microfinance providers should focus on capacity-building of the beneficiaries and the market creations for microfinance borrowers' products.

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CONCLUSION

Microfinance affects household outcome or poverty through a number of channels. Research studies have revealed that microfinance has a significant effect on income and expenditure, and it contributes to poverty reduction. In this study, the effects on household yearly income and expenditure by member and non-member from each of three microfinance programs, including banks (policy bank and agriculture promotion bank), microfinance institutions, and village funds in Oudomxay, northern province of Lao PDR were estimated by the application of the survey design and the fixed-effect model for the effect estimations of microfinance loans. The estimations also included differences and changes in household yearly income and expenditure between member and non-member, and changes in household yearly income and expenditure of member and non-member from 2009 to 2013, corresponding to that fixed-effect model. In addition, the source of microfinance services was investigated in the process, including whether or not households encountered the problems in sourcing loans, repaying loans, and money saving deposits. The survey sampling included members and non-members in 13 villages that received loans or services from microfinance providers.

This study provides estimates of the impact of microfinance loans which included loans from banks, microfinance institution and village funds on household

yearly income and household yearly expenditure, including differences and changes in household yearly income and expenditure between member and non-member as well as changes in household yearly income and expenditure of member and non-member during the periods within 2009 to 2013 by applying the fixed-effect model estimated with and without control variables. The study also provides an investigation of microfinance services in the process, including whether or not villages encounter in sourcing loans, repaying loans, and accessing saving facilities.

The empirical results showed that microfinance programs have a highly significant and positive effect on member yearly income and expenditure after they had received loans over the years (2009 to 2013). The estimations also found differences and changes in household yearly incomes and expenditure between member and non-member as well as change in household yearly incomes and expenditures of member and non-member were totally large, particularly from *t = 2009 to t = 2010, t = 2009 to t = 2011, t = 2009 to t = 2012, and t = 2009 to t = 2013* due to those microfinance loans. Significantly, the change in household yearly income and expenditure of member was also totally large and greater than the change in household yearly income and expenditure of non-member in each year of from *t = 2009 to t = 2010, t = 2009 to t = 2011, t = 2009 to t = 2012,* and *t = 2009 to t = 2013*, from those microfinance loans. The study also showed that there was a relationship between membership and the household yearly income and expenditure from microfinance institution loans, corresponding to the fixed-effect models with and without control variables. Moreover, many household and village characteristics such

as household head education level, household size, agricultural land holding, agricultural land size, business ownership, village with a market, road access in two seasons and distance of village to district center have highly significant impacts on household yearly income and expenditure.

In addition, the survey results found the main sources of microfinance were from formal microfinance and semi-formal microfinance as these loan sources specially offered loans for agriculture production and had low interest rates compared to other sources, as well as no need of collaterals for borrowing. The study also found that households had encountered in sourcing loans, repaying loans and money saving deposits with microfinance providers. The problems in sourcing loans were the time to obtain a loan (including paper work and loan approval) did not match the time the loan was used; the difficult borrowing procedures and the lenders lack confidence in borrowers, especially poor households. For the problems encountered in replaying loans back as their crops were sold on credit, they also used the loan for other purposes (not for productive purposes) and had a lack of markets for their products. Households also faced these problems when deposited money with microfinance providers - such as having an irregular income - took a long procedures when depositing money, in addition to the unclear money depositing information provided by microfinance providers.

This study also has some limitations. First, the study estimated the effect of microfinance loans for both members and non-member after having received loans from MF providers over the years. It is better to estimate the effect before and after

joining microfinance programs. Second, the time for conducting a survey was limited and we could not conduct a follow-up survey for an effect analysis in order to see the long term effects. Third, the sample sizes are also small; the sample needs to investigate more case studies. Fourth, we could carry out the survey in only 13 villages and it is important to investigate more village studies. Fifth, some households did not cooperate with our survey teams to provide information or full responses to the survey questions.

Therefore, these research findings and empirical results have many significant policy suggestions. Firstly, the positive and significant impact of the member dummy variables of microfinance institutions has on household yearly income and expenditure suggest that microfinance institutions significantly contributed to an increase in household income and expenditure of the members better than other sources of microfinance loans.

Secondly, many highly significant impacts of the explanatory variables such as household head education level, household size, agricultural land holding, agricultural land size, business ownership, village with a market, road access in two seasons and distance of village to district center, on household yearly income and expenditure, suggest that providing good infrastructure (including school, market, road access) and capacity-building to remote areas is important to income generation, job alternative, and significantly contributes to poverty reduction in Laos.

Thirdly, the highly positive and significant effect of those microfinances on household yearly income and expenditure, the large difference and change in

household yearly income and expenditure between member and non-member, and the large difference and change in household yearly income and expenditure of member and non-member over the years (*t= 2009 to t= 2013*), suggests that microfinance programs in Oudomxay, northern province of Lao PDR have improved household status of member in terms of income and expenditure. It could be a viable strategy for poverty reduction, and it might reduce poverty in Oudomxay, northern province, Lao PDR. This agrees with the National Growth and Poverty Eradication Strategy (NGPES) (2004) of the Government of Lao PDR that has placed microfinance sectors into one of the top development programs in the agriculture and forestry sectors.

Fourthly, based on the estimated results of differences and changes in household yearly income and expenditure between member and non-member, and changes in households of member and non-member from those three MF loans over the years, this suggests that MFI loans were highly significant for household yearly income and expenditure rather than loans from MF banks, and village funds.

In addition, policy should focus on addressing the issues of inadequate fund sources access to rural areas and reach to the poor. It is also recommended to develop village funds by providing more funds and technical assistances. The microfinance development should consider the growth and sustainability. The microfinance providers should provide explicit information on credit lending, borrowing and money depositing to borrowers, particularly in rural areas. Policy makers and microfinance providers should focus on capacity-building of the beneficiaries and market creations for microfinance borrowers' products.

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APPENDIXES

Appendix 1. Difference and Change in Household Yearly Incomes without Control Variables

Items	Year	The Total Microfinance Loan	Microfinance Bank Loans	Microfinance Institution Loans	Village Fund Loans
		Without Control Variable	Without Control Variable	Without Control Variable	Without Control Variable
The different in expected incomes between member and non-member	2009	0.1452	0.1443	0.2202	-0.3133
	2010	0.2265	0.2239	0.3354	-0.2009
	2011	0.4458	0.4421	0.5550	0.0184
	2012	0.5567	0.5567	0.6621	0.1313
	2013	0.6732	0.6731	0.7786	0.2480
The change in expected incomes between member and non-member	2009	0.1452	0.1443	0.2202	-0.3133
	2010	0.0813	0.0796	0.1152	0.1124
	2011	0.3006	0.2978	0.3348	0.3317
	2012	0.4115	0.4124	0.4419	0.4446
	2013	0.5280	0.5288	0.5584	0.5613
The change in expected incomes of members	2010	0.2096	0.1932	0.1478	0.1113
	2011	0.6977	0.6803	0.6362	0.5995
	2012	0.8408	0.8271	0.7755	0.7446
	2013	1.0348	1.0210	0.9695	0.9388
The change in in income of non-members	2010	0.1283	0.1136	0.0326	-0.0011
	2011	0.3971	0.3825	0.3014	0.2678
	2012	0.4293	0.4147	0.3336	0.3000
	2013	0.5068	0.4922	0.4111	0.3775

Source: Field Survey, July-September 2014

Appendix 2. Difference and Change in Household Yearly Income with Control variables

Items	Year	The Total Microfinance Loan	Microfinance Bank Loans	Microfinance Institution Loans	Village Fund Loans
		With Control Variable	With Control Variable	With Control Variable	With Control Variable
The different in expected incomes between member and non-member	2009	0.0930	0.0908	0.1727	-0.2228
	2010	0.1325	0.1300	0.2337	-0.1633
	2011	0.3536	0.3504	0.4547	0.0573
	2012	0.4762	0.4751	0.5741	0.1809
	2013	0.5887	0.5877	0.6866	0.2934
The change in expected incomes between member and non-member	2009	0.093	0.0908	0.1727	-0.2228
	2010	0.0395	0.0392	0.0610	0.0595
	2011	0.2606	0.2596	0.2820	0.2801
	2012	0.4215	0.4105	0.3660	0.3403
	2013	0.4957	0.4969	0.5139	0.5162
The change in expected incomes of members	2010	0.1654	0.1540	0.1317	0.1045
	2011	0.6527	0.6407	0.6188	0.5912
	2012	0.8047	0.7948	0.7674	0.7440
	2013	0.9916	0.9817	0.9542	0.9307
The change in in income of non-members	2010	0.1259	0.1148	0.0707	0.0450
	2011	0.3921	0.3811	0.3368	0.3111
	2012	0.4215	0.4105	0.3660	0.3403
	2013	0.4959	0.4848	0.4403	0.4145

Source: Field Survey, July-September 2014

Appendix 3. Difference and Change in Household Yearly Expenditure without Control Variables

Items	Year	The Total Microfinance Loan	Microfinance Bank loans	Microfinance Institution loans	Village fund loans
		Without Control Variable	Without Control Variable	Without Control Variable	Without Control Variable
The different in expected expenditures between member and non-member	2009	0.1355	0.0831	0.3789	-0.3540
	2010	0.2421	0.1997	0.5198	-0.2183
	2011	0.4479	0.4049	0.7262	-0.0124
	2012	0.5762	0.5352	0.8477	0.1181
	2013	0.6761	0.6351	0.9477	0.2181
The change in expected expenditure between member and non-member	2009	0.1355	0.0831	0.3789	-0.354
	2010	0.1066	0.1166	0.1409	0.1357
	2011	0.3124	0.3218	0.3473	0.3416
	2012	0.4407	0.4521	0.4688	0.4721
	2013	0.5406	0.5520	0.5688	0.5721
The change in expected expenditure of members	2010	0.2463	0.2083	0.2030	0.1510
	2011	0.7305	0.6919	0.6878	0.6353
	2012	0.9455	0.9089	0.8960	0.8525
	2013	1.0131	0.9765	0.9637	0.9201
The change in expenditure of non-members	2010	0.1397	0.0917	0.0621	0.0153
	2011	0.4181	0.3701	0.3405	0.2937
	2012	0.5048	0.4568	0.4272	0.3804
	2013	0.4725	0.4245	0.3949	0.3480

Source: Field Survey, July-September 2014

Appendix 4. Difference and Change in Household Yearly Expenditure with Control Variables

Items	Year	The Total Microfinance Loan	Microfinance Bank loans	Microfinance Institution loans	Village fund loans
		With Control Variable	With Control Variable	With Control Variable	With Control Variable
The different in expected expenditures between member and non-member	2009	0.0706	0.0173	0.3427	-0.2662
	2010	0.1351	0.0925	0.4267	-0.1861
	2011	0.3443	0.3014	0.6359	0.0227
	2012	0.4847	0.4423	0.7702	0.1644
	2013	0.5817	0.5393	0.8672	0.2613
The change in expected expenditure between member and non-member	2009	0.0706	0.0173	0.3427	-0.2662
	2010	0.0645	0.0752	0.084	0.0801
	2011	0.2737	0.2841	0.2932	0.2889
	2012	0.4141	0.425	0.4275	0.4306
	2013	0.5111	0.522	0.5245	0.5275
The change in expected expenditure of members	2010	0.202	0.1719	0.1952	0.1505
	2011	0.6873	0.6568	0.6803	0.6352
	2012	0.9119	0.8819	0.8987	0.861
	2013	0.974	0.9439	0.9607	0.9229
The change in expenditure of non-members	2010	0.1375	0.0967	0.1112	0.0704
	2011	0.4136	0.3727	0.3871	0.3463
	2012	0.4978	0.4569	0.4712	0.4304
	2013	0.4629	0.4219	0.4362	0.3954

Source: Field Survey, July-September 2014

Appendix 5. Questionnaires

(The questionnaires will be asked the head of household who are members (beneficiary) of microfinance and non-members (non-beneficiary) of microfinance)

General Information

Province: …… ☐☐

District: …….. ☐☐

Village: …….. ☐☐

*Type of Village: …… ☐☐

(1) *City*; 2) *10 Km and less than 20 km from City Center*, 3) 20 *Km and less than 25 km from City Center* and 4) 25 km and above *Far from City Center).*

Quality Control Record

Enumerator's name	Signature:	Interview Date:
…….	……..	……..
Field Work Supervisor's Name: ……. Signature…….		

I. Household Demography

1.1. Age (last birth):……..(years old)

1.2. Are you a household head?

☐ Yes

☐ No

1.3. Gender:

☐ Male

☐ Female

1.4. Marital Status:

- ☐ Single
- ☐ Separated
- ☐ Married
- ☐ Widowed
- ☐ Divorce

1.5. What is your primary source of income? (Multiple choices)

- ☐ Rice planting
- ☐ Maize planting
- ☐ Livestock
- ☐ Retailing
- ☐ Wholesaling
- ☐ Civil servant

1.6. Do you have other sources of income?

- ☐ Yes
- ☐ No

1.6.1. If yes, please specify:……..

1.7. Does your family member have works and income?

- ☐ Yes
- ☐ No

1.7.1. If yes, how many people:…….

1.7.2. And who?:…….

1.8. Do you know how to read and write?

- ☐ Yes
- ☐ No

1.8.1. What is the highest level of education of household head?

- ☐ Never
- ☐ Primary School
- ☐ Secondary School
- ☐ Vocational school
- ☐ College
- ☐ University
- ☐ PhD degree

1.9. How many people are living regularly in your house, include you (not short time visitors?)

1.9.1. Children under 18:……..…… (Persons)

1.9.2. Adults above 18:……..…….. (Persons)

1.10. Do you have any agricultural lands? (Land for planting rice and other plantations)

- ☐ Yes
- ☐ No

1.10.1. If yes, how many hectares do you have?.....hectares

1.11. Do you have any businesses?

- ☐ Yes
- ☐ No

1.11.1. If yes, what's your business? (Multiple choices)

- ☐ Retailing shop
- ☐ Rubber planting
- ☐ Buying-selling maize

- ☐ Food stand
- ☐ Motorcycle repairing
- ☐ Guest house service

II. Money Borrowing from Microfinance Providers

2.1. When has microfinance started operating in your village in the last five years (since 2009)?.....

2.2. Have you ever borrowed money from microfinance programs?

2.2.1. If Yes, when did you start borrowing?.....

2.2.1.1. And what source(s) do you obtain credit from (microfinance)in order to support your business, production and so on? (One answer or multiple choices)

	a)How much Kip/time	b). How many times do you borrow per years	c). How much interest rate/year?	d) periods of borrowing (month/time)
1) Bank (MF)				
2) MFIs				
3) VDFs				
4) others				

2.3. If No, which made you do not want to borrow money from microfinance? (Multiple)

- ☐ High interest
- ☐ No collaterals
- ☐ Do not want to make debts.
- ☐ Difficult process for obtaining credits

☐ Limited amount of loans

☐ No people working for a family

2.3.1. And have you ever borrowed money from other sources?

☐ Yes

☐ No

2.3.1.1. If yes, please specify your sources of money that you borrowed from (excepted from microfinance)? (Multiple choices)

	a).How much Kip/time?	b). How many times do you borrow per year?	c). How much interest rate/year?	d) periods of borrowing (month/time)
1) Bank (CMBs)				
2) relatives				
4) Money lenders				

2.4. Why did you choose to obtain credit from the above source (2.2.1.1 or 2.3.1.1.)? (Multiple)

☐ No need collaterals

☐ Require funds

☐ Sizes of Loans are adequate for running business

☐ Easy procedures

2.5. Would you consider interest rate from sources above, it is low or high?

☐ Low

☐ High

2.6. How was the period of borrowing, it is suit for you? (One answer)

☐ Suitable

- ☐ Too short
- ☐ Short period
- ☐ Long period

2.7. Are you able to pay interest rate and loan pay back?

- ☐ Yes
- ☐ No

2.7.1. If Yes/No please give reason:……..……..

2.8. If you borrowed money from microfinance, what purposes did you use credit for? (Multiple choices)

- ☐ Agriculture
- ☐ Hospitalize
- ☐ Family consumption
- ☐ Handicrafts
- ☐ Wedding
- ☐ Debt payments
- ☐ Trading
- ☐ Retailing
- ☐ Wholesaling
- ☐ Education

III. Household Income and Expenditure

3.1. Household Income and expenditure

Description	**2009**		**2010**		**2011**	
	Amount in Lao currency	**Period (monthly, yearly)**	**Amount in Lao currency**	**Period (monthly, yearly)**	**Amount in Lao currency**	**Period (monthly, yearly)**
1. Income						
2. Expenditure						
Description	**2012**		**2013**			
	Amount in Lao currency	**Period (monthly, yearly)**	**Amount in Lao currency**	**Period (monthly, yearly)**		
1. Income						
2. Expenditure						

Note: - Household income included income in cash and in kind, such as rice, maize, livestock, fishery, non-timber forest products, handicrafts, retailing, repairing, rice mailing service, construction, vehicle rental, salary, transfer, house and land rental, and household expenditure included Food, rental, transportation (fare, gas), education, hospitalization, household furniture and others.

IV. Problems that Village Encounter in Sourcing Loans and Repaying Loans

4.1. Have you ever failed when obtained loans with MF providers?

- ☐ Yes
- ☐ No

4.1.1. If Yes, How many time have you failed?.....(time)

4.1.1.1. What made you fail to obtain the loans from microfinance? (Multiple choices)

- ☐ No collaterals
- ☐ Irregular income
- ☐ Unclear plan for using the loans
- ☐ Poor and unable to pay the loans back
- ☐ Do not respect the rule of microfinance providers

4.2. What have you ever had any problems for borrowing money from microfinance?

- ☐ Yes
- ☐ No

4.2.1. If Yes, please specify: (Multiple choices)

- ☐ Lack of confidence on borrowers
- ☐ Difficulty procedures
- ☐ High cost for getting loans
- ☐ Take long time to get loans
- ☐ Other, please specify……

4.3. Have you ever had the problems of repaying loans (according to term of credit of lending or lending contact)?

- ☐ Yes
- ☐ No

4.3.1. If yes, what are main problems made you difficulty in replaying loans? (Multiple choices)

- ☐ Sell products on credit and do not get paid on time
- ☐ Use loans for other purpose such as household consumption
- ☐ Lack of market demand for products
- ☐ Other, please specify……..

5. The Problems that Villages Encounter in Saving Deposits

5.1. Have you ever deposited your money in microfinance providers?

- ☐ Yes
- ☐ No

5.1.1. If yes, which the following microfinance do you usually use for saving deposit? (One answer or multiple choices)

- ☐ With commercial banks
- ☐ MFIs
- ☐ VDFs
- ☐ The saving groups

5.1.2. If No, where do you usually deposit your money?

- ☐ Commercial banks
- ☐ Relatives
- ☐ Save at home
- ☐ No money to save

5.2. Have you ever had the problems for saving deposit in microfinance?

- ☐ Yes
- ☐ No

5.2.1. If yes what problems do you usually have? (One answer or multiple choices)

- ☐ Irregular household income
- ☐ Unclear recorded account of microfinance providers
- ☐ Take a long process when deposit money for savings
- ☐ Lack of information about saving deposits
- ☐ The village is far away from saving facilities
- ☐ Having difficulties on saving deposits

Thank you for your cooperation!

Appendix 6. Questionnaires for Interview Chief of Villages

Questionnaire ID: __ __ __

General Information

Province: …… ☐ ☐

District: …….. ☐ ☐

Village: …….. ☐ ☐

Type of Village: ……. ☐ ☐

** 1) *City*; 2) *10 Km and less than 20 km from City Center*, 3) 20 *Km and less than 25 km from City Center* and 4) 25 km and above *Far from City Center*.

Interview Information

Interviewee's Name: ……

Age: …….. years

Gender: ☐ Male ☐ Female

Mobile phone:……

Relation to the village: ……. Email:…….

Interview Date: ____/____/2014 (dd/mm/yy), Time:……

1. When did microfinance enter your village.....(year/month)

2. Does your village have market access?

   ☐ Yes ☐ No

3. Does your village have irrigation?

   ☐ Yes ☐ No

4. Does your village have electricity?

   ☐ Yes ☐ No

5. Does your village have road (routs) access in two seasons?

   ☐ Yes ☐ No

6. Does your village have primary school (5 years study)?

   ☐ Yes ☐ No

7. Does your village have secondary school (4 years study)?

   ☐ Yes ☐ No

8. Does your village have nursery health care?

   ☐ Yes ☐ No

9. Does your village have hospital?

   ☐ Yes ☐ No

10. How far is it from your village to a city? …….km

11. How many household are there in your village?.....household

12. How many people are there in your village?.....people

Other information

1. Average of wage age for rice plantation in your village:…….kip/person/day
2. Average of wage for rice harvest cultivation in your village…….. kip/person/day
3. Average of wage for construction work in your village……..…….. kip/person/day

Thank you for your cooperation!