Micro Finance as used for Community Development

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BY

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DOCTORAL COMMITTEE

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Declaration of Authenticity

I declare that the material presented to Rutherford University is my own work or that I have fully and specifically acknowledged wherever ideas have been adapted from other sources. I understand that if at any time it is shown that I have significantly misrepresented materials presented to Rutherford University, any diploma or credit awarded to me on the basis of that material may be revoked.

Student's signature  Date: February 15, 2005

ABBREVATIONS

ACLEDA : Association of Cambodian Local Economic Development Agencies
ADB : Asian Development Bank
CCB : Cambodia Community Building
CCRD : Credit Committee for Rural Development
CDC : Cambodia Development Council
CEB : Cambodian Entrepreneur Building
CEDAC : Centre d'Etude et Development Agricole Cambodgien
CFD : Agent France Development
CGAP : The Consultative Group to Assist the Poorest
CRS : Catholic Relief Services
DEG : Deutsche Investitions und Entwicklungsgesellscaft mbH
EMT : Ennatien Moulethan Tchonebat
FMO : Netherlands Development Finance Company
GRET : Group de Recherches et d'Echange Technologiques
GTZ : German Development Cooperation
IFAD : International Fund for Agricultural Development
IFC : The International Finance Corporation
ILO : International Labor Organization
IRAM : Institute de Recherche et d'Application des Méthodes de Dévelopment
KWF : German Bank for Reconstruction
MFI : Micro Finance Institution
NBC : National Bank of Cambodia
NGO : Non Governmental Organization
PCA : PRASAC Credit Association
PRASAC : Support Programme for the Agricultural Sector in Cambodia
RDB : Rural Development Bank
RGC : Royal Government of Cambodia
SHG : Self Help Groups
UNDP : United Nations Development Programme
USAID : United States Agent for International Development
VDC : Village Development Committees

CONTENTS

ABSTRACT

The Micro Finance System in Cambodia was established at the beginning of the 1990s with the help of Micro Credit Promoters and external aids. The demand for micro credit in Cambodia is largely untapped and the government has strongly encouraged the development of the sector. After the general elections in 1993, Cambodia has become an internationally recognized government; additional foreign support has been available; and a number of Micro Finance Providers have emerged. Royal Government of Cambodia has given a top priority to its social development programs for poverty alleviation in rural areas in order to develop the living standards of the people of Cambodia. At present, there are more than 100 rural financial operators, including licensed Micro Finance Institutions, registered and non-registered Non Governmental Organizations in which most of them are in small size.

The main objective of the study is to access the effectiveness of Micro Finance Institutions through assessing the impact of credit supplied by Micro Finance Institutions on the standard of living of beneficiaries.

The study has been conducted in two provinces of Cambodia, namely, Kompong Speu and Kompong Chhnang. In Kompong Speu, 83 households received one year loans and in Kompong Chhnang, 51 households received one year loans. All the beneficiaries of one year loans were taken as the treatment group. An equal number of control group members, who did not receive loans from Micro Finance Institutions, were selected from the provinces under study. The control group members were selected by the treatment group members.

The study has used three models such as Multiple Discriminating Analysis, Chi-Square and "t"-test to assess the statistical significance of difference between the development loan members and the control group members with respect to cash flow, expenditure, asset position and income and within the developmental loan members before and after the availing of loan with respect to the cash flow, expenditure, asset position and income in businesses and households.

The data show that there is a statistically significant difference between the development loan members and the control group members with respect to cash flow, income, asset position and expenditure. There is also statistically significant difference in cash flow, income, asset position and expenditure among the development loan members before and after availing the loan.

The study concludes that there was positive impact of loan given by the Micro Finance Institution on the development loan members with respect to cash flow, expenditures, asset position and income in business and households. This shows that the Micro Finance Institution has positively contributed for the improvement in the living standard of the development loan members.

The study recommends the following points for undertaking future studies by the researchers: (1) the study could have provided better results if more number of provinces had been covered; (2) instead of confining to one Micro Finance Institution, better results could have been achieved if more number of Micro Finance Institutions had been included; and (3) the future studies should cover different categories of beneficiaries along with different terms of loan supplied by the Micro Finance Institutions.

CHAPTER 1

INTRODUCTION TO THE STUDY

1.1. Introduction

Cambodia is one of the developing countries in the region, covering a surface of 181,035 Km^2 with a total population of 12 million people, equivalent to 2,188,633 households[1]. Eighty-five percent of the population lives in rural areas where farming, fishing and traditional crafts are their daily business activities.

Cambodian economy has changed from plan economy to free market economy since 1989, when Vietnam withdrew its troops from Cambodia. The Micro Finance System in Cambodia was created with the help of Micro Credit Promoters and international donors at the beginning of the 1990s. The demand for micro credit in Cambodia is largely untapped and the government has strongly encouraged the development of the sector. After the general elections in 1993, Cambodia has become an internationally recognized government; additional foreign support has been available, and a number of Micro Finance Providers have emerged. The number of (national and international) organizations providing micro credit has increased yearly ever since.

The Royal Government of Cambodia (RGC) clearly recognizes that providing small loans or savings (micro credit or saving) to poor citizens is a vital mechanism to the development of rural areas (community development). In this connection, rural credit services have been provided actively and directly to poor citizens throughout the country. Although this is a new sector (industry) for Cambodia, the process is being improved and is growing quickly with the active support of the Royal Government of Cambodia.

This research has conducted the investigation of the recipients of the study of a non-profit organization transfer to a profit private company (Micro Finance Institution).

1.2. Background

The Royal Government of Cambodia has given a top priority to its social development programs for poverty alleviation in rural areas in order to develop living standards of Cambodian people. As a result, the number of people classified as poor was reduced from 39% of the total population in 1993 to 36% in 1999[2].

The Micro Finance System in Cambodia was established at the beginning of the 1990s with the help of Micro Credit Promoters and external aids. The demand for micro credit in Cambodia is largely untapped and the government strongly encourages the development of the sector. In 1991, micro credit was mainly extended by GRET (Group de Recherches et d'Echanges Technologiques), for the purpose to provide micro credit to the poor rural population in Cambodia. After the general elections in 1993, Cambodia has had an internationally recognized government; consequently, additional foreign supports have been available, and a number of Micro Finance Providers have emerged. The number of (national and international) organizations providing micro credit exceeded 30 in 1994[3]. In the present, there are more than 100 rural financial operators, including licensed Micro Finance Institutions, registered and non-registered Non Governmental Organizations in which most of them are in small size. Until March 2003, there have been more than 30 registered Non Governmental Organizations, 4 Micro Finance Institutions and 5 specialized banks[4]. The loan portfolios of specialized banks and MFIs and registered Non Governmental Organizations (Non Governmental Organizations registered with National Bank of Cambodia) amounting to US$ 56 million have been

provided to 313,500 households, equal to 17.24 of the totally households in Cambodia. Also, the Micro Finance Institutions have mobilized savings the amounts of US$ 9 million[5].

Micro Finance Operations (it included Non Governmental Organizations & Micro Finance Institutions) are countrywide, spanning across all the 24 provinces. The biggest Specialized Bank is ACLEDA, providing 58 percent of the total loans outstanding up to December 2002 and presently operational in 14 provinces[6]. A new national institution, the Rural Development Bank, was established to promote micro finance in early 1998. It has assigned a task of coordinating finance and refinancing all Micro Finance Institutions, Specialized Banks and Commercial Banks, which have the intention to support rural economic activities. Parallel to this, the National Bank of Cambodia has enacted a Law on Banking and Institutions, to govern and license Micro Finance Institutions. This law has been created to provide opportunities to National and International Financial Organizations and Micro Credit Providers, to undertake micro finance activities as well as to link micro finance activities to the formal banking system. Despite this systematic and coordinated effort, the credit needs of the rural poor are not being met. There is a shortage of up to US $ 120 million in credit available to this sector[7]. The needs of the rural poor can only be addressed if either the present institutions are able to access additional finance, or new institutions begin to provide micro credit. Ennatien Moulethan Tchonnebat (EMT), now the largest Micro Finance Institution in the country by the number of customers, was established in 1991 as a GRET project in order to provide micro credit to the poor rural population in Cambodia. Since July 2000, Ennatien Moulethan Tchonnebat (EMT) has been registered as a private limited company with a

share capital of KHR 330 millions. In November, it (EMT) submitted a request to the National Bank of Cambodia to obtain a license of Micro Finance Institution[8].

1.3. Justification of the Study

This study has been conducted to show an experience from transformation ways of the existing Micro Finance Institutions to other Non-Governmental Organizations. It also wanted to emphasize a change of loan recipients from transformation Non-Governmental Organization to Micro Finance Institution, such as improving the living standard of the recipients, reducing the interest rate from money lenders (informal loan) in the same area as Micro Finance Institution operation, increasing their loan ceiling more than Non-Governmental Organization and sustainable loan from Micro Finance Institution to the recipients. It has been kept as an approach for other Non-Governmental Organizations or Projects. Therefore, I have researched on institutionalization, created models and shared my experience to other Non-Governmental Organizations and Projects in Cambodia and provided some knowledge from my research to students or researchers for their researches. Furthermore, the study has focused on access to the role of Micro Finance Institutions in promoting rural development in general and in strengthening the rural credit system in particular; on access to the impact of credit supplied by Micro Finance Institutions on the living standard of beneficiaries; and on examining the role of Micro Finance Institutions in reducing the rural poverty in general and beneficiaries in particular.

1.4. Methodology

The major research objective was to identify the benefits of the recipients of money, provided from the transformation to Micro Finance Institution, such as improving

living standard, reducing cost of fund from informal lenders, sustaining loan to recipients and increasing loan ceiling. The research has been conducted within limited duration and the scenario of conducting the method of this study could be divided into three sections.

1. Review Term of References:

Phase one of the research was involved in gaining a broad overview of Micro Finance Institutions, Non-Governmental Organization and other related Organizations, which involved micro finance to rural people by collecting and reviewing the available literatures from Government Regulators, Micro Finance Institutions, Non-Governmental Organizations and other scholars.

2. Field Visit:

The overall transferring approach from Non-Governmental Organization to Micro Finance Institutions of most Micro Finance Institutions was very familiar. In phase two we have visited one Micro Finance Institution. The primary focus of attention was on the key staff of a Micro Finance Institution in Cambodia, involving in institutionalization of the organization. The research was also determined on the secondary data from the publicity inside Cambodia from Micro Finance Institutions, organizations, government or other researchers about Cambodian Micro Finance. The objective in this phase was to find the secondary research from these Micro Finance Institutions.

List of Micro Finance Institutions:

1. EMT, Address: # 72-74 St. 598, Toul kork, Phnom Penh, Cambodia
2. ACLEDA, Address: # 28, Mao Tse Tung, Beung Trobek, Chamcar Mon, Phnom Penh, Cambodia
3. Hathakaksekar, Address: Peal Gnek Village, Phteah Prey Commune, Sampov

Meas District, Pusat, Cambodia

4. CEB, # 21, St. 105, Beung Prolit, Phnom Penh, Cambodia

3. Survey:

The survey for the study lasted for two months in 2004 in Kompong Speu province and Kompong Chhnang province of Kingdom of Cambodia. During the study of this research we conducted some interviews with the recipients and non-recipients. In addition, we were determined to do some individual client interviews with 268 families who were or were not the clients of Micro Finance Institution.

1.5. Statement of Problem

Today, in Cambodia, there are more than 70 Non-Governmental Organizations which provide micro credit to rural people. Only a few Non-Governmental Organizations have been transferred to Micro Finance Institutions. Most of them do not know about the advantages of transformation into Micro Finance Institutions and they still depend on donors, with limited duration for a grant. If the project is finished, so the organizations have no operational activities and their clients can't get loan from them. Furthermore, Micro Finance Operator can't get the commercial loan from foreign banks or local banks because the banks need guaranty from the shareholders and their legal entity is a Non Profit Organization and there are no shareholders. In this problem their activities are still very limited, and the sector will not develop for long, so it will not improve the living standard of the rural people, create new businesses, increase more and more loan ceiling to recipients for long, and reduce cost of fund from informal lenders for long and provide loans to the clients for ever.

1.6. Statement of the Purpose and Objectives

The transferring of Non-Governmental Organizations to Micro Finance Institutions is the new way in Cambodia. National Bank of Cambodia is supported by Asian Development Bank and Agent France Development, creating a lot of regulations in order to promote regulation framework for Micro Finance Institutions. Reducing poverty is overachieving the development objective of the Royal Government of Cambodia. Its main poverty reduction strategy is geared towards achieving long term sustainable for economic growth, more equitable distribution of the fruits of economic growth and ensuring sustainable management[9]. To support this sector, it has tried to find a lot of sources of fund from Asian Development Bank, IFAD and others through the Rural Development Bank.

NOTES:

1. Son Koun Thor, Rural credit in Cambodia, 2001, Page 1
2. Son Koun Thor, Rural credit in Cambodia, 2001, Page 1
3. Kang Chandarot, Cambodia Development Review, Volume 6, Issue3, 2002, page 1-4
4. National Bank of Cambodia, Magazine for trimester 3 year 2003,Number 5, 2003, Page 54
5. EMT, Network Information, 2003, page 1
6. ACLEDA, Annual report ACLEDA 2002, 2002, Page 5
7. Kang Chandarot, Cambodia Development Review, Volume 6, Issue3, 2002, page 1-4
8. EMT, Annual report EMT 2001, 2001, Page 3
9. UNDP, United Nations Millennium Development Goal Cambodia 2001, 2001, Page 8

CHAPTER 2

LITERATURE REVIEW

In 1990, the country was partially in peace. The demand for credit from that time has really increased. New people have become much more positive and hopeful in their future and consumer demands have increased. For example, before 1990 sellers could sell only 5 chickens a day, but now they can sell up to 20 chickens a day. This showed that people wanted large amount of loan to expand their businesses. Now, for the first time, they have really started planning for their future and there is a very positive outlook; such feelings of optimism breed success and increase demands for our microfinance services. Many NGOs and international organizations operated their activities in the 1990s, although there was no legal framework for microfinance until 2000. This did not hamper the growth of such semi-formal microfinance. As a result, the 1990s showed some key developments in terms of the legal and political environment microfinance[1]. A major milestone for the development of the micro-finance sector in Cambodia was planted in January 2000 with the law (Prakas) on the establishment of Micro-Finance Institutions (MFIs)[2]. The new law allows formal MFIs to be established as private companies with a minimum capital of only US$ 65,000. With this legislation Cambodia has moved to the forefront of progressive micro-finance regulation in Asia[3].

2.1. Micro-finance

Micro-finance has been widely used in a development context in the third-world nations and less developed countries to help the poor improve their standards of living. Different researchers have defined it differently. However, Cambodian Prakas on

Registration and Licensing of Micro Finance Institution (2000), states, "Micro-finance is the delivery of financial services such as loans and deposits to the poor and low-income households and micro-enterprises"[4]. Its delivery has evolved as an economic development approach intended to benefit low-income women and men[5]. In addition, it also refers to small-scale financial services for both credits and deposits, which are provided to people who farm or fish or herd; who operate small or micro-enterprises where goods are produced, recycled, repaired, or traded; who provide services; who work for wages or commissions; and who make incomes from renting out a small amount of land, vehicles, animals or machinery and tools, in both rural and urban areas[6].

Aquiqunnessa (2000) stated that micro-credit in terms of loan size varied from organization to organization, so it had no agreed definition[7]. Micro financing has been an effective tool to do with the persistence of rural poverty and concomitant unemployment, which has been a major concern in alleviating poverty[8]. In addition, CGAP (2002) stated micro-finance meant providing poor individual and households with small loans (microcredit) that were repaid within a short period of time in order to help them engage in productive activities or grow their tiny businesses[9].

Capital is not the only factor that allows the growth or creation of enterprises, but it is also vital as without it, creativity, drive, and innovation cannot be transformed into material actions[10].

Microfinance refers to the provision of financial services which include credit, saving and other assistance to support self-employment of the poor. Microfinance is distinguished from micro credit in a sense that microfinance refers to the provision of full financial services included but not limited to the provision of micro credit[11]. Micro-

enterprises are enterprises performed by family members and some hired labor. Income generated is used for family consumption and reinvestment[12].

Transformation lending is designed to bridge the gap between informal sector and micro-enterprise lending programs and formal banking sectors[13]. Wholesale lending is defined as providing loans to institutions that lend or retail funds to end-borrowers. The core business of the RDB is wholesale lending by providing credit funds to program partners for significantly increasing outreach to target clientele and contribute to effort of national government in alleviation poverty[14].

Wholesale Lending refers to the process of lending of RDB providing to MFIs that retail funds directly to end-borrowers or on-lends funds to other MFIs that retail funds directly to end-borrowers[15]. Micro-finance Institutions (MFIs) refer to institutions engaging in the delivery of micro-finance services. They generally refer to the retailers of micro-credit or those directly dealing with end borrowers[16]. Wholesale lending is defined as providing loans to institutions on lend or retail funds to end-borrowers. The core business of the rural development bank is wholesale lending, providing credit funds to program partners in order to significantly increase the outreach to target clientele and contribute to efforts of the national government in alleviating poverty [17]. Moreover, microfinance vision is a viable and sustainable private micro-financial market, with the government providing a supportive and appropriate institutional framework to the market[18].

2.2. The Needs of Microfinance and Transformation

The micro-finance sector has developed since the early 1990s, driven by donors funding credit operations. Certain organizations such as ACLEDA, EMT, and Hattha

Kaksekar have already successfully transformed and obtained licenses as specialized banks or MFIs respectively[19]. The transformation process has posed a major challenge for most NGOs in terms of upgrading organizations, systems and human resources. It required the MFIs to develop a consistent corporate strategy and business plan. The transformation has also opened new opportunities as transformed and licensed MFIs were permitted to offer deposit facilities and mobilize public savings[20]. The institutionalization of a decentralized finance scheme has officially been given by an institution, i.e. a structure or form, through the operation of laws or regulations[21]. Jean-Pierre stated that institutionalization is the assumption of responsibility for schemes by local nationals[22]. In many cases, external support keeps them in a situation of dependency. This requires official recognition, which starts with the adoption of legal constitution and continues through accommodation under banking regulation by various relevant state authorities. Furthermore, by the end of the project both the government and donors decided on the final allocation of grant funds to micro finance institutions[23].

Organizations clearly recognize the untapped potential initiative and desire of Cambodians having poor equipment and opportunities. The poor can and will improve their lives with conviction by the foundation of organization's mission which empowers the poor entrepreneurship to help themselves through financial services including Credit and Saving program[24]. Therefore, the goal of a microfinance project is to create incomes and employment in poor communities through the development of local micro-enterprises and, in the process, to increase the financial well-being of borrowers, their families, and the community at large[25].

To reduce costs in order to become sustainable and improve outreach, microfinance institutions have been innovative. However, the new development of finance postulates that the success of microfinance programs is judged by their ability to reach the unbankable sustainability. The success in the outreach area is examined for the breadth, depth, quality, length, cost and variety of products. Moreover, the quantitative dimension of outreach can be measured by the number of clients, average loan size, percentage of loans to clientele below the poverty line, percentage of female clients, length and cost of the services. Quality of outreach can be assessed by the range of products offered to the poor, the level of transaction costs levied on them, and the extent of client satisfaction[26].

Policy makers need some evidence as to whether or not clients are receiving direct measurable benefits from microfinance. In addition, considering the large number of dropouts reported by some MFIs and opportunities to redesign MFI products to better meet the clients' demands and the issue of impact on clients is increasingly important[27]. The law has set off a transformation of financial NGOs into formal and regulated financial institutions. An organization, ACLEDA, was the first to obtain the license in October 2000 as a specialized bank and is not under the MFI law. It is able to attract a group of foreign investors including the IFC, DEG of Germany, FMO from the Netherlands, etc. to become shareholders. Hattha Kaksekar received the license as an MFI in October 2001, second after EMT, and CCB has been preparing for the transformation and expecting the formal licensing by 2003 at the latest[28].

The Asian Development Bank has attempted to determine existing and future demands for micro credit. They have estimated on studies of two operators – GRET and

ACLEDA – as well as on international norms. This exercise, however, is very hazardous, and due to their estimates it varies from 91 to 162 million dollars and the supply today falls well short of demand. Today the demand for micro credit is far from being met, and the expansion strategies of micro finance operators are still very free of constraints related to competition in the scale of the demand[29].

Credit demands have been separated into group-guaranteed micro business loans and individual small business loans, and about 300,000 households (almost 20 percent of the total number in the 11 provinces) have been identified as having for micro businesses on an average loan outstanding of $60, which suggested a credit demand of $18 million. Comparing to more recent information and data from other credit providers indicates that there is considerable variation in the average size of outstanding loans ranging from $33-86 using these as upper and lower limits credit demand in the range of $10-26 millions[30].

The demand for bigger size of loans came from the present clients who wanted bigger size of loans in the next cycle and also from those who are still potential clients. There was a widespread demand for an increase in size of the loan on the part of the borrowers in provinces [31].

Currently there appeared to be an impression that the demand for micro-finance was higher than the supply. A recent study by Uniconsult [32] estimated that in June 1998 the demand for rural credit was in the range of $75-125 million which left a gap of approximately $50-100 million between the demand and informal/semi-formal/formal sources of supply [33].

Development finance was not particularly concerned about the poor target groups. On the contrary, the main trust was to transfer capital to developing countries in order to fulfill what was assumed to be a structural gap in capital formation [34].

2.3. Government Policy

Developing countries have promulgated certain laws to encourage investments in provincial and rural development. It has led to making incentives available to encourage rural development [35]. The laws state that the Prakas classifies banks and microfinance into three different groups: (1) persons who own 5% or less are not required to register with or be approved by the National Bank of Cambodia and have no personal liabilities; (2) persons holding 20% or more are automatically presumed to have majority or effective shareholding and thus personal liabilities. However, the third group, in gray area between 5% and 20%, in which a stockholder is not automatically presumed to be a majority or effective stockholder may be found to be one by the National Bank depending on other facts and circumstances [36].

The National Poverty Reduction Strategy of Cambodia was launched in March 2003 by Prime Minister Hun Sen, following the involvement of all ministries and stakeholders[37]. The idea really is to get people themselves to think about what poverty reduction means and what they can do towards getting out of poverty.

With regard to this law, Mark Pierce stated, "Good governance is important when applied for formal microfinance institutions because the issues may result in potential transfer pricing and transparency. Both non-government and government should transform themselves into commercial forms in order to enhance governance and ownership" [38]. In addition, Hun Sen addressed, in his speech in 1998's conference, that

the Royal Government of Cambodia supported the expansion of rural credit and saving through cooperating with the licensed microfinance institutions and commercial banks. He further indicated that improving rural development banks was the key to provide refinancing to microfinance operators in order for them to provide long-term loans to rural people with sustainability. By strengthening microfinance institutions, the government would create financial laws and regulations through the National Bank. Furthermore, the government would monitor and evaluate the credit activity of microfinance operators and encourage them to become microfinance institutions.

Hun Sen, in his speech in 1999, addressed that the government has actively participated and continued to ensure every program related to food security and nutrition and to establish an effective system of micro credit in order to provide credit to farmers and to alleviate poverty at rural level. In respond to the case, the government established the Credit Committee for Rural Development in the purpose of formulating strategies to improve the efficiency of rural credit and to support the institutional strengthening and promoting private sectors [39]. The National Bank has a role to coordinate these by making a system for microfinance operators to transform into microfinance institutions, recognized and licensed by the National Bank of Cambodia [40]. Therefore, fund can be preceded from the rural development banks, commercial banks, or local financial institutions and international finance institutions.

Son stated that the institutionalization is necessary at this time because local credit sources are important by not depending on outside sources for fund any more [41]. The government has established rural development banks, under the supervision of techniques from the sponsored partners such as ADB and the party involved such as Ministry of

Economics and Finance. Its purpose is to improve the development of rural agro-economic activities [42].

In order to have a good new industry of microfinance, the government has tried to issue a lot of policies through several authorities. Having a legal framework for sound supervision and regulation on microfinance and the role of Credit Committee for Rural Development is very important for microfinance development [43]. With regard to this, loans from Asian Development Bank to the Government are the project consisting of a subsidiary loan to Rural Development Banks for financing licensed Micro Finance Institutions and are supervised by the National Bank. The government has established a Project Coordination Committee whose members are from the Ministry of Economy and Finance, Ministry of Rural Development, Ministry of Agriculture, Forest and Fisheries, National Bank, Rural Development Bank, and Licensed Micro Finance Institutions, in order to coordinate the support for project activities, based on Loan number 1741-CAM(SF) [44].

Phan Ho stated a new law on banking and financial institutions has been promulgated in and the law would provide a legal framework for organizations and operations of all types of banking sector, including microfinance institutions. The supervisor of microfinance requires the same commercial bank such as their capital adequacy ratio and minimum reserve for microfinance institutions[45].

With the advice from its partner the National Bank has been issuing new regulations, circulations or announcements to monitor and gain more control of the finance sector [46]. All organizations giving credit must register with the government and all organizations over a certain size must become licensed. Moreover, to promote

microfinance institutions the Bank has issued regulations on capital guarantee that shall be permanently deposited with certainty. For example, 10 percent is for a commercial bank and specialized bank and 5 percent for microfinance institutions [47]. It has further indicated that the National Bank requires commercial and specialized banks and microfinance institutions to deposit certain amounts.

Planet Finace concluded that having established a framework for sound supervision and regulation is crucial to address the development of human resources, saving mobilization and unmet supply to enhance sustainability of microfinance businesses[48]. Microfinance sector is one of the important tools of the government in promoting economic growth and poverty alleviation in rural areas[49]. With strong support from the government, its partners is now providing an opportunity to microfinance institutions licensed by the National Bank. The government has normally provided fund with certain through an assigned Ministry; the amount of fund has been supported by its partners. According to the meeting of the project coordinator in 2001, it addressed the rural development bank is the source that borrowers can access to borrow a certain amount in US dollars. With respect to single borrower exposure limit applied to rural bank, the National Bank considers the long-term loans from the government as subordinated debt [50]. The National Bank issued the PRAKAS requiring microfinance operators to obtain either a license or registration [51]. The registration and licensing are determined according to the level of loan portfolio outstanding, saving mobilized, number of clients and geographic coverage. A license allows a microfinance institution to conduct credit activities and accept saving from the publics [52].

Recognizing the association is one scenario to promote the establishment of a sound banking structure in the country, in cooperation and consultation with the National Bank [53]. In addition, the National Bank has tried to push microfinance by determining that licensing is compulsory conditions by limiting loan outstanding amount, number of borrowers, saving amounts, and number of depositors [54]. Moreover, the government policy is to support the expansion of rural credit and saving services by encouraging the entry of privately licensed microfinance institutions and commercial banks into the sector [55]. Regarding to this, the government has established the interbank market to help assist the National Bank in undertaking policy reforms. Additionally, it has also established a banking and financial service in order to steer the restructuring process of the banking sector[56].

Chor recorded that to speed up licensing to microfinance institutions, expanding outreach and getting loan from rural development bank is the task of the Project Coordination Committee that makes suggestion to the National Bank of Cambodia[57]. With regard to this, the National Bank has provided licenses to two microfinance institutions – Theaneakea Phum and Enterprise Building – and issued regulations to three microfinance operators. These regulations focus on monitoring the microfinance institutions in order for them to implement that can lead to sustainability [58].

Hun Sen has addressed the poverty reduction strategy which primarily focuses on improving rural roads, primary health care, sanitation, rural water supply, education, rural credit, community development, household family system, provisions of seeds, fertilizer, rice bank, micro-enterprises and information at the village level[59]. With regard to this, some licensed microfinance institutions are now able to provide their credit services to

the poor. For example, EMT is currently driving its credit service activities with six provincial branches in ten operating provinces and towns [60]. However, providing credit services to the poor is still at risk. Mark said non-governmental organizations take greater risk in trying to reach the poor and other marginalized groups; the organizations play a critical role in poverty reduction and the development of rural economy[61]. In addition, credit services also play an important role in creating, supporting and expanding businesses as well as increasing productivity which generates income and raising living standard and reducing poverty [62].

Non-governmental organizations take risks to reach the poor, though, they play an important role in providing credit to the rural people [63]. This credit can generate family incomes, improve living standard, and reduce poverty.

Microfinance now is an emerging market in the country. It plays a very important role to develop and expand financial services in rural areas and participate actively in poverty reduction [64]. It is a whole support to the development program on microfinance that is apart unabsentable in attending to poverty alleviation of rural people. The development of microfinance institutions is to cut the restricted access, one of main obstacles, to financial services in order to improve the living standard [65]. The success of microfinance institutions is its micro loan to the poor [66]. With regard to this, the International Labor Organization stated, "The program of financial and non-financial services for micro and small enterprises aims at contributing to the country's long-term economic development and raising living standard with a direct impact on services provided to rural people, resulting in income and employment." This is how credit is used by organizations[67]. It is also the important mechanism for rural development whose role

is to create and diversify employment as well as to enhance productivity and generate incomes so that the standard of living of the people is improved [68].

Rural Development Bank is a source for providing credit to financial sectors. It has a clear mandate from the government to act as a wholesale bank [69]. Relating to this, the government has worked very hard to develop and promote policies related to rural credit [70]. The new microfinance legislation passed in 2000 requires all credit providers to register with the National Bank. It provides an opportunity for selected microfinance institutions to obtain licenses as fledged MFIs with minimum capital [71]. The government also leaves the operators free set their interest rates. Furthermore, the demand of rural zones is high and there is no real downward pressure on the rates [72]. Moreover, the policy of the National Bank of Cambodia has been a support, in line with its concerns and responsibilities for preserving the integrity of the financial system, promoting public confidence in the financial system, protecting deposits, preventing fraud, and encouraging best management practices [73].

To ensure a healthy microfinance environment, the government, along with the NBC has set up a policy that urges all credit operators to register and subsequently to obtain a license [74]. However, various financial safety arrangements are often provided by the government with the public purpose of promoting economic growth and financial stability [75]. While economies adopt deposit insurance for various reasons, a common objective seems to increase lending banks by boosting public confidence in the banking system and more savings are mobilized from households [76].

The indicator of success for immediate output has to be adopted by the government policy enabling financial viable and sustainable credit and saving institutions

to develop [77]. The government has also undertaken financial sector reforms with the aim of developing a sound financial system, which is an important factor for stimulating economic growth [78]. It has adopted the rural credit policy to develop an effective rural financial system, and has initiated the rural credit and savings program and technical assistant for capacity building for rural financial services [79]. In addition, NBC has continued to strengthen microfinance institutions with special emphasis on provision of rural credit [80]. Its regulations have pushed some microfinance NGOs to transform themselves into licensed microfinance institutions [81]. The mandate on a general guideline in the field of rural credit has been developed by CCRD in order to offer with legal frameworks (credit associations, laws in the rates, articles of association for the rural financial institutions), and to make sure the law is properly applied [82].

With support from the Village Development Committee, villagers have been encouraged to form guarantor groups of 5 to 10 household representatives. Each group has to select a group leader. Each member has to leave a group at least seven weeks to demonstrate saving capacity and related organizational skills as a pro-condition for establishing a co-operative bank [83]. The authorities interested in the micro finance sector have been growing steadily since 1995. Today micro finance, the government priority, the National Bank of Cambodia and the Ministry of Economy and Finance are watching the process of institutionalization of micro finance institutions very closely. Between 1994 and 1996 the Decentralized Rural Credit Committee helped to bring operators and the authorities closer together and to allow the latter to better understand the concrete problem facing decentralized financial systems. This jointly run organization, having ceased to exist the National Bank of Cambodia, assumed the responsibility for

supervising this sector through its Bureau for the Supervision of Decentralized Bank Systems set up in 1997 within the Department of Banking Supervision. Since 1998 this Bureau has actively helped to introduce regulations specific to micro finance institutions [84].

The establishment of VDCs is to have effect on functioning community-based organizations, specifically to identify priorities and plan to an acceptable standard. The development need of their fellow villagers is of the highest importance on Cambodia. The VDCs serve to meet this challenge and as grass-roots representation for bottom-up planning and local community support mobilization. They are highly relevant to the project objective for poverty alleviation among the poorer rural households [85].

MFI products are primarily loans as non-registered MFIs are not permitted to take deposits. Most MFIs have started with solidarity group loans, enabling them to reach people who would have no collateral to access a loan. A more recent response to the demand as well as the need to work towards sustainability due to donor and microfinance providers such as Concern and CRS has compulsory saving which is kept in a village bank and re-loaned to community members as emergency loans [86]. The government supports the expansion of rural credit services by encouraging the entry of private licensed micro finance institutions, specialized and commercial banks and by strengthening the role of RDB as a wholesaler. RDB has provided long term funding to encourage institutions to expand and to make long-term loans which are necessary to finance the capital investments of the rural population [87].

The projects of ADB and IFAD have provided the soft loans to the rural development banks through Royal Government of Cambodia in order to implement rural

microfinance component under its project to increase food and income security for people in the area [88].

2.4. Improvement of living standard

Improving standard of living of rural people is not an easy task. It requires efforts and challenges from all sources involved. Pascal stated, "The way in which credit-generated income is used is probably impossible to dissociate from the way in which income as a whole is used and the profit achieved represents an adequate accumulation of money at the end of the loan cycle." [89] A village without credit has lower levels of income and assets than the average for the villages with credit. Non-clients and former clients have lower income than clients. A majority claim turned has out a profit [90].

Yin Chheng Sorn stated that the micro-finance plays an increasingly major role in providing capital for farmers and potential businesses, or for people to organize businesses, so it should be developed based on high efficiency and sustainability[91]. Similarly, the rural credit plays an important role in creating, supporting and expanding businesses as well as in increasing productivity, which generates income and raises living standards [92].

Based on the impact study, it shows that the average monthly revenue of small business clients is more than monthly expenses and it generates average monthly profits. A great significant percentage of interviewees expressing their living conditions have improved since they obtained loans [93]. The improvement can lead to access to education, family health, and housing and saving. Keo indicated, "The enhancement of income generation through specialized banks such as ACLEDA, has brought more effectiveness

to businesses. Its client figures increase from year to year. The loan helps increase the rural people's living standards." [94]

The rural credit and microfinance constitute an important ingredient in the process of enhancing productive activities and productivity. Any access to capital allows people to take an advantage of and enhance economic opportunities. However, there are various credit services that are needed, such as consumption loans, farm production loans, non-farm production loans, etc. [95]. But the approach to these or promoting sustainable financial services for the poor is one that attempts to take a long-term programmatic view towards the development of a viable financial sector [96]. With regard to this, ACLEDA annual report stated, "The expansion of rural financial intermediation is, therefore, necessary for contributing to the development of rural economy and thereafter to poverty reduction in the country." [97] This has supported the businesses in rural areas and made a significant contribution to the well-being of the society as a whole and especially the poor in the rural areas [98].

The government considers the rural financial sector as sole important mechanism to reduce poverty and to develop the economy because the rural financial sector plays its role to increase and expand businesses and productivity in generating incomes for upgrading people's living standards [99]. Some organizations have developed a clear mission in order to help improve living standards of the rural poor and to create a sustainable access to financial services for rural communities and micro-enterprises [100]. They have also established clear objectives by providing financial services to help the poor communities to build up their capacity, to help them through the provision of credit and saving services, and to assist the alleviation of rural poverty and raise living

standards for the rural population [101]. The NBC recognizes the important contribution of rural finance to the national finance system and has adopted a series of measures to ensure its order development [102].

Referring to the above mention, Church World Service stated, "The availability of a cheaper source of capital makes villagers less vulnerable to the money lenders when they need to buy rice or medicine during emergencies[103]. The interest rates offered by the SHG are much lower, and there is no pressure on the family to put up collateral." People really need money for developing their living standards and the infrastructure in their villages. Most of them indicated that business activities such as rice crop production, animal raising, fishing, bed-making, and buying fertilizer were critically important [104].

Moreover, the institution is really an impact that is expected to produce in the level of income of the individuals that is served by the institution, as well as in the level of income of the communities where the program is present. Successful supports of the villagers would probably be required to support small solidarity loans [105]. However, the lack of fund for purchasing instruments and work cattle for agricultural production or for creating, extending, and improving businesses has been a major reason of low incomes gained by the people [106]. It further indicated that credit activities bring benefits such as income generation of farmers and rural people, labor generation for rural people in the area, preventing an outflow of people from villages to the city for jobs, and improving family economy.

As a result, the borrowers stated they have benefited from the institutions and their living standards have improved and paid jobs have been created [107]. Credit is used approximately as much for cash flow purposes as for small investments and it is very

clear that it is the poor who use credit as a way of managing their cash flow situation and borrowers continue to find credit of sufficient benefit, highlighting a genuine economic dynamism [108]. However, the credit cycle opening and closing dates are actually chosen jointly by all members of the village association in order to possibly match with the needs of a greater number. The interest rates are a favor subject to be discussed by clients to determine their level of satisfaction [109].

Some borrowers who face capital constraints and have good investment alternatives may be able to make a profitable use of loans and pay high interests to cover MFI costs. It is likely that there are other clients who have received benefits from some family consumption and avoided assets sales and informal loans in times of distress, but these impacts might have been too suitable to be easily detected in a quantitative assessment [110].

The main important thing is that it requires policies and programs that foster the participation of the poor in processes of economic growth by creating employment opportunities, by increasing the access of the poor to income generating assets, by raising productivities of their assets, both physical and human, and by allowing them to manage risks better [111]. He further indicated that there is an increasing body of evidence confirming that economic growth and reductions in poverty go hand in hand. Clearly, a substantial improvement in living standards requires economic growth. Furthermore, securing full participation of the poor in such process in a long term effort involves improving their employability, expanding the education opportunities for children, improving performance of labor market and creating a hospital environment of their productive activities and much more [112].

Operations of moneylenders are also useful to improve the standard of living of the poor even if it is frequently more cost-effective than those of specialized farm-credit institutions, cooperatives and commercial banks that the government uses to supplant moneylenders. The emerging perspective is that informal financial arrangements are generally robust and socially useful; the widespread use of informal finance suggests that it is well suited to most rural conditions [113]. In addition to this, the poverty eradication is the integrating theme for IFAD and, in this case, rural credit is perhaps the most important single weapon to overcome rural poverty. Tangible capital assets are a crucial development factor of production. No other instruments in the hands of the poor can lead to asset creation with the same efficiency as credit to the poor [114].

More means has been noticed by researchers. For example, Ismail 1997 explained that combating hunger effectively required a wide range of actions, such as investing with people, supporting agriculture, targeting nutrition and health programs, focusing on environmental sustainability and expanding participation for the very poor. In addition, selecting a broad range of financial products and services of a commercialized MFI are likely rungs on ladder that elevate or improve the income and wealth of the members or clients who use them [115].

Medium and very poor village households constitute on average between 50% to 70% of a village population. At least one person of such households is working in the semi-subsistence village economy by employing some productive assets of the households such as land tools, livestock and so forth. Cash income is mainly generated from the purchase of surplus rice or other food items and also from trading or service

activities. The projected cash income determines the debt capacity of a household in taking out a group loan [116].

Through credit service and assistant from organization staff, people could be able to start the additional jobs to earn more income to support and improve the living standards for their families. As a result, two years after the program started 403 community banks were organized with more than 5,000 clients and their living conditions have been upgraded [117].

Income from income generation activities is used primarily for consumption. These activities could grow into larger micro enterprises and small-scale enterprises; the small ones employ family labor while the larger require hired labor. These larger enterprises are more suited to individual lending [118]. The Seila program aims at contributing to poverty alleviation through strengthening local government by focusing on institutionalizing appropriate systems to effectively deliver public goods. The rural micro-finance component provides funds through the RDB for eligible NGOs to on-lend to members of the project target group in some provinces [119].

Having greatly satisfied the food security issue, the focus has shifted to include promoting yet higher improved family diet and expanding opportunities for income generation from fish production and better livestock. The effectiveness and sustainability of production depend on the appropriate mix of production inputs. The project has provided both goods and support services such as technical extension advice and credit [120].

2.5. Improving Customer Services

Improving customer services means that transformation allows microfinance institutions to offer a widest array of products and services to meet customer needs at one convenient location [121].

Responding to these, some organizations have decided to specialize in financial services and to evolve into an NGO microfinance with an objective to become self-sufficient in providing credit to micro and small business enterprises [122]. It further indicated that the focus has been centered on the training of the new staff, introducing new products like saving and transfers, improving the productivity and capacity and services to customers. In addition, micro business management training is very useful for helping them to improve the productivity of their businesses and helpful for them to succeed their business management [123]. However, the customers choose a bank or microfinance institution because their services are appropriate and convenient, their delivery speedy, well returning and, above all, confident in management and good governance practices [124]. Rural financial institutions have designed micro credit programs appropriate to the needs of the client base in provinces as well as compatible with their institutional approaches and methodologies [125]. However, the major challenge having faced in recent years and the year to come is the quality of the services provided to the clients and improvement of the financial structure. It also increases the products diversification efforts, beginning with the individual credit [126]. Different formal credit providers have different methods, criteria, work fields and banking procedures. The most often used method to provide small loans to the villagers in both urban and rural areas is through the so-called village bank [127]. However, establishing a well researched

mechanism for transmitting product improvement and new products ideas is critical [128]. The strong penetration in the villages of rural areas having achieved through solidarity loans does not enable them to raise any substantial customer deposit financing, and the number of individual loans it could develop in this same market and through the same solidarity credit agents would always be limited [129].

Credit Committee for Rural Development stated, "The diversification of agricultural production is able to provide regular monthly incomes for the farmers and this situation creates appropriate conditions for banks to provide credit to farmers" [130]. With credit, they are able to improve their living conditions through income generation activities[131]. It further indicated that the credit support has made them possible to have access to health, food, land clearing and school facilities, and some beneficiaries could generate stable incomes. But, the competitive environment in the microfinance market has become more intense because many operators have been distributing their services in the villages. Therefore, people would have many alternatives to access the financial services[132]. Some organizations such as EMT have its clear strategy to deliver microfinance services exclusively in terms of the allocation of human and financial resources[133]. This has been redesigned individual credit that is based on targeted research of clients, non-clients, organizational staff, and competition to improve the terms and conditions of the product and address some delivery weaknesses [134].

To show that customers do indeed benefit from using the financial services, the loan in this case must be shown that the consumers continue to use the services. Specifically, the consumers must show this satisfaction with the loan first by repaying. Serious lenders rarely make new loans to borrowers who do not repay. In this case,

successful microfinance institutions have often been criticized, based on increasing average loan size, for drifting from their original goal of helping the poor [135].

The development of the microfinance sector has been best served by allowing different types of institutions to operate in the marketplace [136]. He further indicated that giving an objective to provide sustainable access to financial services to the public is the competition among microfinance institutions, which could increase their efficiency to find the way to better serve their customers. Today a number of commercial banks and non-governmental organizations compete to attract savers from the public in rural areas [137]. However, Chanto said, "Local saving is an important source of fund for credit. So the microfinance operators should try to collect the savings depending on their capacity in order to satisfy the client's needs" [138]. Microfinance services consist of individual credit, group or guarantee group, savings, training, monitoring and advisory services to the borrowers [139].

The demand for services in rural areas is met by microfinance institutions, non-governmental organizations and individual moneylenders [140]. The credit demand is for on-farm and off-farm activities in rural areas. The program of financial and non-financial services for micro and small enterprises consists of a package of related elements, including business training, credit and counseling [141]. Training is one product of microfinance institutions and can develop and enhance the capacity of customers in managing businesses, particularly it can give advice on how to effectively use the fund and on how to control their financial position and daily operation [142].

However, competition has forced financial institutions to look for ways to improve client satisfaction, including improvements to lending methodology, product

mix, and the cost of services in order to retain their best clients. In this case, the key to aggressive market penetration is to have a variety of high-quality financial products and services available for different segments of population[143]. They have financial services for the poor. Many types of agricultural, health, and other development projects have small microfinance components. Usually, they channel loans to some persons targeted for the projects. The design is similar to many old style agricultural credit projects in which credit has been supposed to finance the adoption of new technology [144].

Availability of credit has been perceived to help families to balance food shortages between the harvesting seasons and to improve productivities through purchase of fertilizer and optimization of non-irrigated (rain-fed) production[145].

To meet the growing needs of its clients, the organization offers three main loan products – community bank, solidarity and individual loan. All of these products are associated with compulsory saving community bank loans and are the primary and initial loan product of the program requiring from 12 to 40 members in one bank and solidarity group loan requires from 2 to 8 members in one group. The latest products organization have offered the individual loan which allows single clients access to organization financial services[146].

MFIs have expanded their operations within the province in terms of the number of districts, communes and villages served. ACLEDA has performed the most rapid and widespread geographical expansion over the period while Hattha and CCB have extended their areas of operations more gradually; Hattha was the first to open a sub-branch office. In the third year, ACLEDA followed with the establishment of part-time service points [147].

The loans to end-borrows are for income generating activities and micro-enterprises, suited to group lending because of the small amount of loans and large number of borrowers. Borrowers graduate to individual lending as loan size becomes larger. Social preparation and savings are usually included in the provision of micro credit [148]. This component has originally closely been tied with the issue of improved access to credit in the rural areas. Whilst the activities at enterprise start-up level generally do require credit support as for most small and medium enterprise initiatives. PRASAC saw a much wider opportunity in income generation support at rural community level. It has anticipated that many enterprise support opportunities would be guided through the PCA in due course but loan approvals by the MFI would be based strictly on their business plans and individual merits [149].

2.6. Expanding Outreach

Anita & Victoria defined, "Expanded outreach is the transformation which allows a microfinance institution to expand its outreach and grow its loan portfolio, by providing increased access to cheaper sources of fund [150]. Transformation enabled the institution to increase market penetration, open new branches, and increase its loan portfolio." Mark Pierce stated that microfinance sector plays an important role to reach the depth and breath of the client outreach or sustainable level of the non-governmental organization or microfinance institution. He notices that there are enough international experiences to show that formalization of the microfinance sector could ultimately limit access to financial services for the poor and marginalized [151].

Microfinance operators must have legal entity, responsibility, and a good clear activity, and cooperate with other partners to develop rural credits, otherwise it is difficult

for RDB to refinance them [152]. The role of microfinance is very important for providing funds with low interest rates to support rural development [153]. However, the availability and provision of financial services (formal, semi-formal, and informal) are very limited especially in rural areas and only 10 percent of population has access to formal banking services. The demand for rural credit is such that there is a need for microfinance operator activities to expand significantly, while a number of NGOs are expected to become licensed microfinance and expand their activities [154]. CEDAC has investigated and found that the vast majority of people in rural areas still have limited access to financial services out of the informal sector. They can access from families, friends, and people who have relied on moneylenders and traders, useful to their agriculture production or small enterprise[155].

Some financial services have pushed to the money lender sources to automatically reduce their interest rates lower [156]. However, the role of NGOs fills and continues to fill an important vacuum in both the rural and urban credit markets [157]. Over the past years, NGOs have successively expanded a number of communes covered by their services, and the management would need to emphasize the orientation towards poorer clients [158]. In this case, the bank is ready for business expansion in order to increase and expand the outreach of access to the industry of microfinance services [159]. To meet the demand, many NGOs have started grass-root oriented production programs including the provision of rural credit [160].

Satisfaction, in the outreach approach, is measured with loan by whether the borrowers repay the loan, or they return for more services or another loan. The loan repayment rates and borrower retention rates are key variables in measuring the

performance, and hence viability, of any financial institution, so that collecting such information places no additional burden on any of participants on the loan transaction [161].

Most of the provinces in the country are covered by either a local or international formal credit provider, but some are neglected and lack any form of financial institutions and are totally dependent on the informal credit suppliers [162]. However, RDB benefits from its partners a certain amount which is to be on-lent to licensed microfinance institutions [163]. Credit Committee for Rural Development stated, "Programs of rural credit are created in most provinces in the country, although many of them have common characteristics and have their own specific credit programs." [164] However, the expansion of micro credit services outreach will achieve if operations have access to vocational training continuously and to the needs of microfinance operations undergoing fast growth [165]. Some of institutions cover the majority of areas such as EMT [166]. Its head office is located in the country capital, and more than 80% of its loans are used to finance agricultural activities and other major activities, including animal raising and fertilizers [167]. More than this, its formation strategy lays emphasis on covering at least a hundred families in each village [168]. This has led to a high proportion of clients' families in each village. However, the proportion of villages covered in each district is low, and more stress needs to be placed on the horizontal outreach of the program [169].

The government policy is to support market driven interest rate charges of licensed microfinance institutions and other donors [170]. There is an increased competition among licensed microfinance institutions and declining trend of their effective interest charge. The survey result has revealed that a total certain amount of US dollar for RDB loan is expected among the ten interviewed microfinance institutions over the next four

years [171]. CDC has shown a reliable access to micro credit and savings services by the poor; this is one crucial component for poverty alleviation in order to reduce poverty nationwide [172]. However, the rural poor economically face many difficulties because of road conditions and communication. In this case, credit institutions have tried to ensure they have charged the lowest possible interest rate [173].

The new approach gained particular prominence in the 1980s and considered on setting up credit programs largely outside of the banking sector as well as out of the government reach. Under these approaches, non-government organizations and self-helped group have been used as conduits for donor fund. Their ability to reach the small and very small borrowers is unmatched by other types of institution [174].

Some organizations such as Hattha Kaksekar has the capital endowment to increase its loan portfolio to 3,5 million dollars, but it has reached the one million capital limit as the Rural Development Bank has. To access additional funds at commercial lending rate, Hattha Kaksekar must establish a link with an international lender, funding strategies including diversification of commercial rate lending for portfolio growth and non-refundable resources to support senior management [175].

From the development perspective the three MFIs have been successful in reaching in (down) to the poorer segments of the rural population. The small average loan sizes have commonly served as an indicator or proxy in this regard. For most of the period the loan sizes have been significantly below the per capita income in Cambodia. For CCB and ACLEDA, however, the average loan sizes have increased considerably over the years indicating the shift in methodology and market strategy in both institutions. They have resulted in a significant increase of the overall average loan sizes

from US$ 113 in 1999 to US$ 404 in 2000[176]. A similar study, GRET, suggests a crude estimate of credit needs at $74 per household in a year if this is applied to all rural households, and the total demand for agriculture and small-scale business would be about 1,87 million x $74 = $138 million. This can be capered with the estimated current supply for agriculture and business of $32 million, suggesting an unsatisfied demand of about $106 million[177]. More than 80% of EMT loans are used to finance agricultural production. The activities that stand out clearly are raising animals and buying fertilizers. EMT credit is also used for a small business investment and service such as food trading, food processing, battery charge, bicycle and motorcycle repair, rice mill, etc[178].

2.7. Donor's Supports

The vast majority of financial support to the credit sector has been negotiated through official government channels, including funding sources such as UNDP, USAID, ILO, KWF, CFD, and GTZ[179]. It further indicated that new and significant programs were planned for the near future, including the possibility of soft-dollar loan from partners. The donor community has been influential both in the design and the pace of development of microfinance sector[180]. Donors support has also reflected their own policy objectives.

More than four decades, donors have employed credit programs in low-income countries to stimulate production, investment, and use of modern inputs. Many of these efforts have involved cooperatively supervised credit programs, private rural banks, and specialized development banks. Donors have commonly supported these efforts by placing funds into the central bank being on-lent through a concessionary credit line[181]. One significant donor –ADB – has assisted the country government by providing

assistance through grants and soft loans which are on-lent to MFIs. It has placed greater emphasis on policy reform and capacity building. The shift stems from the institution's recognition enabling policy environment and strengthening MFIs have been requirements for a viable and sustainable microfinance system, capable of reaching poorer clients[182]. However, most microfinance programs have started and continued to be managed by non-governmental organizations. Their sources of funding have included grants and soft loans from donors, trusts, foundations, and occasionally from governments. As they grow and proliferate, however, these programs have begun to reach limit of such resources[183].

The donating package includes financial start-up support for the new branches and technical assistance for overall institutional development crucial in rural development context[184]. In addition, most rural microfinance sectors fund their lending activities with grants from these donating packages in the form of NGOs and projects[185]. Through these services microfinance sectors have been developed since early 1990s[186]. However, operators do not have the same resources available to overcome the human resource constraint. The largest operators have received significant expatriate technical assistant from donor's fund[187]. For example, in 1989 and 1990, with liberalization and the arrival in force of NGOs, solidarity credit scheme was provided and, on a daily basis, millions of families became users with real rates from 5 to 20 percent per month[188]. He further indicated that the peasants were repaying quite evidently, whilst managing in spite of everything to accrue to a greater or lesser extent. For example, GRET began its intervention on credit, with assistant of IRAM. At that time, experimental credit schemes were set up, using a solidarity credit system, without preliminary savings, and with a monthly interest rate of 5 percent[189].

Many donors follow a policy of very limited intervention. As a matter of principle, there can be no doubt that less intervention is preferred. However, in building a financial institution, the real issue is how much non-intervention is feasible if the objective of the project is to be achieved. In reality, an institution-building project is a much higher degree of intervention and long-term commitment on the part of the donors than other types of projects[190].

2.8. Shift from Moneylenders

Reducing moneylenders with credit scheme from microfinance operators is fairly evenly spread throughout various categories of families and also pushes down the rate used by moneylenders[191]. Its impact, therefore, lies in the saving generated when it takes the place of the loan from a moneylender or supplier and, to a lesser extent, in the lesser social dependency when it replaces a family loan[192]. However, there may be reasons that people do not want to borrow money from the lender sources because they charge high interest rates, and their strict payment conditions make small businesses difficult to access the loan from those sources[193].

The creation of the SHGs in a few provinces has reduced the dependence on moneylenders for certain types of financial needs[194]. Before the project people used to buy materials for their income generating activities on credit or from moneylenders, which they could not even bargain over the price[195]. They generated less income prior to the project period, but after they received the credit they can improve their income and price[196]. The crucial point is that lower-income borrowers who borrow from moneylenders generally pay much higher interest rates for credit that will be necessary if commercial microfinance is widely available through institutions. This is of particular

significance because the higher rates of informal lenders tend to constrain micro-enterprise growth, and also the volume of informal commercial credit is very large[197].

2.9. Informal Credit

Several moneylenders can be found in developed and open villages[198]. He further indicated, "Their interest rates vary from 1 to 10 percent per month and even up to 20 percent. Indebtedness to moneylenders is the first cause of bankruptcy among households." Almost everyone uses this kind of money to do their businesses for a short time. However, different sources of moneylenders charge different interest rates[199]. Moreover, with limited access to financial services, most people in rural areas have relied on moneylenders for investment capital to finance essential inputs for agricultural production and micro enterprises[200]. Villagers prefer to borrow money from moneylender sources because they can get it quickly. But these sources charge high interest, ranging from 10 to 30 percent per month[201].

Usually, it is seen that informal lending results in two different types: commercial (loans from moneylenders, traders, employers, commodity wholesalers, and landlords) and non-commercial (loans from friends, relatives, neighbors, and some forms of rotating saving and credit association)[202]. Marguerite further indicated, "Non-commercial loans are common and usually carry no or low financial interest for small amount and short terms for emergencies or for special occasions and specific purposes, such as land purchase, weddings, or house construction for young couple. Informal commercial lenders, however, typically provide credit that can be used for both production and consumption."[203]

Informal lenders are considered as a cause of poverty in developing countries. Their interest rates charged are a spectrum ranging from zero interest to a very high rate of interest such as 360 percent per annum. The elimination is considered necessary for the alleviation of poverty. In this situation, the replacement of informal finance with institutional finance at lower cost is expected to improve income levels of the poor[204].

In low-income countries, the pressure on scarce money resources comes from many sides, including monetary instability and lack of dependability in the banking system that might very well explain illiquidity preferences. In this case, a balanced perspective on informal finance would explore the background and motives for non-monetary transactions and the conversion of cash and vice versa. It would take into account the impact of uneven monetization and financial deepening on the emergence and scope of informal finance[205].

Where credit is not available from either an NGO or one of the alternative credit programs, farmers are currently forced to finance inputs themselves. If they cannot afford the inputs to borrow from other sources (friends/relatives, traders or moneylender) often at relatively high interest rates or the level of inputs used, the result is either a reduction in income – the considerable amount of interest that has to be paid on the loan – or a reduction in self-sufficiency due to lower yields[206].

2.10. Credit Methodology

Village banking is a broadly applied term which does not denote a particular methodology[207]. But NGO credit and saving programs have attempted to fill the void left by the formally final system[208]. However, the method they use is that all loans are provided on an individual basis with borrowers being individually liable and responsible

for a credit service and loan repayment. The borrowers must provide land and titles as principle collateral and other fixed assets as supplementary collateral[209]. Responding to this, a certain organization like ACLEDA provides two types of financial products – micro business loan utilizing the group guarantee methodology and small business loan consisting of collateralized loan to individual small business and agricultural enterprises[210].

Even though rural financial institutions have adopted a different outreach structure, they mostly fall into either the branch model, the village bank model, or the combination model[211]. Their loans are classified as individual and group loans and dominated in certain currencies such as US dollar, Cambodian Riel, and Thai Bath. Others provide loan products, group loans and business loans for all rural businesses and income-generating activities, such as agricultural production, services, trade and manufacturing[212]. However, the institutions require saving from borrowers and collateral for provisions of loans[213].

A self-helped group (SHG) uses another method in which members contribute savings on a regular basis into common fund from which they borrow for any of their needs[214]. It further indicated that an SHG functions as a joint liability group in which members guarantee one another in the event of problems with repayment and it is also a solidarity group. SHG sizes range from 4 members to 24 members. Responding to this, David stated, "Micro-lending is done through groups of borrowers formed by five to ten members and an average seven members. Prior to receiving loan services each group receives six hours of credit using training and is self-formed from members within the same community."[215]

But, other institutions use the group approach for pragmatic reasons, and they do not require members to mutually guarantee each other[216]. The village associations are the client units and they comprise of a number of joint liability groups, which do not meet regularly for any discussion. The purpose of village associations is joint liability in case of solidarity credit[217]. The solidarity credit has an interest rate of 4 percent per month calculated on a declining basis. Its interest rate is due every month, but its capital is due at the end of a loan cycle[218]. This is a group loan product where clients form a liability group of five and the second loan product is the individual credit.

The overall service approach of most NGOs is very familiar small groups which are organized in villages providing with training and motivation and are held jointly and are separately liable for loans provided. Credit operations are preceded by a period of savings mobilization inculcate financial discipline[219]. The quality and quantity of training vary. Some NGOs regard saving mobilization critical, while other different groups in a village may or may not be linked to form an association or village bank; saving mobilization may or may not be managed locally. The solidarity group model has been tried by a number of NGOs including EMT, though, it has subsequently undergone dilution. The village bank approach is currently in favour with each solidarity group answerable to the broader local[220].

The method being used by the NGOs/MFIs is what they call balloon payment method or repayment of the principal at the end of the term of the loan repayment of interest. However, some NGOs have been required to be monthly and some employed equal amortization of principal on a monthly basis and interest also collected on monthly basis based on the declining balance[221]. In addition, individual credit product has been

launched in order to answer the needs of rural clients for larger amounts, and, usually after one or two cycles, borrowers are offered with this product when they have had no difficulty in repaying small loans[222]. Solidarity credit loans are a group loan product clients form joint-liability groups of five, and each client receives a loan of the same size and several groups form a credit village association. Loan principal can be paid at any time prior to the loan due date[223].

2.11. Create Service or Product

People want credit to improve or change their irrigation systems on their land and to buy fertilizer, agricultural equipment and other activities regarding agriculture[224]. Lacking fund to purchase instruments and work cattle for agricultural production or for improving and extending businesses is a major reason of low income[225]. MFIs are attracting a lot of attention while early voices have said that microfinance institutions could perhaps someday cover their costs. Today, private investors are entering this area, discussing the securitization of micro-loan portfolio and publicizing their institutions. They are trying to play a role of a match-maker between poor people's demand for financial services and advanced capital markets[226].

The role of informal finance must be viewed as assisting the poor rather than being against them in such a context. The reasons for success of informal finance provide useful lessons that are being emulated by the expanding MFI[227]. He furthered that the strategy to assist the poor must be one designed to strengthen institutional services, improve community based microfinance operations and reform and strengthen the institutional factors bearing on the productivity of the poor. Some MFIs decided to design new products. However, new product development is very costly and a time consuming

process. If new products are essential and developed to meet client specialization, appropriate costing of the products is essential to adequately price the products along with devising cost efficient mechanism to deliver the products. Many MFIs may not be able to deliver the new products effectively[228].

The withdrawal of the state banking system from rural credits in the early 1990s has left clear vacuum in the market and experimentally led to the introduction at fist of credit schemes in different parts of the country. GRET, a French NGO, was the first organisation to experiment rural credits in Cambodia and is credited with introducing group-based methodology and approach to rural credits, which are essential at the level of detail most NGOs tend to follow either the village-bank or solidarity-group model[229]. Most NGOs propound a pro-poor pro-women and pro-rural/agricultural focus for their rural financial service activities, while targeting women beneficiaries appears not to have difficult attempts to target the poorest of the poor who have met with much less success. The poorest have either tended to shy away from these programs or been deliberately excluded because of the greater perceived risk of default associated with their participation[230].

Some NGOs/programs have wrestled with agricultural lending having focused on credits to micro-enterprises. Among the more prominent NGOs only a few appear to lend to agriculture. The performance has been highly variable, with the greater risk associated with rain-fed rice cultivation, and the animals' high mortality in the livestock sector has made it much more risky to lend to these areas[231]. In this case, pig raising is a traditional activity in most parts of the country and is most frequently limited to one or two pigs by a

single household, so some credit programs have provided finance for a continuation of such micro-scale production and others have financed small-scale production[232].

The NGOs/MFIs were forming groups for credit and saving purposes, with minimal training for the groups' leaders mainly credit, and savings were related nothing by way of livelihood training and being done by these NGOs/MFIs. Whatever the quality of these groups at the moment could be targeted by the project in the delivery of training demonstrations technical assistance and extension services[233]. The design approach based on village level institutions for savings and credit by mid term is in process or is being abandoned to a large extent in favour of a simpler credit, and only solidarity group approach reflects the wide experience in Cambodia where group based savings mobilization is quite difficult[234].

2.12. Major Microfinance Operators

There are certain microfinance operations operating in the country. Those operations result as ACLEDA, a specialized bank providing credits to people, EMT, a licensed microfinance institution providing credits to clients at rural and urban areas, and PRASAC, which also provides credits to people living in provinces. Beside these, we see other organizations such as Hattha Kaksekar and CCB, which provide loan products, individual loans, and group loans to people as well as small business enterprises in provinces.

2.13. Sustainability of Microfinance Operators

Sustainability is the key component for microfinance operations in terms of their independence from subsidies and their sustainable returns on average assets[235]. Over the years, organizations have modified their operational methodology to move toward more

efficient operations and sustainability[236]. Some institutions are fully financially self-sufficient like EMT[237]. Wherever available, sustainable institutions providing microfinance increase the options of the working poor by helping them reduce risks, improve management and quality of their lives[238]. He further explained that saving services permits people to store excess liquidity for future use, and to obtain returns from their assets. Moreover, credit services enable the use of anticipated incomes for the present investment or consumption. A shift from subsidized delivery programs to commercial intermediation is internationally underway. The programs have succeeded because the banks loaned at market rates, used income to finance their operations, kept operating costs low and devised appropriate saving instruments to attract depositors[239].

Innovation reducing transaction costs has been at the heart of creating profitable microfinance institutions and spreading viable microfinance to most countries and have been successfully transformed into banks, which have rarely been successful in mobilizing deposits, especially from micro clients[240].

The shift is inevitable as micro-finance providers are forced to reduce risk via loan portfolio diversification and enhance productivity and subsequent profitability through growing average loan sizes and economies of scale. They have to adopt a 'minimalist' micro-finance approach by abandoning non-financial services. They may have to continue offering social mobilization services under another organizational structure or via partnership with other development service providers[241]. A certain organization like Hattha Kaksekar is a reputable micro finance institution that has now reached a certain level of profitability and operational self-sufficiency. Its financial

services are very useful to the rural poor and highly appreciated by the local population it serves, and its current levels of activity management and systems are adequate[242].

Cost coverage of MFIs is commonly measured by two indicators which depict different degrees and/or stages of cost coverage operational and financial self-sufficiency. Operational self-sufficiency indicates whether an MFI is generating enough operating incomes, which cover operating expenses including salaries, office and other administrative expenses and provisions for loan loss. Financial self-sufficiency measures to what extent operating income is able to cover both operating expense and financial cost including interest expense and cost of capital[243].

However, the sustainability of rural and micro financial services requires that the institution that is providing these services is and remains financially viable. Financial viability of an MFI hinges on three major factors namely high loan recovery, cost coverage and high productivity and efficiency[244].

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CHAPTER 3

RESEARCH METHODOLOGY

3.1. Introduction

The purpose of this chapter is to describe the research methodology used in this study. The chapter elaborates the objectives of the study, hypotheses, research design, sample design, statistical tools employed, and contingency plans.

3.2. Objectives and Hypotheses

The main objective is to access the effectiveness of Micro Finance Institution loans in raising rural living standards. Additional information which may be uncovered in the study is:

(i) Assessing the impact of credit supplied by Micro Finance Institutions on the standard of living of beneficiaries.

(ii) Examining the role of Micro Finance Institutions in reducing rural poverty in general and beneficiaries in particular.

The study examined the following hypotheses:

Ho1: There is no statistically significant difference in the cash flow between development loan members and the control group members.

Ho2: There is no statistically significant difference in the total income between development loan members and the control group members.

Ho3: There is no statistically significant difference in the level of expenditure between development loan members and the control group members.

Ho4: There is no statistically significant difference in the value of the asset position between development loan members and the control group members.

Ho5: There is no statistically significant difference in the value of the asset position, expenditure, cash flow and income within development loan members before and after the loan; and there is no statistically significance difference between development loan members and the control group members.

3.3. Data Collection Procedures

A questionnaire has been administered using personal interviews (see Appendix A). It consisted of questions on personal characteristics of the treatment and control group members. The questionnaire also included several questions relating to the income, asset position, the amount of expenditure made on education, food, health care, ceremony, purchase of gold or saving of the treatment members before and after availing the loan from Micro Finance Institution and of control group members for a similar period of time. Further, it included questions on the amount of investment made on equipment for business, improvement of house, equipment of house. Questions relating to business cash flow, income generated from business have been included.

3.4. Sample

The study have been conducted in two provinces in Cambodia, Kompong Speu and Kompong Chhnang. In these provinces the number of loans to households during the years 2000 through 2004 numbered 191 and 62 respectively. In Kompong Speu, 83 households received one year loans and in Kompong Chhnang, 51 households received one year loans. All beneficiaries of these one year loans that respond to the personal interview were the treatment group. If the study had not received 100 completed and useable questionnaires, Takeo province would have been added to the study. In this province the number of loans to households during the years 2000 through 2004

numbered 165 and out of them 61 had availed a one year loan. An equal number of control group members, who did not receive loans from Ennatien Moulethan Tchonnebat or any other similar organizations or Micro Finance Institutions, have been selected from the provinces used in the study. This control group has been selected by a treatment group member. After completion of the personal interview with the treatment group member, that member has been asked to recommend a neighbor or friend, who was as close as possible to the treatment member in type and size of business, and family composition that did not receive a loan. This recommended control group member has administered the personal interview. In case the selected control group member refused to supply information, the interviewer has asked the original treatment member to provide a replacement name of another person that was as close as possible to the treatment member in type and size of business, and family composition that did not receive a loan.

3.5. Questionnaire Presentation and Development

The questionnaire has been tested twice utilizing a pilot survey in Kandal Province near the capital city of Cambodia with five treatment members and five control group numbers. Any questions or misunderstandings by the test subjects have been recorded in order to revise the final draft of the questionnaire before being administered to the actual control and treatment members in the study.

3.6. Model

In order to measure the significant of the change on several aspects, such as, income, expenditure on various activities, asset positions and cash flow, between the beneficiaries and non-beneficiaries, the 't' test has been used.

The formula for calculating the 't' value has been given below:

$$t = \frac{\overline{X_1} - \overline{X_2}}{S} * \sqrt{\frac{n_1 n_2}{n_1 + n_2}} \quad (1)$$

Where,

$\overline{X_1}$ = mean of the first sample.

$\overline{X_2}$ = mean of the second sample.

n_1 = number of observation in the first sample.

n_2 = number of observation in the second sample.

S = combined standard deviation

The value of S has been calculated as follows:

$$S = \sqrt{\frac{\sum(X_1 - \overline{X_1})^2 + \sum(X_2 - \overline{X_2})^2}{n_1 + n_2 - 2}}$$

When comparing between the beneficiaries and the non-beneficiaries, the first sample was the beneficiaries (treatment members) and the second was the non-beneficiaries (control members).

In order to measure the significance of change in the distribution of income, expenditure, asset position and cash flow of the beneficiaries before and after availing the loan, the development loan members during before and after 12 months of availing the loan, the chi-square test has been used.

For calculation of the chi-square value (χ^2) the formula to be used is as follows:

$$x^2 = \sum \frac{(O_i - E_i)^2}{E_i} \qquad (2)$$

Where:

i = number of class in the distribution

O_i = observed frequencies in class i

E_i = expected frequencies in class i

C = number of categories

df = C - 1

Furthermore, in order to judge the statistical significance between two groups, the research has worked out the multiple discriminate analysis , which happened to be a generalized distance between beneficiary and non-beneficiary, where each group has been characterized by some set of equipment for business, improving houses, education expense, food expense, health expense, saving, revenue, ceremony expense, cash flow per day, investment and house equipment variable, and where it has been assumed that discriminant coefficient structure was identical for both groups. It has been worked out thus:

$$\mathbf{D} = b_1X_{1i} + b_2X_{2i} + \ldots\ldots + b_nX_{ni} \qquad (3)$$

Where

D = ith applicant's discriminant score

b_n = discriminant coefficient for the nth variable

X_{ni} = applicant's value on the nth independent variable

3.7. Sample Size Criterion

The study has been conducted in two provinces Kompong Speu and Kompong Chhnang with the possibility of a third province as explained in 3.4. All the beneficiaries of Ennatien Moulethan Tchonnebat one year loans have been treatment group members for the purpose of the study. Control group members have been selected by the treatment members on the basis of similar socio-economic characteristics of the treatment members. Equal number of control group members as that of treatment members in each province has been included in the study.

3.8. Statistical Analysis and Interpretation

After the collection of both primary and secondary data, tabulation of data has been performed. Results have been reported in both tables and a written form. Mean, percentage, standard deviation, standard error mean, significance 2-tailed and mean difference have been reported. The data has been checked for statistical significance using three statistical tools, T-test, Chi-square, and multiple discriminate analyses.

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CHAPTER 4

RESEARCH FINDINGS AND ANALYSIS

4.a. Introduction

The present chapter analyses the impact of the loan of MFIs on the standard of living of beneficiaries in terms of incomes, expenditures, asset positions and cash flow. Furthermore, a comparative analysis has been made between the beneficiaries and the non-beneficiaries on the basis of incomes, expenditures, asset positions, and cash flow. The statistical models, namely, multiple discriminating analysis, chi-square test and t-test have been used for this purpose. This chapter elaborates the process through which the sample has been developed.

4.b. Developing the sample:

All the beneficiaries of Ennatien Moulethan Tchonnebat of two provinces of Cambodia, Kompong Speu and Kompong Chhnang, who have availed a one-year loan, have been considered as the treatment group members for the purpose of the study. In these provinces the number of loans to households during the years 2000 and 2004 numbered 191 and 62 respectively. In Kompong Speu, 83 households received one-year loans and in Kompong Chhnang, 51 households received one-year loans. Control group members have been selected by the treatment members on the basis of similar socioeconomic characteristics of the treatment members. Equal number of control group members as that of treatment members in each province have been included in the study.

All beneficiaries of the one-year loans that responded to the personal interview have been considered as the treatment group. An equal number of control group members have been selected from those provinces which have not received loans from Ennatien

Moulethan Tchonnebat or any other similar organizations or Micro Finance Institutions. This control group has been selected by the treatment group members. After completion of the personal interview with a treatment group member, that member has been requested to recommend a neighbor or friend who is as close as possible to the treatment member in type and size of business, and family composition that has not received a loan was to be treated as a control group member. Thus, the study has selected the control group members on the basis of the recommendation given by the treatment members.

4.c. Tables

Table 4.1: Distibution of Households on the basis of the number of years of business

Name of Province/ Type of Members	Number of years					Total
	< 5	5 to 10	11 to 15	16 to 20	> 20	
Kompong Speu						
Treatment Members	27	24	8	7	17	83
	33%	29%	10%	8%	20%	100%
Control Member	16	28	12	10	17	83
	19%	34%	14%	12%	20%	100%
Total	43	52	20	17	34	166
	26%	31%	12%	10%	20%	100%
Kompong Chhnang						
Treatment Members	11	8	7	8	17	51
	22%	16%	14%	16%	33%	100%
Control Member	9	11	10	7	14	51
	18%	22%	20%	14%	27%	100%
Total	20	19	17	15	31	102
	20%	19%	17%	15%	30%	100%
Total						
Treatment Members	38	32	15	15	34	134
	28%	24%	11%	11%	25%	100%
Control Member	25	39	22	17	31	134
	19%	29%	16%	13%	23%	100%
Grand Total	63	71	37	32	65	268
	24%	26%	14%	12%	24%	100%

Based on the research of EMT on Beneficiary and Non-beneficiary in Kompong Speu and Kompong Chhnang Provinces, there are 134 beneficiaries and 134 non-beneficiaries in the two provinces, in which each shares the same figures - 83 in Kompong Speu and 51 in Kampong Chhnang. The research also shows that the

beneficiaries and non-beneficiaries, which have traded for less than 5 years, number 63 in all among which 27 beneficiaries live in Kompong Speu and 11 in Kompong Chhnang, while 16 non-beneficiaries live in Kompong Speu and 9 in Kompong Chhnang. Those who have traded between 5 and 10 years number 71, 32 beneficiaries - 24 in Kompong Speu and 8 in Kompong Chhnang and 39 non-beneficiaries - 28 in Kompong Speu and 11 in Kompong Chhnang. For the trade lasting between 11 and 15 years, among 37 traders, 15 are beneficiaries - 8 in Kompong Speu and 7 in Kompong Chhnang and 22 are non-beneficiaries - 12 in Kompong Speu and 10 in Kompong Chhnang. Among 32 businessmen, who have done between 16 and 20 years of businesses, 15 are beneficiaries - 7 in Kompong Speu and 8 in Kompong Chhnang and 17 are non-beneficiaries - 10 in Kompong Speu and 7 in Kompong Chhnang. For the businesses lasting 20 years plus number 65, among which there are 34 beneficiaries - 17 are in Kompong Speu and the rest in Kompong Chhnang and 31 non-beneficiaries - 17 are in Kompong Speu and 14 in Kompong Chhnang.

Table 4.2: Distibution of Households on the basis of type of Business

Name of Province/ Type of Members	Type of Business					Total
	Agriculture	Commerce / Trade	Manufacturing	Service	Others	
Kompong Speu						
Treatment Members	22	28	12	19	2	83
	27%	34%	14%	23%	2%	100%
Control Member	15	35	12	19	2	83
	18%	42%	14%	23%	2%	100%
Total	37	63	24	38	4	166
	22%	38%	14%	23%	2%	100%
Kompong Chhnang						
Treatment Members	25	13	5	5	3	51
	49%	25%	10%	10%	6%	100%
Control Member	17	14	8	10	2	51
	33%	27%	16%	20%	4%	100%
Total	42	27	13	15	5	102
	41%	26%	13%	15%	5%	100%
Total						
Treatment Members	47	41	17	24	5	134
	35%	31%	13%	18%	4%	100%
Control Member	32	49	20	29	4	134
	24%	37%	15%	22%	3%	100%
Grand Total	79	90	37	53	9	268
	29%	34%	14%	20%	3%	100%

The research also focuses on businesses such as agriculture, trade, production, services, and others. In the agriculture field there are 79 businesspeople, 47 are beneficiaries - 22 live in Kompong Speu and 25 in Kampong Chhnang, whereas 32 are non-beneficiaries - 15 live in

Kompong Speu and 17 in Kompong Chhnang. For trade, there are 90 customers among which 41 are beneficiaries - 28 live in Kompong Speu and 13 in Kompong Chhnang and 49 are non-beneficiaries - 35 are in Kompong Speu and 14 in Kompong Chhnang.

Based on the research in the field of production, it shows that there are 37 families, 17 are beneficiaries - 12 live in Kompong Speu and 5 in Kompong Chhnang, while 20 are

non-beneficiaries - 12 live in Kompong Speu and 8 in Kompong Chhnang. Services number 53 in all, 24 are beneficiaries - 19 are in Kompong Speu and 5 in Kompong Chhnang and the other 29 are non-beneficiaries - 19 are in Kompong Speu and 10 in Kompong Chhnang. Beside the above businesses there are 9 more, among which beneficiaries number 5 - 2 in Kompong Speu and 3 in Kompong Chhnang and non-beneficiaries number 4 - 2 are in Kompong Speu and the rest in Kompong Chhnang. (See Table 4.3 to 4.13 in Annex B)

4.d. Statistical Analysis

Multiple Discriminate Analysis

Program used

In order to measure the difference between borrowers and non-borrowers SPSS program has been used to closely analyze the variables of borrowers and non-borrowers 12 months before and 12 months after.

Computational process described

Because the research focused on the difference between borrowers and non-borrowers, some figures had to be calculated such as Wilks' Lambda , Sig, pooled within-groups matrices, canonical correlation, chi-square, standardize canonical discriminate function coefficients, structure matrix, functions at group centroids, and prior probabilities for groups membership.

Discriminate analysis was run as follows (1):

- Choose
- Analyze

- Classify

- Discriminate

To open the discriminate analysis dialog box select dependent variable and click on icon on the left of the grouping variable box to transfer the name. Click on define range and type 1 in to the minimum box for non-borrower and 2 in to the maximum box for borrower. Drag the cursor down the rest of the variable names to highlight them and click the left of the independents box to transfer them all and then clink on OK to run the discriminate analysis command.

Model:

Zi = b1 * Investment 12 months before last 12 months + b2 * Investment last 12 months + b3 * Equipment 12 months before last 12 months + b4 * Equipment last 12 months + b5 * Improving house 12 months before last 12 months + b6 * Improving house last 12 months + b7 * House equipment 12 months before last 12 months + b8 * House equipment last 12 months + b9 * Education expense 12 months before last 12 months + b10 * Education expense last 12 months + b11 * Food expense 12 months before last 12 months + b12 * Food expense last 12 months + b13 * Health expense 12 months before last 12 months + b14 * Health expense last 12 months + b15 * Saving 12 months before last 12 months + b16 * Saving last 12 months + b17 * Ceremony expense 12 months before last 12 months + b18 * Ceremony expense last 12 months + b19 * Cash flow 12 months before last 12 months + b20 * Cash flow last 12 months + b21 * Revenues 12 months before last 12 months + b22 * Revenues last 12 months

Finding:

- Table of wilks' lambda and univiate F- Ratio for variable. (Appendix C)

- Table Fiher's linear discriminate functions (classification function coefficients). (Appendix C)

- Table of canonical discriminate functions and their associated chi-square values and significant levels. (Appendix C)

- Table classification into a prior group using the discriminate function described in table of wilks' lambda . (Appendix C)

4.e. Interpretation:

Random 66 %

When 66 percent (177) of the total number of respondents (268 including 134 beneficiaries and 134 non-beneficiaries) are taken, we find from the result that the wilks' lambdas of the independent variables, i.e., investment 12 months before last 12 months, improving house 12 months before last 12 months, improving house last 12 months and house equipment last 12 months are 0.979, 0.980, 0.958 and 0.979 respectively. The F statistics show that all the four wilks' lambdas are significant at 10 percent level of significance. This shows that there is significant difference between beneficiaries and non-beneficiaries on above four independent variables. Moreover, the overall wilks' lambda is 0.805, which is significant at 5 percent level of significance. This indicates that there is significant difference between beneficiaries and non-beneficiaries across all the predictor variables.

The classification results show that, out of 88 non-beneficiaries, 77.3 percent and out of 89 beneficiaries, 67.4 percent are classified correctly and, of the total sample of 177, 72.3 percent cases are classified correctly.

Random 72%

When 72 percent (193) of the total number of respondents (268 including 134 beneficiaries and 134 non-beneficiaries) are taken, we find from the result that the wilks' lambdas of the independent variables, i.e., improving house last 12 months and health expense last 12 months are 0.954 and 0.983 respectively. The F statistics show that all the two wilks' lambdas are significant at 10 percent level of significance. This shows that there is significant difference between beneficiaries and non-beneficiaries on above two independent variables. Moreover, the overall wilks' lambda is 0.808, which is significant at 5 percent level of significance. This indicates that there is significant difference between beneficiaries and non-beneficiaries across all the predictor variables.

The classification results show that, out of 99 non-beneficiaries, 69.1 percent and out of 99 beneficiaries, 64.6 percent are classified correctly, and of the total sample of 193, 66.3 percent cases are classified correctly.

Random 75%

When 75 percent (201) of the total number of respondents (268 including 134 beneficiaries and 134 non-beneficiaries) are taken, we find from the result that the wilks' lambdas of the independent variables, i.e., improving house 12 months before last 12 months, improving house last 12 months, house equipment last 12 months and health expense last 12 months are 0.982, 0.971, 0.976 and 0.973 respectively. The F statistics show that all the four wilks' lambdas are significant at 10 percent level of significance. This shows that there is significant difference between beneficiaries and non-beneficiaries on the above four independent variables. Moreover, the overall wilks'

lambda is 0.766, which is significant at 5 percent level of significance. This indicates that there is significant difference between beneficiaries and non-beneficiaries across all the predictor variables.

The classification results show that, 80.0 percent of 101 non-beneficiaries and 65.3 percent of 101 beneficiaries are classified correctly and, of the total sample of 201, 72.6 percent cases are classified correctly.

Random 80%

When 80 percent (214) of the total number of respondents (268 including 134 beneficiaries and 134 non-beneficiaries) are taken, we find from the result that the wilks' lambdas of the independent variables, i.e., improving house 12 months before last 12 months, improving house last 12 months, house equipment last 12 months and health expense last 12 months are 0.977, 0.976, 0.986 and 0.984 respectively. The F statistics show that all the four wilks' lambdas are significant at 10 percent level of significance. This shows that there is significant difference between beneficiaries and non-beneficiaries on above four independent variables. Moreover, the overall wilks' lambda is 0.839, which is significant at 5 percent level of significance. This indicates that there is significant difference between beneficiaries and non-beneficiaries across all the predictor variables.

The classification results show that, out of 108 non-beneficiaries, 73.1 percent and out of 106 beneficiaries, 64.2 percent are classified correctly and, of the total sample of 214, 68.7 percent cases are classified correctly.

Random 81%

When 81 percent (217) of the total number of respondents (268 including 134 beneficiaries and 134 non-beneficiaries) are taken, we find from the result that the wilks' lambdas of the independent variables, i.e., improving house last 12 months, house equipment last 12 months and health expense last 12 months are 0.958, 0.983 and 0.980 respectively. The F statistics show that all the three wilks' lambdas are significant at 10 percent level of significance. This shows that there is significant difference between beneficiaries and non-beneficiaries on above three independent variables. Moreover, the overall wilks' lambda is 0.807, which is significant at 5 percent level of significance. This indicates that there is significant difference between beneficiaries and non-beneficiaries across all the predictor variables.

The classification results show that, out of 106 non-beneficiaries, 64.2 percent and out of 111 beneficiaries, 74.8 percent are classified correctly and, of the total sample of 217, 69.6 percent cases are classified correctly.

Random 86%

When 86 percent (230) of the total number of respondents (268 including 134 beneficiaries and 134 non-beneficiaries) are taken, we find from the result that the wilks' lambdas of the independent variables, i.e., improving house 12 months before last 12 months, improving house last 12 months, and health expense last 12 months are 0.985, 0.968 and 0.974 respectively. The F statistics show that all the four wilks' lambdas are significant at 10 percent level of significance. This shows that there is significant difference between beneficiaries and non-beneficiaries on above three independent variables. Moreover, the overall wilks' lambda is 0.830, which is significant at 5 percent

level of significance. This indicates that there is significant difference between beneficiaries and non-beneficiaries across all the predictor variables.

The classification results show that, out of 118 non-beneficiaries, 72.9 percent and out of 112 beneficiaries, 65.2 percent are classified correctly and, of the total sample of 230, 69.1 percent cases are classified correctly.

Random 92%

When 92 percent (247) of the total number of respondents (268 including 134 beneficiaries and 134 non-beneficiaries) are taken, we find from the result that the wilks' lambdas of the independent variables, i.e., improving house last 12 months and health expense last 12 months are 0.965 and 0.983 respectively. The F statistics show that all the two wilks' lambdas are significant at 10 percent level of significance. This shows that there is significant difference between beneficiaries and non-beneficiaries on above two independent variables. Moreover, the overall wilks' lambda is 0.829, which is significant at 5 percent level of significance. This indicates that there is significant difference between beneficiaries and non-beneficiaries across all the predictor variables.

The classification results show that, out of 132 non-beneficiaries, 66.7 percent and out of 115 beneficiaries, 69.6 percent are classified correctly and, of the total sample of 247, 68.0 percent cases are classified correctly.

Random 100%

When 100 percent (268) of the total number of respondents are taken, we find from the result that the wilks' lambdas of the independent variables, i.e., improving house 12 months before last 12 months, improving house last 12 months, house equipment last 12 months and health expense last 12 months are 0.987, 0.965, 0.983 and 0.980 respectively.

The F statistics show that all the four wilks' lambdas are significant at 10 percent level of significance. This shows that there is significant difference between beneficiaries and non-beneficiaries on above four independent variables. Moreover, the overall wilks' lambda is 0.876, which is significant at 5 percent level of significance. This indicates that there is significant difference between beneficiaries and non-beneficiaries across all the predictor variables.

The classification results show that, out of 134 non-beneficiaries, 63.4 percent and out of 134 beneficiaries, 69.4 percent are classified correctly and, of the total sample of 268, 66.4 percent cases are classified correctly.

Average :

After calculating the average of the eight randoms, the wilks' lambdas of the three independent variables, namely, improving house last 12 months, house equipment last 12 months and health expenses last 12 months are 0.964, 0.985 and 0.981 respectively. The F statistics show that all the three wilks' lambdas are significant at 10 percent level of significance. This shows that there is significant difference between beneficiaries and non-beneficiaries on above three independent variables. Moreover, the overall wilks' lambda is 0.823, which is significant at 5 percent level of significance. This indicates that there is significant difference between beneficiaries and non-beneficiaries across all the predictor variables.

Moreover, 70.84 percent of the non-borrowers and 67.6 percent of the borrowers are correctly classified. Of the total sample of 268, 69.14 percent cases are classified correctly.

Conclusion :

As shown in the result, we conclude that the borrowers and non-borrowers had significant discriminate in case of three predictor variables, i.e., improving house last 12 months, house equipment last 12 months and health expenses last 12 months. Among the three independent variables, we see that one variable, house equipment last 12 months, which was different and its average expenditure on house equipment last 12 months of borrowers was greater than that of the non-borrowers, while the average expenditure of non-borrowers on the improving house last 12 months and health expenses last 12 months were higher compared to borrowers. On the average, there is significant difference between borrowers and non-borrowers in asset position, cash flow, expenditure and income.

4.f.1. T-Test

Computational process described

With independent samples, the t statistic is calculated by dividing the difference between the sample means by an estimate of the standard deviation of the distribution of differences. We run and explore the result through SPSS by choosing as follow (2):

4 Analyze

5 Compare Means

6 Independent-Sample T Test

To open the independent-samples t-test by transferring the variable name to test variables(s) box and the grouping variable name to the grouping variable box. Then we

enter the value of the first group and enter the value of the second group and then click continue and then click ok.

Investment on Equipment:

Table 4.14: Comparative results of investment on equipment between beneficiaries and non-beneficiaries

	Have you taken loan from EMT	N	Mean	Std. Deviation	Std. Error Mean
Equipment last 12 months	No	134	085891.79	345,658.917	61,794.595
	Yes	134	708,134.33	063,156.152	91,842.703

			Equipment last [illegible] months
			Equal variances assumed
t-test for Equality of Means	t		.802
	df		266
	Sig. (2-tailed)		.423
	Mean Difference		377,757.46
	Std. Error Difference		470,838.964
	95% Confidence Interval of the Difference	Lower	-549,287.885
		Upper	1,304,802.811

The above result shows that the mean investment on equipment of non-beneficiary is 1,085,891 riels and of beneficiary is 708,134 riels, but the standard deviation of non-beneficiary is 5,345,658 riels while the standard deviation of beneficiary is 1,063,156 riels.

Based on the above condition, we set:

$H_0: \mu_{yes} = \mu_{no}$

$H_1: \mu_{yes} \neq \mu_{no}$

It is found from the result the calculated value of t (t = 0.802) is in the acceptance region at 95 percent confidence level. This implies that the null hypothesis (Ho) is not rejected. In other words, there is no significant difference between the investment expenditures on equipment of the beneficiaries and non-beneficiaries.

Improving House:

Table 4.15: Comparative results of expenditure on improving house between beneficiaries and non-beneficiaries

	Have you taken loan from EMT	N	Mean	Std. Deviation	Std. Error Mean
Improving house last 12 months	No	134	,784,328.36	957,359.271	341,863.772
	Yes	134	659,227.61	366,431.996	118,041.746

			Improving house last 12 months
			Equal variances assumed
t-test for Equality of Means	t		3.111
	df		266
	Sig. (2-tailed)		.002
	Mean Difference		1,125,100.75
	Std. Error Difference		361,669.314
	95% Confidence Interval of the Difference	Lower	413,001.960
		Upper	1,837,199.532

For improving house, the mean expenditure 659,227 riels and 1,784,328 riels are for debtors and non-debtors respectively, while the respective standard deviations are 1,366,431 riels and 3,957,359 riels

The two hypotheses we set are:

Ho: $\mu_{yes} = \mu_{no}$

H1: $\mu_{yes} \neq \mu_{no}$

The result mentioned above shows that the calculated value of t (t = 3.111) is in the rejection region at 95 percent confidence level. So, the null hypothesis is rejected. This indicates that there is significant difference between the expenditures on improving the houses of beneficiaries and non-beneficiaries.

Education Expenses:

Table 4.16: Comparative results of education expenses between beneficiaries and non-beneficiaries

	Have you taken loan from EMT	N	Mean	Std. Deviation	Std. Error Mean
Education expense last 12 months	No	134	519,070.90	662,606.113	57,240.450
	Yes	134	582,170.90	759,342.438	65,597.196

			Education expenses last
			Equal variances assumed
t-test for Equality of Means	t		-.725
	df		266
	Sig. (2-tailed)		.469
	Mean Difference		-63,100.00
	Std. Error Difference		87,060.101
	95% Confidence Interval of the Difference	Lower	-234,514.576
		Upper	108,314.576

The above result shows that the mean expenditure on education of non-beneficiaries is 519,070.90 riels and of beneficiaries is 582,170.90 riels, but the standard deviation of non-beneficiaries is 662,606.13 riels while the standard deviation of beneficiaries is 759,342.43 riels.

Based on the above condition, we set:

Ho: $\mu_{yes} = \mu_{no}$

H1: $\mu_{yes} \neq \mu_{no}$

It is found from the result the calculated value of t (t = -0.725) is in the acceptance region at 95 percent confidence level. This implies that the null hypothesis (Ho) is not rejected. In other words, there is no significant difference between the education expenditures of the beneficiaries and non-beneficiaries.

Food Expenses:

Table 4.17 : Comparative results of food expenses between beneficiaries and non-beneficiaries

	Have you taken loan from EMT	N	Mean	Std. Deviation	Std. Error Mean
Food expenses last 12 months	No	134	1949141.79	517,945.228	131,130.495
	Yes	134	1871063.43	968,528.619	83,668.129

			Food expenses last 12 months
			Equal variances assumed
t-test for Equality of Means	t		.502
	df		266
	Sig. (2-tailed)		.616
	Mean Difference		78,078.36
	Std. Error Difference		155,549.229
	95% Confidence Interval of the Difference	Lower	-228,185.992
		Upper	384,342.708

The above result shows that the mean food expenses of non-beneficiaries is 1,949,141.79 riels and of beneficiaries is 1,871,063.43 riels, but the standard deviation

for non-beneficiaries is 1,517,945.23 riels while the standard deviation for beneficiaries is 968,528.62 riels.

Based on the above condition, we set:

$H_o: \mu_{yes} = \mu_{no}$

$H_1: \mu_{yes} \neq \mu_{no}$

It is found from the result the calculated value of t (t = 0.502) is in the acceptance region at 95 percent confidence level. This implies that the null hypothesis (Ho) is not rejected. In other words, there is no significant difference between the food expenditures of the beneficiaries and non-beneficiaries.

Health Expenses:

Table 4.18: Comparative results of health expenses between beneficiaries and non-beneficiaries

	Have you taken loan from EMT ?	N	Mean	Std. Deviation	Std. Error Mean
Health expenses last 12 months	No	134	485,776.12	780,397.649	67,416.089
	Yes	134	308,970.15	417,134.644	36,034.945

			Health expenses last
			Equal variances assumed
t-test for Equality of Means	t		2.313
	df		266
	Sig. (2-tailed)		.021
	Mean Difference		176,805.97
	Std. Error Difference		76,442.438
	95% Confidence Interval of the Difference	Lower	26,296.748
		Upper	327,315.192

For health expenditure, the mean expenditures 308,970.15 riels and 485,776.12 riels are for debtors and non-debtors respectively, while the respective standard deviations are 417,134.64 riels and 780,397.64 riels

The two hypotheses we set are:

Ho: $\mu_{yes} = \mu_{no}$

H1: $\mu_{yes} \neq \mu_{no}$

The result mention above shows that the calculated value of t (t = 2.313) is in the rejection region at 95 percent confidence level. So, the null hypothesis is rejected. This indicates that there is significant difference between the health expenditures of beneficiaries and non-beneficiaries, and the mean health expenditure of beneficiaries is less than that of non-beneficiaries.

Saving:

Table 4.19 : Comparative results of saving between beneficiaries and non-beneficiaries

	Have you taker loan from EMT	N	Mean	Std. Deviation	Std. Error Mean
Saving last 12 mont	No	134	,271,268.66	236,584.457	93,211.469
	Yes	134	,250,376.87	787,285.002	54,397.908

			Saving last 12 months
			Equal variances assumed
t-test for Equality of Means	t		.084
	df		266
	Sig. (2-tailed)		.933
	Mean Difference		20,891.79
	Std. Error Difference		247,324.455
	95% Confidence Interval of the Difference	Lower	-466,070.849
		Upper	507,854.431

The above result shows that the mean saving of non-beneficiaries is 1,271,268.66 riels and of beneficiaries is 1,250,376.87 riels, but the standard deviation of non-beneficiaries is 2,236,584.45 riels while the standard deviation of beneficiaries is 1,787,285.00 riels.

Based on the above condition, we set:

$H_o: \mu_{yes} = \mu_{no}$

$H_1: \mu_{yes} \neq \mu_{no}$

It is found from the result that the calculated value of t ($t = 0.084$) is in the acceptance region at 95 percent confidence level. This implies that the null hypothesis (Ho) is not rejected. In other words, there is no significant difference between the mean saving of the beneficiaries and non-beneficiaries.

Ceremony Expenses:

Table 4.20: Comparative results of ceremony expenses between beneficiaries and non-beneficiaries

	Have you taken loan from EMT	N	Mean	Std. Deviation	Std. Error Mean
Ceremony expense last 12 months	No	134	519,746.27	425,313.572	36,741.497
	Yes	134	514,179.10	426,258.947	36,823.165

			Ceremony expenses last
			Equal variances assumed
t-test for Equality of Means	t		.107
	df		266
	Sig. (2-tailed)		.915
	Mean Difference		5,567.16
	Std. Error Difference		52,018.103
	95% Confidence Interval of the Difference	Lower	-96,852.440
		Upper	107,986.768

The above result shows that the mean ceremony expenses of non-beneficiaries is 519,746.27 riels and of beneficiaries is 514,179.10 riels, but the standard deviation of non-beneficiaries is 425,313.57 riels while the standard deviation of beneficiaries is 426,258.94 riels.

Based on the above condition, we set:

Ho: $\mu_{yes} = \mu_{no}$

H1: $\mu_{yes} \neq \mu_{no}$

It is found from the result the calculated value of t (t = 0.107) is in the acceptance region at 95 percent confidence level. This implies that the null hypothesis (Ho) is not

rejected. In other words, there is no significant difference between the ceremony expenses of the beneficiaries and non-beneficiaries.

Cash Flow Per day:

Table 4.21: Comparative results of daily cash flow between beneficiaries and non-beneficiaries

	Have you taken loan from EMT ?	N	Mean	Std. Deviation	Std. Error Mean
Cash flow per day last 12 months	No	134	135,966.42	486,345.414	42,013.845
	Yes	134	269,241.04	,918,596.806	65,741.520

			Cash flow per day last 12
			Equal variances assumed
t-test for Equality of Means	t		-.779
	df		266
	Sig. (2-tailed)		.436
	Mean Difference		-133,274.63
	Std. Error Difference		170,983.668
	95% Confidence Interval of the Difference	Lower	-469,928.188
		Upper	203,378.934

The above result shows that the mean cash flow per day of non-beneficiaries is 135,966.42 riels and of beneficiaries is 269,241.04 riels, but the standard deviation of non-beneficiaries is 486,345.41 riels while the standard deviation of beneficiaries is 1,918,596.80 riels.

Based on the above condition, we set:

Ho: $\mu_{yes} = \mu_{no}$

$H_1: \mu_{yes} \neq \mu_{no}$

It is found from the result the calculated value of t (t = -0.779) is in the acceptance region at 95 percent confidence level. This implies that the null hypothesis (Ho) is not rejected. In other words, there is no significant difference between the cash flow per day of the beneficiaries and non-beneficiaries.

Revenues:

Table 4.22: Comparative results of revenues between beneficiaries and non-beneficiaries

	Have you tak loan from EM	N	Mean	Std. Deviation	Std. Error Mean
Revenues last 12 m	No	134	989,267.91	244,846.876	89,727.872
	Yes	134	948,231.34	221,176.427	33,230.427

			Revenues last 12 months
			Equal variances assumed
t-test for Equality of Means	t		-1.253
	df		266
	Sig. (2-tailed)		.211
	Mean Difference		-2,958,963.43
	Std. Error Difference		2,362,207.216
	95% Confidence Interval of the Difference	Lower	-7,609,965.954
		Upper	1,692,039.089

The above result shows that the mean revenue of non-beneficiaries is 10,989,267.91 riels and of beneficiaries is 13,948,231.34 riels, but the standard deviation of non-

beneficiaries is 17,244,846.87 riels while the standard deviation of beneficiaries is 21,221,176.42 riels.

Based on the above condition, we set:

Ho: $\mu_{yes} = \mu_{no}$

H1: $\mu_{yes} \neq \mu_{no}$

It is found from the result the calculated value of t (t = -1.253) is in the acceptance region at 95 percent confidence level. This implies that the null hypothesis (Ho) is not rejected. In other words, there is no significant difference between the revenues of the beneficiaries and non-beneficiaries.

Investment:

Table 4.23: Comparative results of investment between beneficiaries and non-beneficiaries

	Have you taken loan from EMT ?	N	Mean	Std. Deviation	Std. Error Mean
Investment last 12 months	No	134	1431798.51	,064,499.012	264,732.394
	Yes	134	1674817.16	,722,912.349	148,836.958

			Investment last
			Equal variances assumed
t-test for Equality of Means	t		-.800
	df		266
	Sig. (2-tailed)		.424
	Mean Difference		-243,018.66
	Std. Error Difference		303,703.277
	95% Confidence Interval of the Difference	Lower	-840,986.818
		Upper	354,949.505

The above result shows that the mean investment of non-beneficiaries is 1,431,798.51 riels and of beneficiaries is 1,674,817.16 riels, but the standard deviation of non-beneficiaries is 3,064,499.01 riels while the standard deviation of beneficiaries is 1,722,912.34 riels.

Based on the above condition, we set:

$H_o: \mu_{yes} = \mu_{no}$

$H_1: \mu_{yes} \neq \mu_{no}$

It is found from the result that the calculated value of t (t = -0.800) is in the acceptance region at 95 percent confidence level. This implies that the null hypothesis (Ho) is not rejected. In other words, there is no significant difference between the investment of the beneficiaries and non-beneficiaries.

House Equipment:

Table 4.24: Comparative results of house equipment between beneficiaries and non-beneficiaries

	Have you taken loan from EMT ?	N	Mean	Std. Deviation	Std. Error Mean
House equipment last 12 months	No	134	846,001.87	718,533.053	62,071.802
	Yes	134	555,597.01	885,693.368	76,512.254

			House equipment last
			Equal variances assumed
t-test for Equality of Means	t		-2.127
	df		266
	Sig. (2-tailed)		.034
	Mean Difference		-209,595.15
	Std. Error Difference		98,524.279
	95% Confidence Interval of the Difference	Lower	-403,581.801
		Upper	-15,608.497

For investment on house equipment, the mean investment is 555,597.01 riels for debtors and 346,001.87 riels for non-debtors while the respective standard deviations are 885,693.36 riels and 718,533.05 riels.

The two hypotheses we set are:

Ho: $\mu_{yes} = \mu_{no}$

H1: $\mu_{yes} \neq \mu_{no}$

The result mentioned above shows that the calculated value of t (t = -2.127) is in the rejection region at 95 percent confidence level. So, the null hypothesis is rejected. This indicates that there is significant different between the investment on house equipment of beneficiaries and non-beneficiaries. Further, mean investment on house equipment of the beneficiaries is more

4.f.2. Chi-Square

Table 4.25: Distribution of beneficiary's income before and after the loan

Incomes Class Riels	12 months after loan O_i	12 month before loan E_i	$O_i - E_i$	$(O_i - E_i)^2 / E_i$
< 2,000,000	15	20	-5	1.25
2,000,000 - 4,000,000	26	44	-18	7.36
4,000,001 - 6,000,000	25	17	8	3.76
6,000,001 - 8,000,000	16	9	7	5.44
8,000,001 - 10,000,000	7	7	0	-
10,000,001 - 12,000,000	4	8	-4	2.00
> 12,000,000	41	29	12	4.97
Total	134	134	χ^2 =	**24.79**

Table 4-25 shows the income categories of beneficiaries 12 months before loan and 12 months after loan, in which there are 7 categories.

Ho: Distribution of beneficiary's income after 12 months loan is similar to 12 months before loan.

H_1: Distribution of beneficiary's income after 12 months loan is different from 12 months before loan.

It is found that the calculated value of χ^2 is 24.79. But the table value of χ^2 at 5 percent significance level and 6 degrees of freedom (number of categories – 1) is 12.59. Thus the calculated value of χ^2 is greater than the table value of χ^2, which is in the rejection region. So, the null hypothesis is rejected. This implies that there is significant change in the distribution of income of the beneficiaries 12 months before getting the loan and 12 months after getting the loan. Further, number of beneficiaries is found to be more in the lower income categories 12 months before getting the loan and, 12 months after getting the loan, the number of beneficiaries in the higher income categories is more.

Table 4.26: Distribution of beneficiary's expenditure before and after the loan

Expenses Class Riels	12 months after loan O_i	12 month before loan E_i	$O_i - E_i$	$(O_i - E_i)^2 / E_i$
< 1,000,000	7	7	0	-
1,000,000 - 2,000,000	20	30	-10	3.33
2,000,001 - 3,000,000	39	38	1	0.03
3,000,001 - 4,000,000	35	34	1	0.03
4,000,001 - 5,000,000	15	15	0	-
5,000,001 - 6,000,000	10	4	6	9.00
> 6,000,000	8	6	2	0.67
Total	134	134	χ^2 =	**13.06**

*It includes expenditures on food, education, health, and ceremonies.

Table 4-26 shows the expenditure distribution of the beneficiaries 12 months after availing the loan and 12 months before availing the loan. The hypotheses we set are:

Ho: Distribution of beneficiary's expenditure 12 months before loan is similar to 12 months after loan.

H_1: Distribution of beneficiary's expenditure 12 months after loan is different from 12 months after loan.

From the Chi-square distribution table, we can see that, at $\alpha = 0.05$ and df = 6, the Critical Value of χ^2 is 12.59, so the calculated value of χ^2 13.06 is in the rejection region and null hypothesis is rejected at 5 percent significance level.

This implies that expenditure distribution of the beneficiaries 12 months after availing the loan and 12 months before availing the loan has changed significantly. It is also observed that the number of beneficiaries in the lower expenditure categories is more 12 months before getting the loan and, after getting the loan, more number of beneficiaries is found in the higher expenditure categories.

Table 4.27: Distribution of beneficiary's asset position before and after the loan

Asset Position Class Riels	12 months after loan O_i	12 month before loan E_i	$O_i - E_i$	$(O_i - E_i)^2 / E_i$
< 1,000,000	7	15	-8	4.27
1,000,000 - 2,000,000	19	39	-20	10.26
2,000,001 - 3,000,000	29	31	-2	0.13
3,000,001 - 4,000,000	21	13	8	4.92
4,000,001 - 5,000,000	12	10	2	0.40
5,000,001 - 6,000,000	11	2	9	40.50
> 6,000,000	35	24	11	5.04
Total	134	134	χ^2 =	**65.52**

*It includes assets position such as investment, invest equipment, house equipment, improving house and saving.

Table 4-27 shows the distribution of the assets position of the beneficiaries 12 months after availing the loan and before availing the loan. The hypotheses we set are:

Ho: Distribution of beneficiary's assets position after 12 months loan is similar to 12 months before loan.

H_1: Distribution of beneficiary's assets position after 12 months loan is different from 12 months before loan.

It is found that the calculated value of χ^2 is 65.52. But the table value of χ^2 at 5 percent significance level and 6 degrees of freedom (number of categories – 1) is 12.59. Thus the calculated value of χ^2 is greater than the table value of χ^2 and it is in the rejection region. So, the null hypothesis is rejected. This implies that there is significant change in the distribution of assets position of the beneficiaries 12 months before getting the loan and 12 months after getting the loan. In the lower categories of asset position,

more number of beneficiaries is found 12 months before availing the loan but 12 months after availing the loan, more number of beneficiaries is found in the higher categories of asset position.

Table 4.28: Distribution of beneficiary's daily cash flow before and after the loan

Cash Flow Class Riels	12 months after loan O_i	12 month before loan E_i	$O_i - E_i$	$(O_i - E_i)^2 / E_i$
< 10,000	26	42	-16	6.10
10,000 - 20,000	41	38	3	0.24
20,001 - 30,000	15	9	6	4.00
30,001 - 40,000	5	9	-4	1.78
40,001 - 50,000	1	6	-5	4.17
50,001 - 60,000	7	6	1	0.17
> 60,000	39	24	15	9.38
Total	134	134	χ^2 =	**25.82**

Table 4-28 shows the cash flow distribution of the beneficiaries 12 months after availing the loan and before availing the loan. The hypotheses we set are:

Ho: Distribution of beneficiary's cash flow after 12 months loan is similar to 12 months before loan.

H_1: Distribution of beneficiary's cash flow after 12 months loan is different from 12 months before loan.

From the Chi-square distribution table, we can see that, at $\alpha = 0.05$ and df = 6, the Critical Value of χ^2 is 12.59, so the calculated value of χ^2 25.82 is in the rejection region and null hypothesis is rejected at 5 percent significance level.

This implies that cash flow distribution of the beneficiaries 12 months after availing the loan and before availing the loan has changed significantly. Further, before availing the loan, more number of beneficiaries is found in the lower categories of cash flow and,

in the higher categories of cash flow, the number of beneficiaries is more 12 months after availing the loan.

4.g. Chapter Summary

To sum up, the study has used three models such as Multiple Discriminating Analysis, Chi-Square and "t"-test to assess the statistical significance between the development loan members and the control group members with respect to cash flow, expenditure, asset position and income and within the developmental loan members before and after the availing of loan with respect to the cash flow, expenditure, asset position and income in businesses and households.

The data analysis shows us that there is significant increase in cash flow, expenditure, asset position and income of the households within the developmental loan members after the availing of loan from the Micro Finance Institutions. Among developmental loan members and control group members, there is significant difference in expenditure, cash flow, income and asset position.

Thus, the hypotheses of the study show that:

(i) The null hypothesis (Ho 1), there is no statistically significant difference in the case flow between development loan members and the control members is rejected.

(ii) The null hypothesis (Ho 2), there is no statistically significant difference in the total income between development loan members and the control members, is rejected.

(iii) The null hypothesis (Ho 3), there is no statistically significant differences in the level of expenditure between development loan members and the control members, is rejected.

(iv) The null hypothesis (Ho 4), there is a statistically significant difference in the value of asset position between development loan members and the control members, is rejected.

(v) The null hypothesis (Ho 5), there is no statistically significant difference in the value of the asset position, expenditure, cash flow and income within development loan members before and after the loan, is rejected; and there is no statistically significance difference between development loan members and the control group members, is rejected.

This shows that there is a statistically significant difference between the development loan members and the control group members with respect to cash flow, income, asset position and expenditure. There is also statistically significant difference in cash flow, income, asset position and expenditure among the development loan members before and after availing the loan.

NOTE:

1. Paul R. Kinnear and Colin D. Gray, SPSS 12 made in simple, Discriminant analysis and Logistic regression, Social Science, Hove & New York, Psychology press, 2004, Pages 374-380

2. Paul R. Kinnear and Colin D. Gray, SPSS 12 made in simple, Discriminant analysis and Logistic regression, Social Science, Hove & New York, Psychology press, 2004, Pages 159-170

CHAPTER 5

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

This chapter summarizes the main findings of the study along with conclusions and recommendations for future studies. It also highlights the limitations of the study.

5.1. Main finding of the study:

The present study was undertaken with a view:

(i) To assess the impact of credit supplied by Micro Finance Institutions on the standard of living of beneficiaries.

(ii) To examine the role of Micro Finance Institutions in reducing rural poverty in general and beneficiaries in particular.

In order to know the impact of loan of Micro Finance Institution with respect to cash flow, expenditures, asset position and income on business and households on the treatment members, primary data were collected from treatment and control group members. To measure the statistical significance of change in cash flow, expenditures, asset position and income on business and households between the development loan members and control group members as well as among the development loan members before and after availing the loan, Multiple Discriminate Analysis, Chi-Square test and 't'-test were used.

The study found that there were statistically significant increases in cash flow, expenditures, asset position and income on business and households among the development loan members before and after availing the loan. Between the development

loan members and control group members, there is also statistically significant difference in cash flow, expenditures, asset position and income.

5.2. Conclusions:

The present study concluded that there was positive impact of loan given by Micro Finance Institution on the development loan members with respect to cash flow, expenditures, asset position and income in business and households. This shows that the Micro Finance Institution has positively contributed the living standard for the development of the loan members.

5.3. Limitations:

The limitations of the study are as follow:

(i) The present study confined to only two provinces out of 24 provinces of the country.

(ii) Out of seven numbers of Micro Finance Institutions operating in the country, only one Micro Finance Institution, namely Ennatien Moulethan Tchonnebat taken into consideration for the purpose of the study.

(iii) Trough the sample Micro Finance Institution providing loans to different categories of beneficiaries for different terms, the study which took into consideration only the beneficiaries who had availed individual loan of one year term.

5.4. Recommendations for future study:

The present study has recommended the following points for understanding future studies by the researchers:

(i) The study could have provided better results if more number of provinces had been covered.

(ii) Instead of confining to one Micro Finance Institution, better results could have been achieved if more number of Micro Finance Institutions had been included.

(iii) The future studies should cover different categories of beneficiaries along with different terms of loan supplied by the Micro Finance Institutions.

Beside the above, the present study may be considered as an important guideline for designing policies by the Micro Finance Institutions, Non Governmental Organizations and the government relating to the development of the beneficiaries in particular and rural community in general.

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Appendix A. Questionnaire

Credit Impact Survey Questionnaire

1- What year and month did you create your business?

.....

2- Are you still in this business?

1. Yes
2. No

If no, what date did the business end? .....

3-What is the type of your business?

1. Agriculture
2. Commerce/trading
3. Manufacturing
4. Service
5. Other (Please explain.....)

4- Have you taken a loan from EMT, ACELEDA, CEB or HATAKAKSEKAR ?

1. No (If no, skip questions 5 through 36) Please answer questions 37 through 66
2. Yes (Please answer questions 5 through 36) do not answer questions 37 through 66

5- Which currency did you borrow?

1. Khmer Riel
2. US Dollar
3. Other (Please explain.....)

6- On what date did you receive your loan?

.....

7- In the 12 months before receiving your loan how many Riels did you add to the total investment in your business for the whole year?

.....

8- In the 12 months after receiving your loan how many Riels did you add to the total investment in your business including the loan received for the whole year?

.....

9- In the12 months before receiving your loan how many Riels did you invest in equipment for your business for the whole year?

.....

10- In the12 months after receiving your loan how many Riels did you invest in equipment for your business for the whole year?

.....

11- In the12 months before receiving your loan how many Riels did you invest in improving your house for the whole year?

.....

12- In the12 months after receiving your loan how many Riels did you invest in improving your house for the whole year?

.....

13- In the12 months before receiving your loan how many Riels did you invest in equipment for your house for the whole year?

.....

14- In the12 months after receiving your loan how many Riels did you invest in equipment for your house for the whole year?

.....

15- In the12 months before receiving your loan did you have access to informal credit?

1. Yes
2. No

16- In the12 months after receiving your loan did you have access to informal credit?

1. Yes
2. No

17- In the12 months before receiving your loan how many Riels did your family spend on education for the whole year?

.....

18- In the12 months after receiving your loan how many Riels did your family spend on education for the whole year?

.....

19- In the12 months before receiving your loan how many Riels did you spend money on food to feed your family members for the whole year?

.....

20- In the 12 months after receiving your loan how many Riels did you spend money on food to feed your family members for the whole year?

.....

21- In the12 months before receiving your loan how many Riels did you spend for health care in your family for the whole year?

.....

22- In the 12 months after receiving your loan how many Riels did you spend for health care in your family for the whole year?

.....

23- In the12 months before receiving your loan how many Riels did you save or use purchase gold for the whole year?

.....

24- In the12 months after receiving your loan how many Riels did you save or use purchase gold for the whole year?

.....

25- In the12 months before receiving your loan how many Riels did you spend on ceremony for the whole year?

.....

26- In the12 months after receiving your loan how many Riels did you spend on ceremony for the whole year?

.....

27- In the12 months before receiving your loan how many Riels did your business cash flow average per day?

.....

28- In the12 months after receiving your loan how many Riels did your business cash flow average per day?

.....

29- In the12 months before receiving your loan how many Riels did your business generate income before all expenses for the entire year?

.....

30- In the12 months before receiving your loan how many Riels did your business generate income before all expenses for the entire year?

.....

31- In the12 months before receiving your loan how much was the interest rate of informal credit in your village as charged per month?

.....

32- In the12 months after receiving your loan how much was the interest rate of informal credit in your village as charged per month?

.....

33. Please an X beside the answer which is true for you.

Sex:
…….. Male
…….. Female

34. Age at nearest birthday……

35. Marital Status:
…….. Single
…….. Married
…….. Divorced
……..Widowed

36. Education level:
…….. 0 through 5th grade
…….. 6th through 9th grade
…….. 10th through 12th grade
……..1 or 2 years of college
……..3 or more years of college

IN YOU ANSWERED YES TO QUESTION 4 STOP HERE, DO NOT ANSWER ANY MORE QUESTIONS

37- In the last 12 months how many Riels did you add to the total investment in your business for the whole year?
……

38- In the 12 months before the last 12 months how many Riels did you add to the total investment in your business for the whole year?
……

39- In the last 12 months how many Riels did you invested in equipment for your business for the whole year?
……

40- In the 12 months before the last 12 months how many Riels did you invested in equipment for your business for the whole year?
……

41- In the last 12 months how many Riels did you invest in improving your house for the whole year? ……..

42- In the 12 months before the last 12 months how many Riels did you invest in improving your house for the whole year?

.....

43- In the last 12 months how many Riels did you invest in equipment for your house for the whole year?

.....

44- In the 12 months before the last 12 months how many Riels did you invest in equipment for your house for the whole year?

.....

45- In the last 12 months did you have access to informal credit?

1. Yes
2. No

46- In the 12 months before the last 12 months did you have access to informal credit?

1. Yes
2. No

47- In the last 12 months how many Riels did your family spend on education for the whole year?

.....

48- In the 12 months before the last 12 months how many Riels did your family spend on education for the whole year?

.....

49- In the last 12 months how many Riels did you spend money on food to feed your family members for the whole year?

.....

50- In the 12 months before the last 12 months how many Riels did you spend money on food to feed your family members for the whole year?

.....

51- In the last 12 months how many Riels did you spend for health care in your family for the whole year?

.....

52- In the 12 months before the last 12 months how many Riels did you spend for health care in your family for the whole year?

.....

53- In the last 12 months how many Riels did you saved or use to purchase gold for the whole year?

.....

54- In the 12 months before the last 12 months how many Riels did you saved or use to purchase gold for the whole year?

.....

55- In the last 12 months how many Riels did you spend on ceremony for the whole year?

.....

56- In the 12 months before the last 12 months how many Riels did you increase more expenses on ceremony for the whole year?

.....

57- In the last 12 months how many Riels did your cash flow always have average per day?

.....

58- In the 12 months before the last 12 months how many Riels did your cash flow always have average per day?

.....

59- In the last 12 months how many Riels did your business generate in total income before all expenses for the entire year?

.....

60- In the 12 months before the last 12 months how many Riels did your business generate in total income before all expenses for the entire year?

.....

61- In the last 12 months how much was the interest rate of informal credit in your village as charged per month?

.....

62- In the 12 months before the last 12 months how much was the interest rate of informal credit in your village as charged per month?

.....

63- Please an X beside the answer which is true for you.

Sex:
…….. Male
…….. Female

64- Age at nearest birthday……

65- Marital Status:
…….. Single
…….. Married
…….. Divorced
……..Widowed

66- Education level:
…….. 0 through 5th grade
…….. 6th through 9th grade
…….. 10th through 12th grade
……...1 or 2 years of college
……...3 or more years of college

Appendix B. Tables

Table 4.3: Distibution of member on the basis of investment in business during the last 12 months

Name of Province	Control Member					Treatment Member				
	<500,000	500,000 to 1,000,000	1,000,001 to 2,000,000	2,000,001 to 3,000,000	>3,000,000	<500,000	500,000 to 1,000,000	1,000,001 to 2,000,000	2,000,001 to 3,000,000	>3,000,000
Kompong Speu	45	15	12	4	7	14	26	25	8	10
	54%	18%	14%	5%	8%	17%	31%	30%	10%	12%
Kompong Chhnang	13	27	6	3	2	11	11	20	7	2
	25%	53%	12%	6%	4%	22%	22%	39%	14%	4%
Total	58	42	18	7	9	25	37	45	15	12
	43%	31%	13%	5%	7%	19%	28%	34%	11%	9%

Table 4.4: Distibution of member on the basis of income in business during the last 12 months

Name of Province	Control Member					Treatment Member				
	<2,000,000	2,000,000 to 4,000,000	4,000,001 to 6,000,000	6,001001 to 8,000,000	>8,000,000	<2,000,000	2,000,000 to 4,000,000	4,000,001 to 6,000,000	6,001001 to 8,000,000	>8,000,000
Kompong Speu	14	21	10	4	34	7	11	17	13	35
	17%	25%	12%	5%	41%	8%	13%	20%	16%	42%
Kompong Chhnang	8	19	9	3	12	8	15	8	3	17
	16%	37%	18%	6%	24%	16%	29%	16%	6%	33%
Total	22	40	19	7	46	15	26	25	16	52
	16%	30%	14%	5%	34%	11%	19%	19%	12%	39%

Table 4.5: Distibution of member on the basis of investment equipment during the last 12 months

Name of Province	Control Member					Treatment Member				
	<500,000	500,000 to 1,000,000	1,000,001 to 2,000,000	2,000,001 to 3,000,000	>3,000,000	<500,000	500,000 to 1,000,000	1,000,001 to 2,000,000	2,000,001 to 3,000,000	>3,000,000
Kompong Speu	60	9	6	4	4	50	17	9	3	4
	72%	11%	7%	5%	5%	60%	20%	11%	4%	5%
Kompong Chhnang	34	9	6	1	1	27	16	7	0	1
	67%	18%	12%	2%	2%	53%	31%	14%	0%	2%
Total	94	18	12	5	5	77	33	16	3	5
	70%	13%	9%	4%	4%	57%	25%	12%	2%	4%

Table 4.6: Distibution of member on the basis of spending on health care during the last 12 months

Name of Province	Control Member					Treatment Member				
	<100,000	100,000 to 500,000	500,001 to 1,000,000	1,000,001 to 2,000,000	>2,000,000	<100,000	100,000 to 500,000	500,001 to 1,000,000	1,000,001 to 2,000,000	>2,000,000
Kompong Speu	18	46	12	4	3	13	58	8	3	1
	22%	55%	14%	5%	4%	16%	70%	10%	4%	1%
Kompong Chhnang	3	34	10	3	1	15	33	3	0	0
	6%	67%	20%	6%	2%	29%	65%	6%	0%	0%
Total	21	80	22	7	4	28	91	11	3	1
	16%	60%	16%	5%	3%	21%	68%	8%	2%	1%

Table 4.7: Distibution of member on the basis of spend on food during the last 12 months

Name of Province	Control Member					Treatment Member				
	<500,000	500,000 to 1,000,000	1,000,001 to 2,000,000	2,000,001 to 3,000,000	>3,000,000	<500,000	500,000 to 1,000,000	1,000,001 to 2,000,000	2,000,001 to 3,000,000	>3,000,000
Kompong Speu	2	15	44	10	12	3	11	37	19	13
	2%	18%	53%	12%	14%	4%	13%	45%	23%	16%
Kompong Chhnang	1	5	31	9	5	2	9	25	10	5
	2%	10%	61%	18%	10%	4%	18%	49%	20%	10%
Total	3	20	75	19	17	5	20	62	29	18
	2%	15%	56%	14%	13%	4%	15%	46%	22%	13%

Table 4.8: Distibution of member on the basis of investment in improving house during the last 12 months

Name of Province	Control Member					Treatment Member				
	<500,000	500,000 to 1,000,000	1,000,001 to 2,000,000	2,000,001 to 3,000,000	>3,000,000	<500,000	500,000 to 1,000,000	1,000,001 to 2,000,000	2001001 to 3,000,000	>3,000,000
Kompong Speu	46	15	6	6	10	55	11	9	3	5
	55%	18%	7%	7%	12%	66%	13%	11%	4%	6%
Kompong Chhnang	32	5	3	2	9	38	6	3	1	3
	63%	10%	6%	4%	18%	75%	12%	6%	2%	6%
Total	78	20	9	8	19	93	17	12	4	8
	58%	15%	7%	6%	14%	69%	13%	9%	3%	6%

Table 4.9: Distibution of member on the basis of invest in equipment for house during the last 12 months

Name of Province	Control Member					Treatment Member				
	<100,000	100,000 to 500,000	500,001 to 1,000,000	1,000,001 to 2,000,000	>2,000,000	<100,000	100,000 to 500,000	500,001 to 1,000,000	1,000,001 to 2,000,000	>2,000,000
Kompong Speu	41	30	6	3	3	23	39	6	7	8
	49%	36%	7%	4%	4%	28%	47%	7%	8%	10%
Kompong Chhnang	15	29	5	0	2	14	25	8	2	1
	29%	57%	10%	0%	4%	27%	49%	16%	4%	2%
Total	56	59	11	3	5	37	64	14	9	9
	42%	44%	8%	2%	4%	28%	48%	10%	7%	7%

Table 4.10: Distibution of member on the basis of spend on education during the last 12 months

Name of Province	Control Member					Treatment Member				
	<100,000	100,000 to 500,000	500,001 to 1,000,000	1,000,001 to 2,000,000	>2,000,000	<100,000	100,000 to 500,000	500,001 to 1,000,000	1,000,001 to 2,000,000	>2,000,000
Kompong Speu	14	39	17	10	3	10	38	24	8	3
	17%	47%	20%	12%	4%	12%	46%	29%	10%	4%
Kompong Chhnang	14	21	12	3	1	8	24	13	6	0
	27%	41%	24%	6%	2%	16%	47%	25%	12%	0%
Total	28	60	29	13	4	18	62	37	14	3
	21%	45%	22%	10%	3%	13%	46%	28%	10%	2%

Table 4.11: Distibution of member on the basis of saving during the last 12 months

Name of Province	Control Member					Treatment Member				
	<500,000	500,000 to 1,000,000	1,000,001 to 2,000,000	2001001 to 3,000,000	>3,000,000	<500,000	500,000 to 1,000,000	1,000,001 to 2,000,000	2001001 to 3,000,000	>3,000,000
Kompong Speu	35	27	13	1	7	31	30	12	6	4
	42%	33%	16%	1%	8%	37%	36%	14%	7%	5%
Kompong Chhnang	17	15	14	1	4	14	17	8	5	7
	33%	29%	27%	2%	8%	27%	33%	16%	10%	14%
Total	52	42	27	2	11	45	47	20	11	11
	39%	31%	20%	1%	8%	34%	35%	15%	8%	8%

Table 4.12: Distibution of member on the basis of spending on ceremony during the last 12 months

Name of Province	Control Member					Treatment Member				
	<100,000	100,000 to 500,000	500,001 to 1,000,000	1,000,001 to 1,500,000	>1,500,000	<100,000	100,000 to 500,000	500,001 to 1,000,000	1,000,001 to 1,500,000	>1,500,000
Kompong Speu	2	49	29	1	2	3	44	29	5	2
	2%	59%	35%	1%	2%	4%	53%	35%	6%	2%
Kompong Chhnang	1	34	11	3	2	2	43	5	0	1
	2%	67%	22%	6%	4%	4%	84%	10%	0%	2%
Total	3	83	40	4	4	5	87	34	5	3
	2%	62%	30%	3%	3%	4%	65%	25%	4%	2%

Table 4.13: Distibution of member on the basis of average cash flow per day during the last 12 months

Name of Province	Control Member					Treatment Member				
	<10,000	10,000 to 50,000	50,001 to 100,000	100,001 200,000	> 200,000	<10,000	10,000 to 50,000	50,001 to 100,000	100,001 200,000	> 200,000
Kompong Speu	17	42	9	7	8	10	37	19	10	7
	20%	51%	11%	8%	10%	12%	45%	23%	12%	8%
Kompong Chhnang	27	15	8	1	0	20	21	6	2	2
	53%	29%	16%	2%	0%	39%	41%	12%	4%	4%
Total	44	57	17	8	8	30	58	25	12	9
	33%	43%	13%	6%	6%	22%	43%	19%	9%	7%

Appendix C. Tables of finding

Discriminant 66 Percent

Analysis Case Processing Summary

Unweighted Cases		N	Percent
Valid		177	66.0
Excluded	Missing or out-of-range group codes	0	.0
	At least one missing discriminating variable	0	.0
	Both missing or out-of-range group codes and at least one missing discriminating variable	0	.0
	Unselected	91	34.0
	Total	91	34.0
Total		268	100.0

Tests of Equality of Group Means

	Wilks' Lambda	F	df1	df2	Sig.
Investment 12 months before last 12 months	.979	3.776	1	175	.054
Investment last 12 months	.991	1.558	1	175	.214
Equipment 12 months before last 12 months	1.000	.041	1	175	.840
Equipment last 12 months	.996	.783	1	175	.378
Improving house 12 months before last 12 months	.980	3.538	1	175	.062
Improving house last 12 months	.958	7.729	1	175	.006
House equipment 12 months before last 12 months	.999	.151	1	175	.698
House equipment last 12 months	.979	3.730	1	175	.055
Education expenses 12 months before last 12 months	1.000	.000	1	175	.984
Education expenses last 12 months	.994	1.103	1	175	.295
Food expenses 12 months before last 12 months	.992	1.423	1	175	.235
Food expenses last 12 months	1.000	.001	1	175	.978
Health expenses 12 months before last 12 months	.998	.266	1	175	.607
Health expenses last 12 months	.988	2.147	1	175	.145
Saving 12 months before last 12 months	.997	.581	1	175	.447
Saving last 12 months	.999	.150	1	175	.699
Ceremony expenses 12 months before last 12 months	.999	.215	1	175	.644
Ceremony expenses last 12 months	.998	.270	1	175	.604
Cash flow per day 12 months before last 12 months	.998	.322	1	175	.571
Cash flow per day last 12 months	.998	.367	1	175	.546
Revenues 12 months before last 12 months	1.000	.044	1	175	.833
Revenues last 12 months	.990	1.688	1	175	.196

Eigenvalues

Function	Eigenvalue	% of Variance	Cumulative %	Canonical Correlation
1	.243[a]	100.0	100.0	.442

a. First 1 canonical discriminant functions were used in the analysis.

Wilks' Lambda

Test of Function(s)	Wilks' Lambda	Chi-square	df	Sig.
1	.805	35.650	22	.033

Standardized Canonical Discriminant Function Coefficients

	Function
	1
Investment 12 months before last 12 months	-.308
Investment last 12 months	-.142
Equipment 12 months before last 12 months	-.129
Equipment last 12 months	.703
Improving house 12 months before last 12 months	-.349
Improving house last 12 months	.653
House equipment 12 months before last 12 months	.280
House equipment last 12 months	-.309
Education expenses 12 months before last 12 months	.267
Education expenses last 12 months	-.580
Food expenses 12 months before last 12 months	.194
Food expenses last 12 months	-.058
Health expenses 12 months before last 12 months	-.160
Health expenses last 12 months	.452
Saving 12 months before last 12 months	-.181
Saving last 12 months	.042
Ceremony expenses 12 months before last 12 months	.070
Ceremony expenses last 12 months	-.152
Cash flow per day 12 months before last 12 months	.464
Cash flow per day last 12 months	-.220
Revenues 12 months before last 12 months	.289
Revenues last 12 months	-.649

Structure Matrix

	Function
	1
Improving house last 12 months	.426
Investment 12 months before last 12 months	-.298
House equipment last 12 months	-.296
Improving house 12 months before last 12 months	-.289
Health expenses last 12 months	.225
Revenues last 12 months	-.199
Investment last 12 months	-.191
Food expenses 12 months before last 12 months	.183
Education expenses last 12 months	-.161
Equipment last 12 months	.136
Saving 12 months before last 12 months	.117
Cash flow per day last 12 months	-.093
Cash flow per day 12 months before last 12 months	-.087
Ceremony expenses last 12 months	-.080
Health expenses 12 months before last 12 months	-.079
Ceremony expenses 12 months before last 12 months	-.071
House equipment 12 months before last 12 months	-.060
Saving last 12 months	-.059
Revenues 12 months before last 12 months	-.032
Equipment 12 months before last 12 months	-.031
Food expenses last 12 months	-.004
Education expenses 12 months before last 12 months	.003

Pooled within-groups correlations between discriminating variables and standardized canonical discriminant functions
Variables ordered by absolute size of correlation within function.

Functions at Group Centroids

Have you taken loan from EMT ?	Function
	1
No	.493
Yes	-.487

Unstandardized canonical discriminant functions evaluated at group means

Classification Processing Summary

Processed		268
Excluded	Missing or out-of-range group codes	0
	At least one missing discriminating variable	0
Used in Output		268

Prior Probabilities for Groups

Have you taken loan from EMT ?	Prior	Cases Used in Analysis	
		Unweighted	Weighted
No	.500	88	88.000
Yes	.500	89	89.000
Total	1.000	177	177.000

Classification Function Coefficients

	Have you taken loan from EMT ?	
	No	Yes
Investment 12 months before last 12 months	2.313E-07	4.287E-07
Investment last 12 months	1.613E-07	2.243E-07
Equipment 12 months before last 12 months	-1.24E-07	-6.06E-08
Equipment last 12 months	-1.73E-07	-3.20E-07
Improving house 12 months before last 12 months	-1.11E-07	6.575E-09
Improving house last 12 months	4.638E-08	-1.45E-07
House equipment 12 months before last 12 months	8.986E-08	-1.27E-07
House equipment last 12 months	2.811E-07	6.750E-07
Education expenses 12 months before last 12 months	-7.62E-07	-1.07E-06
Education expenses last 12 months	3.113E-07	1.046E-06
Food expenses 12 months before last 12 months	1.699E-07	8.067E-08
Food expenses last 12 months	8.788E-07	9.199E-07
Health expenses 12 months before last 12 months	3.848E-07	5.688E-07
Health expenses last 12 months	7.919E-07	9.286E-08
Saving 12 months before last 12 months	1.879E-08	5.731E-08
Saving last 12 months	5.449E-08	2.948E-08
Ceremony expenses 12 months before last 12 months	-8.21E-09	-1.40E-07
Ceremony expenses last 12 months	2.285E-06	2.617E-06
Cash flow per day 12 months before last 12 months	-3.24E-07	-6.42E-07
Cash flow per day last 12 months	4.857E-08	1.745E-07
Revenues 12 months before last 12 months	4.520E-08	2.771E-08
Revenues last 12 months	-4.02E-08	-1.17E-08
(Constant)	-2.584	-3.035

Fisher's linear discriminant functions

Classification Results[a,b]

			Have you taken loan from EMT ?	Predicted Group Membership		Total
				No	Yes	
Cases Selected	Original	Count	No	68	20	88
			Yes	29	60	89
		%	No	77.3	22.7	100.0
			Yes	32.6	67.4	100.0
Cases Not Selected	Original	Count	No	26	20	46
			Yes	19	26	45
		%	No	56.5	43.5	100.0
			Yes	42.2	57.8	100.0

a. 72.3% of selected original grouped cases correctly classified.

b. 57.1% of unselected original grouped cases correctly classified.

Discriminant 72 Percent

Analysis Case Processing Summary

Unweighted Cases		N	Percent
Valid		193	72.0
Excluded	Missing or out-of-range group codes	0	.0
	At least one missing discriminating variable	0	.0
	Both missing or out-of-range group codes and at least one missing discriminating variable	0	.0
	Unselected	75	28.0
	Total	75	28.0
Total		268	100.0

Tests of Equality of Group Means

	Wilks' Lambda	F	df1	df2	Sig.
Investment 12 months before last 12 months	.997	.481	1	191	.489
Investment last 12 months	.994	1.247	1	191	.266
Equipment 12 months before last 12 months	.999	.126	1	191	.724
Equipment last 12 months	.996	.742	1	191	.390
Improving house 12 months before last 12 months	.989	2.134	1	191	.146
Improving house last 12 months	.954	9.299	1	191	.003
House equipment 12 months before last 12 months	.992	1.637	1	191	.202
House equipment last 12 months	.991	1.667	1	191	.198
Education expenses 12 months before last 12 months	1.000	.052	1	191	.820
Education expenses last 12 months	.998	.360	1	191	.549
Food expenses 12 months before last 12 months	.999	.250	1	191	.618
Food expenses last 12 months	.997	.583	1	191	.446
Health expenses 12 months before last 12 months	1.000	.091	1	191	.763
Health expenses last 12 months	.983	3.271	1	191	.072
Saving 12 months before last 12 months	.996	.831	1	191	.363
Saving last 12 months	.999	.112	1	191	.738
Ceremony expenses 12 months before last 12 months	1.000	.095	1	191	.758
Ceremony expenses last 12 months	.999	.112	1	191	.738
Cash flow per day 12 months before last 12 months	.997	.517	1	191	.473
Cash flow per day last 12 months	.997	.576	1	191	.449
Revenues 12 months before last 12 months	1.000	.074	1	191	.786
Revenues last 12 months	.990	2.026	1	191	.156

Eigenvalues

Function	Eigenvalue	% of Variance	Cumulative %	Canonical Correlation
1	.237[a]	100.0	100.0	.438

a. First 1 canonical discriminant functions were used in the analysis.

Wilks' Lambda

Test of Function(s)	Wilks' Lambda	Chi-square	df	Sig.
1	.808	38.347	22	.017

Standardized Canonical Discriminant Function Coefficients

	Function
	1
Investment 12 months before last 12 months	1.055
Investment last 12 months	-.941
Equipment 12 months before last 12 months	-.505
Equipment last 12 months	1.215
Improving house 12 months before last 12 months	-.196
Improving house last 12 months	.621
House equipment 12 months before last 12 months	-.089
House equipment last 12 months	-.255
Education expenses 12 months before last 12 months	.079
Education expenses last 12 months	-.124
Food expenses 12 months before last 12 months	.066
Food expenses last 12 months	.211
Health expenses 12 months before last 12 months	-.135
Health expenses last 12 months	.445
Saving 12 months before last 12 months	-.657
Saving last 12 months	.208
Ceremony expenses 12 months before last 12 months	.138
Ceremony expenses last 12 months	-.312
Cash flow per day 12 months before last 12 months	-.276
Cash flow per day last 12 months	.275
Revenues 12 months before last 12 months	.180
Revenues last 12 months	-.350

Structure Matrix

	Function
	1
Improving house last 12 months	.453
Health expenses last 12 months	.269
Improving house 12 months before last 12 months	-.217
Revenues last 12 months	-.211
House equipment last 12 months	-.192
House equipment 12 months before last 12 months	-.190
Investment last 12 months	-.166
Saving 12 months before last 12 months	.135
Equipment last 12 months	.128
Food expenses last 12 months	.113
Cash flow per day last 12 months	-.113
Cash flow per day 12 months before last 12 months	-.107
Investment 12 months before last 12 months	.103
Education expenses last 12 months	-.089
Food expenses 12 months before last 12 months	.074
Equipment 12 months before last 12 months	-.053
Ceremony expenses last 12 months	-.050
Saving last 12 months	.050
Ceremony expenses 12 months before last 12 months	-.046
Health expenses 12 months before last 12 months	-.045
Revenues 12 months before last 12 months	-.040
Education expenses 12 months before last 12 months	.034

Pooled within-groups correlations between discriminating variables and standardized canonical discriminant functions
Variables ordered by absolute size of correlation within function.

Functions at Group Centroids

Have you taken loan from EMT ?	Function
	1
No	.497
Yes	-.472

Unstandardized canonical discriminant functions evaluated at group means

Classification Processing Summary

Processed		268
Excluded	Missing or out-of-range group codes	0
	At least one missing discriminating variable	0
Used in Output		268

Prior Probabilities for Groups

Have you taken loan from EMT ?	Prior	Cases Used in Analysis	
		Unweighted	Weighted
No	.500	94	94.000
Yes	.500	99	99.000
Total	1.000	193	193.000

Classification Function Coefficients

	Have you taken loan from EMT ?	
	No	Yes
Investment 12 months before last 12 months	7.357E-08	-1.53E-07
Investment last 12 months	-7.527E-08	3.339E-07
Equipment 12 months before last 12 months	-9.918E-08	1.997E-07
Equipment last 12 months	9.837E-08	-1.70E-07
Improving house 12 months before last 12 months	-1.971E-07	-1.33E-07
Improving house last 12 months	3.668E-08	-1.45E-07
House equipment 12 months before last 12 months	6.759E-07	7.906E-07
House equipment last 12 months	1.390E-07	4.445E-07
Education expenses 12 months before last 12 months	-1.085E-06	-1.18E-06
Education expenses last 12 months	4.965E-07	6.489E-07
Food expenses 12 months before last 12 months	9.871E-07	9.346E-07
Food expenses last 12 months	6.932E-07	5.468E-07
Health expenses 12 months before last 12 months	4.331E-07	5.858E-07
Health expenses last 12 months	4.649E-07	-1.44E-07
Saving 12 months before last 12 months	-2.431E-07	-1.16E-07
Saving last 12 months	-1.912E-07	-2.88E-07
Ceremony expenses 12 months before last 12 months	1.878E-07	-7.78E-08
Ceremony expenses last 12 months	2.513E-06	3.215E-06
Cash flow per day 12 months before last 12 months	-8.993E-07	-7.03E-07
Cash flow per day last 12 months	4.656E-07	3.036E-07
Revenues 12 months before last 12 months	6.329E-08	5.116E-08
Revenues last 12 months	-4.950E-08	-3.27E-08
(Constant)	-2.807	-2.916

Fisher's linear discriminant functions

Classification Results[a,b]

			Have you taken loan from EMT ?	Predicted Group Membership		Total
				No	Yes	
Cases Selected	Original	Count	No	65	29	94
			Yes	35	64	99
		%	No	69.1	30.9	100.0
			Yes	35.4	64.6	100.0
Cases Not Selected	Original	Count	No	25	15	40
			Yes	11	24	35
		%	No	62.5	37.5	100.0
			Yes	31.4	68.6	100.0

a. 66.8% of selected original grouped cases correctly classified.

b. 65.3% of unselected original grouped cases correctly classified.

Discriminant 75 Percent

Analysis Case Processing Summary

Unweighted Cases		N	Percent
Valid		201	75.0
Excluded	Missing or out-of-range group codes	0	.0
	At least one missing discriminating variable	0	.0
	Both missing or out-of-range group codes and at least one missing discriminating variable	0	.0
	Unselected	67	25.0
	Total	67	25.0
Total		268	100.0

Tests of Equality of Group Means

	Wilks' Lambda	F	df1	df2	Sig.
Investment 12 months before last 12 months	.998	.375	1	199	.541
Investment last 12 months	.996	.855	1	199	.356
Equipment 12 months before last 12 months	1.000	.005	1	199	.944
Equipment last 12 months	.997	.605	1	199	.438
Improving house 12 months before last 12 months	.982	3.575	1	199	.060
Improving house last 12 months	.971	5.849	1	199	.016
House equipment 12 months before last 12 months	1.000	.016	1	199	.900
House equipment last 12 months	.976	4.851	1	199	.029
Education expenses 12 months before last 12 months	.998	.385	1	199	.536
Education expenses last 12 months	.996	.742	1	199	.390
Food expenses 12 months before last 12 months	1.000	.029	1	199	.865
Food expenses last 12 months	.999	.111	1	199	.739
Health expenses 12 months before last 12 months	1.000	.022	1	199	.881
Health expenses last 12 months	.973	5.585	1	199	.019
Saving 12 months before last 12 months	.997	.667	1	199	.415
Saving last 12 months	1.000	.001	1	199	.978
Ceremony expenses 12 months before last 12 months	.999	.255	1	199	.614
Ceremony expenses last 12 months	1.000	.091	1	199	.763
Cash flow per day 12 months before last 12 months	.997	.650	1	199	.421
Cash flow per day last 12 months	.995	.981	1	199	.323
Revenues 12 months before last 12 months	1.000	.028	1	199	.867
Revenues last 12 months	.988	2.366	1	199	.126

Eigenvalues

Function	Eigenvalue	% of Variance	Cumulative %	Canonical Correlation
1	.305[a]	100.0	100.0	.484

a. First 1 canonical discriminant functions were used in the analysis.

Wilks' Lambda

Test of Function(s)	Wilks' Lambda	Chi-square	df	Sig.
1	.766	50.086	22	.001

Standardized Canonical Discriminant Function Coefficients

	Function
	1
Investment 12 months before last 12 months	.716
Investment last 12 months	-.691
Equipment 12 months before last 12 months	-.300
Equipment last 12 months	1.054
Improving house 12 months before last 12 months	-.452
Improving house last 12 months	.455
House equipment 12 months before last 12 months	.476
House equipment last 12 months	-.442
Education expenses 12 months before last 12 months	-.064
Education expenses last 12 months	-.234
Food expenses 12 months before last 12 months	.429
Food expenses last 12 months	-.372
Health expenses 12 months before last 12 months	-.089
Health expenses last 12 months	.511
Saving 12 months before last 12 months	-.684
Saving last 12 months	.133
Ceremony expenses 12 months before last 12 months	-.065
Ceremony expenses last 12 months	.207
Cash flow per day 12 months before last 12 months	5.714
Cash flow per day last 12 months	-5.727
Revenues 12 months before last 12 months	.351
Revenues last 12 months	-.632

Structure Matrix

	Function
	1
Improving house last 12 months	.310
Health expenses last 12 months	.303
House equipment last 12 months	-.283
Improving house 12 months before last 12 months	-.243
Revenues last 12 months	-.197
Cash flow per day last 12 months	-.127
Investment last 12 months	-.119
Education expenses last 12 months	-.111
Saving 12 months before last 12 months	.105
Cash flow per day 12 months before last 12 months	-.103
Equipment last 12 months	.100
Education expenses 12 months before last 12 months	-.080
Investment 12 months before last 12 months	.079
Ceremony expenses 12 months before last 12 months	-.065
Food expenses last 12 months	-.043
Ceremony expenses last 12 months	-.039
Food expenses 12 months before last 12 months	.022
Revenues 12 months before last 12 months	-.022
Health expenses 12 months before last 12 months	-.019
House equipment 12 months before last 12 months	-.016
Equipment 12 months before last 12 months	.009
Saving last 12 months	.004

Pooled within-groups correlations between discriminating variables and standardized canonical discriminant functions
Variables ordered by absolute size of correlation within function.

Functions at Group Centroids

Have you taken loan from EMT ?	Function
	1
No	.553
Yes	-.547

Unstandardized canonical discriminant functions evaluated at group means

Classification Processing Summary

Processed		268
Excluded	Missing or out-of-range group codes	0
	At least one missing discriminating variable	0
Used in Output		268

Prior Probabilities for Groups

Have you taken loan from EMT ?	Prior	Cases Used in Analysis	
		Unweighted	Weighted
No	.500	100	100.000
Yes	.500	101	101.000
Total	1.000	201	201.000

Classification Function Coefficients

	Have you taken loan from EMT ?	
	No	Yes
Investment 12 months before last 12 months	9.334E-08	-8.46E-08
Investment last 12 months	-1.36E-07	1.583E-07
Equipment 12 months before last 12 months	-2.77E-07	-1.02E-07
Equipment last 12 months	1.975E-07	-6.41E-08
Improving house 12 months before last 12 months	-1.32E-07	3.361E-08
Improving house last 12 months	3.340E-08	-1.31E-07
House equipment 12 months before last 12 months	1.496E-07	-2.86E-07
House equipment last 12 months	2.189E-07	8.415E-07
Education expenses 12 months before last 12 months	8.256E-07	9.752E-07
Education expenses last 12 months	-3.11E-07	4.398E-08
Food expenses 12 months before last 12 months	1.058E-06	5.784E-07
Food expenses last 12 months	7.770E-07	1.150E-06
Health expenses 12 months before last 12 months	3.821E-07	5.206E-07
Health expenses last 12 months	5.390E-07	-2.69E-07
Saving 12 months before last 12 months	-3.18E-07	-1.64E-07
Saving last 12 months	-3.12E-08	-1.05E-07
Ceremony expenses 12 months before last 12 months	2.700E-07	4.124E-07
Ceremony expenses last 12 months	1.725E-06	1.228E-06
Cash flow per day 12 months before last 12 months	1.649E-07	-4.56E-06
Cash flow per day last 12 months	-1.94E-07	3.768E-06
Revenues 12 months before last 12 months	6.720E-08	4.157E-08
Revenues last 12 months	-5.25E-08	-1.79E-08
(Constant)	-2.898	-3.149

Fisher's linear discriminant functions

Classification Results[a,b]

			Have you taken loan from EMT ?	Predicted Group Membership		Total
				No	Yes	
Cases Selected	Original	Count	No	80	20	100
			Yes	35	66	101
		%	No	80.0	20.0	100.0
			Yes	34.7	65.3	100.0
Cases Not Selected	Original	Count	No	21	13	34
			Yes	14	19	33
		%	No	61.8	38.2	100.0
			Yes	42.4	57.6	100.0

a. 72.6% of selected original grouped cases correctly classified.

b. 59.7% of unselected original grouped cases correctly classified.

Discriminant 79 Percent

Analysis Case Processing Summary

Unweighted Cases		N	Percent
Valid		214	79.9
Excluded	Missing or out-of-range group codes	0	.0
	At least one missing discriminating variable	0	.0
	Both missing or out-of-range group codes and at least one missing discriminating variable	0	.0
	Unselected	54	20.1
	Total	54	20.1
Total		268	100.0

Tests of Equality of Group Means

	Wilks' Lambda	F	df1	df2	Sig.
Investment 12 months before last 12 months	.990	2.046	1	212	.154
Investment last 12 months	.989	2.378	1	212	.125
Equipment 12 months before last 12 months	.999	.268	1	212	.606
Equipment last 12 months	1.000	.049	1	212	.824
Improving house 12 months before last 12 months	.977	4.885	1	212	.028
Improving house last 12 months	.976	5.288	1	212	.022
House equipment 12 months before last 12 months	.999	.148	1	212	.701
House equipment last 12 months	.986	3.057	1	212	.082
Education expenses 12 months before last 12 months	.999	.121	1	212	.728
Education expenses last 12 months	1.000	.002	1	212	.966
Food expenses 12 months before last 12 months	.996	.857	1	212	.356
Food expenses last 12 months	.999	.122	1	212	.727
Health expenses 12 months before last 12 months	.988	2.607	1	212	.108
Health expenses last 12 months	.984	3.513	1	212	.062
Saving 12 months before last 12 months	.995	.974	1	212	.325
Saving last 12 months	.997	.535	1	212	.465
Ceremony expenses 12 months before last 12 months	.992	1.662	1	212	.199
Ceremony expenses last 12 months	.994	1.310	1	212	.254
Cash flow per day 12 months before last 12 months	1.000	.082	1	212	.775
Cash flow per day last 12 months	1.000	.034	1	212	.854
Revenues 12 months before last 12 months	.999	.164	1	212	.686
Revenues last 12 months	.995	1.151	1	212	.284

Eigenvalues

Function	Eigenvalue	% of Variance	Cumulative %	Canonical Correlation
1	.192[a]	100.0	100.0	.402

a. First 1 canonical discriminant functions were used in the analysis.

Wilks' Lambda

Test of Function(s)	Wilks' Lambda	Chi-square	df	Sig.
1	.839	35.351	22	.036

Standardized Canonical Discriminant Function Coefficients

	Function
	1
Investment 12 months before last 12 months	-.071
Investment last 12 months	.674
Equipment 12 months before last 12 months	.364
Equipment last 12 months	-.430
Improving house 12 months before last 12 months	.363
Improving house last 12 months	-.512
House equipment 12 months before last 12 months	-.494
House equipment last 12 months	.340
Education expenses 12 months before last 12 months	-.167
Education expenses last 12 months	.132
Food expenses 12 months before last 12 months	-.129
Food expenses last 12 months	-.094
Health expenses 12 months before last 12 months	.298
Health expenses last 12 months	-.414
Saving 12 months before last 12 months	-.071
Saving last 12 months	.132
Ceremony expenses 12 months before last 12 months	.249
Ceremony expenses last 12 months	-.210
Cash flow per day 12 months before last 12 months	.043
Cash flow per day last 12 months	-.055
Revenues 12 months before last 12 months	-.400
Revenues last 12 months	.625

Structure Matrix

	Function
	1
Improving house last 12 months	-.360
Improving house 12 months before last 12 months	.346
Health expenses last 12 months	-.294
House equipment last 12 months	.274
Health expenses 12 months before last 12 months	.253
Investment last 12 months	.242
Investment 12 months before last 12 months	.224
Ceremony expenses 12 months before last 12 months	.202
Ceremony expenses last 12 months	.179
Revenues last 12 months	.168
Saving 12 months before last 12 months	.155
Food expenses 12 months before last 12 months	-.145
Saving last 12 months	.115
Equipment 12 months before last 12 months	.081
Revenues 12 months before last 12 months	-.063
House equipment 12 months before last 12 months	-.060
Food expenses last 12 months	-.055
Education expenses 12 months before last 12 months	-.054
Cash flow per day 12 months before last 12 months	-.045
Equipment last 12 months	-.035
Cash flow per day last 12 months	-.029
Education expenses last 12 months	-.007

Pooled within-groups correlations between discriminating variables and standardized canonical discriminant functions
Variables ordered by absolute size of correlation within function.

Functions at Group Centroids

Have you taken loan from EMT ?	Function
	1
No	-.432
Yes	.441

Unstandardized canonical discriminant functions evaluated at group means

Classification Processing Summary

Processed		268
Excluded	Missing or out-of-range group codes	0
	At least one missing discriminating variable	0
Used in Output		268

Prior Probabilities for Groups

Have you taken loan from EMT ?	Prior	Cases Used in Analysis	
		Unweighted	Weighted
No	.500	108	108.000
Yes	.500	106	106.000
Total	1.000	214	214.000

Classification Function Coefficients

	Have you taken loan from EMT ?	
	No	Yes
Investment 12 months before last 12 months	4.007E-07	3.558E-07
Investment last 12 months	-6.97E-08	2.231E-07
Equipment 12 months before last 12 months	-2.33E-07	-3.75E-08
Equipment last 12 months	2.652E-08	-2.55E-07
Improving house 12 months before last 12 months	-2.41E-07	-1.13E-07
Improving house last 12 months	1.798E-07	-2.02E-08
House equipment 12 months before last 12 months	3.098E-07	-1.17E-07
House equipment last 12 months	3.895E-07	7.469E-07
Education expenses 12 months before last 12 months	-1.18E-06	-1.36E-06
Education expenses last 12 months	9.335E-07	1.128E-06
Food expenses 12 months before last 12 months	1.228E-07	6.586E-08
Food expenses last 12 months	1.033E-06	9.672E-07
Health expenses 12 months before last 12 months	4.465E-07	7.980E-07
Health expenses last 12 months	7.676E-07	2.005E-07
Saving 12 months before last 12 months	-8.36E-08	-1.25E-07
Saving last 12 months	4.883E-08	1.230E-07
Ceremony expenses 12 months before last 12 months	-3.64E-07	1.146E-07
Ceremony expenses last 12 months	2.715E-06	2.263E-06
Cash flow per day 12 months before last 12 months	-5.99E-07	-4.94E-07
Cash flow per day last 12 months	3.273E-07	2.240E-07
Revenues 12 months before last 12 months	5.947E-08	3.403E-08
Revenues last 12 months	-4.16E-08	-1.33E-08
(Constant)	-2.848	-2.906

Fisher's linear discriminant functions

Classification Results[a,b]

			Have you taken loan from EMT ?	Predicted Group Membership		Total
				No	Yes	
Cases Selected	Original	Count	No	79	29	108
			Yes	38	68	106
		%	No	73.1	26.9	100.0
			Yes	35.8	64.2	100.0
Cases Not Selected	Original	Count	No	17	9	26
			Yes	9	19	28
		%	No	65.4	34.6	100.0
			Yes	32.1	67.9	100.0

a. 68.7% of selected original grouped cases correctly classified.

b. 66.7% of unselected original grouped cases correctly classified.

Discriminant 81 Percent

Analysis Case Processing Summary

Unweighted Cases		N	Percent
Valid		217	81.0
Excluded	Missing or out-of-range group codes	0	.0
	At least one missing discriminating variable	0	.0
	Both missing or out-of-range group codes and at least one missing discriminating variable	0	.0
	Unselected	51	19.0
	Total	51	19.0
Total		268	100.0

Tests of Equality of Group Means

	Wilks' Lambda	F	df1	df2	Sig.
Investment 12 months before last 12 months	.997	.633	1	215	.427
Investment last 12 months	1.000	.092	1	215	.762
Equipment 12 months before last 12 months	.999	.161	1	215	.689
Equipment last 12 months	.995	1.144	1	215	.286
Improving house 12 months before last 12 months	.997	.576	1	215	.449
Improving house last 12 months	.958	9.334	1	215	.003
House equipment 12 months before last 12 months	1.000	.005	1	215	.946
House equipment last 12 months	.983	3.723	1	215	.055
Education expenses 12 months before last 12 months	1.000	.105	1	215	.746
Education expenses last 12 months	.997	.549	1	215	.459
Food expenses 12 months before last 12 months	.993	1.507	1	215	.221
Food expenses last 12 months	.993	1.477	1	215	.226
Health expenses 12 months before last 12 months	.999	.224	1	215	.637
Health expenses last 12 months	.980	4.374	1	215	.038
Saving 12 months before last 12 months	.994	1.393	1	215	.239
Saving last 12 months	1.000	.098	1	215	.755
Ceremony expenses 12 months before last 12 months	1.000	.012	1	215	.912
Ceremony expenses last 12 months	.998	.378	1	215	.539
Cash flow per day 12 months before last 12 months	.999	.300	1	215	.585
Cash flow per day last 12 months	.998	.487	1	215	.486
Revenues 12 months before last 12 months	.998	.436	1	215	.510
Revenues last 12 months	1.000	.088	1	215	.768

Eigenvalues

Function	Eigenvalue	% of Variance	Cumulative %	Canonical Correlation
1	.240[a]	100.0	100.0	.440

a. First 1 canonical discriminant functions were used in the analysis.

Wilks' Lambda

Test of Function(s)	Wilks' Lambda	Chi-square	df	Sig.
1	.807	43.856	22	.004

Standardized Canonical Discriminant Function Coefficients

	Function
	1
Investment 12 months before last 12 months	.207
Investment last 12 months	-.108
Equipment 12 months before last 12 months	-.409
Equipment last 12 months	.635
Improving house 12 months before last 12 months	-.347
Improving house last 12 months	.618
House equipment 12 months before last 12 months	.346
House equipment last 12 months	-.348
Education expenses 12 months before last 12 months	.079
Education expenses last 12 months	-.322
Food expenses 12 months before last 12 months	.241
Food expenses last 12 months	-.104
Health expenses 12 months before last 12 months	-.148
Health expenses last 12 months	.580
Saving 12 months before last 12 months	-.202
Saving last 12 months	-.018
Ceremony expenses 12 months before last 12 months	-.164
Ceremony expenses last 12 months	.236
Cash flow per day 12 months before last 12 months	7.780
Cash flow per day last 12 months	-7.755
Revenues 12 months before last 12 months	.896
Revenues last 12 months	-1.168

Structure Matrix

	Function
	1
Improving house last 12 months	.425
Health expenses last 12 months	.291
House equipment last 12 months	-.269
Food expenses 12 months before last 12 months	.171
Food expenses last 12 months	.169
Saving 12 months before last 12 months	.164
Equipment last 12 months	.149
Investment 12 months before last 12 months	.111
Improving house 12 months before last 12 months	-.106
Education expenses last 12 months	-.103
Cash flow per day last 12 months	-.097
Revenues 12 months before last 12 months	.092
Ceremony expenses last 12 months	.086
Cash flow per day 12 months before last 12 months	-.076
Health expenses 12 months before last 12 months	-.066
Equipment 12 months before last 12 months	.056
Education expenses 12 months before last 12 months	.045
Saving last 12 months	.044
Investment last 12 months	.042
Revenues last 12 months	-.041
Ceremony expenses 12 months before last 12 months	.015
House equipment 12 months before last 12 months	.009

Pooled within-groups correlations between discriminating variables and standardized canonical discriminant functions
Variables ordered by absolute size of correlation within function.

Functions at Group Centroids

Have you taken loan from EMT ?	Function 1
No	.499
Yes	-.476

Unstandardized canonical discriminant functions evaluated at group means

Classification Processing Summary

Processed		268
Excluded	Missing or out-of-range group codes	0
	At least one missing discriminating variable	0
Used in Output		268

Prior Probabilities for Groups

Have you taken loan from EMT ?	Prior	Cases Used in Analysis	
		Unweighted	Weighted
No	.500	106	106.000
Yes	.500	111	111.000
Total	1.000	217	217.000

Classification Function Coefficients

	Have you taken loan from EMT ?	
	No	Yes
Investment 12 months before last 12 months	-9.73E-08	-1.44E-07
Investment last 12 months	1.031E-07	1.443E-07
Equipment 12 months before last 12 months	-6.05E-08	1.729E-07
Equipment last 12 months	-1.40E-07	-2.87E-07
Improving house 12 months before last 12 months	-2.02E-07	-6.73E-08
Improving house last 12 months	7.907E-08	-1.10E-07
House equipment 12 months before last 12 months	2.529E-07	-3.30E-08
House equipment last 12 months	3.634E-07	7.866E-07
Education expenses 12 months before last 12 months	-1.55E-06	-1.65E-06
Education expenses last 12 months	9.217E-07	1.343E-06
Food expenses 12 months before last 12 months	1.080E-06	8.699E-07
Food expenses last 12 months	6.466E-07	7.234E-07
Health expenses 12 months before last 12 months	2.802E-07	4.510E-07
Health expenses last 12 months	8.001E-07	-9.31E-08
Saving 12 months before last 12 months	-2.23E-08	2.036E-08
Saving last 12 months	-7.47E-08	-6.62E-08
Ceremony expenses 12 months before last 12 months	-1.46E-07	1.954E-07
Ceremony expenses last 12 months	2.598E-06	2.063E-06
Cash flow per day 12 months before last 12 months	2.364E-06	-3.54E-06
Cash flow per day last 12 months	-2.36E-06	2.603E-06
Revenues 12 months before last 12 months	1.009E-07	4.212E-08
Revenues last 12 months	-9.17E-08	-3.07E-08
(Constant)	-2.966	-2.749

Fisher's linear discriminant functions

Classification Results[a,b]

			Have you taken loan from EMT ?	Predicted Group Membership		Total
				No	Yes	
Cases Selected	Original	Count	No	68	38	106
			Yes	28	83	111
		%	No	64.2	35.8	100.0
			Yes	25.2	74.8	100.0
Cases Not Selected	Original	Count	No	14	14	28
			Yes	4	19	23
		%	No	50.0	50.0	100.0
			Yes	17.4	82.6	100.0

a. 69.6% of selected original grouped cases correctly classified.

b. 64.7% of unselected original grouped cases correctly classified.

Discriminant 85 Percent

Analysis Case Processing Summary

Unweighted Cases		N	Percent
Valid		230	85.8
Excluded	Missing or out-of-range group codes	0	.0
	At least one missing discriminating variable	0	.0
	Both missing or out-of-range group codes and at least one missing discriminating variable	0	.0
	Unselected	38	14.2
	Total	38	14.2
Total		268	100.0

Tests of Equality of Group Means

	Wilks' Lambda	F	df1	df2	Sig.
Investment 12 months before last 12 months	.999	.171	1	228	.679
Investment last 12 months	.996	1.001	1	228	.318
Equipment 12 months before last 12 months	1.000	.051	1	228	.822
Equipment last 12 months	.997	.627	1	228	.429
Improving house 12 months before last 12 months	.985	3.467	1	228	.064
Improving house last 12 months	.968	7.513	1	228	.007
House equipment 12 months before last 12 months	1.000	.004	1	228	.947
House equipment last 12 months	.991	2.087	1	228	.150
Education expenses 12 months before last 12 months	1.000	.011	1	228	.917
Education expenses last 12 months	.996	.994	1	228	.320
Food expenses 12 months before last 12 months	.997	.608	1	228	.436
Food expenses last 12 months	1.000	.005	1	228	.941
Health expenses 12 months before last 12 months	.998	.470	1	228	.494
Health expenses last 12 months	.974	6.002	1	228	.015
Saving 12 months before last 12 months	.997	.598	1	228	.440
Saving last 12 months	1.000	.004	1	228	.948
Ceremony expenses 12 months before last 12 months	.999	.337	1	228	.562
Ceremony expenses last 12 months	.999	.173	1	228	.678
Cash flow per day 12 months before last 12 months	.998	.546	1	228	.461
Cash flow per day last 12 months	.997	.641	1	228	.424
Revenues 12 months before last 12 months	1.000	.031	1	228	.861
Revenues last 12 months	.989	2.485	1	228	.116

Eigenvalues

Function	Eigenvalue	% of Variance	Cumulative %	Canonical Correlation
1	.205[a]	100.0	100.0	.413

a. First 1 canonical discriminant functions were used in the analysis.

Wilks' Lambda

Test of Function(s)	Wilks' Lambda	Chi-square	df	Sig.
1	.830	40.532	22	.009

Standardized Canonical Discriminant Function Coefficients

	Function
	1
Investment 12 months before last 12 months	.404
Investment last 12 months	-.679
Equipment 12 months before last 12 months	.107
Equipment last 12 months	.345
Improving house 12 months before last 12 months	-.481
Improving house last 12 months	.556
House equipment 12 months before last 12 months	.386
House equipment last 12 months	-.328
Education expenses 12 months before last 12 months	.265
Education expenses last 12 months	-.526
Food expenses 12 months before last 12 months	.126
Food expenses last 12 months	-.052
Health expenses 12 months before last 12 months	-.154
Health expenses last 12 months	.474
Saving 12 months before last 12 months	-.077
Saving last 12 months	.148
Ceremony expenses 12 months before last 12 months	-.307
Ceremony expenses last 12 months	.422
Cash flow per day 12 months before last 12 months	.849
Cash flow per day last 12 months	-.709
Revenues 12 months before last 12 months	.381
Revenues last 12 months	-.722

Structure Matrix

	Function
	1
Improving house last 12 months	.401
Health expenses last 12 months	.358
Improving house 12 months before last 12 months	-.272
Revenues last 12 months	-.230
House equipment last 12 months	-.211
Investment last 12 months	-.146
Education expenses last 12 months	-.146
Cash flow per day last 12 months	-.117
Equipment last 12 months	.116
Food expenses 12 months before last 12 months	.114
Saving 12 months before last 12 months	.113
Cash flow per day 12 months before last 12 months	-.108
Health expenses 12 months before last 12 months	-.100
Ceremony expenses 12 months before last 12 months	-.085
Ceremony expenses last 12 months	-.061
Investment 12 months before last 12 months	.060
Equipment 12 months before last 12 months	.033
Revenues 12 months before last 12 months	-.026
Education expenses 12 months before last 12 months	-.015
Food expenses last 12 months	-.011
House equipment 12 months before last 12 months	-.010
Saving last 12 months	.010

Pooled within-groups correlations between discriminating variables and standardized canonical discriminant functions
Variables ordered by absolute size of correlation within function.

Functions at Group Centroids

Have you taken loan from EMT ?	Function
	1
No	.440
Yes	-.463

Unstandardized canonical discriminant functions evaluated at group means

Classification Processing Summary

Processed		268
Excluded	Missing or out-of-range group codes	0
	At least one missing discriminating variable	0
Used in Output		268

Prior Probabilities for Groups

Have you taken loan from EMT ?	Prior	Cases Used in Analysis	
		Unweighted	Weighted
No	.500	118	118.000
Yes	.500	112	112.000
Total	1.000	230	230.000

Classification Function Coefficients

	Have you taken loan from EMT ?	
	No	Yes
Investment 12 months before last 12 months	4.787E-09	-8.28E-08
Investment last 12 months	1.150E-07	3.553E-07
Equipment 12 months before last 12 months	3.849E-08	-3.01E-08
Equipment last 12 months	-4.45E-08	-1.20E-07
Improving house 12 months before last 12 months	-1.26E-07	3.580E-08
Improving house last 12 months	1.784E-07	-2.30E-08
House equipment 12 months before last 12 months	1.273E-07	-1.75E-07
House equipment last 12 months	2.858E-07	6.741E-07
Education expenses 12 months before last 12 months	-9.69E-07	-1.28E-06
Education expenses last 12 months	5.954E-07	1.228E-06
Food expenses 12 months before last 12 months	1.374E-07	7.829E-08
Food expenses last 12 months	1.077E-06	1.114E-06
Health expenses 12 months before last 12 months	7.745E-07	9.886E-07
Health expenses last 12 months	9.646E-07	2.150E-07
Saving 12 months before last 12 months	-1.79E-07	-1.64E-07
Saving last 12 months	-5.59E-08	-1.21E-07
Ceremony expenses 12 months before last 12 months	-3.79E-07	2.032E-07
Ceremony expenses last 12 months	2.888E-06	2.000E-06
Cash flow per day 12 months before last 12 months	-7.03E-07	-1.31E-06
Cash flow per day last 12 months	2.552E-07	6.793E-07
Revenues 12 months before last 12 months	5.606E-08	3.225E-08
Revenues last 12 months	-4.96E-08	-1.66E-08
(Constant)	-2.808	-2.881

Fisher's linear discriminant functions

Classification Results[a,b]

			Have you taken loan from EMT ?	Predicted Group Membership		Total
				No	Yes	
Cases Selected	Original	Count	No	86	32	118
			Yes	39	73	112
		%	No	72.9	27.1	100.0
			Yes	34.8	65.2	100.0
Cases Not Selected	Original	Count	No	14	2	16
			Yes	6	16	22
		%	No	87.5	12.5	100.0
			Yes	27.3	72.7	100.0

a. 69.1% of selected original grouped cases correctly classified.

b. 78.9% of unselected original grouped cases correctly classified.

Discriminant 92 Percent

Analysis Case Processing Summary

Unweighted Cases		N	Percent
Valid		247	92.2
Excluded	Missing or out-of-range group codes	0	.0
	At least one missing discriminating variable	0	.0
	Both missing or out-of-range group codes and at least one missing discriminating variable	0	.0
	Unselected	21	7.8
	Total	21	7.8
Total		268	100.0

Tests of Equality of Group Means

	Wilks' Lambda	F	df1	df2	Sig.
Investment 12 months before last 12 months	.999	.129	1	245	.720
Investment last 12 months	.997	.670	1	245	.414
Equipment 12 months before last 12 months	1.000	.054	1	245	.816
Equipment last 12 months	.998	.507	1	245	.477
Improving house 12 months before last 12 months	.990	2.560	1	245	.111
Improving house last 12 months	.965	8.863	1	245	.003
House equipment 12 months before last 12 months	1.000	.025	1	245	.875
House equipment last 12 months	.991	2.171	1	245	.142
Education expenses 12 months before last 12 months	1.000	.000	1	245	.992
Education expenses last 12 months	.999	.217	1	245	.641
Food expenses 12 months before last 12 months	.994	1.383	1	245	.241
Food expenses last 12 months	.997	.714	1	245	.399
Health expenses 12 months before last 12 months	.997	.625	1	245	.430
Health expenses last 12 months	.983	4.180	1	245	.042
Saving 12 months before last 12 months	.998	.597	1	245	.441
Saving last 12 months	.999	.149	1	245	.700
Ceremony expenses 12 months before last 12 months	.999	.150	1	245	.698
Ceremony expenses last 12 months	.998	.429	1	245	.513
Cash flow per day 12 months before last 12 months	.997	.783	1	245	.377
Cash flow per day last 12 months	.998	.401	1	245	.527
Revenues 12 months before last 12 months	1.000	.003	1	245	.955
Revenues last 12 months	.995	1.314	1	245	.253

Eigenvalues

Function	Eigenvalue	% of Variance	Cumulative %	Canonical Correlation
1	.206[a]	100.0	100.0	.414

a. First 1 canonical discriminant functions were used in the analysis.

Wilks' Lambda

Test of Function(s)	Wilks' Lambda	Chi-square	df	Sig.
1	.829	43.900	22	.004

Standardized Canonical Discriminant Function Coefficients

	Function
	1
Investment 12 months before last 12 months	.304
Investment last 12 months	-.428
Equipment 12 months before last 12 months	-.208
Equipment last 12 months	.703
Improving house 12 months before last 12 months	-.452
Improving house last 12 months	.618
House equipment 12 months before last 12 months	.329
House equipment last 12 months	-.287
Education expenses 12 months before last 12 months	.112
Education expenses last 12 months	-.284
Food expenses 12 months before last 12 months	.071
Food expenses last 12 months	.084
Health expenses 12 months before last 12 months	-.104
Health expenses last 12 months	.478
Saving 12 months before last 12 months	-.531
Saving last 12 months	.307
Ceremony expenses 12 months before last 12 months	-.143
Ceremony expenses last 12 months	.322
Cash flow per day 12 months before last 12 months	.269
Cash flow per day last 12 months	-.122
Revenues 12 months before last 12 months	1.115
Revenues last 12 months	-1.531

Structure Matrix

	Function
	1
Improving house last 12 months	.419
Health expenses last 12 months	.288
Improving house 12 months before last 12 months	-.225
House equipment last 12 months	-.207
Food expenses 12 months before last 12 months	.165
Revenues last 12 months	-.161
Cash flow per day 12 months before last 12 months	.124
Food expenses last 12 months	.119
Investment last 12 months	-.115
Health expenses 12 months before last 12 months	-.111
Saving 12 months before last 12 months	.109
Equipment last 12 months	.100
Ceremony expenses last 12 months	.092
Cash flow per day last 12 months	.089
Education expenses last 12 months	-.066
Ceremony expenses 12 months before last 12 months	.055
Saving last 12 months	.054
Investment 12 months before last 12 months	.050
Equipment 12 months before last 12 months	-.033
House equipment 12 months before last 12 months	.022
Revenues 12 months before last 12 months	-.008
Education expenses 12 months before last 12 months	.001

Pooled within-groups correlations between discriminating variables and standardized canonical discriminant functions
Variables ordered by absolute size of correlation within function.

Functions at Group Centroids

Have you taken loan from EMT ?	Function
	1
No	.422
Yes	-.485

Unstandardized canonical discriminant functions evaluated at group means

Classification Processing Summary

Processed		268
Excluded	Missing or out-of-range group codes	0
	At least one missing discriminating variable	0
Used in Output		268

Prior Probabilities for Groups

Have you taken loan from EMT ?	Prior	Cases Used in Analysis	
		Unweighted	Weighted
No	.500	132	132.000
Yes	.500	115	115.000
Total	1.000	247	247.000

Classification Function Coefficients

	Have you taken loan from EMT ?	
	No	Yes
Investment 12 months before last 12 months	3.113E-08	-3.64E-08
Investment last 12 months	-9.22E-10	1.513E-07
Equipment 12 months before last 12 months	-3.37E-08	7.621E-08
Equipment last 12 months	5.190E-08	-1.07E-07
Improving house 12 months before last 12 months	-1.35E-07	2.327E-08
Improving house last 12 months	6.689E-08	-1.16E-07
House equipment 12 months before last 12 months	2.954E-07	-4.99E-09
House equipment last 12 months	3.834E-07	7.418E-07
Education expenses 12 months before last 12 months	-7.94E-07	-9.28E-07
Education expenses last 12 months	4.957E-07	9.291E-07
Food expenses 12 months before last 12 months	7.676E-08	4.275E-08
Food expenses last 12 months	1.014E-06	9.552E-07
Health expenses 12 months before last 12 months	4.424E-07	5.569E-07
Health expenses last 12 months	6.228E-07	-4.91E-08
Saving 12 months before last 12 months	-3.02E-07	-1.94E-07
Saving last 12 months	7.327E-08	-6.62E-08
Ceremony expenses 12 months before last 12 months	1.382E-06	1.740E-06
Ceremony expenses last 12 months	2.644E-06	1.891E-06
Cash flow per day 12 months before last 12 months	-5.66E-07	-1.26E-06
Cash flow per day last 12 months	3.504E-07	6.027E-07
Revenues 12 months before last 12 months	1.126E-07	4.429E-08
Revenues last 12 months	-1.05E-07	-2.84E-08
(Constant)	-2.865	-2.691

Fisher's linear discriminant functions

Classification Results[a,b]

			Have you taken loan from EMT ?	Predicted Group Membership		Total
				No	Yes	
Cases Selected	Original	Count	No	88	44	132
			Yes	35	80	115
		%	No	66.7	33.3	100.0
			Yes	30.4	69.6	100.0
Cases Not Selected	Original	Count	No	2	0	2
			Yes	7	12	19
		%	No	100.0	.0	100.0
			Yes	36.8	63.2	100.0

a. 68.0% of selected original grouped cases correctly classified.

b. 66.7% of unselected original grouped cases correctly classified.

Discriminant 100 Percent

Analysis Case Processing Summary

Unweighted Cases		N	Percent
Valid		268	100.0
Excluded	Missing or out-of-range group codes	0	.0
	At least one missing discriminating variable	0	.0
	Both missing or out-of-range group codes and at least one missing discriminating variable	0	.0
	Total	0	.0
Total		268	100.0

Tests of Equality of Group Means

	Wilks' Lambda	F	df1	df2	Sig.
Investment 12 months before last 12 months	.999	.229	1	266	.633
Investment last 12 months	.998	.640	1	266	.424
Equipment 12 months before last 12 months	1.000	.021	1	266	.886
Equipment last 12 months	.998	.644	1	266	.423
Improving house 12 months before last 12 months	.987	3.475	1	266	.063
Improving house last 12 months	.965	9.677	1	266	.002
House equipment 12 months before last 12 months	1.000	.041	1	266	.840
House equipment last 12 months	.983	4.526	1	266	.034
Education expenses 12 months before last 12 months	1.000	.022	1	266	.882
Education expenses last 12 months	.998	.525	1	266	.469
Food expenses 12 months before last 12 months	.996	1.140	1	266	.287
Food expenses last 12 months	.999	.252	1	266	.616
Health expenses 12 months before last 12 months	.998	.500	1	266	.480
Health expenses last 12 months	.980	5.350	1	266	.021
Saving 12 months before last 12 months	.998	.627	1	266	.429
Saving last 12 months	1.000	.007	1	266	.933
Ceremony expenses 12 months before last 12 months	1.000	.110	1	266	.741
Ceremony expenses last 12 months	1.000	.011	1	266	.915
Cash flow per day 12 months before last 12 months	.998	.507	1	266	.477
Cash flow per day last 12 months	.998	.608	1	266	.436
Revenues 12 months before last 12 months	1.000	.036	1	266	.849
Revenues last 12 months	.994	1.569	1	266	.211

Eigenvalues

Function	Eigenvalue	% of Variance	Cumulative %	Canonical Correlation
1	.142[a]	100.0	100.0	.352

a. First 1 canonical discriminant functions were used in the analysis.

Wilks' Lambda

Test of Function(s)	Wilks' Lambda	Chi-square	df	Sig.
1	.876	34.814	6	.000

Standardized Canonical Discriminant Function Coefficients

	Function
	1
Improving house 12 months before last 12 months	-.430
Improving house last 12 months	.672
House equipment last 12 months	-.357
Health expenses last 12 months	.480
Revenues 12 months before last 12 months	.685
Revenues last 12 months	-.994

Structure Matrix

	Function
	1
Improving house last 12 months	.507
Health expenses last 12 months	.377
House equipment last 12 months	-.347
Improving house 12 months before last 12 months	-.304
House equipment 12 months before last 12 months[a]	-.219
Revenues last 12 months	-.204
Investment last 12 months[a]	-.175
Saving last 12 months[a]	-.167
Ceremony expenses 12 months before last 12 months[a]	-.165
Ceremony expenses last 12 months[a]	-.134
Saving 12 months before last 12 months[a]	-.099
Equipment last 12 months[a]	-.077
Equipment 12 months before last 12 months[a]	-.067
Education expenses last 12 months[a]	.059
Investment 12 months before last 12 months[a]	-.057
Food expenses 12 months before last 12 months[a]	.035
Cash flow per day last 12 months[a]	.033
Revenues 12 months before last 12 months	.031
Cash flow per day 12 months before last 12 months[a]	.030
Education expenses 12 months before last 12 months[a]	.011
Health expenses 12 months before last 12 months[a]	.011
Food expenses last 12 months[a]	-.010

Pooled within-groups correlations between discriminating variables and standardized canonical discriminant functions
Variables ordered by absolute size of correlation within function.

a. This variable not used in the analysis.

Functions at Group Centroids

Have you taken loan from EMT ?	Function
	1
No	.375
Yes	-.375

Unstandardized canonical discriminant functions evaluated at group means

Classification Processing Summary

Processed		268
Excluded	Missing or out-of-range group codes	0
	At least one missing discriminating variable	0
Used in Output		268

Prior Probabilities for Groups

Have you taken loan from EMT ?	Prior	Cases Used in Analysis	
		Unweighted	Weighted
No	.500	134	134.000
Yes	.500	134	134.000
Total	1.000	268	268.000

Classification Function Coefficients

	Have you taken loan from EMT ?	
	No	Yes
Improving house 12 months before last 12 months	8.081E-09	1.254E-07
Improving house last 12 months	1.289E-07	-4.11E-08
House equipment last 12 months	4.130E-07	7.450E-07
Health expenses last 12 months	1.108E-06	5.335E-07
Revenues 12 months before last 12 months	5.150E-08	1.559E-08
Revenues last 12 months	-1.50E-08	2.355E-08
(Constant)	-1.327	-1.297

Fisher's linear discriminant functions

Classification Results[a]

		Have you taken loan from EMT ?	Predicted Group Membership		Total
			No	Yes	
Original	Count	No	85	49	134
		Yes	41	93	134
	%	No	63.4	36.6	100.0
		Yes	30.6	69.4	100.0

a. 66.4% of original grouped cases correctly classified.

Random	100%	92.20%	85%	81%	80%	75%	72%	66%	Average
Number people	268	247	230	217	214	201	193	177	218
Percent	100%	92.20%	85%	81%	80%	75%	72%	66%	81%
Investment 12 months before last 12 months (Sig)	0.633	0.72	0.679	0.427	0.154	0.541	0.489	0.054	0.462
Investment 12 months before last 12 months (WL)	0.999	0.999	0.999	0.997	0.99	0.998	0.997	0.979	0.995
Improving house 12 months before last 12 months (Sig)	0.063	0.111	0.064	0.449	0.028	0.06	0.146	0.062	0.123
Improving house 12 months before last 12 months (WL)	0.987	0.99	0.985	0.997	0.977	0.982	0.989	0.98	0.986
Improving house last 12 months (Sig)	0.002	0.003	0.007	0.003	0.022	0.016	0.003	0.006	0.008
Improving house last 12 months (WL)	0.965	0.965	0.968	0.958	0.976	0.971	0.954	0.958	0.964
House equipment last 12 months (Sig)	0.034	0.142	0.15	0.055	0.082	0.029	0.198	0.055	0.093
House equipment last 12 months (WL)	0.983	0.991	0.991	0.983	0.986	0.976	0.991	0.979	0.985
Health expenses last 12 months (Sig)	0.021	0.042	0.015	0.038	0.062	0.019	0.072	0.145	0.052
Health expenses last 12 months (WL)	0.98	0.983	0.974	0.98	0.984	0.973	0.983	0.988	0.981
Improving house last 12 months (coefficients)	0.672	0.618	0.556	0.618	-0.512	0.455	0.621	0.653	0.460
House equipment last 12 months (coefficients)	-0.357	-0.287	-0.328	-0.348	0.34	-0.442	-0.255	-0.309	(0.248)
Health expenses last 12 months (coefficients)	0.48	0.478	0.474	0.58	-0.414	0.511	0.445	0.452	0.376
Improving house last 12 months (matrix)	0.507	0.419	0.401	0.425	-0.36	0.31	0.453	0.426	0.323
House equipment last 12 months (matrix)	-0.347	-0.207	-0.211	-0.269	0.274	-0.283	-0.192	-0.296	(0.191)
Health expenses last 12 months (matrix)	0.377	0.288	0.358	0.291	-0.294	0.303	0.269	0.225	0.227
Canonical correlation	0.352	0.414	0.413	0.44	0.402	0.484	0.438	0.442	0.423
Wilks' lambda	0.876	0.829	0.83	0.807	0.839	0.766	0.808	0.805	0.820
Sig	0	0.004	0.009	0.004	0.036	0.001	0.017	0.033	0.013
Chi-Square	34.814	43.9	40.532	43.856	35.351	50.086	38.347	35.65	40.317
Correctly classified (No)	63.40%	66.70%	72.90%	64.20%	73.10%	80%	69.10%	77.30%	70.84%
Correctly classified (Yes)	69.40%	69.90%	65.20%	74.80%	64.20%	65.30%	64.60%	67.40%	67.60%
Selected(correctly classified)	66.40%	68.00%	69.10%	69.60%	68.70%	72.60%	66.80%	72.30%	69.19%
Unselected(correctly classified)		66.70%	78.90%	64.70%	66.70%	59.70%	65.30%	57.10%	65.59%