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MICRO-FINANCE AND WOMAN HOUSEHOLD EXPENDITURE DECISION : THE CASE OF ADDIS CREDIT AND SAVING INSTITUTION

MIKROFINANS OG KVINNER HUSHOLDNINGENES UTGIFTER AVGJØRELSE: TILFELLE AV ADDIS KREDITT OG SPARING INSTITUSJON

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Abstract

This study is conducted with an objective of identifying the determinant factors that affect women micro-finance participants' involvement in household decision making (child-related, women-related and sale/purchase of personal asset) and to examine the effect of group lending on the level of participation of women in household expenditure decision making. A Primary household data ('before'-'after') from 100 women micro-finance participants of Addis Ababa (capital city of Ethiopia) and a secondary data from different official reports was collected from mid-December 2011 until the end of January 2012.

In this study the Ordinary Least Squares (OLS) and Ordered Probit estimation technique is employed and the regression result showed that increased level of education, low household size and high income contribution to the household by the women increases the woman's level of participation in the household expenditure decisions. It also revealed that the amount of loan taken and microfinance experience of the women are found to be insignificant in most of household decisions by the women for the overall micro-finance participants. Among the group members, however, the result indicated that higher microfinance experience would lead to higher level of decision by the women concerning family planning.

Key words: micro-finance, women members, household expenditure decisions, group members, level of participation on decision making, Addis Ababa

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List of abbreviations

ACSI-Addis Credit and Saving Institution

ADLI-Agricultural Development Led Industrialization

CSA-Central Statistics Authority

MFI- Micro-Finance Institution

MoE- Ministry of Education

MoFED- Ministry of Finance and Economic Development

MSE- Micro and Small Enterprise

NBE- National Bank of Ethiopia

NGO- Non-Governmental Organizations

OLS-Ordinary least squires

PASDEP- Plan for Accelerated and Sustainable Development to End Poverty

PRSP- The Poverty Reduction Strategy Paper

TVET- Technical and Vocational Education and Training

Exchange rate 1 USD = 18.23 ETH Birr

Chapter One

1.1. Introduction

Ethiopia, a developing country in Sub-Saharan Africa, is one of the fastest urbanizing countries in the world with an annual average urban population growth rate of 4.3% (WMUD, 2008). Despite 85% of its estimated 83 million people's life is dependent on agriculture, urban-rural migration is on the rise. The ever increasing rural-urban migration puts tremendous pressure on the already fragile infrastructure and public service that exists in cities and the already high urban unemployment level in urban areas of the country is further exacerbated.

While reports indicate that the percentage of people living below the poverty line in rural areas is decreasing in urban areas, particularly in Addis Ababa, the change is lower (MoFED, 2012). This has encouraged policy makers to address the issue of poverty in urban areas. The effort to alleviate urban poverty among women and youth, who are thought to constitute a disproportionate majority of the unemployed, has come to the forefront. For instance, during 2009-2011 female unemployment in Addis Ababa was 50% higher than their male counterparts (CSA, 2011). Thus, the focus on women is justified but takes on greater significance on the assumption that an improvement in their economic situation has a multiplier effect on the whole household.

Since 2000, in a shift away from a rural bias in policy, the government has incorporated measures to tackle urban poverty. Agricultural Development Led Industrialization (ADLI) policy, which assumes agricultural productivity as a key to the over all economic growth, was adopted in 1995, and it entirely focused on rural poor. The Poverty Reduction Strategy Paper (PRSP) from 2001-2005 and its successor Plan for Accelerated and Sustainable Development to End Poverty (PASDEP) from 2005-2010, however, address the issue of urban poor (MoFED, 2010). Among the measures taken were promoting Micro and Small Enterprise (MSE) development, and providing micro-financing services to the urban poor. Micro-finance institutions (MFI) have implemented a group-lending system with special focus on unemployed youth and women, who cannot present collateral.

In addition, the government has devised an integrated policy where MFIs provide loan to MSEs, which are encouraged to take part in government-sponsored infrastructure projects. The premise is that if the unemployed youth and women are given loans they can create jobs for themselves and improve their wellbeing. Government report claims that due to access created by MFIs thousands of jobs have been created in the last decade. For instance in the 2010/11 fiscal year alone 51,983 MSEs were established providing employment for 541,883 people of which 60481 jobs were created in Addis Ababa (NBE, 2011). In recent years it has become common to see all sorts of MSEs showcase their products in exhibition centers and in the streets. It is common to hear and see personal accounts of success stories related to micro-finance being publicized by state-run TV and radio.

Similarly, in encouraging micro and small enterprise (MSE) development as one of the means of addressing urban poverty, women either organized or individually, are given access to micro-finance to start their own businesses, such as street vendor, small cafes, and selling 'Injera', the Ethiopian traditional flat bread staple. This is meant to make them economically empowered by being able to make a financial contribution and participate in the financial decision making in the household.

However, no independent study has been undertaken to assess the impact of micro-finance on urban women beneficiaries in Ethiopia. Little is known about the relationship between access to micro-finance and the level of women's participation in the household expenditure decision making. The decision making activities that the study focused on are categorized into three parts: expenditures on child such as education, health, clothing and food; Women related expenditures such as family planning, and buying presents; and purchase of personal assets by women such as jewelry. The participation of the women in the household expenditure decision in this case refers to whether the woman takes part in making these decisions and how often. This study analyzes the effect that participation by women in micro-finance programs has on the empowerment of those women in household decision making. The discussion of women empowerment in relation to micro-finance in this study is, however, limited to investigate whether or not micro-finance enables women to increase their participation in the household expenditure decision making.

Micro-finance services are provided by government and Non-governmental organizations (NGOs) throughout the country for those who do not have access to financial services. The area of study covered in this study is, however, limited to the capital, Addis Ababa. A survey was conducted on 100 female micro-finance participants in January 2012. Of the 10 districts of Addis Ababa, data was collected from three randomly selected districts: Bole, Gullele and Yeka. Women beneficiaries of Addis Credit and Saving Institution (ACSI) between 2001and 2010 are included in the study. Since MFIs started operating in Addis Ababa long before any other city in the country it should provide a better picture of the relationship between micro-finance participation and the level of women household expenditure decision making.

In addition, given the emphasis the government has put on it and the claimed job opportunities it created the issues raised by the study is worth investigating. For this end, women participants of microfinance in Addis Ababa provide good opportunity to analyze the effects of micro-finance on women in terms of the level of their involvement in household expenditure decision making. It is based on this rationale that Addis Ababa is chosen to be the study area. In doing so the study could also provide a valuable input for other researchers who are interested to conduct further studies on issues of micro-finance and women.

1.2. Objectives and research questions

The government of Ethiopia argues that providing micro-finance services for the poor reduces poverty by enabling them to be self-employed in micro and small businesses. The micro-finance program of the government generally focuses on women and unemployed youth. Group lending for women and youth who are organized in the form of cooperatives is the preferred way of financing. The general objectives of the study are:

- To identify the determinant factors that affect women micro-finance participants' involvement in household decision making;

- To examine the effect of group lending on the level of participation of women in household expenditure decision making: child-related, women-related and sale/purchase of personal asset.

The basic questions of the study are:

1. Does a woman's participation in micro-finance affect their involvement in household expenditure decision making (child-related, women-related and sale/purchase of personal asset?

2. Are group-based women micro-finance participants more involved in household decision making?

To answer these questions the level of participation of women in household expenditures decision making 'before' and 'after' micro-finance membership is measured using scores ranging in value from 5 to1 indicating 'always' to 'never' respectively. In addition, a comparison among women participants of micro-finance is made on the level of involvement in the household expenditure decision making between group members and all respondents.

1.3. Organization of the study

The study is organized into six chapters. The first chapter introduces the problem, defines objectives and poses the basic research questions to be studied, significance, the scope and organization of the study. The second chapter provides a description of urban poverty in Ethiopia, the presence of female-owned MSEs, MSE development and MFIs. The third chapter of the study outlines the underlying theory and reviews the related literature. Chapter four gives a description of the methodology used and the data collection methods used in the study. It also provides descriptive analysis of the data collected and sets the model for regression analysis. The fifth chapter presents the results of analysis of the study. The final chapter presents the conclusion of the study, providing the limitations of the study and suggestions for future research.

Chapter Two

2. Background of the study

2.1. Poverty in Ethiopia

Ethiopia's population has a life expectancy of 58.1 years at birth. It is the second-most populous country in Sub-Saharan Africa (SSA). According to all available international indicators, it is one of the poorest countries in the world. The Human Development Index (HDI) of the United Nations Development Program (UNDP) ranks Ethiopia 174 out of 189 countries (UNDP, 2011). Ethiopia's per capital income at US$380 is much lower than the SSA average of US$1,165 (World Bank, 2010).

After the fall of the socialist Derg regime in 1991 the country has adopted different policy measures to tackle poverty. The first is Agricultural Development Led Industrialization (ADLI) strategy, which was officially launched in 1995 with the aim of introducing agricultural technology to increase productivity. The country's economy is predominantly agriculturally-based, accounting for 51% of GDP in 2009. The strategy assumes that as agricultural productivity increases it will provide raw materials that require additional value added which will employ surplus labor and capital accumulation leading to the beginning of industrialization. PRSP from 2001-2005 and its successor PASDEP from 2005-2010 continue to be based on this strategy to address the issues of poverty.

Even though Ethiopia started from a weak and low economic basis it has made substantive economic progress since 2004. According to Ethiopia's Millennium Development Goal (EMDG) report the country is thought to have sustained an 11 % average economic growth, the International Development Association (IDA) and International Monetary Fund (IMF) have estimated the rate of annual average economic growth at between 7-8 %, in the period of 2004/5-2009/10 (IDA 2011; IMF 2011).

Table 2.1 provides information about the macro-economic indicators of Ethiopia from 2004-2011. It shows a consistent double digit growth of real GDP thorough out this period. Even though agriculture's contribution to GDP is gradually decreasing it still has a significant share of GDP, 41% as of 2010/11.

Table 2.1: Macro-economic indicators of Ethiopia from 2004-2011

Indicator		Fiscal year						
		2004/5	2005/6	2006/7	2007/8	2008/9	2009/10	2010/11
Real GDP (in millions of Birr*)		83,804	93,474	104,499	116,190	127,844	141,18	157,464
Growth in Real GDP, % change		12.6	11.5	11.8	11.2	10	10.4	11.4
Real GDP per capita (in millions of Birr)		1,334.	1,441.0	1,553.0	1,664.0	1,764.0	1,933.0	1,946.4
Growth in Real GDP per capita		9.0	8.0	7.8	7.1	6.0	9.6	8.5
Percentage share of GDP	Agriculture	47.4	47.4	46.1	44.6	43.1	42.0	41.1
	Industry	13.6	13.4	13.2	13.0	13.0	13.0	13.4
	Services	39.7	40.4	41.7	43.5	45.0	46.1	46.1
Annual average Inflation		8.6	6.1	10.6	15.8	25.3	2.8	18.1

*1USD= 18 birr (National Bank of Ethiopia as of November 2011)

Source: NBE/2010/11 annual report

The impressive economic growth is, however, challenged by low level of income and savings and productivity in agricultural sector, limited implementation capacity, unemployment and a narrow modern industrial sector base. In recent years, particularly after 2007/8, the fast growth of the economy is further challenged a very high inflation. The annual end of period inflation for July 2011, for example reached 35.9 percent. The food inflation during the same period was 46.5 percent. Despite the efforts made by the government to address this issue, including a short-lived and failed attempt to put a price cap on some basic food items, inflation remains stubbornly high (MoFED, 2010; World Bank 2010).

Table 2.2 provides comparative data on the trends of national, urban and rural poverty in Ethiopia based on the national survey conducted every five years from 1995-2011. The poverty index used is headcount index. It refers to the share of the population whose income or consumption is below the poverty line. In line with the double digit growth in GDP from 2004 to 2011 the percentage change in people living below poverty line has decreased at an increased pace across all levels than the period before (1999-2004). During this period the percentage decrease of people living below poverty line was much stronger at urban level (27%), but the percentage decrease at Addis Ababa level was much lower (14%).

Table 2.2: Trends of national and rural/urban poverty of Ethiopia

Poverty indices over time						Percentage Change	
Level	Poverty indices	1995/96 (%)	1999/00 (%)	2004/05 (%)	2010/11 (%)	2004/05 over 1999/00	2010/11 over 2004/05
National	Headcount index	46	44	39	30	-12	-24
Rural	Headcount index	48	45	39	30	-13	-23
Urban	Headcount index	33	37	35	26	-5	-27
Addis Ababa	Headcount index	38	36	33	28	-10	-14

Source: Adapted from Interim report on poverty analysis (MoFED 2012)

2.2. Urban poverty in Ethiopia

Urban poverty in Ethiopia is the least researched area because most researchers have focused on the rural settings for different reasons. One of the justifications for this is that since majority of people live in rural part the country it is thought to be logical to focus on that. In one of the few studies comparing urban with rural poverty Bigsten et al. (2002) reported a decline in rural poverty from 1994 to 1997.The reason for the smaller reduction in poverty in the urban areas was argued to be policies favoring the rural area and growth patterns with in the country. One of the policies in this respect was ADLI, which focused on the rural areas.

While rural poverty has substantially declined since 1995/6, urban poverty showed little changed until 2005. In addition, income inequality in rural areas remained low but it increased by about 14% in urban areas in 2005, which is thought to be one of the reasons for a rise in poverty. The headcount poverty index for rural areas decreased in 2004/5 by 13 percent from what it was five years ago, whereas the urban headcount poverty index increased 11 percent. The government recognizes the fact that an increasing urban poverty and population growth are emerging challenges requiring policy response (MoFED, 2010).

Addis Ababa is the most populous city of the country with an estimated population of 3 million people. About 42% of its population lives below 1 dollar per day poverty line (UNCHS, 2000). By any measure this indicates that significant portion of the population is poor. Another related factor is the high level of unemployment observed in urban areas. Unemployment is a serious problem in Addis Ababa, especially among the female residents.

Table 2.3 shows comparative data on rate of unemployment for some selected years at national and Addis Ababa level. For example in 2011 the overall rate of unemployment in Addis Ababa, which is thought to be the highest of all cities in the country stands at an estimated rate of 25%. The female unemployment rate is, however, estimated to be 34%.

Table 2.3: The rate of unemployment at national and Addis Ababa level (in percent)

Year	National (Ethiopia)			Addis Ababa		
	Average	male	Female	Average	Male	Female
2003	26	18	35	32	21	44
2004	23	16	30	29	22	37
2006	17	12	22	30	21	36
2009	20	12	30	28	18	38
2010	19	11	27	27	18	37
2011	18	11	25	25	17	34

Source: *Adapted from the Ethiopian Central Statistics Authorities report of 2011(CSA,2011).*

The underlying features of the poor in Addis Ababa like the poor in most developing countries include: homelessness, unemployment, low pay, lack of sufficient food, and a lack of access to public services. The monthly income of the majority of the employed households, 60% of them, does not exceed USD $68. Taking this into account, the city government of Addis Ababa has been working towards creating employment in a multiple directions. Initiatives include improving the investment climate, developing an integrated housing program (aimed at employment creation and skills development), supporting the development of micro and small-scale enterprises, and making microfinance more available (UN-Habitat, 2008). The Development of MSEs is considered to be the key in enabling the poor to get self-employed.

2.3. Women and MSE Enterprises

Promoting gender equality and women empowerment is one of the Millennium Development Goals (MDGs) the government of Ethiopia is trying to achieve. Gender issues are also one of the eight pillars of a plan for accelerated and sustainable development to end poverty (PASDEP). The following are among the measures included in PASDEP, which are particularly designed to address gender issues: safeguarding women's rights such as access to land, credit, and increasing the number of women that benefit from government programs such as low-cost houses in urban areas and the development of micro and small scale enterprises. MDG report of Ethiopia indicates that the country is on track to achieve gender parity in the coverage of universal primary education in 2015. In 2009/10 the gender parity for primary education was 0.93, the gender gap is larger in rural areas and at higher level of education (MoFED, 2010).

Ethiopian women are driven into the MSE sector due lack of wage employment, low level of education and lack of mobility (large families and household responsibility). They tend to work in areas where they have gender-based skills and know-how, such as food processing, clothing, and hairdressing. The MSEs that are run by women face various constraints both when starting and running the business. The constraints include low level of business knowledge and skill, limited financial resources to start-up and for expansion, and a lack of confidence to venture into better paying enterprises (Haftu et al., 2009).

According to the 2009 Urban Employment and Unemployment Survey, out of the total unemployed people 68.5% were females and 31.5% were males (MoFED, 2010). This clearly shows that women are disproportionately affected by unemployment. It might be the result of the fact that most jobs created recently are in construction and other male-dominated sectors where the government has created a linkage between MSEs and these projects. MFIs and MSE development agencies prioritize and give incentives for women to be engaged in the MSE sector. The assumption is that if women are given with both financial and non-financial support they will be able to make profit with which they are expected to support their family. As to how this affects their level of participation in the household expenditure decision making is explored in chapter five.

2.4. Micro-finance in Ethiopia

The poor in Ethiopian have long been neglected by formal financial institutions as they lack to present collateral and as a result deemed to be risky, and un-profitable. Those who resort to the traditional financial sector are not provided with reasonable service either. They usually are forced to pay a very high interest rate. The failure of both formal and informal financial sectors to address the financial needs of the poor has prompted the government and NGOs to establish micro-finance institutions which are mainly focused on providing financial services to the poor. The establishment of sustainable MFIs that provide service to large number of poor has become the main component of the new development strategy of the country (Zigiju, 2008). The emergence of MIFs in Ethiopia is similar to other countries in that it is forced due to the limitation of financial institutions in providing credit to the poor (Bamlaku, 2006).

Following the government's decision to liberalize the financial sector by issuing Proclamation No. 84 in 1994, private domestic investors were allowed to take part in the banking and insurance industry. The government later started a micro-enterprise lending program in cooperation with International Development Association (IDA) with the objective of providing finance for small businesses and household income generating activities (Bamlaku, 2006). The development of MFIs in Ethiopia started late, but there are 28 MFIs with 659,635 active borrowers in the country, of which 12 are licensed to operate in regional states and the rest have nation-wide operation (Haftu et al. 2009).

2.5. Addis Credit and Saving Institution (ACSI)

There are many micro-finance institutions in Ethiopia. Many of them are regionally based in terms of their operation. One of them is ACSI. It is a micro-finance institution, which operates within the boundaries of Addis Ababa city administration. It was established and registered at the National Bank of Ethiopia in 2000 according to Proclamation 40/88. This institute exclusively operates in Addis Ababa. Women beneficiaries of this institute are the focus of the study. Three districts of the city are selected at random as the areas of study. ACSI is established with the mission of promoting MSEs to alleviate poverty and unemployment prevailing in Addis Ababa city administration territory through provision of sustainable financial and other related services with particular attention to women.

Table 2.4 shows the number of female and male clients of ACSI and the amount of loan disbursed for each group from 2000- 2011. Currently ACSI has over one hundred thousand customers, 57% of which are female. The decreasing trend of percentage of women clients is due to increased loan disbursement for MSEs involved in housing related projects which usually attract male than female micro-finance participants. The loan repayment rate of its customers for the last seven years is, on average, more than 98% (ACSI, 2011).

Table 2.4: Addis Credit and Saving Institution Loan Disbursement, in thousands of Birr

Year	Male		Female		Total		% of women clients
	No. of clients	Amt. of loan disbursed	No. of clients	Amt. of loan disbursed	No. of clients	Amt. of loan disbursed	
2000	609	720	912	1080	1521	1800	60%
2001	564	1178	4756	6439	5321	7617	89%
2002	1571	2371	5858	7618	7429	9989	79%
2003	837	150	3663	5405	4500	6896	82%
2004	8452	19277	13071	24786	21523	44062	61%
2005	13418	70654	13526	38905	26944	109559	50%
2006	4456	26479	6402	24529	10858	51008	59%
2007	7994	51409	10300	46403	18294	97812	56%
2008	12883	105863	14372	70333	27255	176196	52%
2009	14007	142852	17480	89162	31487	232014	56%
2010	18729	208578	18700	116434	37429	325011	49%
2011	17568	413977	25107	166115	42675	580091	58%
Total	101089	1044846	134147	605211	235236	1642056	57%

Source: ACSI (2011)

In table 2.5 shows the average loan size of ACSI clients from 2000 to 2011. It is the average of all ACSI clients. Even though the average loan size has reached 13,591 birr in 2011, the average loan size of the sample micro-finance participants of this study is 5480. This could be due to the type of business activities they are involved in, which are mostly labor intensive and requiring less financing.

Table 2.5: Average loan size of ACSI clients in Birr

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Average loan size	1183	1432	1877	1532	2047	4066	4698	5347	6465	7369	8683	13591

Source, ACSI (2011)

In addition to the shift from free credit to charging interest the institute changed its loan policy in 2002 to a group-collateral lending, which is a method of letting those who cannot present collateral by themselves to form a group and be collateral for each other. It has also started providing training for organized borrowers (ACSI, 2011). The collateral-based lending system, however, provides loans for individuals who can present collateral in one of the following forms: the salary of a permanent employee of a different organization, the valuation of assets e.g. a house, land, vehicle, and jewels such as gold and silver, or household items (e.g. television) and the amount of money paid for 'Equib' (traditional rotating saving and association where members save and lend each other).

The introduction of a group-lending system was aimed at addressing the prevailing lack of collateral among the poor. In this system 5-7 people form a group in which each member co-guarantees other members of the group. The institute has become flexible with the number of people who can form a group. In the area where data for this study is collected it was possible to observe groups formed by up to three people. The groups can be either self-selected by members themselves or arranged by the institution. Self-selected groups are typically formed by those individuals who know each other. If individuals cannot find others to form a group, the institution will facilitate. The youth, who usually don not have an initial capital, and women are thought to be the primary beneficiaries of this system.

2.6. MSE development

MSEs in most developing countries are an integral part of the informal economy (Green et al., 2006). They provide alternative ways of getting employed. The less capital and knowledge that they usually require makes them attractive options. Nevertheless a capital is required and is still difficult to obtain. In developing countries where the formal sector of employment remains stagnant with little potential of growth, an expanding urban informal sector is becoming a major source of absorption and employment opportunity (Ziderman, 2002:2). Given the high unemployment in cities and the ever increasing rural-urban migration in Ethiopia, promoting MSEs could make a contribution in the poverty reduction. The MSE sector of Ethiopia, cutting

across all sectors of the economy, is believed to be the highest source of productive employment next to the agriculture both in rural and urban areas (Haftu et al., 2009).

Similar to other developing countries, the ability of medium and large-scale enterprises in Ethiopia to absorb the ever-increasing labor force is limited. In addition, the capacity of the state, which used to be the major provider of employment is decreasing and cannot keep up with the supply of labor force. Taking this into account the government has devised different policies to promote self-employment or job creation for others. The expansion of Technical and Vocational Education and Training (TVET) is one of the measures taken by the government, which aims at providing training for students who want to continue in this stream or fail to make to university education in the hope that using their training they will be self-employed. TVET graduates are encouraged and provided with incentives to start their own business. The incentives among others include: the availability of finance from MFIs, providing working place and creating market linkage.

Given the contribution of MSEs for employment it is no surprise to see the emphasis the government has put on the program. The development of MSEs in Ethiopia is incorporated in various sectorial policies and strategies as a major element. For example:

- PASDEP considers the MSE sector as a vital factor for economic growth and poverty reduction. It is expected to create employment opportunities to alleviate the challenges of unemployment in urban areas through integrating MSE and TVET graduates.
- The industrial development strategy, which recognizes the private sector as an important factor for the implementation of the strategy views MSEs as springboards for future industrialization
- The national urban development policy puts emphasis on MSEs as means of creating jobs and requires urban administration to involve MSEs in their development projects such as housing and roads construction (Haftu et al., 2009).

After realizing that the provision of financial services alone is not enough to address the issue of poverty the government turned its attention to the development of MSEs. In order to facilitate this a federal government agency, Micro and Small Enterprise Development Agency (MSEDA),

was established by the Council of Ministers of Ethiopia Regulation No. 33/1998. Similar to the MFIs it is structured to the lowest level of government administration called 'kebele'. It works in collaboration with other government bodies, mainly with ACSI. For instance, MSEDA helps unemployed youth and women to form groups or cooperatives and provides its approval so that they can secure loan from ACSI. At the lower level of administration they share the same office buildings. ACSI is concerned with the financial aspect of MSEs, whereas MSEDA is dedicated to providing non-financial services, which are generally referred as Business Development Services (BDS). The following are among the major objectives of the agency:

a. to organize needy but able women and youth in associations and teams and assist them in getting employment opportunity;
b. to reduce un-employment and facilitate self-employment;
c. to develop those sectors which have substantial contribution to socio-economic development; and
d. to provide training, market information and consultancy services;

MSEs in most countries are known to make a significant proportion of job creation. In most developing countries MSE development is embraced as one of the strategies in tackling poverty through creating job for the owners and beyond. Since women make up the large share of micro-enterprise population, they are considered to be critically important to poverty reduction strategies (Stevenson and St-Onge, 2005). Besides, the promotion of female owned micro-enterprises is encouraged based on the assumption that their success in MSE would better the wellbeing of their household. But, women face a lot of challenges in operating MSEs.

The common challenges faced by women micro-enterprises in developing countries include: limited access to markets, credit, information, training, technology, and proper business premises, and low level of education. They also face gender based bias in a male-dominated and patriarchal society like that of Ethiopia (Stevenson and St- Onge, 2005). The main targets in the MSE development strategy in Ethiopia are women and unemployed youth. Despite this and the fact that women are identified as on of the target groups of MFIs as well as MSE development agencies few resources are committed for its cause. This is mainly manifested in the lack of

Women's access to business development services, information, working premises (Stevenson and St- Onge, 2005).

Chapter Three

3. Theory and review of literature

This section is concerned with the theoretical framework of the study and the presentation of review of literature related to micro-finance and poverty alleviation with special focus on women, micro-finance and women's level of participation in household expenditure decision making, group lending approach in relation with women.

3.1 Paradigms of Micro-finance

There are different models or paradigms that are related with micro-finance and its impact on women. Mayoux (2000) has grouped the dominant views on micro-finance and women empowerment into three major paradigms. These are financial self-sustainability, poverty alleviation and feminist empowerment paradigm. Each of these paradigms are discussed in detail below as to how each of them view the participation of women in micro-finance and an effort is made to show into which paradigm ACSI's approach falls.

3.1.1 Financial Self-sustainability Paradigm

Financial self-sustainability paradigm, as its name suggests, is aimed at providing financially self-sustainable micro-financing services to large number of poor people. Increasing the access of micro-financing to a large number of poor people, particularly micro and small entrepreneur is at the heart of this paradigm. To attain self-sustaining micro-finance, it is argued that the focus should be on setting the interest rate 'right'. This is intended to cover costs, to expand programs so as to ripe the effects of economies of scale and to use groups to decrease cost of delivery (Mayoux, 2000). According to this paradigm women are targeted because of their high rate of repayment which makes them efficient contributors of economic growth. Gender lobbyists have argued that the focus should be on women because of their high repayment rate compared to men. The assumption is that by providing women with an increased access to micro-finance services it is possible to have economic empowerment, wellbeing and social and political empowerment (Mayoux, 2000).

In addition, this paradigm is non-interventionist in that it assumes that greater access, without the need of targeting women, to micro-finance by itself leads to the economic empowerment of women (Mayoux, 2000). Another non-interventionist aspect of this paradigm is reflected on the segment of the people it reaches. That is, it does not directly target the poorest of the poor. The provision of financial services is aimed at the areas where the demand is unmet without exclusively focusing on those who are poor. It is focused on the financial sustainability of the institution instead of the wellbeing of the beneficiaries. As a result, financial institutions guided by this thinking might not reach out the poorest of the poor as they might be considered as not worth profiting from or helping the institution.

The financial self-sustainability paradigm, according to Woller and Woodworth (2001), is referred to as an institutional approach, focusing on the financial sustainability of institutions on the ground that donated funds are enough to reach out large numbers of poor and vulnerable groups. The institution should rather strengthen itself so as to increase its breadth of outreach. In general the financial sustainability approach is inclined to favor women because of their high repayment rate and even among them it might select only the better off among the poor by leaving the poorest of the poor out of reach. It is the presumed failure of this approach to reach the poorest of the poor that lead to the poverty alleviation paradigm discussed below.

3.1.2 Poverty alleviation paradigm

This paradigm, sometimes referred as welfarist approach, directly links micro-finance services with the issue of poverty alleviation and empowerment. Micro-finance institutions that are guided by such approach are much more interested in improving the wellbeing of their participants (Woller and Woodworth, 2001). In contrast to the institutional approach mentioned above the reason why poverty alleviation paradigm targets on women is due to the fact that the level of poverty among women is relatively higher and their special responsibility for household wellbeing (Mayoux, 2005). Providing micro-finance services has showed significant results in terms of decreasing poverty through increased access to education, health, and gender equity and improved environmental conditions (Littlefield et al., 2003). One of the aspects of gender equity

at household level, as indicated by the level of participation of women in different kinds of household expenditure decision making, is the focus of this study.

The poverty alleviation paradigm takes micro-finance as an interventionist program that has to be integrated with others in an effort to alleviate poverty and increase the wellbeing for the poorest households (Mayoux, 2005). According to Woller and Woodworth (2001), the main premise of integrated programs (micro-finance plus) is that financial services need to be integrated with assistance in other areas to achieve their maximum effect. Besides this the poverty alleviation approach gives much more emphasis to the depth of the outreach than the scale of coverage. Proponents of this approach are critical of the institutional approach. This is because its focus on financial stability might undermine the effort to reach out the neediest. Instead welfarists claim and refer to the case of Bangladish's Grameen Bank, which targets the neediest women, that both depth and breadth of outreach can be achieved by focusing on poverty-targeted programs (Woller and Woodworth, 2001).

ACSI's approach is more inclined to the poverty alleviation paradigm though it also strives to achieve financial sustainability. Even though it provides financial services to many sections of the society its mission is targeting the poor and women in particular. The reason why ACSI targets women is not because of their relatively good rate of repayment rather it is because it assumes that women make the most out of it in terms of improving household welfare and they are thought to be underprivileged due to higher level of unemployment compared to their male counterparts and the traditional status given to them. They are proven to be more financially responsible with better repayment performance than men and are more likely to use the return out of investment for household and family well-being (Littlefield et al., 2003). The poorest of poor who can not present collateral for even a small amount ($60) of loan are organized to form groups and get the money without collateral. Group lending mechanism on the other hand benefits ACSI by decreasing its cost of lending though its main goal of doing so is to enable the poor access to finance. In recent years its programs are designed in an integrated approach where ACSI provides financial services and other agencies provide non-financial services which specifically target women and youth.

3.1.3 Feminist empowerment paradigm

This paradigm is exclusively concerned about the gender equity and women's human right. The assumption is that it is possible and effective to promote the interests of women through providing micro-finance services. Empowerment here refers to an activist approach that increases the ability of women to take part in decisions that affect their life. Participating in micro-finance services is considered to be the means to achieve these objectives. Micro-finance in this case is advanced as an entry point to a wider strategy for women's economic and socio-political empowerment which focuses on gender awareness and feminist organization (Mayoux, 2005).

Littlefield et al. (2003) similarly indicated that providing access to financial services can empower women so that they can be more confident, more assertive, participating in decision making process on the things that matter or affect them and stand for gender equities. Among the examples of success related to women and micro-finance Self-Employed Women's Association (SEWA) of India is the most common one that proponents of feminist empowerment paradigm refer to their claim that targeting women through micro-finance is the best way to empower them (Mayoux, 2005).

From a human right's perspective equal access for financial services has been promoted by both the Convention on the Elimination of Discrimination against Women (CEDAW) and the Beijing Platform for Action" (BPFA) (Cheston and Lisa, 2002). Critics of this paradigm, however, argue that since these kinds of institutions place a priority on serving women there is also a tendency of prioritizing social goals ahead of efficiency, which might lead to poor financial performance (Cheston and Lisa, 2002). The poor financial performance affects the ability of the institution to access more people and even their very existence.

Other critics also point out the reason why micro-financing institutions do not incorporate women empowerment in their paradigm design. This is mainly to do their assumption that good micro-finance will naturally and gradually lead to empowerment. So the focus first should rather

be on how to make MFIs sustainable. A counterargument to this proposition is the case of Working Women's Forum (WWF) of India which has been able to enhance women's empowerment as measured by their contribution to the household as well as achieving financial sustainability fully and providing a range of non-financial services to women (Cheston and Lisa, 2002).

3.2 Literature review

3.2.1 Micro-finance and poverty reduction

The provision of micro-finance services in many countries, particularly in developing countries, is mainly based on the assumption that if the poor, who usually are left out by the conventional financial institutions because of their risky nature, are given with small credit and combining it with their unused labor, they will improve their income. It is assumed that through improved access to financial services the poor will be able to contribute in the process of poverty reduction (Green et al., 2006). The less capital the poor need to operate a business, which are usually small businesses, makes them attractive for government and other development agencies to use them as a means to address problems of poverty. The development of MSEs is considered to be the main link between providing access to financing and the impact on poverty reduction (Green et al., 2006). The promotion of MSEs parallel to the provision of financial services in Ethiopia is in line with this proposition.

The impact of micro-finance on poverty reduction remains a contested issue. One of the major causes of disagreement is on how to measure the impact. Some consider the rate of repayment, which shows the viability of the institution, as an indication of the impact of micro-finance without taking account of the source of the payment. Others consider the change in the household income of micro-finance participants as measure of impact through randomization but take an issue with selection bias that may arise due self-selection of participants into the program. Some studies have produced positive evidence as to the impact of micro-finance on poverty reduction. Khandker (2005), for instance, shown that micro-finance through increased consumption improved the welfare of program participants and resulted in a positive spill-over effect on non-participants. In addition to the substantial reduction of poverty among micro-

finance participants and it also benefited the non-participant indirectly through increased local income, and its impact on extreme poverty is shown to be slightly higher than that of moderate poverty (Khandker, 2005).

Other studies have shown that the impact of micro-finance varies according to the level of poverty of participants. According to Mosely and Hulme (1996) the less poor among participants experience greater level of impact. The reason is that the less poor are more likely to take risk and make an investment that would later result in increased income. The very poor, on the other hand, are likely to take small and subsistence protecting loans that are not enough to invest in new technology, which the impact of it will in some cases be negative (Mosely and Hulme (1996). Morduch (1998), challenging the commonly accepted notion, showed that the impact of access to finance is limited to reducing vulnerability rather than the alleviation of income poverty.

Following the success stories of micro-finance in Asia and Latin America, most African countries have devised a poverty reduction strategy which takes poverty reduction as one of the major elements. Similarly, the government of Ethiopia has included micro-finance and micro-enterprise development in almost all of poverty reduction strategies. However, there are few studies which examine the impact of microfinance on poverty. In one of the studies conducted in northern Ethiopia Guush and Gardebroek (2011) found out that the impact of microfinance participation as measured by the change in the annual per capita consumption and improved housing is significant. Micro-finance programs positively impacted the wellbeing of farmers in Ethiopia directly through increased consumption and asset growth and indirectly by increasing the use of some improved technologies (Liverpool and Winter-Nelson, 2010).

3.2.2 Micro-finance and women economic empowerment

The reason why MFIs incorporate women in their program as is detailed at the beginning of this chapter varies according to the focus of the institution. The effect of micro-finance on women's empowerment can be seen from different perspectives. The discussion in this study is, however, limited to women economic empowerment aspect of micro-finance, with particular focus on the

relationship between micro finance and the women's level of participation in household expenditure decision making.

The economic empowerment dimension of women's participation in micro-finance is mainly manifested by their ability to own assets and taking part in deciding on household expenditure. That is, as women earn more income and their financial contribution for household increases they will more likely participate in the expenditure decision. Studies show competing evidence about the impact of micro-finance on women empowerment. Pitt et al. (2003) using quasi-experimental method compared the effect of women and men's participation in micro-finance on the wellbeing of their children found out that the provision of credit significantly improved the health and nutrition of their children where as credit provided to men resulted in no significant change. This study though it used a 'before/after' comparison method attempted to see if micro-finance participation affects the level of woman's participation among others on child-related household expenditure decisions

In another study Pitt et al. (2006) comparing the effect of women and men micro-finance participation showed that it has a positive impact on the empowerment of women. It found out that access to credit to women resulted in an increased household decision making, access to financial and economic resources, and social networks among others. Holvoet (2005)using 'constructed matching' method in exploring the 'household decision making process' of micro-finance participants showed that women are more likely to make independent decisions when they are borrowers than being in male borrowers' household. Khandker (2005) also showed the positive impact of micro-finance on women in terms increased household expenditure. Women participation in micro-finance has resulted in an increase in household expenditure at both individual and household level than that of eligible non-participants (Chowdhury, 2011).

In a study conducted in rural Bangladesh Hashemi et al. (1996), reported that women's membership in micro-finance and their duration of membership had significant positive effect on their participation in major decisions within the household as well as making large and small purchases. They also found out that women's micro-finance participation resulted in significant economic contribution and increased rate of their own asset holdings. Kabeer (2001) reported

that micro-finance participation contributed to women's economic independence by enabling them to acquire their own assets and savings.

In a study that was conducted in Pakistan to explore the effect of micro-finance intervention on women's bargaining power in the household decision making process (Asim, 2008) found that it has no effect. It compared the household decision making across four major dimensions: child related, health, economic and social mobility decision. It used the ordered probit model to measure the household decision making process. The same method is adapted by this study to estimate the level of women participation in individual household expenditure decision. The only empowering effect of micro-finance is indicated in their involvement in decision, which used to be traditionally 'male only' such as purchase of TV/Refrigerator or house.

Generally most researches show the positive impact of micro-finance on women empowerment. Garikipati (2008) based on a study conducted in India, however, argues that even though the provision of credit to women eases the household's vulnerability its impact on their empowerment is not strong as they lack control over family assets. Taking this further other researchers have found out significant evidence indicating that women don't even have control over their loan, particularly married women (Goetz and Gupta, 1994). It may further lead women into a situation where they will be forced to substitute funds from other sources to make loan repayments. The failure to make loan repayments on time due to lack of control over the loan may lead to conflict with in the household culminating with violence against the women. Contrary to this Pitt et al. (2006) found that conflict over the use of loan is less likely when the borrower is female than male. This study, however, tried to find out whether women's participation in micro-finance program has an effect on her level of involvement in the household expenditure decision.

3.2.3 Group lending and women

All MFIs with the exception of charity-based institutions want to make sure that the money they lend will be returned. To ensure this they require some form of guarantee from their customers, mostly some form of material collateral. The lack of a guarantee that the poor can present and the high cost of micro-finance delivery excludes access to finance and puts MFIs in a position that

contradicts their very reason of existence: to provide the poor the small amount of credit they need. To address these contradictions MFIs created a system for those who cannot present a guarantee on their own to form a group where they can be guarantors for each other. Group-lending, which is also referred as 'joint liability lending' is one of the most important innovation of MFIs (Murduch, 1998). Besides removing one of the common entry barriers, lack of finance, the group lending system suits in the case of Ethiopia as it builds up on the existing social structures of mutual support and communal life (Gobeze, 2011).

The group-lending programs helps reduce the cost of delivery for MFIs by decreasing the cost of gathering information about the borrower and by reducing the cost of loan processing and follow-up as members of the group do it by themselves for their own purpose (Mayoux, 2001). The most important aspect of group-lending that is helpful for both borrowers and lenders is peer pressure (Holvoet, 2005). Other studies have also shown that group lending reduces the risky nature of micro-finance through peer monitoring, and the threat of social sanction on those members who fail to meet their contract (Wydick, 2001).

It is, however, not a preferred method for borrowers as it imposes an administrative cost associated with the screening of group members and because it makes them responsible for the failure of any members, and given the alternative most would prefer an individual-based loan (Wydick, 2001). In addition, individual-based loans are preferred by customers because of their flexibility in terms of the amount of loan they provide and its terms and conditions. ACSI employs both lending approaches. Group-lending is used only when customers are not able to present collateral. It is used as an alternative form of collateral. After securing the loan in this form individuals are free to invest in their own business unless the group is a cooperative. Most of the women in this study who took part in group-lending program operate their own business but remain in regular contact with other members at least until the loan gets paid.

Group-lending programs are often seen as particularly important in providing benefits to women. Besides providing access to finance for women who would otherwise have been left out, their participation in group-lending programs enables them to become economically empowered by making them able to decide on their saving and credit use, increase wellbeing of a household,

and build their social capital through networks created by being member of a group (Mayoux, 2001).

Even though women's participation in a group puts an additional time burden, it is thought to have also the benefit of providing them with information and the access to extra-household networks (Holvoet, 2005). Peer pressure and the availability of group fund are also important aspect of being in group-loan. In a study conducted in South India it is shown that, women who are not in group-lending program, even though they have gained greater control over the loan they have not been able to translate this improvement into other household decision makings. It is only those women who are part of the group-lending program that have been able to make significant improvement in deciding in the areas of loan use, money management, and time and task allocation in the household; the longer they have been in the group the stronger the effect (Holvoet, 2005). In this study effects of group-lending on women's level of participation in household expenditure decision making is discussed by.

Exploring the impact of the gender of the borrower on education of their children Holvoet (2004) found that there is no significant difference whether credit enters the household through father of mother. But, comparing the way credit entered the household she showed that children whose father or mother received loan through group membership stayed longer in school and are more likely to join private school than children whose parents received credit directly. Besides, girls are found out to be the only beneficiaries of mother's group membership.

Chapter Four

4. Methodology and Data collection

This section is concerned with the research methods used. A brief account is given to the research design that is employed. It explains the type of data collected, the methods of data collection used, and the sampling techniques employed and the justification for choosing them. It presents the descriptive analysis of the data. Finally it sets the model of regression to be used for the presentation of results.

4.1. Research methods

Both primary and secondary types of data are employed in conducting this study. Secondary data are collected from different official documents and reports of ACSI (ACSI 2011, MoFED 2012, CSA 2011) periodic reports of Ethiopian Central Statistics Authority, other policy papers, and literature reviews from various sources. The primary data are collected through questionnaires distributed to women ACSI beneficiaries in three selected districts of Addis Ababa and interviews conducted with officials of ACSI.

A small household survey consisting of 100 respondents was conducted from mid-December 2011 until the end of January 2012 by using a questionnaire to collect data for this study. The survey included 100 participants of women micro-finance participants, who work in three selected districts (30 respondents from Bole, 35 respondents from Gullele and 35 respondents from Yeka) of Addis Ababa. The districts are randomly selected whereas the respondents are chosen based on convenience sampling technique, explained in the section below. Each of these data collection methods are discussed in detail below.

4.1.1. Questionnaire

Questionnaires were distributed to respondents mainly consisting of close-ended and quantifiable questions. The questionnaire was designed to collect the ‘before-after’ data from women participants/beneficiaries of the biggest micro-finance institute, ACSI, in the city of Addis Ababa. The questionnaire is chosen as a method of data collection because it enables one to

collect and address a wide range of questions from a relatively large number of respondents over a short period of time.

The women participants of the study are those who have been participants of this institute for at least year. As the objective of the study is to analyze the effects of micro-finance on the empowerment, particularly the financial independence aspect of women participants, it was important to take only those that have been participants for a year or more who would better placed to reflect on the effect. Other than the number of years of participation in micro-finance no other criterion was used to select respondents. Women micro-finance participants who are involved in any type of business activity are part of the survey.

After refining the questions that were based on the results of pilot study questionnaires, the survey was distributed for the selected districts. Even though most of the respondents had some level of schooling, they needed help in the completion of the questionnaire, as also witnessed in the pilot study. With the help of two assistants, who were hired during the data collection period, the respondents filled the questionnaires. The respondents were contacted in two ways: (1) when they come to the local ACSI's office to make their periodic payments and for other consultations; and (2) due to too few numbers of respondents coming to local office and the short time period available for data collection the assistance of credit officers of the local ACSI was sought to go to door to door to find respondents. Credit officers usually make door to door visits to follow-up with their customers and the survey team accompanied them during these times to contact the respondents. Nearly half of the questionnaires were completed in such way.

4.1.2. Interview

A semi-structured type of interview was used. This type of interview according to Bryman (2004) refers to a context in which the interviewer has questions that are in a general form of an interview schedule and is able to vary the sequence of the questions. An interview was conducted with one ACSI official from each of the three selected districts. The officials chosen for the interview are the heads of the local ACSI office.

The questions included in the interview are mostly of a qualitative type and are designed in such a way that they are related or similar to some of the questions raised in the questionnaire distributed to participants of micro-finance. By doing so it is intended to cross-check the responses and facilitate the analysis of the data. All the interviews were conducted by me. Interview responses were noted down literally and summarized later.

4.1.3. Pilot Study and the language used

Conducting a pilot study is essential to test whether a given research instrument measures what it intends to measure before the actual data collection starts. Pilot studies are particularly important when research is based on a questionnaire as the method of data collection where the researcher may not be present to clarify any confusion that might arise during the completion of the questionnaire. Before administering the questionnaire, a pilot study, involving 15 respondents was undertaken. The pilot study was conducted on randomly selected women micro-finance participants who were not part of the survey respondents. The pilot study showed that some of the questions were not clearly stated and some were unnecessary. It also showed that most of the respondents needed help during the completion of the questionnaire. Based on the results of the pilot study some corrections were made on the way the questions are framed in the questionnaire.

The language used in the process of data collection is an important factor that could affect the quality of data. Taking this into account the language used in both methods of data collection was Amharic, the official language of the country, on which all of the respondents are fluent. Both the questionnaire and the interview guide were prepared in Amharic. The data were later translated and transcribed into English for the purpose of analysis and writing the thesis.

4.2. Sampling technique

Sampling is a decision about who should be involved in the study as a source of information that can represent a population. The sampling technique used determines the representativeness of the sample and the relevance of the data collected. The choice of sampling technique depends on what kinds of data are collected and from whom it is collected. Careful selection of

representative sample is particularly important in surveys from which descriptive generalizations are made to a large population (Durrheim, 1999).

The study used two types of sampling techniques. The first one is purposive sampling. It is a technique that enables the researcher to select the sample on the basis of wanting to reach respondents relevant to the research (Bryman, 2004). It involves the selection of samples which are positioned to have more information than other potentials. The interview for this study was conducted based on this technique. That is, the heads of the district ACSI are specifically chosen for the interview because they are thought to have better information than others regarding the questions raised by the study.

The second sampling technique used in this study is convenience sampling. As its name implies a convenience sample is one that is simply available to the researcher by the virtue of its easier access (Bryman, 2004). This technique of sampling is used to collect data from women micro-finance participants by using questionnaires. This method is chosen because of the difficulty getting as large number of respondents from which samples could be taken.

4.3 Data presentation

4.3.1 Definition of Variables

In this study three types of dependent variables and some related independent variables are used for regression analysis.

4.3.1.1 Dependent variables

Ordinal dependent variables are used to measure the level of input women had on different kinds of household expenditure decisions before and after micro-finance participation using a scale of 1 to 5. A response of ‘always’ takes a value of 5 indicating ‘ a woman has a full level of participation’ and ‘never’ takes a value of 1 at the lower end of the scale indicating ‘no woman participation at all’. Three types of dependent variables are used: child-related expenditures, women-related expenditures and asset purchases by the women.

The decision score of a respondent in each of the dimensions is computed by adding the scores obtained in all items in that class. This method is adopted from the method used by Rahman and Naoroze (2007) and Nessa et al. (2012) in measuring women empowerment. An outline of the measurement structure of the three decisions is presented in tables 4.1 for child-related table 4.2 for women-related and table 4.3 sale/purchase of personal asset. Moreover, this study adapts a method used by Salman (2008) where each household decisions score are used as a dependent variable under each sub-category to see the effect in detail.

Table 4.1: women's level of participation on child related expenditure decision and its measurement

Child-Related Expenditure	Values assigned to the responses 'Before MF' and 'After MF'	Aggregate index of empowerment	Possible score range
A. Taking children to health station B. Sending children to school C. Buying fruits for children D. Buying children clothing	1. always 2. most of the time 3. sometimes 4. rarely 5. never	(ChildIndex)=A+ B+C+D	4-20

Table 4.2: women's level of participation on women related expenditure decision and its measurement

Women-Related Expenditure	Values assigned to the responses 'Before MF' and 'After MF'	Aggregate index of empowerment	Possible score range
A. Family planning and your own medical care B. Purchasing personal clothing and cosmetics C. buying presents for different occasions (for family, friends, and relatives)	1. always 2. most of the time 3. sometimes 4. rarely 5. never	(OwenIndex)=A +B+C	3-15

Table 4.3: women's level of participation in deciding to purchase personal asset

Asset purchased by the Women (PerassIndex)	Values assigned to the responses 'Before MF' and 'After MF'	Possible score range
A. Sale/purchase of personal assets	1. always 2. most of the time 3. sometimes 4. rarely 5. never	1-5

4.3.1.2 Independent variables

Each of the independent variables is defined below. The effect that the age of a micro-finance participant is expected to have is explained through education. The younger the respondents are the more likely they are to be more educated, which in turn makes them more likely to accommodate the interest of women. Therefore, an older household head is expected to decrease the probability of a woman's participation in household expenditure decision making. Similarly younger spouses are more likely to have a better education. The more educated they are the more likely they are to demand to have more say in household affairs. Therefore, an older spouse is expected to decrease the probability of women's participation in household expenditure decision making.

Household size is the number of individuals in the household. It is expected to have a negative effect the woman's level of participation in the household decision making. As the number of the household members increase a women is more likely to have lesser participation in decision.

The education for both the household head and spouse is categorized into six parts ranging from 'No-education' to 'Above diploma holders'. The education level of the household head (EH) is expected to increase the spouse's level of participation in household decision making. That is,

the more educated the household head is the better understanding he is expected to have of women's right in general. The better education of the spouse (ES) makes her aware of her rights in participating in the household decision making. The more educated the women is the more active she is expected to be in household affairs. Therefore, the level of education of the spouse is expected to increase the score of participation in household expenditure decision making.

Training (TR) is a dummy variable for specific training provided to the micro-finance participants in connection with the business in which they are involved in. It takes a value of 1 if the respondent has received training and 0 if otherwise. The training is expected to increase income through increased productivity. The training of spouse is expected to increase the the degree to which the spouse participates in household expenditure decisions.

The idea of starting the business (ID) is a variable that is intended to capture who in the household brought the idea of getting micro-finance loan to start the business. If women are more involved in originating the idea of doing business they are more likely to have increased participation in household decision making too. Related to this is a variable called 'against the idea' (AI). It is a dummy for the household head being against the idea of the spouse starting business. It is represented by 1 if the husband was against the women starting the business and 0 if otherwise. The household head being against the idea of spouse's starting business is expected to decrease her participation in household expenditure decision making.

The 'level of support' (LS) is a variable which captures the level of support women got from family members during their business activity. It is a dummy variable with 1 representing if the respondent received support and 0 otherwise. The level of support is expected to increase the women's level of participation in household expenditure decision making.

The 'Experience in micro-finance' (MFexp) represents the number of years of participation in micro-finance. Experience gives women the financial independence of getting involved in more of household decisions and time to become more aware of her role in household economic decisions. The increased years of micro-finance participation is expected to increase women's participation in household decision making.

The ‘Type of loan’ (TL) represents whether the respondent took the loan on a group or an individual basis. Group membership is thought to increase their access to information and enable the formation of networks. It is a dummy variable with 1 representing if the respondent is a member of a group based loan and 0 if otherwise. A group-based loan through the interaction it creates with other members provides the opportunity for a woman to increase awareness of her rights. Hence, a group-based loan is expected to increase the level of participation of women in household decision making.

The group-loan evaluation (GE) measures how group-based borrowers evaluate the group-lending program. Respondents were given four alternatives ranging from ‘very good’ to ‘very bad’ to indicate their experience of working under this system. The better the experience of respondents under this system is used as a proxy for increased awareness which in turn increases their level of participation in the household decision making.

The amount of the loan (AL) indicates the latest amount of micro-finance loan taken by the women in local currency. The larger the amount of the loan the greater the economic power for women. The amount of loan is expected to increase the involvement of women in household decision making. The loan repayment (LR) is a dummy for repayment of loan on time, taking a value of 1 if the respondent has paid back the loan and 0 if she is delinquent. The inability of women making loan repayments on time affects her financial independence. Repayment of loan on time is expected to increase women’s level of participation in household decision making.

The source of repayment (SR) is a follow-up to the loan repayment variable and shows how the repayment has been financed. Respondents were given six alternative answers ranging from ‘from return on micro-finance investment’ to ‘borrowing from traditional lenders’. When the return on investment of micro-finance money is the major source of repayment it is expected to increase the participation of women in household decision making.

Total household income (HI) is the value of the total average monthly income of the household. It is the sum of salary/wage of household head, spouse and others, and income from micro-

finance investment, sales of assets, remittance, aid and others. The percentage of the household income contribution (HHIp) is a variable which shows how much the percentage of the household income is contributed by women in the form of income from microfinance investment. The higher percentage contribution of women to household income the more say they would have in the household expenditure decision making. Hence, it is expected to have a positive effect on their participation.

4.3.2 Descriptive analysis

This section presents descriptive analysis of the study based on the variables defined in the previous section. The analysis also includes some information gathered through interview and the responses to the open ended questions presented in the questionnaire. Table 4.4 shows the before-after summary of descriptive statistics of the dependent variables for each variable (scores from 1-5), the aggregate index scores for child-related (score from 4-20) and woman related (score from 3-15).

Table 4.4 Descriptive statistics of some of the dependent variables used in the analysis before and after microfinance participation

Dependent	After microfinance participation					Before Microfinance participation			
Variable |	Obs	Mean	Std. Dev.	Min	Max	Mean	Std. Dev.	Min	Max
ChildIndex |	84	16	3.135	9	20	14.3	3.837	7	20
childhealth |	84	4.2	1.062	2	5	3.7	1.071	1	5
childschool |	84	3.5	1.145	1	5	3.2	1.239	1	5
childfood |	84	4.6	0.742	3	5	4.0	0.891	2	5
childcloth |	84	3.8	1.134	1	5	3.4	1.261	1	5
WomenIndex |	100	13.2	2.311	7	15	11.9	2.795	7	15
FamilyPlan |	100	4.8	0.691	3	5	4.2	1.001	1	5
WomenClothes |	100	4.4	0.888	2	5	3.8	1.146	2	5
BuyPresents |	100	4.1	1.031	2	5	3.9	1.049	2	5
PAssetIndex |	100	4.2	0.919	2	5	3.72	1.129	1	5

Source: own calculation (STATA)

From the summery, it is clear that the 'mean', of the after microfinance participation is higher than the before program enrolment for all variables. This shows that there is undeniably some positive change on woman's participation on decision after the enrollment of microcredit program. And, the average mean indicated in the table for the child-related household decisions takes a value of around 3.5 ($\frac{14.3}{4}$) for 'before' and about 4 ($\frac{16}{4}$) for 'after' microfinance enrolment on a scale of 5 suggesting that for average women in the sample, the women who used to participate '*sometimes'* in child-related household expenditure decisions before microfinance enrolment and now she participates '*most of the time*' after microfinance. The same is true for women-related and purchase of personal asset a shift from *most of the time* participation to *always* deciding (from 4 to 4.6).

In table 4.5, which is the main reference for the analysis, provides statistical description of independent variables used in the analysis.

Table 4.5: Descriptive statistics of all possible explanatory variables used in the analysis of before and after microfinance participation

	After microfinance participation					Before Microfinance participation			
Explanatory Variables |	Obs	Mean	Std. Dev.	Min	Max	Mean	Std. Dev.	Min	Max
Age |	100	36.32	6.035	21	50	32.25	5.010	19	44
agediff |	71	3.70	2.199	-1	8	3.70	2.199	-1	8
Edu |	100	2.59	1.198	1	5	2.57	1.191	1	5
depend |	100	2.50	1.425	0	6	2.535	1.145	1	5
HHSize |	100	4.18	1.635	1	7	4.19	1.656	1	8
HHI |	100	1018.5	265.7	600	1835	738.5	220.50	0	1500
HHIp |	100	.4965	.2338	.08	1	.230	.27007	0	1
MFexp |	100	4.07	1.54	2	7				
TR |	100	.38	.488	0	1				
ID |	100	1.72	1.173	1	5				
AI |	72	.2639	.4438	0	1				
LS |	100	.72	.4513	0	1				
TL |	100	.7	.4606	0	1				
GE |	70	1.871	.7787	1	4				
LR |	100	.92	.2727	0	1				
SR |	92	1.2065	.8192	1	6				
AL |	100	5480.45	1887.6	1780	10000				

Source: own calculation (STATA)

The age of the micro-finance participant is expected to have a negative effect on the extent of a woman's participation in the household expenditure decision making. The negative effect in this case is taken on the assumption that the younger the respondents the most likely that she is relatively better educated which, in turn, would affect her views on the role of women in the

household. In addition, the older the respondents are the more likely to be traditional in their view of women, resulting in less participation. The average age of female micro-finance participants is 36 years, ranging from 21 to 50 years old.

Household size is the number of individuals in the household. It is expected to have a negative effect the woman's level of participation in the household decision making. By the time of the survey, the average household size is around 4 individuals in the house. The minimum is 1 person and the maximum is 7 individuals under one roof.

Education is considered to be an important element in creating awareness to the rights and role of women in the society in general and at household level in particular. Education can be taken as a proxy for income and more income can be translated to more say for women in household affairs. The level of education of the women micro-finance participant can have an effect on her level of participation in the household decision making. In this case the effect is expected to be positive. That is, the better level of education leads to increased level of participation.

In table 4.6 about 75% of the respondents have received some level of education. The high level of literacy shown by the respondents is the result of their location, Addis Ababa, where the level of education is higher than in the rural areas. For example, in the 2010/11 academic year the rate of enrollment in the urban areas was 85.5% whereas in rural area it was 14.2% (MoE, 2011).

Table 4.6: Level of Education at the time of survey

Level of education	Female	
	No	%
No education	25	25
Completed elementary school	22	22
Completed secondary school	25	25
Technical and Vocational education & training graduate	25	25
Diploma holder	3	3
Above diploma	0	0
Total	100	100

In addition to the formal education, micro-finance institutions or other support organization provide specific training tailored to the type of activity they are involved in. Training, similar, to education is expected to have a positive effect on woman's participation. As it discussed in chapter two MSEDA is an agency tasked for this purpose. As it is learnt from the interview ACSI also provides short-term awareness creation programs on saving and loan repayment. However, as indicated in table 4.5, only 38% of the respondents claim to have received such training (TR).

Table 4.7 indicates who in the household initiated in the idea of starting a business. Starting a business for woman in developing countries is challenged by the traditional role women are expected to play as housewives. By identifying who in the household brought the idea of the woman starting the business the study sought to relate the level of initiative women have taken to do business with their level of participation in the household decision making. More initiative from the woman is expected to increase her participation.

Table 4.7: Idea of starting business

Whose idea was starting business?	All respondents		Married Respondents	
	No.	%	No.	%
Self	63	63	42	59
Husband	20	20	18	25
Children	4	4	1	1
In-laws	8	8	8	11
Others	5	5	3	4
Total	100	100	71	100

According to table 4.6, 63% of all respondents claim to have brought the idea of staring business by them. However, the percentage among married women it 59%. Given the culture where men dominate most business activities both figures indicate a significant level of initiative taken by

women to start their own business. This might be due to the type of business activities respondents are involved with, which are traditionally done by women such as preparing home-made food items and drinks, and small venders. In addition, according to officials of ACSI, the increased participation of women in MSEs is also due their policy of prioritizing women.

In addition to identifying who was behind the idea of starting the business it is also important to know if the husbands of married participants were against the idea of the woman starting her own business. The husband's disapproval of the idea is expected to affect the woman's participation in the household expenditure decision negatively. In table 4.5, 73% of husbands of married micro-finance participants were not against the idea of their wives starting their own business. The rest, 27%, disapproved it. Besides ACSI's focus of credit access towards women, the significant rate of approval by the husbands to their wives starting a business might be explained by the fact that most of the micro-finance participants did not have sufficient income before microfinance was provided, which made them welcome any potential additional source of income even if it meant going against the traditional role women were expected to play.

What happens after starting the business is also important. Respondents were asked if they got the level of support they expected from members of the household after they started their business activities. The level of support is expected to affect woman's participation in the household decision making positively. Seventy two percent of respondents indicated that they have received the level of support they expected from members of the household. This is in line with the support they got for their idea of starting their own business.

The number of years of experience with micro-finance variable (MFexp) is measured as the number of years the respondent has participated in micro-finance. This is another element that is expected to positively affect the level of say women have in the household decision making process. The more experienced women are the more likely to have better financial independence through increased income, which would enable them to have greater say in the household expenditure decision. In addition, more experience could be associated with an increased level of woman's interaction with business customers and fellow micro-finance participants. This increases the level of awareness towards their rights within the household. In table 4.5, the

average year of experience in micro-finance is four years with a minimum of two years and maximum of seven years. Most of them, 61%, joined the micro-finance program four or fewer years ago. Participants with less than one year of experience were not included in the study on the assumption that they do not give a representative reflection of the effect of micro-finance on women's participation in the household.

There are two ways of getting a loan from ACSI. It is either individual or group-based loan. Clients who take group-loan are those who cannot present collateral. Besides enabling the poor, who do not have collateral, to get access to finance, group-based loan programs benefit women by providing them access to information and opportunity to network among group members and beyond. This is expected to affect their participation in the household affairs positively. In table 4.5, the majority of the respondents, 72%, have taken group-based loans. Even though there is the option of taking a loan individually, the fact that this many of them opt to taking group-loans shows that most of them are too poor to present collateral. This is in line with the response of those who took a group-based loan to a follow-up question which asked them why they chose this option. In almost all cases the only reason for their choice was lack of collateral to present. Despite a group loan not being the preferred type by the individual, the overwhelming majority, i.e., 85% of respondents that took a loan on group-basis evaluated a group-lending system as either 'good' or 'very good'.

The average loan value in 2011 for all ACSI clients was 13,456 Birr the average loan for male clients being 23,564 birr and 6616 birr for female clients (ACSI, 2011). The average loan size for the respondents, however, is 5,480 Birr. The significant discrepancy between the two figures can be explained by the characteristic of respondents. That is, the respondents in this case are women who are mostly involved in business activities, such as selling home-made food and drinks, and petty trading, which require much less capital than male borrowers. The loan size is expected to have a positive effect in the participation of women in household decision making. The amount of the loan is proxy for income. The larger the value of the loan the more likely the loan has increased income for women, enabling them to have more say in the household affairs.

The ability of paying back the loan is another factor that could affect woman's level of say in household decision making. If women are able to make loan repayments they are expected to have more say in the household. The rate of repayment of respondents, as it is presented in table 4.5, is 92%. It is less than the average loan repayment rate of ACSI clients for the last seven years, which is 98% for both male and female clients with no significant difference between them (ACSI, 2011). According to officials of ACSI, because of the low barriers to entry in the sectors in which the women respondents are involved there is a high degree of competition and relatively lower returns.

Assuming that the loan repayment rate alone does not tell the entire story, respondents were presented with a follow-up question to indicate the source of loan repayment. It was intended to examine to what extent the respondent was able to repay their loan from micro-finance earnings. The more the repayment is financed through this means the more likely to increase the say of women in household decision making. In table 4.8, 91% of the respondents who were able to pay back their loan did so from a return on loan investment. Only 9% of them resorted to the other sources such as selling personal assets and income from other business.

Table 4.8: Source of loan repayment

Source of loan repayment	No.	%
Return from loan investment	84	91
Selling personal assets	3	3
Income from other business	3	3
By taking loan from micro-finance institutions	0	0
By taking loan from traditional lenders	0	0
Others	2	2
Total	92	100

The total average household income and woman's percentage contribution to it are other factors considered to have an effect on woman's participation in the household expenditure decision making. Both factors are expected to increase a woman's participation. But, the woman's percentage contribution to the household income is expected to have more direct impact. The more they contribute the more say they demand in the household affairs. Micro-finance participation is expected to increase their earning and their contribution more. In table 4.5, The average household income (HHI) before micro-finance participation was 739 birr and the percentage contribution of a woman to household income (HHIp) was 27%. The average monthly HHI of the respondents after micro-finance participation is 1019 birr, where the lowest household income is 600 birr and the highest is 1835 birr. And, the average HHIp is 50%. The lowest contribution is 8% whereas the highest is 100%, indicating that the woman is the only source of household income. This shows that both HHI and HHIp have increased after micro-finance participation.

4.3.3 Specification of Econometric models

In this study the Ordinary Least Squares (OLS) estimation technique and the Ordered Choice Model (Ordered Probit) is employed to investigate the research questions set out in chapter 1. Regression analysis is performed by using primary data which were gathered from a sample of 100 women participants of Addis Ababa.

The dependent variable for this study is the woman's level of participation in household expenditure decision making on: aggregate child-related (*ChildIndex)*, aggregate women-related *(WomenIndex)* and purchase of her own personal assets *(PerassetIndex)* as explained in table 4.1, table 4.2 and table 4.3 respectively. Moreover, individual dependent variables like *Childhealth, Childschool, Childcloth, Childfood, Familyplan, Womencloth, and Buypresents* which are a part of the aggregated decision participation are included as dependent variables for a better intuition. The Ordered choice model is used for these individual dependent variables since there outcome is arranged orderly from 1-5. The independent variables are: age, education, amount of loan, duration of membership, percentage of HH income contribution and household size. In the

model below all these independent variables are tested as to how they affect each of the three dependent variables.

4.3.3.1 Econometric Model I: Ordinary least squares (OLS) for the aggregate decision participation

In this section the model tries to identify different factors affecting the women's level of participation on the decisions related to their children's food, health, school and clothing combined using OLS as it is adapted in related studies such as Nessa et al. (2012). Decision cumulative index for the child-related (from 4 to 20) and Decision cumulative index for the women-related from 3 to 15 (see table 4.5) is used as dependent variable and the characteristics of the borrowers' household characteristics that affect the decision is considered as explanatory variables. To grasp the change on the 'before-after' situation, the study used linear regression. The econometric specification of the model is described by

$$\boldsymbol{Y_{it}} = \boldsymbol{\beta_0} + \sum \boldsymbol{\beta_1 X_{it}} + \boldsymbol{\beta_2 MFexp_{it}} + \boldsymbol{\beta_3 AL_{it}} + \boldsymbol{U_i} \quad \ldots\ldots\ldots\ldots \quad (4.1)$$

Where $\mathbf{Y_{it}}$ is the dependent variable for child-related and woman-related expenditure decision score for the i^{th} individual and t refers to the time period (0 is before, 1 is after the enrollment of microcredit program) , $\mathbf{X_{it}}$ stands for explanatory variables of household characteristics (the respondents' Age, Education level, Household size, Household income percentage share), Mfexp is number of years the respondent has participated in micro-finance, AL is the amount of loan taken and $\mathbf{U_i}$ is the error term. Likewise β_0 is the intercept term, β_1 is the regression coefficients to be estimated for $\mathbf{X_{it}}$ **,** β_2 is the regression coefficients to be estimated for microfinance experience and β_3 is amount of loan regression coefficient.

4.3.3.2 Econometric Model II: Ordered choice model (Ordered Probit) for the Individual decision participation

In this study the ordered probit model is used to estimate the level of women participation in individual household decisions related to her children and herself. According to Gujerat (2003) this model can be used for variables were ordering exists but the distances between the

categories cannot be quantified. In this study the values are assigned to the outcomes variable from low to high but the numeric values are ordinal and reflect only the ranking of the outcomes(1= never participated in the decision – 5= always makes the decision). A brief description of the Ordinal Regression model (ORM) is as follows.

A model is derived from a measurement model in which a latent variable y* ranging from -∞ to ∞ is mapped to an observed variable y (Long, 1997), where y providing incomplete information about an underlying y* according to the measurement equation :

$$y_i = m \;\; if \;\; T_{m-1} \leq y^* < T_m \;\; for \;\; m = 1 \; to \; J$$

The T's are called thresholds or cut points. The extreme categories 1 and j are defined by open-ended intervals $T_0 = -\infty \; and \; T_1 = \infty$. The mapping is shown on fig 4.1 . Where y* is the latent variable and the cut points are indicated by T's.

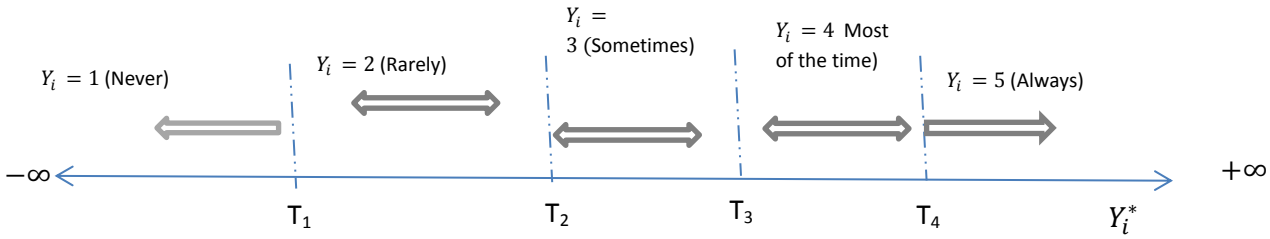

Figure 4.1 ordinal choices relative to threshold

In this study, the women were asked if they participate on certain household decisions. Response categories are ' Never', 'rarely' , 'Sometimes' , 'most of the time' , and 'always'. According to the measurement model the observed Y is related to Y* as

$$Y_i = \begin{cases} 1 = Never, & if \;\; T_0 = -\infty \leq Y_i^* < T_1 \\ 2 = Rarely\,, & if \;\; T_1 \leq Y_i^* < T_2 \\ 3 = Sometimes, & if \;\; T_2 \leq Y_i^* < T_3 \\ 4 = Most\ of\ the\ time\,, & if \;\; T_3 \leq Y_i^* < T_4 \\ 5 = Always, & if \;\; T_4 \leq Y_i^* < T_5 = \infty \end{cases}$$

the structural model is

$$\boldsymbol{Y_{it}^{*}} = \sum \boldsymbol{\beta_1 X_{it}} + \boldsymbol{\beta_2 MFexp_{it}} + \boldsymbol{\beta_3 AL_{it}} + \boldsymbol{U_i} \ \ldots\ldots\ldots\ldots \quad (4.2)$$

Where $\boldsymbol{Y_{it}^{*}}$ is the latent dependent variable for individual household decisions(*Childhealth, Childschool, Childcloth, Childfood, Familyplan, Womencloth, and Buypresents*) score for the i^{th} individual and t refers to the time period (0 is before, 1 is after the enrollment of microcredit program) , $\mathbf{X_{it}}$ stands for explanatory variables of household characteristics (the respondents' Age, Education level, Household size, Household income percentage share), **Mfexp** is number of years the respondent has participated in micro-finance, **AL** is the amount of loan taken and $\mathbf{U_i}$ is the error term. β_1 is the regression coefficients to be estimated for $\mathbf{X_{it}}$ **,** β_2 is the regression coefficients to be estimated for microfinance experience and β_3 is amount of loan regression coefficient.

4.3.4 Statistical consideration for the model

Different statistical tests are used in the study to estimate the model accurately

T-test is used to compare the means of variables for a single group (Gujarati, 2003). In this study individual estimates are tested for statistical reliability of the OLS. In order to test the efficiency of the regression coefficient t-test was employed in the study. F-test was used for the goodness of fit of the model. It attempted to determine the level of goodness based on the significant level.

The variance inflation factor (VIF) test is used to detect multicollinearity since the accuracy of the OLS estimators are reduced by the presence of multicollinearity. The larger the value of VIF the more collinear the variable Xi is. In this study some variables was found to have high VIF which indicated that multicollinearity exist. To mention some, age of the husband, age difference and marital status with higher VIF (greater than 7) had to be eliminated to correct the model. If the VIF of a variable exceeds 10, that variable is said be highly collinear (Gujarati, 2003).

The econometric models used for hypothesis testing must be free from specification error or bias (Gujarati, 2003) . Incorrect functional form, omission of important variables and inclusion of unnecessary variables lead to biased and inconsistent OLS estimators of the

variables in the model. Regression Specification Error test (RESET) with a command ‘Linktest’ in Stata is used and we have found that ‘_hatsq’ is not statistically significant and our model is correct.

Chapter Five

5. Result and Discussion

Econometric model estimation and the discussion of the results is presented in this chapter. The main objective of the study is to identify the determinant factors that affect women micro-finance participants' involvement in household expenditure decision making and to explore if group-based women micro-finance participants are more involved in household decision making. A 'before-after' analysis is used to examine the effect on sample of 100 micro-finance participants with two observations (before and after) by using STATA 11 statistics software.

5.1 Econometric model estimation

The econometric estimation, as discussed before, is done with Ordinary least squares for aggregated household indexes and Ordinal Probit model for individual decision indexes. The econometric models for the study are linear. Multiple regression model of the change on their level of decision due to micro-finance participation is specified as follows:

$$Y_{it} = f(Age, Edu, HHsize, Mfexp, AL, HHIp) \ldots\ldots\ldots (5.1)$$

where, Y_{it} = *(ChildIndex, womenIndex, PerassetIndex, Childhealth, Childschool, Childcloth, Childfood, Familyplan, Womencloth, and Buypresents)* $_{it}$,house hold decision score i^{th} individual and t refers to the time period (0 is before, 1 is after the enrollment of microcredit program) , Age is age of the respondent i, *Edu* is education level of the individual i, *HHsize* is the total number of the household of the respondent i, *Mfexp* is number of years the respondent has participated in micro-finance, *AL* is the amount of loan taken , *HHIp* percentage share of income from the women i .

This econometric model is related to how micro-finance participation affects women related to child expenditure decision making. In order to be able to interpret the coefficients and explain the magnitude of the change, the dependent variable Y_{it} is log transformed so, equation 5.1 is improved as equation (5.2) for the OLS regression and equation (5.3) for the Ordinal probit

$lnY_{it} = f(Age, Edu, HHsize, Mfexp, AL, HHIp) \ldots\ldots\ldots (5.2)$

$lnY^{*}_{it} = f(Age, Edu, HHsize, Mfexp, AL, HHIp) \ldots\ldots\ldots (5.3)$

, where 'ln' indicates the natural log of dependent variable Y.

5.2. Results

5.2.1 Results of OLS estimation

5.2.1.1 Result discussion for women microfinance members

By using model (5.2) a regression was executed using STATA and the results are presented in table 5.1. It shows the result of the econometric model estimation for aggregate child and woman related decision participation. The results shows that the overall R^2 which measures the goodness of fit of the log-lin regression model is 0.23 for child-related and 0.27 for women-related expenditure decision participation. This implies that the model explains about 23% of the total variation in the dependent variable child-related index and 27% of the total variation in the dependent variable Women-related index. The model is statistically significant at 1% with a P-value of 0.000.

The study revealed that among the six explanatory variables only three variables: education, household size and household income percentage of the women are the only statistically significant variables found in explaining the decision by the women. As expected education and household income percentage are positive while household size is negatively related. The result also showed that the effect of age, microfinance experience and amount of loan on the level of women's household expenditure decision making is statistically insignificant.

In table 5.1, the level of education of the women is statistically significant at 1% level of significance for both aggregate child-related and women-related decisions participations. It implies that the more educated the women are the more likely to have participation on the overall household expenditure decision making. Other factors keeping constant, a unit increase in education of the women would lead to a 5% ($e^{-0.057} = 1.05$) increase on her level of

participation on child-related decisions and a 4.3% increases on the level of participation decision to spend for herself. This result is in line with the expectation that the level of education would be positively related to the women's level of participation in household expenditure decision. The more educated a woman is the more likely that she will be active in decisions that matter to her and her children.

Table 5.1 Estimation results OLS

Explanatory variables	*lnChildIndex*			*lnWomenIndex*		
	Coefficients of estimates	T –values	p-values	Coefficients of estimates	T-Values	P-values
Age	0.007	1.3	0.196	0.002	0.5	0.616
Edu	**0.057*** **	**2.82**	**0.005**	**0.042*** **	**2.77**	**0.006**
HHSize	**-0.062*** **	**-3.83**	**0.000**	**-0.046*** **	**-3.79**	**0.000**
Mfexp	0.014	0.87	0.384	0.016	1.2	0.233
AL	-0.000	-0.15	0.877	0.000	0.12	0.904
HHIp	0.117	1.36	0.174	**0.123***	**1.95**	**0.052**
_cons	**2.520*** **	**11.33**	**0.000**	**2.44*** **	**17.07**	**0.000**
	F(6, 161) = 8.15			F(6, 193) = 11.91		
R-squared	0.233			0.27		
Adj R-squared	0.205			0.248		
Prob > F	0.000			0.000		

Note: Parameter estimate significance ***at 1%, ** at 5% and * at 10%

Number of observations = 200 for women-related and 168 for child-related expenditure

The sign for the variable that captures the effect of household size (HHSize) is found to be negative and the coefficient is statistically different from zero at 1% level of significance for both decisions. As the size of the family increases by one person, the level of decision index on child-related expenditure by the women decreases by 6.4% for child-related and 4.7% for women-related expenditure decisions keeping other factors constant.

The percentage contribution of woman to the household income is a variable that is expected to capture the effect of women's micro-finance participation on her level of household expenditure decision making. The assumption is that by participating in micro-finance women will increase their share of contribution to the household income. The more they contribute to the household income they are more likely to have greater say in the household expenditure decision too. Accordingly, the household income percentage showed a positive sign and it is statistically significant at 10% level for women-related decisions. Other factors keeping constant,when the woman's income percentage share increases by 1% her level of participation on decision concerning herself will increase by 13% . This result in general is in line with the expectation that the more the women contribute to the household income their say on the household expenditure decision also increases. However, even though it has the expected positive sign, this variable is not statistically significant for the child-related decisions.

The age of the women is found to be not statistically significant and resulted in unexpected sign. Microfinance experience of the women showed the expected sign though it is found to be not significant. In addition, the amount of loan was not statistically significant with unexpected sign for the child related expenditure but it showed the expected sign for the women-related decisions.

5.2.1.2 Result for group women participants'

In this part the result of the multiple regressions explained above will be discussed with group participants. A regression analysis was done among group lending participants only so it can be compared with the overall microcredit members to be able to see how the magnitude of the

coefficients change. In table 5.2, the regression result among group lending participants is presented.

Table 5.2. Estimation results: women group members

Explanatory variables	*lnChildIndex*			*lnWomenIndex*		
	Coefficients of estimates	T -values	p-values	Coefficients of estimates	T-Values	P-values
Age	0.004	0.46	0.644	-0.009	-1.41	0.163
Edu	**0.067****	**2.48**	**0.017**	**0.058*****	**2.8**	**0.007**
HHSize	-0.030	-1.24	0.219	-0.013	-0.69	0.495
Mfexp	-0.006	-0.26	0.799	**0.038***	**1.81**	**0.075**
AL	-0.001	-0.26	0.798	0.001	0.36	0.720
HHIp	**0.341*****	**2.65**	**0.011**	**0.294*****	**2.82**	**0.006**
_cons	**2.466*****	**8.15**	**0.000**	**2.440*****	**12.35**	**0.000**
R-squared	0.3468			0.382		
Adj R-Squared	0.2699			0.323		
Prob>F	0.001			0.000		
	F(6, 51) = 4.51			F (6 , 63) = 6.49		

Note: Parameter estimate significance ***at 1%, ** at 5% and * at 10%

Number of observations = 70 for women-related and 58 for child-related expenditure

The results show the model is statistically significant at 1% and the overall R^2 of the regression model is 0.35 for child-related and 0.38 for women-related expenditure decision participation.

This implies that the model explains about 34.6% of the total variation in the dependent variable child-related index and 38.2% of the total variation in the dependent variable Women-related index among group members.

In table 5.2, education of the women is statistically significant at 5% for child-related and 1% for women-related level of participation on decision among the group members. Keeping other factors constant, as the education level goes up by a unit (e.g. from elementary to high school), the women's level of participation in household expenditure decision increases 17% for child-related and 14% for women-related decisions.

Unlike the overall participants, the group lenders Household size (HHSize) variable is found to be negative and the coefficient is not statistically significant for group participants' decisions involvement. Recall on table 5.1 an increase in the size of the family by one person, decreases the level of the women's decision participation on child-related expenditure by 6.4% and 4.7% for women-related. However, this variable is no more significant on table 5.2 when the women are in group lending system.

Household income percentage is found to be a very important variable which positively affect the woman's level of decision making. It is statistically significant at 10% level for both decisions. As the woman's income share on the overall household increases by 1%, the woman is going to be more empowered to decide by 34% for child-related and 29% for women-related cetirus paribus.

Microfinance experience took the expected sign and has found to be statistically significant at 10% level of significance on the women-related decisions when the women are in group lending but it is not statistically significant for child-related decisions. By the time the woman adds a 1 year experience in group- microfinance, her level of participation to decide concerning herself will increase by 9% keeping other factors constant. On the contrary, this variable did not have the expected sign and it is not statistically significant for grouped women on their child-related decisions participation.

The variable age is statistically insignificant but it has the expected sign for women related decision level among group members.

Likewise, amount of loan which is statistically insignificant for both decisions is found with unexpected sign for the child- related expenditure.

5.2.2 Regression result of Ordered Choice Model (Ordered Probit)

The econometric model (equation 5.3) estimation for the individual decisions of child-related *(Childhealth, Childschool, Childcloth, Childfood)* and women-related (*Familyplan, Womencloth, Buypresents*) is presented by using Ordered probit here. Similarly, the level of participation on sale/purchase of personal asset (*PerassetIndex*) is estimated by using this method since the outcome variable is ordinal from 1 to 5 (see table 4.3).

In table 5.3 overall performance of the ordered probit model with a p-value = 0.000 and $pseudo\ R^2$ > 0.075 is observed making all this eight household decisions statistically significant at 1 % level. The coefficients of the individual variable do not have a meaningful interpretation but the sign of it give an insight on how these explanatory variables affect the outcome.

The study revealed that the variable education has the expected positive sign and is statistically significant at 1% for child health, child food, woman's clothing and sale/purchase personal asset (coefficient is 0.405,0.286,0.372 and 0.268 respectively). And at 10% level statistically significant for the woman's decision on family planning (coefficient = 0.179), buy presents for relatives (coefficient = 0.159) and at 5% level significance for child school decision (coefficient = 0.189). This result is positively related to the women's level of participation in household expenditure decision. The more educated a woman is the more likely that she will be active in decisions that matter to her and her children. This might increase her consciousness towards her own medical care and family planning. Besides she could purchase personal valuables like gold and silver jewelries that are traditionally considered as other ways of saving in the society.

The sign for the variable that captures the effect of household size (HHSize) is found to be negative and the coefficient is statistically different from zero at 1% level of significance for child health, child-School, child-cloth, purchase of presents and sale/purchase of personal assets. And 5 % statistically significant for family-plan and women-cloth decision participation. As the size of the family increases by one person, the level of decision on child-related and women-

related expenditure by the women decreases. The wider the household size, the more she struggle to decide on dividing up the household budget.

The household income percentage showed a positive sign and it is statistically significant at 10% level for child-food decisions (Coefficient =0.787)**,** 5% on the child-health decisions (Coefficient = 0.944) and 1% on women-clothe, buying presents decision and sale/purchase of personal asset (Coefficient = 1.303 for clothe,1.06 for buying presents and 1.323). This result in general is in line with the expectation that the more women contribute to the household income their say on the household expenditure decision also increases. Through increasing her income share in the house hold, she will perhaps decide how to spend it: like purchasing and carrying some oranges when she visits her aunt.

Another variable which is found to be statistically significant is the age of the women. It is found to be 5% level statistically significant for child-cloth (Coefficient = 0.061) and resulted in unexpected sign. The result shows as the woman is aging she will be participating more on deciding about her child's clothe. Nevertheless this variable is not statistically significant for the rest of the decisions with unexpected positive sign except for the family-plan decision with the expected negative sign.

Microfinance experience of the women is statistically not significant for all decisions. The variable showed the expected positive sign for child-health, child-food, family-plan, women-cloth and unexpected negative sign for child-school, child-cloth and buy-presents. In addition, the amount of loan is statistically insignificant for all decisions with unexpected negative sign for the child-health, child-food and buy-presents decisions.

Table 5.3 Estimation results ordered probit for all participants

	Child-related decisions				women-related decisions			sale/purchase personal assets decision	
explanatory variables	health	school	food	cloth	family planning	cloth	buy presents	coefficients	Standard deviation
Age	0.045	0.023	0.001	**0061****	-0.013	0.023	0.02	0.005	0.025
	(0.028)	(0.025)	(0.029)	(0.027)	(0.028)	(0.025)	(0.248)		
Edu	**0.405*****	**0.189****	**0.286*****	0.115	**0.179***	**0.372*****	**0.159***	**0.268*****	0.089
	(0.106)	(0.098)	(0.106)	(0.098)	(0.102)	(0.094)	(0.090)		
HHSize	**-0.225*****	**-0.368*****	-0.190	**-0.363*****	**-0.235****	**-0.180****	**-0.337*****	**-0.220*****	0.071
	(0.085)	(0.082)	(0.087)	(0.082)	(0.081)	(0.074)	(0.072)		
Mfexp	0.048	-0.024	0.152	-0.050	0.109	0.020	-0.001	0.018	0.078
	(0.089)	(0.079)	(0.096)	(0.080)	(0.098)	(0.086)	(0.080)		
AL	-0.001	0.001	-0.001	0.001	0.001	0.001	0.001	0.001	0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)		
HHIp	**0.944****	0.379	**0.787***	0.623	0.525	**1.303*****	**1.060*****	**1.323*****	0.400
	(0.462)	(0.432)	(0.471)	(0.437)	(0.445)	(0.445)	(0.407)		
Log likelihood	-184.55	-214.65	-160.35	-217.68	-151.8	-191.17	-209.26	-214.43	
Psedu R-squared	0.095	0.087	0.1	0.075	0.129	0.147	0.125	0.1398	
Chi 2	38.79	40.68	40.68	35.44	45.23	66.25	59.91	69.67	
Prob > Chi 2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

Note: Parameter estimate significance ***at 1%, ** at 5% and * at 10%

Number of observations = 200 for women-related and sale/purchase of personal asset and 168 for child-related expenditure (standard deviation in parenthesis)

5.1.2.1 Regression result for group women participants'

In this part Ordered probit regression analysis was done among group lending participants on group only so it can be compared with the overall microcredit lenders to be able to see how the magnitude of the coefficients change. The regression result among group lending participants is presented on table 5.4

In table 5.4 overall performance of the ordered probit model with a p-value = 0.001 and $pseudo\ R^2$ > 0.1 is observed making most of the eight household decisions statistically significant at 1 % level. The coefficients of the individual variable do not have a meaningful interpretation here too. But the sign of it gives an insight of the effect.

The study revealed that among group members the variable education has the expected positive sign and is statistically significant at 1% for child health, family-planning and woman's clothing decisions. And at 5% level statistically significant for the buy-present and child school decision. The more educated a woman is the higher she will participate on household decisions. In contrast the sign of household size (HHSize) is found to be negative and the coefficient is statistically different from zero at 1% level of significance for child cloth and purchase of presents. And 5 % statistically significant for child-school and sale/purchase of personal asset decision participation.

The household income percentage showed a positive sign and it is statistically significant at 1% on child-cloth, women-clothe, buying presents and sale/purchase of personal asset decision. Also it is 5% statistically significant for the child-health and family-planning decisions and a level of 10% statistically significant child-food decisions. This result shows the more women contribute to the household income their say on the household expenditure decision also increases among group members.

Age of the women is found to be 5% level statistically significant for child- and resulted in unexpected positive sign. The result shows as the woman is aging she will be participating less

on deciding about her child's clothe. Yet, in contrast with the overall participants (see table 5.3) ,this variable have the expected negative sign and is not statistically significant for child-food ,family-planning , woman-cloth and buy-presents among group members.

Even if microfinance experience of the women is statistically not significant for all decisions, it is found to be at 10% level significant for family-planning decision participation among group members. The variable showed the expected positive sign for child-food, family-plan, women-cloth and buy-present decisions. Unexpected negative sign is found for child-school, child-health and child-cloth. In addition, the amount of loan is statistically insignificant for all decisions with expected positive sign for only the child-school and woman-cloth decisions.

Table 5.4 Estimation results ordered probit for group members

	Child-related decisions				women-related decisions			sell/purchase personal assets decision	
explanatory variables	health	school	food	cloth	family planning	cloth	buy presents	coefficients	Standard deviation
Age	0.052	0.005	-0.071	**0.086***	-0.111	-0.081	-0.049	-0.034	0.047
	(0.055)	(0.049)	(0.066)	(0.052)	(0.072)	(0.055)	(0.047)		
Edu	**0.609*****	**0.411***	0.359	0.212	**0.672*****	**0.652*****	**0.335****	**0.302****	0.156
	(0.203)	(0.180)	(0.222	(0.177)	(0.252)	(0.199)	(0.171)		
HHSize	-0.088	**-0.348****	0.117	**-0.406*****	-0.024	0.216	**-0.351*****	-0.182	0.134
	(0.166)	(0.151)	(0.187	(0.156)	(0.200)	(0.155)	(0.139)		
Mfexp	-0.104	-0.019	0.116	-0.104	**0.394***	0.211	0.325	0.052	0.148
	(0.170)	(0.149)	(0.186)	(0.158)	(0.247)	(0.179)	(0.164)		
AL	-0.001	0.001	- 0.001	-0.001	-0.001	0.001	-0.001	0.001	0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)		
HHIp	**2.167****	**2.876*****	**2.094***	**1.932****	**2.702****	**3.640*****	**3.762*****	**3.051*****	0.946
	(1.036)	(0.938)	(1.173)	(0.931)	(1.356)	(1.144)	(1.072)		
Log Likelihood	-52.42	-64.18	-33.16	-66.64	-27.33	-41.20	-56.59	-59.97	
Pseudo R-squared	0.151	0.215	0.125	0.143	0.30	0.316	0.264	0.214	
Chi 2	18.66	35.3	9.44	22.19	22.99	38.1	40.62	32.58	
Prob > chi2	0.005	0.000	0.150	0.001	0.001	0.000	0.000	0.000	

Note: Parameter estimate significance ***at 1%, ** at 5% and * at 10%

Number of observations = 70 for women-related and sale/purchase personal asset and 58 for child-related expenditure (standard deviation in parenthesis)

6. Chapter Six

6.1 Conclusions

The study set out to explore if micro-finance has an effect on the level of participation of women micro-finance members in general and group members in particular in the household expenditure decision making. As discussed in chapter 5 a number of interesting insights emerge from our analyses. The result suggests that there is a positive shift of the women's level of participation on household decisions after microfinance enrolment. This includes decisions relating to child, women and sale/purchase of personal assets. Our analysis shows that Education, Household size and Percentage share of income by the women are important and significant determinants of women decision empowerment. Our result of the study imply that microfinance enrolment plays a significant role in empowering women through household decision participation and in particular group lending as a system encourages and give them strength to participate more on household decisions. Therefore, it can be concluded that women are more empowered to participate on child-related, women- related and sale/purchase of personal asset decisions when they are enrolled in microfinance credit program.

6.2 Major findings of the study

In the study, the results of the regression analysis showed that most of the coefficients of the variables in the equation have the expected sign showing the causal relationship between them. It was found that the women are able to increase their level of participation in the household child-related, women-related and sale/purchase of personal assets decisions.

After enrolment in micro-finance, the woman's income share percentage has increased by 22% on average and creates an increase of status within the household as she has some income from microfinance under her control which leads to a higher participation decisions concerning the household. She will have more say on her kid's basic needs (food, cloth and health checkup) and participate more on the kids' education. Through this, the outcome result we have been waiting for which is women empowerment is achieved by microcredit enrolment. The study showed

there is a high level of decision empowerment achieved when the women are in group lending system compared to the overall.

The study also showed that education matters. The variable has the expected positive sign and is statistically significant at 1% level for most of the household decisions. As the saying goes, "Educate a man and you educate an individual and educate a woman and you educate a family" seems to works here (Maciver, Robert M.). It is important that the woman is educated not only to be able to have a 'say' in the household but also she will know how to use her loan money to earn more income and be more conscious on how to spend it wisely through learning. The effect is reflected on the overall family through decision participation.

Even though it is not that substantial (not statistically significant for all), the women experience from microfinance has a positive relationship with the level of decision making except for the decisions to buy-presents. As a woman is more experienced from microfinance, she would have greater level of participation on decision that matter to her children and herself.

Another interesting finding of the study is that the amount of loan taken does not matter (magnitude almost 0 and statistically not significant for all) on how the woman participates in household expenditure decision making. In fact it is found to be negatively correlated for most of the child-related decisions and buying presents for relatives. It implies that the higher amount of credit she takes, she will have a lower level of participation on child-health, child-food, and on buying-presents decision. However, this is against our expectation that more loan through the expected more income it generates and the greater responsibility that it comes with, will result in her greater level involvement in household expenditure decisions.

In addition, the study revealed that the household size has an effect on the woman's level of participation in the household decisions. The total number of household is negatively correlated and is statistically significant at 1 % level for most of the household decisions.

With reference to the group members most of the magnitudes sign is the same with the overall microfinance members. Microfinance experience which is not statistically significant for microfinance participants is found to be statistically significant at 10 % for the group members

with the expected positive sign. Likewise, household size which has a negative correlation with the decisions for all members is no longer statistically significant in most of the household decision for group members.

6.3 Limitation of the study

The study attempted to capture the relevant issues using the primary data from 100 microfinance participants . Since the data relied on the memory recall of the respondents to collect background information, major problem happened on the availability of data for the before-after analysis since they did not keep any record of their household economic activates.

In idea situation a quasi-experimental method with control to compare with would have been more appropriate to address the questions raised by this study. The change that happened as a result of micro-finance membership could have been estimated more accurately. However, due to time and budget constraints the study relied up on the 'before' and 'after'. The study that initially intended to collect data on 200 samples in the period of one and half month ended up with only 124 participants. Due to some missing values 24 of them had to be dropped during data cleaning leaving us only a sample of 100 for the analysis.

In addition, there are some important variables that have not been included in this study as independent variables which could influence the level of decision of the woman like difference of age between the husband and the wife , dependents (consumer-worker ratio), education of the husband, working women before loan, years after marriage involvement in come generating activities after loan. Not being able to include all of these variables in the analysis could be on of the limitations of the study.

6.4 Scope for future study

Some variables which are used in similar studies could be used (variables explained at section 6.3) and included in the regression analysis to see if they result in similar findings. The study has some variables that are not used for the analysis but available in the dataset (Level of support from family, Loan repayment, source of repayment, loan training etc.).By using these variables

different kinds of analysis can be done (like effect of microcredit on income and loan repayment). In addition by increasing the sample it is also possible to explore if the findings of this study hold. Comparative study can also be done by collecting similar data from rural micro-finance participants. Another way of assessing microcredit impact could be done 'with' and 'without' analysis of microcredit instead of 'before- after' analysis by collecting some data for participants and non-participants (control group) of microfinance. Besides, a before-after membership data with a before-after control groups could also be considered to address similar questions. This way removes biases in second period comparisons between the treatment and control group that could be the result from permanent differences between those groups, as well as biases from comparisons over time in the treatment group that could be the result of trends (Wooldridge 2009).

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Appendix: Questionnaire

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This questionnaire is to be filled by women microfinance beneficiaries. Its main objective is to investigate the relationship between micro-finance and women's participation in household decision making.

1. **Background information on Household**

	Response/Codes
Marital status	
Marital status before microfinance	
Age of Household head (in years)	
Age of Spouse (in years)	
Level of education of Household head	
Level of education of Spouse	
Level of education of spouse (before microfinance)	
Number of household size	
Number of household size(before microfinance)	
Number of Dependents in the household	
Number of Income generating household members	

Codes:

Marital Status: 1= Single; 2= Married; 3= Divorced; 4= Separated; 5= Widowed

Education: 1= No education: 2= Completed elementary school; 3= completed secondary school;

4= TVET graduate; 5= Diploma holder; 6= Above diploma holder

2. Have you taken any training that is directly related to what you are doing with the micro-finance money? 1= yes 0= No

3. How long has it been since you started your business (in years)?_____

4. What was the main source of funding to get your business started?

1= Own money 2= Loan 3= 'Iquib'-rotating saving and credit

4= from relatives 5= Aid 6=Others

5. If Loan was the source of fund to get your business started, where did you get that loan?
   1=Bank 2=Micro-finance institutions 3=Traditional lenders
   4=Family/relatives 5=Others

6. Who in your family brought the idea of you starting a business?

   1=Self 2=Husband 3=Children 4= In-laws 5=Others

7. Was your husband against the idea of you starting the business?

   1= Yes 0= No

8. After your get the business running do you think that you got the level of support you expected of your family?

   1=Yes 0=No

9. Compared with men micro-finance beneficiaries do you think you have been given priority or incentives to take part in micro-financing system?

   1=Yes 0=No

10. If you answer for question No. 11 is 'a' (Yes), can you mention the main priorities or incentives you got? _____

11. How long has it been since you started participating in micro-financing (in years)?_____

12. How did you secure micro-financing loan?

    1= In a group system 0= Individually

13. Why did you choose one of the ways of securing loan from micro-financial institutions mentioned in question No. 12 above?
    _____

14. If your answer for question No. 12 is 'a' (group system) what is your evaluation of group lending system as a whole?

1=Very good 2=Good 3= Bad 4=Very bad

15. If your answer for question No. 12 is 'a' (group system), what are the opportunities that you got by participating in a group lending system?_____

16. If your answer for question No.12 is 'a' (group system), what are the major challenges that you faced by participating in a group lending system?

_____

17. How much is the latest amount of loan that you have taken from the micro-finance institution?_____

18. Have you managed to pay back your loan on time?

1=Yes 0=No

19. If your answer for question No. 18 is 'a' (yes) what is the source of repayment?

1=Return from the loan investment 2=Selling personal assets

3= Income from other business 4=By taking loan from the same institution

5=By taking loan from traditional lenders 6=Others

20. If your answer for question No. 18 is 'a' (yes), will you take another round of loan?

1=Yes 0=No

21. If your answer for question No. 18 is 'a' (No), what is the reason for not seeking another round of loan?

1=I have enough fund of my own 2=I wouldn't qualify for another round of loan

3=I can't pay back 4= others

22. Household Expenditure decision.

What is the level of say you have concerning the following household expenditure decision makings?

Put the following codes in the 'Before MF' and 'After MF' Column 1. never 2. rarely 3. sometimes 4. most of the time 5. always	Issues for decision	Response	
		Before MF	After MF
	22b. Taking children to health station		
	22c. Sending children to school		
	22d. Buying food for children		
	22e. Buying children's clothing		
	22f. Family planning and your own medical care		
	22g. Purchasing personal clothing and cosmetics		
	22j. Buying presents for different occasions (for family, friends, and relatives)		
	22h. Sale/purchase of personal assets(Gold, Silver, jewelries)		

23. Household income

Source of income		Average monthly income before micro-finance participation	Average monthly income after micro-finance participation
23a.Wage/Salary	Wife		
	Husband		
	Others		
23b. Income from MF investment			
23c. Income from other Business			
23d. Sale of assets			
23e. Aid			
23f. Remittance			
23g. Others			
23h.Total avg. monthly income			

24. Ownership of consumer durables, and women's say in buying them

Type of asset	Year of purchase 0-Before MF 1-After MF	Have you had a say in the decision to buy? 0= No 1= yes
24a.Radio		
24b.Tape recorder		
24c.Television		
24d.Mobile phone		
24e. Land line phone		
24f.Sofa		