Spring 2011

Microfinance and poverty alleviation: A case study of Al-Darb Al-Ahmar district in Cairo, Egypt

Noran Mohammed Farag
The American University in Cairo AUC

The American University in Cairo

The School of Business

Microfinance and Poverty Alleviation

A Case Study of Al-Darb Al-Ahmar District in Cairo, Egypt

A Thesis Submitted to

The Department of Economics

In partial fulfillment of the requirements for the degree of

Master of Arts in Economics

By

Noran Mohammed Farag

Under the Supervision of

Dr. Mona Said

May 2011

ACKNOWLEDGEMENTS

This research owes its success to the resolute effort of Dr Mona Said, my supervisor; I will eternally be appreciative of her support. My appreciation also goes to Dr Adel Beshai and Dr Abeer El-Shennawy for their valuable comments during a seminar held at the Economics Department prior to submission of thesis. I would like also to thank the staff of the Department of Economics at the AUC for their effort. Finally, many thanks go to First Microfinance for providing me with the data of the beneficiaries who I approached in gathering the data required for the survey conducted within the context of this thesis.

MICROFINANCE AND POVERTY ALLEVIATION

A CASE STUDY OF AL-DARB AL-AHMAR DISTRICT IN CAIRO, EGYPT

A Thesis Submitted by Noran Mohammed Farag to the Department of Economics April/2011 in partial fulfillment of the requirements for the degree of Master of Arts/Science has been approved by

Dr.

Thesis Committee Chair / Adviser _____

Affiliation _____

Dr.

Thesis Committee Reader / examiner _____

Affiliation _____

Dr.

Thesis Committee Reader / examiner _____

Affiliation _____

_____ _____ _____ _____

Department Chair/ Date Dean Date

ABSTRACT

This thesis tests whether microcredit offered by MFIs succeeded, from the perspectives of beneficiaries, in reducing the poverty of borrowers in poor areas in Cairo using the example of First Microfinance as a case study. The data was gathered using a tailored questionnaire on a sample of 151 beneficiaries. A linear regression model is used with the dependent variable as the difference in wealth indices before and after acquiring the loan and a set of independent variables. Microfinance showed a positive effect on poverty reduction but with a small magnitude. The results show that the lack of training provided to beneficiaries and the haphazard types of micro-projects are the main reasons for this limited effect. This conclusion was also validated using a qualitative research. It is highly recommended to have a governmental supervisory entity which ensures that Microfinance Institutions (MFIs) are providing sufficient training sessions to all beneficiaries prior to approving loans requests. Additionally, the existing Non-governmental Organizations (NGOs) law which does not differentiate between NGO-MFIs and any other NGO implementing community service programs should be modified in a manner that supports emphasis on training and monitoring of beneficiaries as mandatory for MFIs to obtain licenses.

List of Acronyms

AKAM: Aga Khan Agency for Microfinance

CGAP: Consultative Group to Assist the Poor

EMFN: Egyptian Microfinance Network

GDP: Gross Domestic Product

HDI: Human Development Index

HH: Household

MENA: Middle East and North Africa

MFI: Microfinance Institution

MIX: Microfinance Information Exchange

MSE: Medium and Small Enterprises

MSME: Medium, Small and Microenterprises

NGO: Non-governmental Organization

OECD: Organization for Economic Cooperation and Development

OLS: Ordinary Least Squares

PCA: Principal Component Analysis

SFD: Social Fund for Development

SHG: Self Help group

USAID: United States Agency for International Development

VIF: Variance Inflation Factor

TABLE OF CONTENTS

List of Tables

INTRODUCTION

Poverty is a chronic problem in many developing countries across the world. As such, various poverty alleviation approaches addressing specific economic problems have been experimented with in almost every low and middle income country. For instance, programs such as those aiming to limit population growth, provide employment opportunities, empower women, reduce inequality, improve health and education conditions, and enable microfinance, were attempted with varying degrees of success on poverty outcomes. In each case, impact analyses are conducted after program implementation to ascertain whether such approaches should be implemented extensively. The purpose of this research is to examine the impact of microfinance as a poverty reduction tool in Al-Darb Al-Ahmar district in Cairo, an area that has been identified by many donors as one of the most impoverished in the city.

Microfinance is usually provided by non-governmental organizations (NGOs), a number of banks, and social funds. Donors and NGOs have played an important supportive role in the development of Microfinance Institutions (MFIs) in sub-Saharan Africa (Basu et al., 2004). Most importantly, they have helped to disseminate the best practices tested internationally and regionally, build local capacity, and develop the entrepreneurial skills of borrowers. In addition, social funds have also been set up as "agencies that finance small projects in several sectors targeted to benefit a country's poor and vulnerable groups based on a participatory manner of demand" (Jorgensen and Van Domelen, 1999). In 1987, the first social fund was set up in Bolivia which triggered some donors to support the idea. By 2001, the World Bank had provided about US$ 3.5 billion to approximately 98 social funds in 58 countries (Rawlings, Sherburne-Benz, Domelen, 2004). In 1997, the Social Fund for Development was established in Egypt with the objective of reducing poverty and generating employment opportunities. Later, many NGOs

started providing microcredit services due to the increasing demand. Accordingly, measuring the success of one of those NGOs in reducing the poverty rate among its borrowers is the broad objective of this research.

Generally, access of the poor to banking and financial services is not easy due to the rigid guarantees required by the bank to qualify for taking a loan. Poor people who are in dire need of these financial services do not own sufficient assets. For that reason, the scheme of the Grameen Bank in Bangladesh emerged where the bank has been offering micro-loans to the poor without strict guarantees. Grameen Bank started in 1976 as an initiative by professor Muhammad Yunus. In October 1983, the Grameen Bank project was transformed into an independent bank. Almost 60% of the initial share capital of the bank was paid by the government, while 40% was owned by the borrowers themselves (Grameen Bank, 2008).

Egypt is considered an interesting case study because it was one of the first countries in the Middle East and North Africa to implement the microfinance program. It has also implemented microfinance on a scale that is large enough to be analyzed. Micro-lending programs have existed in Egypt since the mid 1960s in "Meet Ghamr" Banks. As a result, it could provide a model for lessons to be learned by other countries (Iqbal and Riad, 2004). Policies should be developed to strengthen and facilitate the access to microfinance by the poor as a source of employment. This is, of course, in the case that solid indicators of microfinance success in Egypt are indeed witnessed.

Recently, the Egyptian government took steps indicating that it encourages microfinance as a method of poverty reduction. In 2004, a new Micro and Small Enterprises (MSEs) law, No. 141/2004, was decreed. The main objective of the law was to provide support to MSEs. The law provided many incentives to encourage MSEs. Those incentives included (a) establishing local

funds to finance MSEs, (b) allowing MSEs to take part and provide goods and services to general public offerings, and (c) allocating 10% of the new land in the industrial cities to be used by MSEs (El Mahdi and Rashed, 2007).

Al-Darb Al-Ahmar is one of the poorest areas in Cairo and recently began utilizing microfinance as a way out of poverty. Since 2000, an active NGO called First Microfinance has been offering loans to the residents of this area. This research has conducted a survey using a customized questionnaire for the borrowers benefiting from the aforementioned NGO's projects with the goal of studying the impact of microfinance on their well-being. The methodology used in this study is the mixed method procedures which combine quantitative with qualitative analysis. Firstly, A Linear Regression model is constructed using the change in wealth indices of the borrowers as the dependent variable and a set of independent variables such as gender, age, marital status, amount of loan, and levels of education. Secondly, a sequential transformative strategy was conducted to validate the outcomes of the quantitative model.

The remainder of the thesis will proceed as follows. Chapter one presents a review of theoretical and empirical literature, while chapter two introduces microfinance experiences in Egypt and the developing world. Chapter three shows the data and methodology used, and chapter four presents the empirical results of the model, in addition to the qualitative analysis results. Finally, chapter five displays the major attempts to alleviate poverty through microfinance in Egypt with comparison to attempts in other developing countries, and introduces alternatives based on the findings of this thesis.

CHAPTER ONE

1. REVIEW OF THEORETICAL AND EMPIRICAL LITERATURE

The purpose of this chapter is to present the conceptual framework through which microfinance is considered a poverty reduction tool, in addition to displaying the previous empirical studies in various developing countries and highlighting the effectiveness of microfinance in reducing poverty in each country.

1.1. Conceptual Framework in Assessing Microfinance Effect on Poverty

Theories developed in the context of development economics highlighted numerous factors affecting poverty. Many researchers agree that the major factors correlated with poverty are: large family size, low educational attainment, unemployment, underemployment (for example, part-time workers who want to work full-time), low wages, and the prevailing economic conditions in the labor market. According to the literature, a number of specific factors affect poverty in each country, depending on the conditions of the country. For example, in Uganda, as stated in Lawson, McKay and Okidi (2003), alcoholism, polygamy, large families, and illness were the leading causes of poverty. In Latin America, other factors proved to be the most important determinants of poverty, including rural underdevelopment and demographic composition complexity (Benito, 2000).

Conceptual approaches to poverty alleviation often start by defining poverty and its dimensions. They then suggest specific strategies to combat the various components identified as important in their definition. Tackling the various definitions of poverty and methods of its

measurement is outside the scope of this thesis. Therefore, the next subsection will briefly display the general approach to defining poverty as a multidimensional concept.

1.1.1. Poverty as a Multidimensional Concept

Some researchers attempt to define poverty in order to find better approaches to combat it. For instance, poverty could be defined as an income level below a socially acceptable minimum. Poverty could be distinctive in terms of its severity. Montgomery and Weiss (2005) made a simple distinction between the long-term or chronic poor and those who temporarily fall into poverty as a result of adverse shocks, known as transitory poor. Studies such as that of Weiss, Montgomery and Kurmanalieva (2003) argue that microfinance can help both types of poor come out of poverty since access to microfinance can fund prolific activities that will increase income levels. This is based on the notion that poverty is typically interpreted as a lack of access by poor households to the assets required for a higher standard of income or welfare (Weiss, Montgomery and Kurmanalieva, 2003).

Poverty has traditionally been defined as one-dimensional, where only income and consumption count for measuring the intensity of poverty. The study of poverty started with the works of Booth (1892) and Rowntree (1901), who were the first to introduce the economic concept of poverty, combined with that of the poverty line and the head count ratio on the basis of the basic needs approach (Fusco, 2003).

It was not until the 1970s that poverty started being defined by many researchers as a multidimensional concept. In fact, poverty has several dimensions, including insufficient or poor quality nutrition, poor health, limited access to education, and low levels of participation in decision making. This multivariate direction includes the social exclusion approach of Lenoir

(1974), the functioning and capabilities approach introduced by Sen (1979), and the UNDP human poverty index. Moreover, Massoumi (1986), Case and Deaton (2002), and Deutsch and Silber (2005) argue that poverty is a multi-dimensional phenomenon.

More studies attempted to measure the relative importance of specific dimensions in reducing poverty. The reason why a certain dimension might matter is that it has instrumental power. That is, the dimension is expected to contribute effectively to the reduction of one or more other dimensions of poverty (Alkire, 2008). For example, if studies proved the poverty rate has decreased among football players, then football playing skills might be included as a multidimensional measure of poverty. An empirical study conducted in rural Brazil concluded that poverty has two dimensions; income and educational attainment. The study observed that the drop in poverty levels is higher for people with higher education (Bourguignon and Chakravarty, 2003). Therefore, educational attainment should be included as a multidimensional measure of poverty in Brazil.

Each country has its own dimensions used in measuring poverty reduction based on its historical, cultural, political, economic, and environmental status. Many researchers in all countries came up with numerous dimensions, but these papers invariably aggregate the multiple measures of well-being into a one-dimensional index, essentially returning to a univariate analysis. The best-known example is the Human Development Index (HDI) of the UNDP (1990), which uses a weighted average of life expectancy, literacy, and GDP per capita for a population, as well as other dimensions (Duclos, Sahn and Younger, 2008).

In order to avoid the possibility that two equally valid rules for aggregating across several dimensions of well-being could lead to contradictory conclusions regarding which groups have higher poverty, some studies measure poverty reduction through certain dimensions that are not

aggregated into one-dimension. Such researchers include Duclos, Sahn, and Younger (2008), in addition to many others who have tackled microfinance as a poverty reduction tool.

The definition of poverty used in this research is that of the World Bank which implies that anybody who earns $2 per day or less is considered poor. Before testing the effectiveness of microfinance, it is important to highlight the historical origin of microfinance. The following subsection displays such origin.

1.1.2. Historical Origin of Microfinance

Microfinance, which is currently recognized as a strategy to fight poverty, was initially considered as a women's empowerment tool. While this is correct for the evolution and development of microfinance, presently it has more of finance and less of gender in its overall system. The transition from being a women's empowerment tool to a poverty reduction tool, regardless of gender, has taken place as a result of the increased violence against empowered women by deprived men. The next section displays the different views about the effectiveness of microfinance.

The microfinance approach proved effective in Bangladesh. The Grameen Bank is a microfinance institution and community development bank that offers small loans to poor individuals. The lending system of the bank is known as a "solidarity lending system." The notion is to provide loans to a group of five borrowers. This tactic serves two purposes: it is considered collateral, and it dramatically reduces administrative costs due to the loan being offered as a lump sum to the group and later split among them. Moreover, the bank makes the borrowers recite and abide by sixteen decisions. The decisions are to follow the four principles of the Grameen Bank, which are discipline, unity, courage, and hard work. They are also aimed at improving the

conditions of the houses they live in. Borrowers should plant their vegetables themselves in order to consume their needs and sell the surplus. They should limit population growth, focus on their health quality, educate their children and ensure their ability to fund such education, and always undertake bigger investments to ensure higher incomes. In addition, they should use pit-latrines, always help each other in case of difficulties, refrain from inflicting injustice on any person, and take part in social activities (Margaret, 1998).

As a result of the sixteen decisions, Grameen borrowers have been encouraged to adopt positive social habits. About 40 countries have tried to replicate the Grameen Bank experience. In Egypt, there are at least 14 NGOs that provide micro-credit as well as the governmental Social Development Fund which was initiated in 1991. Some of the banks with large market shares, such as Al-Ahli National Bank and the Bank of Cairo, have already begun providing microfinance. Moreover, the National Bank for Development has been offering microloans for over 20 years.

1.1.3. The Debate about the Effectiveness of Microfinance

Finding strategies to alleviate poverty is of great importance to policy makers. Among these strategies, microfinance has taken an advanced rank because it helps to not exclude the poor from their right to access loans. Nonetheless, many poor people have great difficulty accessing microfinance. Montgomery and Weiss (2005) stated that microfinance may have had positive effects on poverty but it is not the magic formula in reaching the poor. Caskey et al, (2006), for instance, said that about two thirds of low-income households living in the Metropolitan area of Mexico City were 'unbanked', and among those 'banked', only a small percentage had access to credit. Measuring the effect of microfinance on poverty reduction will have good policy implications in terms of facilitating access to microfinance for the poor, should microfinance prove to have a positive effect (Niño-Zarazúa and Mosley, 2009).

There has long been a debate about the effectiveness of microfinance. While some perceive it as a good technique to decrease poverty rates, others do not. Microfinance has many advantages. It accepts giving loans to the very poor without requiring collateral and being replaced by group lending, as well as the provision of some non-financial services, such as business development, in order to help borrowers achieve the best use of the loans through teaching them feasibility studies techniques, marketing, budgeting, etc. Moreover, contrary to regular employment opportunities, microfinance offers employment opportunities with flexible working hours that could be considered a big advantage for women Conversely, according to Islam (2007 and 2009), there are some disadvantages to microfinance, including the imperfect information that results in borrowers not knowing where to apply for loans and lenders not knowing much about potential borrowers; institutional underdevelopment in the sense of literacy or numeracy which results in institutions that are too weak to support growth of good services; the ability to reach the extreme poor; limited macroeconomic impact; propensity to charge high interest rates; and very low repayment rates. The existence of family enterprises in most cases is considered by some economists to be a disadvantage as well.

Previous studies show that there are many practices originating from microfinance. For instance, there are groups called self-help groups (SHGs) which are small, informal, homogeneous, and have about 20 members. Homogeneity ensures that the members do not have conflicting interests and can freely participate in the activities. Those members have poor risk-taking ability, no collateral to offer, and limited earning opportunities. It is observed that the repayment rates of such systems are good in relatively remote communities, and even in communities that are likely to have higher than average rates of poverty. It was also noticed that women dominate SHGs, which allows for women's empowerment (Vatta, 2003).

It is worth mentioning that microcredit programs do not merely offer monetary loans to buy physical inputs, but they provide noncredit services and incentives that are often called business development services (BDS) as well. These noncredit aspects may be an important element in the success of microcredit programs. However, because such noncredit services are costly to deliver, and their contribution to the success of the programs is difficult to measure, they may not be properly valued (McKernan, 2002). Montgomery and Weiss (2005) in their paper have discussed the prospect of microfinance eradicating poverty and the methodological issues related to assessing its success in poverty alleviation, or at least decreasing its percent compared to before obtaining micro-credits. They recommended giving more attention to poor outreach, since the poor face difficulties accessing microcredit represented in the necessity of introducing collaterals or assets covering loan amount. Therefore, studying the impact of this microcredit in alleviating poverty is the main objective of this thesis.

One of the solutions provided for addressing unemployment was to facilitate microcredit for the poor so they could establish their own micro and small businesses. In sum, the above paragraph highlights the importance of adopting a multidimensional definition of poverty that includes literacy rates, health conditions, the basic needs indicators such as food, quality of potable water, and clothing, in addition to the monetary income and non-monetary assets.

1.2. Previous Empirical Studies in Developing Countries:

Testing the impact of microfinance on poverty reduction has been extensively performed over the past few years. However, the results were debatable. Some studies admit that microfinance supports poverty reduction, while others deny these claims. This section is divided into three parts; the first reviews the empirical studies supporting microfinance while the second reviews

the empirical studies denying the effectiveness of microfinance in reducing poverty rates in various countries. The third part reviews central aspects of the debate on microfinance and poverty, such as inequality, microfinance demand, and poor outreach.

1.2.1. Studies Showing Positive Impact

Many studies supported the idea of enabling microfinance as a poverty reduction tool. Ahmed (2003) interviewed 80 micro-credit beneficiaries in one of the poorest slums in Pakistan. He found a significant association between the economic status of the beneficiaries, their ages, and total number of family members, and the monthly household income after utilizing the micro-credit. Hietalahti and Linden (2006) reported that marginalized rural communities benefited greatly from micro-credit.

Arun, Imai, and Sinha (2006) analyzed the effect of MFIs on the poverty of households in India. They also tackled the argument that links the support of microfinance to the informal activities which suffer from low market demand. Using the Index Based Ranking Indicators which were created to capture non-income dimensions of poverty, such as basic needs, capabilities, social capital or vulnerability, they found that there are significant results for households in rural areas who took loans from MFIs for productive purposes, and not in the case of simply having access to MFIs. The result implies that monitoring the use of loans, as well as increasing the productivities, is particularly important in helping the poor escaping from poverty and protecting them from various shocks. In urban areas, significant poverty reducing effects are observed in both cases. Datt, Simler, Mukherjee, and Dava (2000) provide an analysis of the determinants of living standards and poverty in Mozambique based on the nationally-representative data from the national household living standards survey. Almost 66% of the population in Mozambique was living below the poverty line. They specified six principal

elements of a prospective poverty alleviation strategy for Mozambique. These included increased investment in education, sustained economic growth, a sectoral pattern of growth favoring an increase in the industrial and services sectors, measures to raise agricultural productivity, improved rural infrastructure, and a reduction in fertility rates and the level of dependency in households.

Hulme and Mosely (1996) utilized a pre and post survey of borrowers and control groups in Indonesia and Sri Lanka. They discovered that growth of the incomes of borrowers always exceeds that of the control group. Matovu (2006) studied the outcome of microfinance intervention on rural poor women, as well as on the household welfare in Uganda in general. He used Uganda Finance Trust as a case study and developed a questionnaire to measure certain indicators of interest. He found that clients who participated in microfinance programs have registered an improved standard of living as a result of improved incomes. One of the empirical studies that attempted to test the variables affecting the success of microfinance in reducing poverty was done by Schmidt and Kolodinsky (2007). They used a Path Analysis Regression and concluded that having a previous business experience, along with the training, can promote the well-being of the entrepreneur.

Imai and Azam (2010) have examined whether microfinance reduces poverty in Bangladesh using a panel data covering four rounds from 1997 to 2005. They used a treatment effects model and propensity score matching for the participants and non-participants of microfinance programs. They found that household access to microfinance loans from MFIs has increased per capita household income if only taken for productive purposes. In this thesis, the sample includes people who took loans for productive purposes, while people who took loans for other reasons were excluded from the beginning. It is logical to test the effect of microfinance loans on poverty reduction solely on people who use the loans for productive purposes.

The same results were obtained in India when Imai et al (2010) used Tobit and Propensity Score Matching models. However, they found that loans for productive purposes were more important for poverty reduction in rural than in urban areas. Unexpectedly, the results showed that in urban areas, simple access to MFIs has larger average poverty-reducing effects than the access to loans from MFIs for productive purposes.

1.2.2. Studies Questioning the Impact of Microfinance

Other studies disagree with these claims and argue that microfinance either has no effect in alleviating poverty or only a slight effect. Morduch (1998) used the BIDS World Bank survey data with a difference-in-difference method. He concluded that microfinance effects are either non-existent or very small. Others have criticized microfinance and accused it of being no use in reducing poverty rates. For example, Mallick (2002) claimed that poverty levels did not decrease in Bangladesh, but Hossain (2002) refused this claim and stated that microfinance success should not be ignored. Some argue that most MFIs have low repayment rates which results in their inability to sustain. Failure to meet a repayment deadline results in an immediate loss of privilege of future loans (Morduch 1999:1582). Roodman and Morduch (2009) revisited the studies carried out in Bangladesh and they used Two-Stage Least-Squares (2SLS) regressions and discovered that lives of the borrowers after 30 years of microfinance did not improve.

A study by Menon (2006b) draws her sample from eight Grameen thanas – Grameen is the only program that operates in these thanas – and estimates the impacts of consumption smoothing by nonlinear least squares. The results show that although microcredit helps improve the recipients' ability to smooth seasonal shocks, its effect diminishes over time and it has virtually no impact after four years of participation.

In attempting to solve the problem of MFIs' sustainability, Hulme and Arun (2009) argue that the concept and practice of microfinance have changed drastically over the last decade and the microfinance sector is increasingly implementing a financial systems approach. This is done through either operating on commercial lines or by steadily reducing reliance on interest rate subsidies, as well as aid agency financial support.

Ricardo N. Bebczuk (2009) in his paper assessed the access of micro-small-medium enterprises (MSME) to credit in Guatemala and Nicaragua using national household surveys conducted in 2006 and World Bank Investment Climate surveys. Based on the regression conducted, the number of MSMEs that have an unmet demand for credit is significantly lower than is usually thought. About 63% of micro and small enterprises owners said there is no need for a loan and 23.9% attributed their refusal to apply for a loan to the high interest rate, while 13% were in favor of applying for loans.

It is worth mentioning the selection bias problem that many studies did not consider. This bias, arising from the non-random placement and self-selection into the program, may lead to invalid impact estimates. Islam (2007) attempted to find a solution for this problem by suggesting parametric and non-parametric strategies. He employed the instrumental variable (IV estimator) approach where he used eligibility rule for receiving the loan as an instrument for participation in microfinance. He interpreted the IV estimator as the local average treatment effect, which is the effect of treatment on those who are inclined to participate only because of the instrument. This approach was firstly introduced by Imbens and Angrist (1994).

Islam (2007) found that the effect of microfinance on household consumption expenditure was not strong. He did not find statistically significant effects in most cases. However, he concluded that the IV estimates of program impact are larger in the consumption expenditure of the

relatively poor participating households. None of the estimated coefficients of PSM estimates are statistically significant, and they have lower magnitude than the corresponding IV estimates. His overall results indicate that the positive effects are found more for male than female borrowers. This result contradicts Pitt and Khandker (1998), who found stronger positive effects for women than for men borrowers.

1.2.3. Studies Addressing Access to and Demand for Microfinance

Some studies state interesting findings concerning the access of poor to microfinance. Morduch et al. (2001) conducted another study that analyzed the effects of micro-finance on poverty reduction. They argued that the poorest strata of the population, with no access to basic health or education, have no access to microfinance as well. This argument is worth analyzing in this research since some research argues that the lack of access to the credit market is considered one of the main reasons why the poor in developing countries remain poor (Menkhoff and Rungruxsirivorn, 2009). A research study conducted in Indonesia revealed that the borrowers' annual increase in income exceeds that of non-borrowers in Indonesia. About 12.9% annual average rise in income from borrowers was observed while only a three percent rise was reported from the non-borrowers who were considered the control group (Remenyi, and Quinones, 2000).

Analyzing the demand for microfinance is crucial because it is an indicator of its success. A recent working paper by Mirko Bendig, Lena Giesbert, and Susan Steiner (2009) studied the household demand for formal financial services in rural Ghana. The paper analyzed the household's demand for the three financial elements of savings products, loans, and insurance. They argued that the demand for these elements is interconnected. Therefore, the paper estimated the determinants of household demand for savings, loans, and insurances by applying a

multivariate probit model using data from a household survey in rural Ghana. The results found were that poorer households are less likely to participate in the formal financial sector than better off households. They referred to other factors that appeared to affect households' demand for financial services, including households' risk assessment, the past exposure to shocks, and the trust in the providing institution and its products. Definitely, there should not be an expectation to see a poverty reduction resulting from microfinance without having poor people taking loans to start microenterprises. Despite the exceptional growth of the microfinance sector during the last three decades in serving around 40 million beneficiaries, many parts of the developing world have still have not satisfied demand for microfinance services (Imai et al, 2010).

Inequality is a phenomenon that is usually observed where poverty exists. Ahlin and Jiang (2008) described a model in which the adoption of microfinance is considered a financial development and showed that microfinance decreases inequality. According to them, microfinance reduces inequality by increasing the income of the poor and lowering that of the wealthy, given that wages paid by employers increased. Bigman, Berg, and Thieu (2007) analyzed Vietnam Bank for Social Policies and concluded that it lowers inequality, but its effect is insignificant. Furthermore, Kai and Hamori (2009) examined the relationship between microfinance and inequality by providing a cross-country empirical study of 61 developing countries. They concluded at the end of the study that microfinance has a significant equalizing outcome.

Since microfinance has some positive advantages such as the equalizing effect, it should be encouraged. Also, commercial banks should be more engaged in the sector in support of several reasons. Most important, microfinance can be profitable for banks, due to the proven high demand for microfinance, particularly in banks that specialize in retail banking or consumer lending. Besides, banks have a large outreach potentiality through their extensive branch

networks. Adversely, the commercial banks have major obstacles hindering them from offering microloans, including the riskiness of micro-entrepreneurs and the informal sector, the inadequate collateral of micro-entrepreneurs, the high cost of lending to micro-enterprises, the inability of micro-entrepreneurs to pay high interest rates, legal and regulatory constraints, and social constraints. Therefore, governments in collaboration with the formal banking sector should have to find solutions for such barriers. Morduch (2008) defended the high interest rates that are made mandatory by most MFIs by saying that poor households have high economic returns to capital. According to Morduch (2008), 20 to 33 percent monthly returns to capital were reported for a small retail male-owned business with no employees but the owner. Definitely, this range is not common but at least is achievable; thus, imposing a high interest rate should not be a problem. However, there was a limitation in that research, as it did not mention the case of the owner being a female. Thus, analyzing the case of female borrowers will be tackled throughout this study. This will be done by analyzing the female borrowers group compared to the male borrowers group in order to measure the change in wealth indices among both men and women and compare the results of the two groups.

It is worth investigating other factors that influence the success of the micro and small enterprises, and hence the effectiveness of microcredit, in reducing poverty levels. Factors include: education and entrepreneurial and management skills which are essential factors to run any activity, even if it is of a simple level business type. Karnani (2007) said that most people do not have either the persistence to be entrepreneurial or the skills required to run a small project. This could be better enhanced by offering the borrowers some courses when they apply for a loan. Some NGOs realized the importance of providing beneficiaries with such skills, including BRAC in Bangladesh, Sanabel, and First Microfinance in Egypt. Throughout this study, the effect of the provided trainings will be assessed. Definitely, one more crucial factor for the success and sustainability of a project is marketing. Moreover, according to Asian Development Bank (2000),

the enhancement of the rural infrastructure, in the case of rural areas and in terms of roads and markets, can develop the effectiveness of microfinance. This applies for any underdeveloped area, even if it is urban.

As mentioned above, several previous studies attempted to measure the effectiveness of microfinance in reducing poverty. These include Abou Ali, El-Azouny, El-Laithy, Haughton, and Khandker (2009) on the SFD which showed that microcredit was significantly effective in reducing poverty among borrowers; however, they did not address the variables influencing its effectiveness. Comparing the initial results of this research with similar studies, the significant variables were found to be different from those of the Ghanaian case, where the only variables significant to the welfare of borrowers were age and the amount of the loan (Adjei, Arun and Hossain, 2009). Similarly, according to the study conducted by Coleman (1999) in North West Thailand, it was found that years since loan was taken had no significant impact, whereas the amount of loan was proven to positively affect the change in wealth.

CHAPTER TWO

2. MICROFINANCE EXPERIENCE IN EGYPT AND THE DEVELOPING WORLD

The idea of microcredit started for the purpose of providing women with sources of living in the belief that they have more responsibility in directing household expenditure. However, it was documented that tensions increased in households against women because of the perceived increased empowerment of women in relation to men. This has resulted, in some cases, in increased violence against women. Therefore, microcredit programs started to also be directed towoards men in order to achieve a balance between both genders.

The main purpose of this research is to test whether microcredit offered by MFIs succeeded, from the perspectives of beneficiaries, in reducing poverty of the borrowers in poor areas in Cairo using the example of First Microfinance. Other questions will also be considered. For instance, do women have access to microcredit or not, as well as what is the level of success they might have achieved? Secondly, what are the levels of education of the borrowers and is a correlation between education and success or failure of borrowers' enterprises? Thirdly, what other factors might exist that affect the success of any enterprise to generate income? These may include the type of project; the time elapsed since the loan was taken, marital status, number of children, and others. Finally, whether microcredit was able to generate sufficient and stable employment opportunities for beneficiaries will be also tackled through the study.

The present analysis is similar to the impact analysis study conducted by Abou Ali et al., (2009) on the effectiveness of the Social Fund for Development SFD. They found that SFD succeeded in reaching the poorest strata of the population, confirming that the poorest 10% of the

population account for 24.9% of all microcredit loans. Furthermore, the headcount poverty rate among microcredit users was 45.6%, or far above the national rate of 19.6% (in 2004-05). Therefore, it could be concluded that big institutions offering microcredit have a positive impact on reducing poverty rate; but what about smaller MFIs? Are they also raising the poor's standards of living? This study attempts to answer this question.

It is worth elaborating on the distinction between microfinance and microcredit terms in the context of small and micro enterprises. Microcredit is the provision of micro loans to the unemployed or poor entrepreneurs who do not have sustainable jobs in order to establish a small project for survival. Microfinance is the same as microcredit but with the provision of a wider range of financial services, such as savings, insurance, and fund transfers. Thus, the more suitable term for this research would be microcredit because the goal is to test the impact of receiving a loan on reducing poverty; however, the other services included in microfinance are a step further.

The unavailability of microfinance services leads to more poverty. Among the major roles of finance is allocating credit to optimize the intertemporal problems of output and consumption. Without a credit market, people have to cover both their consumption and investment using their current income. The income of poor people, however, is too small and unstable to sufficiently cover both consumption and investment. For example, a sudden decrease in income because of illness of the household head means that family members have to find another source of income. Thus, they have to minimize their investment and consumption. Because poor people are generally quite vulnerable to unfavorable incidents and unexpected risks, reducing investment in education leaves the next generation poor, and the vicious circle of poverty never ends. Financially constrained people have to prepare for unexpected risks by themselves, meaning that risk management is much more important for poor people. Therefore, risk management, encompassing loans, savings, and insurance, is a crucial role of microfinance (Hamada, 2010).

This research tests whether microcredit has helped in poverty reduction, and what the magnitude of its impact is from the popularity side since the available data was at one point of time and no control group was used to compare their status with that of beneficiaries. This test will be done by measuring the wealth index for borrowers before and after obtaining the loans. The ownership of some assets, before and after receiving the loan, will be the measure of the beneficiaries' wealth. To tackle this broad issue, more correlations between the change in wealth index and other variables, which were mentioned above, will be conducted.

Moreover, if the results prove to be encouraging, this thesis will explore the elements that positively affect microcredit impact on poverty, as well as indicate the elements that negatively affect the role of microcredit in reducing poverty. If results do not support the ability of microfinance to reduce poverty, better channels should be found to transfer allocations used to be specified for microfinance. The analysis will also provide detailed insights into the individual and household characteristics of those who have succeeded in escaping poverty through the enterprises they founded with this microcredit.

In sum, the questions to be answered throughout this study will focus on the effectiveness of micro-credit in reducing poverty levels. The effectiveness of microcredit is defined as the increase in incomes of borrowers as an outcome of establishing micro-enterprises using the obtained microloans. This is measured by the increase in their wealth indices after obtaining the loans. In addition, the demographic characteristics of beneficiaries will be analyzed, with special emphasis on gender and education. In particular, the success of women in managing loans will be examined by measuring whether they were able to enhance their well-being using the wealth index measure. Moreover, the types of projects able to generate good profits using micro-credit will be analyzed and the extent to which they can be considered a sustainable poverty reduction

tool. Finally, recommendations and policy suggestions that need to be developed or modified to strengthen microcredit will be introduced.

2.1. Microfinance and Pro-poor Growth

The rapid growth of the industry has shifted the focus of microfinance from being a social movement to the integration of microfinance into the formal financial sector (Ledgerwood and White 2006). This integration has led some to argue that microfinance and formal financial business are contradictory; they criticize the practice of pursuing profit as deviating from the mission of microfinance. For example, in 2007 Banco Compartamos, one of the biggest MFIs in Mexico, held an initial public offering (IPO).

Shareholders sold 30% of their existing stockholdings, resulting in a record amount of profit taking. Dr. Yunus criticized Banco Compartamos for being on the moneylenders' side and affirmed that Compartamos, which charged 100% interest on some loans, was generating profits from poor people to win investors' money, compromising the movement's idealistic principles (Hamada, 2010).

"Pro-poor growth" is arguably the type of growth that developing countries must be interested in since it has been observed that growth can sometimes harm the poor by creating more inequality in the community. There are two different definitions of "pro-poor growth" in literature. According to the first definition, "pro-poor growth" means that poverty falls more than it would have if all incomes had grown at the same rate (Baulch and McCullock, 2000; Kakwani and Pernia, 2000). According to the second definition, "pro-poor growth" is growth that reduces poverty (Ravallion and Chen, 2003). Obviously, the second definition is simpler and more straightforward to measure, but both definitions call attention to the importance of the tools to measure poverty reduction. Eastwood and Lipton (2001) concluded that by examining a less

aggregated, more micro-based and causally structured pro-poor growth literature, policy implications recommended by economists will be more useful to policymakers. They found that one of the major pro-poor growth policy implications is agricultural growth, which is consistent with Egypt's case as poverty remains concentrated in rural areas and specific part of cities inhabited by migrants from rural areas. Thus, microcredit can specify more loans for supporting agricultural projects with its various types.

2.2. Microfinance in Bangladesh:

Inside Bangladesh, one of the successful models of microcredit is Grameen Bank, which provides loans to 7.9 million borrowers, of which 97% are women. The bank's accumulated loans are worth US$8.17 billion and the repayment rate is 98%. Bangladeshi MFIs are recently moving towards self-sufficiency through commercialization of financing resources, as well as through enhancing internal control system. Mahjabeen (2008) examined the welfare and distributional implications of microfinance institutions (MFIs) in Bangladesh in a general equilibrium framework. The major findings are that MFIs raise income of all households, increase consumption of all commodities by all households, generate employment, reduce income inequality, and enhance social welfare.

Based on the previous results, there are some important policy implications for developing countries. First, in any country characterized by high poverty rates the government can use MFIs as a tool for poverty alleviation. Second, MFIs can generate employment opportunities, in particular for the poor. Third, for countries with thin financial markets, MFIs can be used as a way to reach the unreached poor people due to obstacles such as the necessity of the existence of collaterals. Fourth, as small-scale and micro-producers operate in the private sector, the government can use MFIs to empower the private enterprises. Fifth, governments of developing economies should consider the distributional aspect of MFIs as a way of reducing the

gap between the rich and the poor. Microfinance can supplement the existing fiscal policy and land reform system by lowering the income inequality within an economy. Thus, microfinance could be considered as an effective development strategy and government can use it as a way to enhance the living standard of the poor and achieve millennium development goals.

2.3. Microfinance in Indonesia:

Indonesia has a long history of commercial microfinance dating back to the village credit boards (badan kredit desa) started in 1896. Also, there are many microfinance programs and MFIs in the country. Microfinance programs are supported by the government and international institutions targeting the poorest of the poor, the economically active poor, and micro and small enterprises. Assistance is given in the form of cash transfers, scholarships, and technical business support (Hamada, 2010).

Indonesia's microfinance system includes several types of institutions: commercial banks with microfinance operations, such as Bank Rakyat Indonesia (BRI), which is a world famous MFI; secondary banks known as BPR, which is a commercialized but small-scale unit bank; and cooperatives, savings, credit associations, and self-help groups. The number of BPRs in Indonesia is 1,765 (Hamada, 2010).

Many studies on microfinance have been conducted in Indonesia in an attempt to measure the impact of microfinance. Takahashi, Higashikata, and Tsukada (2010) is one of the few studies to systematically evaluate the outreach and impact of microcredit on the welfare of clients, especially the poor, in the context of Indonesia propensity score matching using the difference-in-difference method. The authors' results show that although collateral ownership is in fact not an important determinant of participation in the microcredit scheme under study,

relatively richer families gain access to microcredit. Moreover, the impact of microcredit on various household outcomes is generally statistically insignificant, except for sales of nonfarm enterprises for the wealthy and schooling expenditures for the poor, implying that the credit scheme under study might not have an impact on poverty alleviation in Indonesia, at least in the short term (Hamada, 2010).

The expected trend for financial services is to become more comprehensive in services provided to the poor. This trend might help to reduce the risks that the poor face and should protect them more effectively than when each service is provided separately. Accordingly, the role of commercial MFIs will become progressively more important. However, things should be taken cautiously because commercial MFIs face different problems from nonprofit MFIs. Profit-seeking MFIs face the question of whether they can develop innovations that reach poorer households without compromising their profits. On the contrary, nonprofit MFIs care about whether their social and economic impacts are sufficiently large to justify and ensure receiving continuing financial support (Cull, Demirgüç-Kunt, and Morduch 2008).

2.4. Microfinance in India:

Microfinance has evolved in India over the past few decades. It has some positive impact on poverty reduction, but not as significant as required. In 2009, about 88 MFIs were operating in India and were serving about 26.6 million beneficiaries with an average loan of USD 144.4. Imai et al. (2010) analyzed the impact of Micro Finance Institutions (MFIs) on household poverty in rural and urban areas inside India, based on the Indexed Based Ranking (IBR) Indicator which reflects multi-dimensional aspects of poverty. They employed the treatment effects model, a version of the Heckman sample selection model, and the Tobit model in order to estimate poverty-reducing effects of access to MFIs and loans used for productive purposes, such as

investment in agriculture or non-farm businesses. For households in rural areas, a larger poverty reducing effect of MFIs is observed when access to MFIs is defined as taking loans from MFIs for productive purposes, as opposed to the case of simply having access to MFIs. In urban areas, on the contrary, simple access to MFIs has larger average poverty-reducing effects than taking loans from MFIs for productive purposes.

A national study of MFIs in India used some indicators to test the effectiveness of microfinance in enhancing the well-being of the beneficiaries, such as asset formation (including savings), diversification of livelihoods, reduced dependency on costly financial sources, and ability to send children to school. The study found out that clients, especially women, see an increase in savings as a key impact of microfinance and that they started to accumulate savings. Involvement in a microfinance program is instilling a habit of saving and in some areas clients have also started saving with formal sources such as the post office (Sinha, 2003). This shows that microfinance allowed clients to organize their finances to the extent that they had surplus of money.

2.5. Microfinance in Ghana:

Ghana is like other countries searching for a cure to the problem of poverty. In the search for the solution, micro-finance has been found as a major remedy to poverty. A study was conducted in four districts in Ghana to explore the impact of microfinance on households. That is, how microfinance has impacted household income, profit levels, and expenditure on child education for participating households. The results showed that microfinance had a positive impact on the household income of households in two out of the four districts. The study has shown that microfinance has some impact on the program household. However, an in depth analysis of these programs showed that there has not been any significant decline in the overall level of poverty. This contradictory finding may be due to the fact that the microfinance program

has not yet reached the very poor people in the society. Thus, the study's major policy implication is that microfinance institutions must find tools to deal with impoverished areas, and they need to establish a National Autonomous Microfinance Fund to help them expand their base to reach the very poor in the impoverished areas (Nanor, 2008).

According to Steel and Andah (2003) MFIs in Ghana need regular supervision which is costly and requires huge number of staff. It is worth mentioning that Ghana has recently introduced the Islamic microfinance through Ghana Islamic Microfinance institution which offers interest free loans compliant to Sharia'a. Impact assessment studies should evaluate the economic impact of Islamic banking on the borrowers.

2.6. Microfinance in Morocco:

Microfinance can generate jobs for additional employees in addition to the owners themselves, which might reduce unemployment rates in case these jobs are generated in the formal sector. Consequently, unemployment reduction will enhance the status of the whole economy in any country. According to McPhee and St-Onge (2009), in Morocco, an association called Al Amana for the Promotion of Micro-Enterprises Morocco (Al Amana) is a successful microfinance institution (MFI) registered as a non-profit organization that is able to generate job opportunities. Al Amana offers loans to both men and women either individually or to a group of borrowers, as in the case of Grameen Bank. About 42% of the loans are given to women. Consequently, when the household's income increases, their nutritional and health status improves, leading to a reduction in costs paid for medications. Therefore, measuring the magnitude of the reduction in unemployment rates as a result of microfinance should be a potential research topic.

The Moroccan microcredit sector is one of the successful microfinance experiences worldwide. In just four years, from 2003 to 2007, MFI loan portfolios multiplied eleven times and client outreach experienced a fourfold increase, according to MIX. In 2007 some weakness has occurred, in terms of loan delinquency as well as multiple lending clients with loans from two to five different MFIs. In 2006, a study by Planet Finance highlighted the concentration of microfinance loans in large cities, such as Casablanca, Fez, and Marrakesh. It showed that nonperforming loans started to rise significantly from one of the lowest levels in the world, 0.42 percent in 2003, to 1.9 percent in 2007. Recently, Morocco has introduced a body called Regional Investment Centers which has two central missions; assisting enterprises in setting up and providing assistance to investors. They provide entrepreneurs with a one-stop-shop, which can take care of all the administrative paperwork in an efficient and quick way. Most importantly, these centers would be SMEs' means of communication when seeking assistance and information about government support programs.

2.7. Microfinance in Egypt:

The main channel through which microfinance is agreed to improve recipient's welfare is through employment generation. Khan (2005) identified five channels through which employment can reduce poverty: an increase in wage employment; an increase in real wage; an increase in self-employment; an increase in productivity in self-employment; and an increase in the terms of exchange of output of self-employment. Thus, poverty declines if the poor have access to microfinance that supports self-employment.

Microfinance has demonstrated its power and potential in many parts of the world and has helped some countries rise out of poverty. So what hampers its development in the Middle East? And

what can be done to extend its outreach and increase its effectiveness? According to a study conducted by the World Bank in 1998, microfinance faces many obstacles. In some countries, microfinance is constrained by social, cultural, or religious barriers; some people see the charging of interest rates to be against Islamic regulations. It is estimated that over 1/3 of the world's poor are Muslims (CIA World Factbook 2010 and Economist 2008). The Consultative Group to Assist the Poor (CGAP) conducted a global survey in 19 Muslim countries in 2007, in which 20-40% of the respondents cited religious reasons for not using conventional microloans. Constructing and making available Islamic-compliant microfinance products would extend the reach of microfinance and aid in the economic progress of the Muslim poor and of nations with large Islamic populations (El-Komi and Croson, 2010).

Lack of adequate infrastructure is another barrier to microfinance development. Many of the poor people in need of financial services live in distant areas with poor infrastructure, which drastically increases a microfinance institution's costs of doing business with those people. Moreover, some countries face political uncertainty and macroeconomic instability. In Gaza, frequent border closures forced micro-entrepreneurs out of business because they could not obtain inputs and because they had trouble selling products. Egypt faces some similar obstacles, but has recently gained a better reputation in the microfinance sector. This is attributed to the existence of many organizations offering microfinance, as well as their provision of business development services to the borrowers.

Still, such organizations need more concern and support from both parties; government and donors. By nature, resources are limited, especially in developing countries. Thus, using the available resources efficiently is the key to extending the effectiveness of microfinance.

Unemployment, poor education, income inequality, and large family size are all known causes of poverty in Egypt. Many policies have been used by the Egyptian government to help solve these issues. Government employment is one such tactic, and many countries in the MENA region employ this as a method to combat poverty (Adams and Page, 2003). Controlling for the number of births is another well-known approach used to combat poverty, but unfortunately neither of these approaches has proven to be the right model for solving the poverty issue. A survey conducted by the World Bank analyzed microfinance in the Middle East and North Africa. Countries covered in detail were Egypt, Jordan, Lebanon, Morocco, Tunisia, the West Bank and Gaza, and Yemen. About 60 microfinance programs were analyzed in the region. In Egypt, there are 17 institutions that participated in this survey, including Save the Children, the Economic and Social Development Association, the National Bank for Development, and others. The survey revealed that there are 1.55 million potential borrowers (Brandsma and Chaouali, 1998).

Moreover, according to Sanabel – a microfinance network for Arab countries established in 2002 to serve microfinance in the Arab region – Egypt is considered the largest microfinance market in the region, in terms of outreach. This research will consider microcredit as an alternative solution for alleviating poverty since it can be argued that it is a less costly approach when compared to previously mentioned solutions, and also proved effective in other developing countries.

In Egypt, there are 16 MFIs with a gross loan portfolio of USD 216.9; average loan balance per borrower is USD 198.3 and the active borrowers reach approximately 1.1 million (Microfinance Information Exchange). Table (2-1) displays the most active 13 Egyptian MFIs with information about each, such as the average loan balance per borrower, cost per borrower, number of active borrowers, total number of women borrowers, and other information.

Table 2-1: Statistics on Microfinance Institutions in Egypt as of 2009

Name	Average loan balance per borrower	Cost per borrower	Gross loan portfolio	Number of active borrowers	Personnel	Total women borrowers	Total men borrowers
ABA	286	34	38,501,957	134795	863	75834	58961
ABWA	204	17	3,655,800	17931	145	17213	718
Al-Tadamun	119	28	10,798,152	90714	302	90714	—
ASBA	198	27	73,044,374	368333	5583	—	368333
CEOSS	160	20	6,229,943	38873	120	26288	12585
DBACD	231	23	24,070,314	104234	565	58671	45563
ESED	188	48	19,724,475	104964	641	77163	27801
FMF	249	76	4,578,856	18390	175	7480	10910
IDDA	148	15	1,681,712	11373	69	11373	—
Lead Foundation	128	23	22,176,175	172691	872	144481	28210
RADE	177	27	2,868,169	16209	124	13815	2394
SBACD	271	41	8,766,050	32307	530	18871	13436
SCDA	402	40	784,561	1951	25	925	1026

Source: Microfinance Information Exchange, 2009 (http://www.mixmarket.org)

Table (2-1) shows that the total number of MFIs active borrowers in Egypt is 1,112,765. It also shows the diversity of MFIs among the Egyptian governorate and that there are specific MFIs that target only women, such as Al-Tadamun and the Industrial District Development Association (IDDA). In addition, it reveals there are other MFIs targeting only men such as Assuit

Businessmen Association (ASBA). The table below shows the full name of every MFI in Egypt to show the diversity of MFIs among governorates.

Table 2-2: MFIs Abbreviations in Egypt

Abbreviation	Full Name
ABA	Alexandria Business Association
ABWA	Assuit Business Women' Association
ASBA	Assuit Businessmen Association
CEOSS	Coptic Evangelical Organization for Social Services
DBACD	Dakahlya Businessmen's Association for Community Development
ESED	Egyptian Small Enterprise Development Foundation
FMF	First Microfinance Foundation - Aga Khan Egypt
IDDA	Industrial District Development Association
RADE	Regional Association to Develop Enterprise in Sohag
SBACD	Sharkia Businessmen's Association for Community Development
SCDA	Sohag Community Development and Children with Special Needs Association

Source: Microfinance Information Exchange, 2009 (http://www.mixmarket.org)

It is worth mentioning that according to the UN Advisors Group on Inclusive Financial Sectors (2007), SMEs in the formal sector are led by trade (55%), manufacturing (18%), and services (17.5%) industries, whereas SMEs in the informal sector are dominated by trade (38%), services (30%), manufacturing (19%), and transport (5%) industries. Men own the majority of SMEs in the formal (87%) and informal (80%) sectors in Egypt. Enterprises that operate informally constitute nearly 82% of total economic units; while informal employment constitutes nearly 40%. This high number of informal businesses in the SME sector distorts competition and inhibits the effectiveness of government policies.

In 2008, a national study was conducted in Egypt, jointly by many donors, to assess the microfinance sector in general. The study used the Impact-Knowledge-Market (IKM) methodology which uses qualitative and quantitative methods as part of a participative and multidisciplinary approach to identify client characteristics, research market demand, and assess impact. The study highly encourages microfinance as a poverty reduction tool because there were positive effects on people as a result of accessing a loan and starting a project. These benefits include the increase in food quality, the enhancement of health conditions, and 40% of the sample stated that their children's level of education has tremendously increased. Another study by Shahidur and Khandker (2003) used a quasi-experimental design to estimate the long-term impacts of micro-finance on household consumption and poverty in Bangladesh, based on household survey data collected in 1991/92 and 1998/99. The results of their study showed that micro-finance helps in reducing extreme poverty more than moderate poverty at the village level, but they did not explain the reasons behind these findings. Table (2-3) shows the microfinance attempts in other developing countries, such as Bangladesh, the pioneer country in microfinance, Indonesia, India, Ghana and Morocco.

Table 2-3: MFIs Attempts in Number of Developing Countries in 2009

Country	Number of MFIs	Gross loan portfolio	Number of active borrowers
Egypt	16	216,880,537	1,112,765
Bangladesh	25	2,316,469,064	20,214,480
Indonesia	16	90,052,775	286,124
India	86	4,598,401,176	26,492,911
Ghana	29	130,126,239	356,690
Morocco	10	611,695,078	919,025

Source: Microfinance Information Exchange, 2009 (http://www.mixmarket.org)

2.8. Conclusion:

This Chapter summarized microfinance experiences of some selected developing countries. Comparing Egypt's attempts to those of the pioneer Bangladesh, it is seen that the number of active borrowers in Bangladesh compared to its population size is much higher than that of Egypt. Although the Bangladeshi population in 2009 was 156 million, which is almost double the size of the Egyptian population; the active MFI borrowers in Bangladesh are 20 times more than that of Egypt. Compared to Morocco, Egypt's active number of borrowers is still lower when the population size of both countries is considered. The Moroccan population is about a third of Egypt's while the number of MFIs active borrowers in both countries is similar to a great extent. Thus, despite the growth of microfinance in recent years, there is still room for future expansion to the same level utilized in other successful countries in the developing world.

CHAPTER THREE

3. METHODOLOGY AND DATA

This chapter aims to describe the data used in analyzing the microfinance effectiveness, using sampling technique, characteristics of the population, and sample chosen in terms of demographics including age, gender, marital status and education, social and economic status, types of ongoing projects, size of loans, and the challenges faced by entrepreneurs in conducting the small or microenterprises using microcredit. Morduch (1998) argues that microfinance has a minimal impact on poverty alleviation based on the results of a survey conducted on 1,798 households of Grameen Bank clients and two other microfinance programs. Adversely, Pitt and Khandker (1998) apply a quasi-experimental design to 1991–92 data; they concluded that microcredit raises household consumption, especially when loaned to women. Later, Khandker (2005) applies panel methods using a 1999 resurvey; he concluded that microcredit helps the extremely poor even more than the moderately poor. But using simpler estimators than PK, Morduch (1999) finds no impact on the level of consumption in the 1991–92 data.

However, other studies such as that of Remenyi, Quinones, and Benjamin (2000) argued that microfinance has a significant impact in reducing poverty rates. This led to further studies conducting research on how to strengthen microfinance institutions so that they can play an important role as a poverty reduction strategy. In order to know how much poverty reduction is attainable through micro credit, a wide range of variables need to be included in the analysis, such as the region of the loans, whether it is rural or urban, the type of the project established, the market demand for the good or service provided, the interest paid on the loan, the education level of borrower, age, accumulated experience before starting the project, marital status, the number of children for married people, whether training on business skills has been offered to borrowers upon issuing the loans, and others.

3.1. Methodology:

This study applies the Mixed Methods approach which involves using a quantitative research followed by a qualitative one. The mixed methods approach involves six types of designs. The Sequential Transformative strategy mentioned in Creswell (2009) is appropriate for this study as it implies conducting a qualitative research after conducting a quantitative research in order to validate results.

The analysis of the data collected through the designed questionnaire will be as follows. Firstly, descriptive statistics is calculated on the demographic characteristics of the whole sample before conducting the econometric analysis. Secondly, a linear regression model is constructed with the dependent variable as the wealth index indicator, which is widely known and has been used in many studies such as that of Osman (2006). The wealth index is built by aggregating various household indicators for asset ownership (Filmer and Pritchett, 2001). This proposed study will compute the difference in wealth indices before and after the loan and let the change in wealth index to be the dependent variable. However, since there was no available data for the beneficiaries' status before the loan, the data were collected at one point in time depending on the people's perceptions.

Literature often tries to compare the status before and after microcredit programs to estimate their impact on individuals (before–after comparison). However, in most cases, this does not provide reliable estimates because other factors like macroeconomic shocks can affect the post-treatment outcome. In other words, this approach fails to separate the impact of microfinance from the time trend that affects the result (Kono & Takahashi, 2010). Therefore, this study measures how clients perceive the change in their incomes due to the microfinance loan.

The dependent variable could be the change in monetary income, consumption or wealth. It is usually difficult to measure the change in monetary income as most people refrain to reveal

information about their monetary incomes. The best that could be done to use monetary income change as the indicator of wellbeing enhancement is to categorize income into ranges. The second method is to use consumption; to ask beneficiaries how much do they spend on their consumption. Still, this method has its disadvantages like not all households are equal in number. Still, this method is used by many researchers such as Gertler et al (2003) and Amin et al (2003). The third way to use is the wealth index. The wealth index has been proposed as a reliable, simple alternative to expenditure and is extensively used (Howe et al, 2009).Some studies use both indicators; consumption and wealth such as Kondo (2007) and Coleman (1999).

In this research, the wealth index was the selected method. This is because in a poor religious area such as Al-Darb Al-Ahmar, people might refrain from revealing their consumption intake due to the fear from envy. On the contrary, people might exaggerate the real figures in order to appear wealthy. Therefore, measuring wealth proxied by the assets owned is the most concrete variable available. According to Kondo (2007), the ideal wealth variable would be household assets pre-dating the availability of the program but since this data was not available, beneficiaries were asked if they possess the assets before the loans or not.

The wealth index can be thought of as a fundamental indicator of well being. It is a composite measure of the cumulative living standard of a household that is calculated using the Principal Component Analysis (PCA). The index will be calculated for the sample before and after the loan. The assets that will be included in the wealth index are those used by the Demographic Health Survey (DHS) conducted in 2005. Those assets are electricity, radio with cassette recorder, color television, black and white TV, video or DVD player, mobile, telephone, satellite dish, personal home computer, sewing machine, fan, air conditioner, refrigerator, automatic washing machine, half automatic washing machine, private toilet, flush toilet, car,

bicycle, motorcycle, and animal-drawn cart. Each household asset for which information is collected is assigned a weight or factor score generated through principal components analysis.

The total assets that were used to construct the wealth index are 22; standardization was done to these variables in order to be multiplied by the component score matrix forming the wealth index before categorizing it into the five quintiles. This is done for wealth before and after the loan. The change in wealth index is considered the dependent variable.

The principal components factor analysis (PCFA) technique is implemented to extract a linear combination of the single indicator variables that capture most of the common information in those variables. The resulting asset scores are standardized in relation to a standard normal distribution with a mean of zero and a standard deviation of one. These standardized scores are then used to create the break points that define wealth quintiles as: lowest, second, middle, fourth, and highest. The wealth index has a good advantage in terms of controlling for inflation since assets owned determine wealth, not just the monetary income.

This survey might have some drawbacks, such as the reliance on people's memory concerning their assets ownership before the loan, as well as the possibility that some interviewees might either reply with pleasant replies to please the interviewer or reply negatively for fear of envy. However, assuming that people say the truth, this study aims to test the satisfaction of loan clients using statistical hypotheses.

A test of the hypothesis of the mean wealth indices is carried out in order to test whether there is a change; either positive, negative, or no witnessed change using a Paired Samples Test. Since baseline data of the beneficiaries do not exist, the study is based on testing how microfinance clients perceive the change in their incomes due to the microfinance loan. As a

result of the hypothesis testing, the difference between the wealth indices in the two periods is considered the dependent variable that will be analyzed.

A goodness of fit test, such as Chi square test ($\chi 2$ test), was performed in order to test the association between the dependent variable and each of the independent variables. The type of association will not be clear; in other words, whether there is a negative or positive association will not be shown using the chi square test. The chi square helps in testing the significance of the association between dependent and independent variables. Not only attributing the change in wealth index to any of the independent variables, but the indicating direction of the association will be tested. Therefore, testing correlations and the relationships' direction between the dependent variable and independent significant variables will be performed. Certainly, the regression model reveals this part of information, but testing for correlations will confirm the robustness of the results.

According to theory, the explanatory variables that are related to making microfinance effective in reducing poverty are gender, age at the time of the loan, level of education, total number of family members, amount of the loan, productivity of workers, and training given to borrowers. In the sample used in this research, only one of the borrowers had a training course accompanied with the loan. As for the productivity, it was difficult to get data for such a variable. Therefore, the explanatory variables included in the model are gender, age at the time of the loan, level of education, marital status, total number of children, and amount of the loan.

Then, the equation of the OLS model is constructed as follows:

$$Y = \beta + \beta_0 Gen + \beta_1 Mar + \beta_2 Read/Write + \beta_3 Prim/Prep + \beta_4 Sec + \beta_5 Inst + \beta_6 Univ + \beta_7 Amt + \beta_8 HH + \beta_9 Age + \beta_{10} years + \mu$$

Where Y = change in wealth index,

β = *constant*

β_0*Gen = gender,* β_1*Mar = Marital status,*

β_2 *Read/Write = Read and write ability,*

β_3 *Prim/Prep = Primary or Preparatory School,*

β_4 *Sec = Secondary School,*

β_5 *Inst = Two years Institute,*

β_6*Univ = University Education,*

β_7 *Amt = Amount of loan,*

β_8 *HH = Number of Household Members,*

β_9*Age = Age at Loan,*

β_9*Years = Years elapsed since loan was taken and* μ *= error term.*

3.2. Data and Composition of Sample

The lack of recent data on microfinance with all the required variables made it essential to conduct a survey on borrowers of one of the MFIs. The questionnaire used in the data collection is attached in Annex one. The First Microfinance Foundation (FMF), a subsidiary of the Aga Khan Agency for Microfinance (AKAM), is one of the agencies providing microcredit for the poor, especially those living in poorer districts in Cairo like Al-Darb Al-Ahmar, El-Gamaliya and Manshiet Nasser. Borrowers from Al Darb Al Ahmar are the population from which the sample is drawn. FMF has more than 10,000 loans from May 2004 till December 2009 to Al-Darb Al-Ahmar residents, both men and women, to start small and micro businesses. A sample of

151 beneficiaries has been chosen using a simple random sample technique from a population of 10,000 beneficiaries. However, the randomness was implemented within the beneficiaries who have used the microloans in investment purposes. Beneficiaries who have used the funds in buying consumption goods were not included in the sample. This is to ensure that the impact is tested on those who used the funds in investment purposes only. Statistically, this is considered a selection bias but it is essential in order to exclude irrelevant observations.

3.2.1. Socio-economic Characteristics of Beneficiaries

This section collects general information about the borrower such as gender, his/her age and level of education, Table (3-1) shows the composition of the sample and the population according to the gender:

Table 3-1: Composition of the Sample

Gender	Population	Percentage of Gender in the population	Sample	Percentage of Gender in the sample
Male	5997	60%	100	66%
Female	4006	40%	51	34%
Total	1003	100%	151	100%

Source: Author's calculations based on First Microfinance data and a field survey on its borrowers

The sample is stratified by gender, whereby around 40% of the borrowers in the population were females while the rest were males. A sample size of 151 was chosen for this study which is consistent with other studies on microfinance. Sampling error is caused by observing a sample instead of the whole population (Salkind, 2004). As such, the sample error is equal to +/-7.9% at a 95% confidence level using the formula below:

$$\text{Sampling error (e)} = +/-1.96 * \sqrt{p\%(1-p)\%} / \sqrt{n}$$

Where,

p= the probability that a person will be chosen from the population in the sample (50%).

n = sample size which is 151

The *1.96* represents the z-score of a confidence level of 95%

The slight variations between the percentage of both genders in the population and that of the sample are due to the inability to reach some borrowers. The sample drawn was randomly chosen from the pool of borrowers' population after making sure that the purpose of the loan taken was actually used for establishing or enlarging small or micro projects and not for any other purpose. The questionnaire consists of three sections.

Table 3-2: Statistics on Beneficiaries' Level of Education

Level of Education	Frequency	Percent	Cumulative Percent
Illiterate	31	20.5	20.5
Read/Write	34	22.5	43.0
Primary	5	3.3	46.4
Preparatory	12	7.9	54.3
Technical Secondary	35	23.2	77.5
General Secondary	8	5.3	82.8
Two years institute	11	7.3	90.1
University	15	9.9	100.0
Total	151	100.0	

Source: Author's calculations based on First Microfinance data and a field survey on its borrowers

Table (3-2) shows that the higher percentage, 23.2%, lies in the technical secondary category which is consistent with the fact that most of the projects conducted in Al-Darb Al-Ahmar were related to crafts, as will be shown later. However, this percentage is not considered high and is very near the percentage of those who are illiterate. In general, the sample showed that almost half of the beneficiaries, 43%, were either illiterate or can only read and write, meaning half of them did not receive formal education. The issue here is whether the 47% who received different levels of education benefited from the microloans more than those who did not,

or if the education did not have any impact on their success. This will be tested later through the regression model. Introducing the gender aspect into the education variable, the table below shows the level of education for each gender.

Table 3-3: Distribution of the Sample among the Different Levels of Education in Percentages

Gender	Level of Education						Total
	illiterate	Read/Write	Primary/Prep	Technical/ general Secondary	Two years institute	University	
Male	17	22	10	31	8	12	100
Female	27	24	14	24	6	6	100
Total	21	23	11	28	7	10	100

Source: Author's calculations based on First Microfinance data and a field survey on its borrowers

Table (3-3) shows the high discrepancy in the level of education between males and females in higher levels of education. The percentages of educated males in secondary, two year institute diplomas and universities are higher than that of females, while the number of illiterate females are double that of males. The interaction between education and gender will be tested later.

Table 3-4: Statistics on Beneficiaries' Age at loan

Age	Number	Minimum	Maximum	Mean	Std. Deviation
Total	151	21	60	37	10.055
Male	100	21	59	37	10.286
Female	51	22	60	37	9.685

Source: Author's calculations based on First Microfinance data and a field survey on its borrowers

The average age at the time of receiving the loan for the whole sample, as well as for both males and females, is 37 years old. However, the minimum and maximum ages observed in males are 21 and 59 years old, while in females the minimum and maximum

ages are 22 and 60 years old. Table (3-4) shows no significant variations in age between males and females.

Table 3-5: Beneficiaries' Marital Status

Marital Status	Frequency	Percent	Cumulative Percent
Not married	19	12.6	12.6
Married	125	82.8	95.4
Divorced	1	.7	96.0
Widowed	6	4.0	100.0
Total	151	100.0	

Source: Author's calculations based on First Microfinance data and a field survey on its borrowers

Table (3-5) shows that most of the beneficiaries are married; about 83%. The remaining percent is divided between not married, divorced and widowed. Since more than 80% of the sample is married, the marital status cannot be considered an effective independent variable.

Table 3-6: Total Number of Children of Beneficiaries

Number of Children	**Frequency within the 151 beneficiaries**
1	27
2	28
3	35
4	24
5	7
6	4
7	1
10	1

Source: Author's calculations based on First Microfinance data and a field survey on its borrowers

Few beneficiaries have many children; on average, most of them have one, two or three children. Only two cases had 7 and 10 children, and these could be considered extreme cases. This means

that the variation among beneficiaries in this variable is not high. Thus, this variable is not included among the list of independent variables.

Table 3-7: Statistics on Beneficiaries' Type of Project

Type of Project	Frequency	Percent	Cumulative Percent
Manufacturing	31	20.5	20.5
Services (such as repairing mobiles, shoes, etc)	48	31.8	52.3
Trade	72	47.7	100.0
Total	151	100.0	

Source: Author's calculations based on First Microfinance data and a field survey on its borrowers

Table (3-7) shows that about 48%, which is almost half the sample, work in the trade sector which included trading in clothes, dairy products, mobiles, meat, soap, vegetables, leather products, and silver, or owing a mini-market. The second largest cluster of beneficiaries lies in the services sector with approximately 32%. The services sector includes mobile maintenance, repairing shoes, transportation, ironing, upholstery, photography, and mechanical services for cars. The smallest percentage, 20%, is for the manufacturing sector which includes manufacturing carpets, glass, furniture, shells, bakery, clothes, and sweets. The following table shows the distribution of males and females among the three types of projects in order to explore the most attractive sectors for both males and females, in case there is gender preference to certain types of projects.

Table 3-8: Distribution of the Sample among the Type of Project for Males and Females

			Type of project			
			Manufacturing	Services	Trading	Total
Gender	Male	Count	20	43	37	100
		% within Gender	20.0%	43.0%	37.0%	100.0%
		% within Type of project	64.5%	89.6%	51.4%	66.2%
		% of Total	13.2%	28.5%	24.5%	66.2%
	Female	Count	11	5	35	51
		% within Gender	21.6%	9.8%	68.6%	100.0%
		% within Type of project	35.5%	10.4%	48.6%	33.8%
		% of Total	7.3%	3.3%	23.2%	33.8%
Total		Count	31	48	72	151
		% within Gender	20.5%	31.8%	47.7%	100.0%
		% within Type of project	100.0%	100.0%	100.0%	100.0%
		% of Total	20.5%	31.8%	47.7%	100.0%

Source: Author's calculations based on First Microfinance data and a field survey on its borrowers

Table (3-8) shows that trade is the most frequent type of project females run, with 68.6% within females and 48.6% within those working in the trade sector, while the service sector attracts few women. As for males, the service sector is their most attractive sector. About 43% of the males work in this sector and within those working in the services sectors, about 89% is males.

3.2.2. Statistics on the Borrowers' Wellbeing Status

This section one includes questions about the living standards status of borrowers before and after getting the loans. Questions collecting data about monthly income, expenditure, assets ownership, and place of residence will provide good indicators about the standards of living. The questions developed under the second section is used in calculating the wealth index before and after getting the loan; they were similar to those in the Demographic Health Survey (DHS) which were used for the same purpose.

Table 3-9: Cross Tabulation for the Income Increase Categorized by Gender

			Income Increase		Total
			Yes	No	Yes
Gender	Male	Count	68	32	100
		% within Gender	68.0%	32.0%	100.0%
		% within Income Increase	62.4%	76.2%	66.2%
		% of Total	45.0%	21.2%	66.2%
	Female	Count	41	10	51
		% within Gender	80.4%	19.6%	100.0%
		% within Income Increase	37.6%	23.8%	33.8%
		% of Total	27.2%	6.6%	33.8%
Total		Count	109	42	151
		% within Gender	72.2%	27.8%	100.0%
		% within Income Increase	100.0%	100.0%	100.0%
		% of Total	72.2%	27.8%	100.0%

Source: Author's calculations based on First Microfinance data and a field survey on its borrowers

Table (3-9) shows that about 72% of the beneficiaries affirmed that their incomes have increased after acquiring the loans. However, the percentage of females who stated that their incomes have increased exceeds that of males. More than 80% of females stated that their incomes have increased while within males the percentage was 68%. This shows that women felt they achieved higher benefits from the microloans than males.

Table 3-10: Quintiles of Wealth Indices before Loan and after Loan Cross Tabulation

		Wealth index after					Total
		1.00	2.00	3.00	4.00	5.00	1.00
Wealth index Before	1.00	18	4	4	3	1	30
	2.00	2	16	6	5	1	30
	3.00	1	10	8	7	5	31
	4.00	0	4	10	12	4	30
	5.00	0	0	1	10	19	30
Total		21	34	29	37	30	151

Source: Author's calculations based on First Microfinance data and a field survey on its borrowers

Table (3-10) shows that 12 out of 30 beneficiaries became better off and moved from the first quintile to the next 4 quintiles. Also, 12 out of 30 beneficiaries became better off and moved

from the second quintile to the next 3 quintiles. The same case happened in the third quintile, while only 4 out of 30 beneficiaries have moved from the fourth quintile to the fifth. The highest clustering is on the diagonal where beneficiaries remain in the same quintile after receiving the loan. Therefore, 40 beneficiaries out of 151 became better off after the loan and were able to move to higher wealth categories, which constitute around 26% of the sample. However, 38 beneficiaries became worse off, constituting about 25% of the sample, while 73 beneficiaries, constituting approximately 48% of the sample, remained in their wealth quintiles. It is obvious that the net impact of the microfinance, which is 1%, is terribly low in spite of the 72.2% positive replies to the question asking whether income increased after the loan. However, testing the variables affecting the success of the 26% is of interest in order to obtain policy implications that help in extending the benefits of microfinance to more people.

Table 3-11: Statistics on Amount of Loan in EGP

	Number	Minimum	Maximum	Mean	Median	Mode	Std. Deviation
Amount of the loan	151	100	20,000	3,143.4	2500	2000	2,458

Source: Author's calculations based on First Microfinance data and a field survey on its borrowers

The average loan amount is EGP 3,143, but since extreme values exist, the median could be considered a better indicator as it is not affected by extremes. The median value for the 151 beneficiaries is EGP 2500. The mode value is EGP 2000 which shows the most frequent value of the dataset. FMF offers loans up to EGP 100,000 but with more restricted conditions.

3.2.3. Statistics on Loans, Type of Projects and Obstacles faced by Entrepreneurs

This Third section collects data about the loan taken and project information such as its type, marketing, costs, profits or losses incurred, training provided if any, competition with imported

goods, business growth, advantages and disadvantages of loans taken, whether more capital is needed, and others.

Table 3-12: Cross tabulation for gender and existence of obstacles to the beneficiaries' projects

			Suffering from Obstacles		Total
			yes	no	yes
Gender	Male	Count	29	71	100
		% within Gender	29.0%	71.0%	100.0%
		% within Suffering from Obstacles	76.3%	62.8%	66.2%
		% of Total	19.2%	47.0%	66.2%
	Female	Count	9	42	51
		% within Gender	17.6%	82.4%	100.0%
		% within Suffering from Obstacles	23.7%	37.2%	33.8%
		% of Total	6.0%	27.8%	33.8%
Total		Count	38	113	151
		% within Gender	25.2%	74.8%	100.0%
		% within Suffering from Obstacles	100.0%	100.0%	100.0%
		% of Total	25.2%	74.8%	100.0%

Source: Author's calculations based on First Microfinance data and a field survey on its borrowers

According to the survey results, table (3-12) shows that 25% of the beneficiaries face some obstacles in running their small and micro business. About 29% suffer from obstacles within males while only 17.6% within females suffer from obstacles in running their projects.

Table 3-13: The Obstacles Faced by the Beneficiaries

Obstacles		Frequency	Percent	Valid Percent	Cumulative Percent
	Insufficient demand	10	6.6	26.3	26.3
	High competition from imports	6	4.0	15.8	42.1
	Unskilled labor	3	2.0	7.9	50.0
	More funds needed	19	12.6	50.0	100.0
	Total	38	25.2	100.0	
	No problems	113	74.8		
Grand Total		151	100.0		

Source: Author's calculations based on First Microfinance data and a field survey on its borrowers

As shown by table (3-13), 50% of the beneficiaries stated that their main obstacle is the need for more funds; but according to the rules of the NGO or the ability to repay the loan, the beneficiaries are not given the amount of loan they need. The second most common obstacle is the insufficient demand, which is in fact a marketing issue. Therefore, marketing sessions, as well as marketing channels, should be provided to the beneficiaries. It is worth mentioning that all beneficiaries declared that they were not provided any sort of training before or after the loan.

Exploring the movements of beneficiaries within the wealth quintiles using cross tabulation for wealth indices before and after the loan is very crucial to the analysis. The following table shows the movement of beneficiaries between the ordered quintiles of wealth.

A straight forward question was asked to the beneficiaries, which was whether their income has increased after the loan to measure how they perceive the effect of the loan on the increase of their income. The following table shows the results.

Table 3-14: Repayment Rates of the Loan

		Frequency	Percent	Cumulative Percent
Valid	yes	109	72.2	72.2
	No	42	27.8	100.0
	Total	151	100.0	

Source: Author's calculations based on First Microfinance data and a field survey on its borrowers

In general, the interest rate paid by the beneficiaries and reported by FMF manager was 12% annually. The repayment percent among the sample, which is 72.2%, is not a high percentage when compared to that of the Grameen bank that ranged between 95% and 98%. This relatively low repayment rate indicates that there are problems faced by the 27.8%. A deeper investigation should be done for those non-paying beneficiaries to know the actual reasons making them not to pay. Linking the question asking the beneficiaries if their incomes have increased or not, table (3-9) shows that 72.2% admitted that their incomes have increased, which is the same percent of the repaying beneficiaries. This indicates that the main reason that

encourages people to pay back the loan is to feel the tangible increase of incomes. Therefore, feasibility studies should be an essential prerequisite for any loan applicant before issuing the loan. This is applied in almost all big microfinance institutions, including the SFD, Banque Misr, Credit Agricole Bank, the Egyptian National Bank, and others.

3.3. Conclusion

This Chapter introduced the data collected about beneficiaries of First Microfinance in Al-Darb Al-Ahmar. It also has introduced some descriptive statistics about the sample. The interviewees have a positive perception to the effect of microloans on their incomes. Three main issues were revealed; firstly, interviewees stated that they have some obstacles such as the high interest rates imposed which hinders them from repaying the installments on time. Secondly, literacy is found to be higher among women. Despite this, the study shows success among women to enhanced standard of living was more than among males. This shows that microfinance is a good tool for women to sustain their livelihoods.

CHAPTER FOUR

4. EMPIRICAL RESULTS

Before embarking on performing analysis on the determinants of change in wealth index, it is useful to undertake some tests to reveal the direction of and change in the index before and after the intervention. McNemar test, a non-parametric test, was used to test if there is a significant change in assets ownership for the borrowers before and after the loan. It was concluded with a 95% confidence level that there was an increase in all the assets included in the questionnaire except for the separate kitchen and private toilet. This is interpreted as almost all the interviewees had stated that they had these two assets before acquiring the loan.

Next, a paired samples test is also conducted in order to compare if the index of assets after obtaining the loan exceeds the index before loan taking for the whole sample size. This is done by calculating two indices for 22 owned assets, before and after receiving the loan, using the Principal Component Analysis (PCA). Table (4-1) below shows that there is a significant difference between the two variables since the t-value is very low.

Table 4-1: Results of the Paired Samples Test

Model	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Upper	Lower			
Change in Wealth index	.3408	.2651	.02157	.29816	.38342	-15.8	150	.000

Source: Author's calculations based on First Microfinance data and a field survey on its borrowers

Since the paired samples test showed that there is an enhancement in the status of the borrowers measured by the assets owned, testing which variables affect the change in assets should be conducted. This was done, as mentioned above, using a linear regression model, with the dependent variable as the change in wealth and the independent variables as: gender, age, level of education, marital status, loan size, number of children, years since loan taken, and level of education. Three tests were run; one for the whole sample, another for borrowers who took loans for more than 2 years, and relatively new borrowers who have taken a loan in the past 2 years.

Table (16) shows the results of the first Ordinary Least Squares Regression model (for the whole sample; 151 borrowers). From the table, two variables are significant since their p-values are less than 0.05: secondary education and years since loan taken. From the table, the effect of secondary education on the change in wealth is surprisingly and significantly less than the impact of being illiterate, which is the omitted variable in the regression. This is interpreted as the increase of people with secondary education by one unit leads to the decrease in change in wealth measured by assets owned by 0.477, while every year that elapses since the loan was taken leads to an increase in wealth by 0.142. Age at the time of receiving the loan and borrowers with university education were proved to significantly affect the change in wealth index at a 90% level of confidence. This means older borrowers are achieving higher changes in wealth, while people with university education are achieving fewer changes in their wealth, even in comparison to illiterate workers. Testing for multi-collinearity, the tolerance and VIF values showed that there is no multi-collinearity since all the VIF values, which are the inverse of the Tolerance, are below 5.

The multiple correlation coefficient (R) value is 0.430, which means that the relationship between the observed and model-predicted values of the dependent variable is strong by 43%. The coefficient of determination (R^2) value is 0.185, which means that about a fifth of the

variation in time is explained by the model. This value is similar to that of Khandker (2001) and Panda (2009).

Table 4-2: Ordinary Least Square Estimates for Full Sample of Borrowers Where Dependent Variable is the Change in Wealth Measured by Assets Ownership

Model	Coefficients	t	Sig.	Collinearity Statistics	
				Tolerance	VIF
(Constant)		-1.406	.162		
Gender	.088	.524	.601	.949	1.053
Married	-.067	-.305	.761	.856	1.168
Education (Read/Write)	-.007	-.030	.976	.590	1.696
Education (Primary/Preparatory)	-.413	-1.392	.166	.674	1.484
Education (Secondary)	-.477	-2.038	.043	.530	1.886
Education (Two Years Institute)	-.369	-1.087	.279	.761	1.313
Education (University)	-.562	-1.762	.080	.652	1.534
Amount of the loan	1.54E-005	.443	.658	.819	1.221
Number of HH members	-.072	-1.035	.302	.418	2.393
Age at loan	.019	1.692	.093	.456	2.191
Years since loans taken	.142	3.945	.000	.859	1.164

Observations: 151, R=0.43, R^2=0.185, Adjusted R^2=0.181

Source: Author's calculations based on First Microfinance data and a field survey on its borrowers

Subsequently, a separate regression was conducted for the group of borrowers who have taken loans for more than two years. Table (4-2) displays the results of this model. One variable showed significance, with a p-value of less than 0.05, which is years since loan taken. Every year that elapses since the loan was taken leads to an increase in the change in wealth by 0.178. However, people with primary or preparatory education showed significance at 90%, but also

with a negative effect in comparison to illiterate workers which is interesting because education is supposed to help entrepreneurs increase their income. However, this could have some explanations. Illiterate people are usually very poor, thus the change they witness in their incomes might be more than the change that occurs for the educated. Another explanation could be that illiterate people spend most of their lives working in a specific craft which endows them with practical experience that helps them in their small projects.

Table 4-3: Ordinary Least Squares Estimates for Borrowers Who Have Taken Loans for More Than Two Years Where Dependent Variable is the Change in Wealth Measured by Assets Ownership

Model	Coefficients	t	Sig.	Collinearity Statistics	
				Tolerance	VIF
(Constant)		.208	.836		
Gender	-.170	-.602	.549	.931	1.074
Married	-.153	-.337	.737	.820	1.220
Education (Read/Write)	.115	.286	.776	.571	1.751
Education (Primary/Preparatory)	-.961	-1.731	.089	.706	1.416
Education (Secondary)	-.269	-.714	.478	.522	1.916
Education (Two Years Institute)	-.214	-.330	.743	.750	1.332
Education (University)	-1.153	-1.563	.124	.764	1.309
Amount of the loan	2.11E-005	.259	.797	.893	1.120
Number of HH members	-.146	-1.382	.172	.513	1.948
Age at loan	.008	.432	.667	.523	1.912
Years since loans taken	.178	2.345	.022	.875	1.142
Observations: 70, R=0.43, R^2=0.195, Adjusted R^2=0.191					

Source: Author's calculations based on First Microfinance data and a field survey on its borrowers

This regression was conducted for borrowers who have taken loans for two years or less. The table below (Table 4-3) shows that there is only one variable significant at 95%, which is secondary education but with a negative effect in comparison to illiterate workers.

Table 4-4: Ordinary Least Squares Estimates for Borrowers Who Have Taken Loans for Two Years or Less Where Dependent Variable is the Change in Wealth Measured by Assets Ownership

Model	Coefficients	t	Sig.	Collinearity Statistics	
				Tolerance	VIF
(Constant)		-1.611	.112		
Gender	.263	1.332	.187	.897	1.115
Married	-.183	-.740	.462	.722	1.384
Education (Read/Write)	-.048	-.170	.866	.568	1.762
Education (Primary/Preparatory)	-.078	-.237	.814	.600	1.667
Education (Secondary)	-.761	-2.538	.013	.493	2.030
Education (Two Years Institute)	-.432	-1.163	.249	.703	1.422
Education (University)	-.417	-1.254	.214	.547	1.828
Amount of the loan	2.10E-005	.610	.544	.819	1.221
Number of HH members	.007	.077	.939	.290	3.451
Age at loan	.018	1.239	.219	.317	3.157
Years since loans taken	.062	.495	.622	.828	1.208
Observations: 81, R=0.43, R^2=0.176, Adjusted R^2=0.171					

Source: Author's calculations based on First Microfinance data and a field survey on its borrowers

Although some studies attempted to measure the effectiveness of microfinance in reducing poverty – such as the study conducted by Abou Ali, El-Azouny, El-Laithy, and Haughton on the SFD in Egypt and Khandker (2009) on Bangladesh, with both showing that microcredit was significantly effective in reducing poverty among borrowers – they did not

address the variables determining its effectiveness. Comparing the initial results of this research with similar studies that have examined the variables affecting microcredit effectiveness, the significant variables were found to be different from those of the Ghanaian case study, which were age and the amount of the loan (Adjei, Arun and Hossain, 2009). Similarly, according to the study conducted by Coleman (1999) in Northwest Thailand, it was found that years since loan was taken, as a variable, does not affect welfare measures but rather the amount of loan was proven to be a positive and significant determinant of the change in wealth.

Additionally, sensitivity analysis is conducted to ascertain whether the wealth index is an adequate measure of welfare. This is accomplished by running the models using the most affected change in assets owned, measured by the highest mean of the asset. Many studies followed this approach, such as Churchill (1995), Montgomery, Bhattacharya and Hulme (1995), and others. Two assets were observed to be the most positively affected; the mobile and the half-automatic washer machine. The models are run using each of those assets as a dependent variable.

Table 4-5: Ordinary Least Square Estimates for Full Sample of borrowers with Change in Mobile Ownership as the Dependent Variable

Model	Coefficients	t	Sig.	Collinearity Statistics	
				Tolerance	VIF
(Constant)		3.146	.002		
Gender	.023	.278	.782	.949	1.053
Married	-.097	-1.133	.259	.856	1.168
Education (Read/Write)	-.141	-1.371	.173	.590	1.696
Education (Primary/Preparatory)	-.195	-2.032	.044	.674	1.484
Education (Secondary)	-.258	-2.380	.019	.530	1.886
Education (Two Years Institute)	-.042	-.461	.645	.761	1.313
Education (University)	-.201	-2.055	.042	.652	1.534
Amount of the loan	.058	.667	.506	.819	1.221
Number of HH members	.242	1.980	.050	.418	2.393
Age at loan	-.176	-1.507	.134	.456	2.191
Years since loans taken	.201	2.363	.020	.859	1.164
Observations: 151, R=0.43, R^2=0.185, Adjusted R^2=0.181					

Source: Author's calculations based on First Microfinance data and a field survey on its borrowers

Table (4-5) shows the results of the first Ordinary Least Squares Regression model (for the whole sample; 151 borrowers) where the dependent variable is the change in mobile ownership. From the table, five variables are significant since their p-values are less than 0.05. These include primary/preparatory education, secondary education, university education, number of households' members, and years since the loans were taken. From the table, the effects of primary/preparatory, secondary, and university education on the change in wealth are surprisingly and significantly less than the impact of being illiterate, which is the omitted variable in the regression. This is interpreted as the increase of number of educated people by one unit leads to the decrease in change in wealth measured by assets owned by 0.195, 258, and 0.201 respectively. The number of households' members and years elapsed since the loan was taken

positively affect the change in wealth measured by the change in mobile ownership. This is interpreted as the decrease of households' number by one unit would increase the change in wealth by 0.242, while every year that elapses after the loan was taken leads to an increase in wealth by 0.201. Testing for multi-collinearity, the tolerance and VIF values showed that there is no multi-collinearity since all the VIF values, which are the inverse of the Tolerance, are below 5.

Table 4-6: Ordinary Least Squares Estimates for Borrowers Who Have Taken Loans for More than Two Years with Change in Mobile Ownership as the Dependent Variable

Model	Coefficients	t	Sig.	Collinearity Statistics	
				Tolerance	VIF
(Constant)		2.654	.010		
Gender	-.001	-.008	.994	.931	1.074
Married	.090	.699	.488	.820	1.220
Education (Read/Write)	-.047	-.305	.762	.571	1.751
Education (Primary/Preparatory)	-.174	-1.246	.218	.706	1.416
Education (Secondary)	-.124	-.763	.449	.522	1.916
Education (Two Years Institute)	-.003	-.022	.983	.750	1.332
Education (University)	-.142	-1.057	.295	.764	1.309
Amount of the loan	.290	2.335	.023	.893	1.120
Number of HH members	.268	1.639	.107	.513	1.948
Age at loan	-.293	-1.809	.076	.523	1.912
Years since loans taken	-.136	-1.082	.284	.875	1.142
Observations: 70, R=0.43, R^2=0.195, Adjusted R^2=0.191					

Source: Author's calculations based on First Microfinance data and a field survey on its borrowers

Then a separate regression was conducted for the group of borrowers who have taken loans for more than two years. Table (4-6) displays the results of this model. One variable showed positive significance, with p-value less than 0.05, which is amount of the loan. An increase in the loan amount by one unit leads to an increase in change in wealth, measured by change in mobiles owned, by 0.290.

Table 4-7: Ordinary Least Squares Estimates for Borrowers Who Have Taken Loans for Two years or Less with Change in Mobile Ownership as the Dependent Variable

Model	Coefficients	t	Sig.	Collinearity Statistics	
				Tolerance	VIF
(Constant)		1.751	.084		
Gender	.062	.535	.594	.897	1.115
Married	-.217	-1.666	.100	.722	1.384
Education (Read/Write)	-.145	-.986	.328	.568	1.762
Education (Primary/Preparatory)	-.209	-1.461	.148	.600	1.667
Education (Secondary)	-.354	-2.247	.028	.493	2.030
Education (Two Years Institute)	-.040	-.299	.765	.703	1.422
Education (University)	-.228	-1.526	.131	.547	1.828
Amount of the loan	-.002	-.017	.986	.819	1.221
Number of HH members	.172	.835	.407	.290	3.451
Age at loan	-.055	-.280	.780	.317	3.157
Years since loans taken	.091	.750	.456	.828	1.208
Observations: 81, R=0.43, R^2=0.175, Adjusted R^2=0.171					

Source: Author's calculations based on First Microfinance data and a field survey on its borrowers

This regression was conducted for borrowers who have taken loans for two years or less. The above table (Table 4-7) shows that there is only one significant variable at 90%, which is

marital status, but with a negative coefficient. The interpretation of this result is that married people are likely to have a decrease in their wealth, compared to those unmarried, by 0.217.

The second highest mean of change in assets ownership is that of the half automatic washer machine. The following set of regressions considers the change in ownership of this asset as the dependent variable.

Table 4-8: Ordinary Least Square Estimates for Full Sample of borrowers with Change in Half-automatic Washer Ownership as the Dependent Variable

Model	Coefficients	t	Sig.	Collinearity Statistics	
				Tolerance	VIF
(Constant)		-.388	.699		
Gender	.031	.390	.697	.949	1.053
Married	.025	.298	.766	.856	1.168
Education (Read/Write)	.012	.118	.906	.590	1.696
Education (Primary/Preparatory)	-.020	-.214	.831	.674	1.484
Education (Secondary)	.160	1.518	.131	.530	1.886
Education (Two Years Institute)	.068	.773	.441	.761	1.313
Education (University)	.182	1.919	.057	.652	1.534
Amount of the loan	-.111	-1.312	.192	.819	1.221
Number of HH members	.121	1.025	.307	.418	2.393
Age at loan	-.001	-.005	.996	.456	2.191
Years since loans taken	.309	3.743	.000	.859	1.164
Observations: 151, R=0.43, R^2=0.185, Adjusted R^2=0.181					

Source: Author's calculations based on First Microfinance data and a field survey on its borrowers

Table (4-8) shows the results of the first Ordinary Least Squares Regression model (for the whole sample; 151 borrowers) where the dependent variable is the change in half automatic washer machine ownership. From the table, one variable is significant at 100% since its p-value is

zero which is years since the loan was taken. This is interpreted as the increase of number of years elapsing since loan is taken by one unit leads to the increase in change in wealth, measured by half automatic washer machine owned, by 0.309. This could be explained as the more time elapses, the loan is repaid and experience is accumulated. The university education variable is positively significant with 90%. As the number of people with university education increases by one unit, the wealth increases by 0.182. Testing for multi-collinearity, the tolerance and VIF values showed that there is no multi-collinearity since all the VIF values, which are the inverse of the Tolerance, are below 5.

Table 4-9: Ordinary Least Squares Estimates for Borrowers Who Have Taken Loans for More than Two Years with Change in Half-automatic Washer Ownership as the Dependent Variable

Model	Coefficients	t	Sig.	Collinearity Statistics	
				Tolerance	VIF
(Constant)		-.702	.485		
Gender	070	.588	.559	.931	1.074
Married	.042	.333	.741	.820	1.220
Education (Read/Write)	-.040	-.264	.793	.571	1.751
Education (Primary/Preparatory)	-.140	-1.020	.312	.706	1.416
Education (Secondary)	.064	.402	.689	.522	1.916
Education (Two Years Institute)	-.077	-.576	.567	.750	1.332
Education (University)	-.048	-.362	.719	.764	1.309
Amount of the loan	-.020	-.162	.872	.893	1.120
Number of HH members	.065	.400	.690	.513	1.948
Age at loan	.008	.050	.960	.523	1.912
Years since loans taken	.381	3.082	.003	.875	1.142
Observations: 70, R=0.43, R^2=0.195, Adjusted R^2=0.191					

Source: Author's calculations based on First Microfinance data and a field survey on its borrowers

Then a separate regression was conducted for the group of borrowers who have taken loans for more than two years. Table (4-9) displays the results of this model. One variable showed a positive significance, with a p-value of less than 0.05, which is years elapsed since loan taken. The increase of the years elapsed since loan was taken by one year leads to the increase in change in wealth measured by change in half automatic washer machine owned by 0.381.

Table 4-10: Ordinary Least Squares Estimates for Borrowers Who Have Taken Loans for Less than Two Years with Change in Half-automatic Washer Ownership as the Dependent Variable

Model	Coefficients	t	Sig.	Collinearity Statistics	
				Tolerance	VIF
(Constant)		.054	.957		
Gender	-.023	-.192	.849	.897	1.115
Married	.012	.091	.928	.722	1.384
Education (Read/Write)	.055	.369	.714	.568	1.762
Education (Primary/Preparatory)	.090	.621	.537	.600	1.667
Education (Secondary)	.231	1.451	.151	.493	2.030
Education (Two Years Institute)	.203	1.522	.133	.703	1.422
Education (University)	.397	2.621	.011	.547	1.828
Amount of the loan	-.227	-1.839	.070	.819	1.221
Number of HH members	.145	.695	.489	.290	3.451
Age at loan	.004	.020	.984	.317	3.157
Years since loans taken	-.028	-.229	.820	.828	1.208
Observations: 81, R=0.43, R^2=0.175, Adjusted R^2=0.171					

Source: Author's calculations based on First Microfinance data and a field survey on its borrowers

The above table (Table 4-10) shows that there is only one variable positively significant at 95%, which is the university education. The interpretation of this result is that people with university education are likely to have increase in their wealth compared to those who are illiterate by 0.397.

Table 4-11: Summary of Significant Variables at 95% for the Three Dependent Variables

Dependent Variable	Whole Sample	More than 2 years since loan taken	Two years or Less since loan taken
Wealth change	Secondary Education, negative	Years since loan taken, positive	Secondary Education, negative
	Years since loan taken, positive		
Mobile change	Number of HH members, positive	Amount of the loan, positive	
	Years since loan taken, positive		
	Primary/Preparatory Education, negative		
	Secondary Education, negative		
	University Education, negative		
Half Automatic Washer change	Years since loan taken, positive	Years since loan taken, positive	University Education, positive

Source: Author's calculations

Table (4-11) summarizes the findings of all the previous regressions models. In the first case, where the dependent variable used is wealth change measured by change in all assets ownership, the years since loan taken showed a positive significance that is logically acceptable. This is because the longer time passes after the loan is acquired, the more experience in managing the project is gained and the loan is repaid, which enables the entrepreneurs to direct more money to the investments. Surprisingly, the secondary education proved to be negatively significant. This could be attributed to the less experience gained throughout the entrepreneur's life as he/she spent his/her time in education, while the illiterate entrepreneurs gained more technical experience while working.

In the second case, where the change in mobile ownership is used as the dependent variable, the model showed five significant variables. Number of households' members and years since loans were taken showed positive significance. This is interpreted as the lower the number of family dependents, the more well-off the family becomes. As for the years since loan was taken, the interpretation is the same as it was in the first case.

The third case, where the half automatic washer machine was used as the dependent variable, two variables showed positive significance. The two variables are the years since loan was taken and the university education. The years since loan was taken affects positively the change in wealth because it allows for more experience in managing the project and the loan is repaid, which enables the entrepreneurs to direct more money to the investments. Unlike previous results, the university education showed a positive effect on change in wealth in the case that people had the loan for two years or less. Actually, two years are not enough to measure the effect of microfinance on change in wealth; hence, interpreting the variables affecting efficiency of microfinance is not so reliable.

Since the model revealed some surprising results concerning the levels of education variable, testing for the interactions between level of education attainment and other variables in the model was done and the results will be shown in the following section. Firstly, an interaction between gender and levels of education was analyzed, but the results showed the insignificance of the model. Then, interaction between type of project and levels of education was tested, which showed significance despite the type of project variable by itself, using chi-square test, showing insignificance.

There are three types of projects: manufacturing, trading, and services. Transforming this variable into a dummy, the manufacturing was used as the reference type. The model was run for the other two types after computing the interaction with education variables. The model of the services interacted with education showed insignificance while the trade when interacted with the education model showed high significance.

Table 4-12: Ordinary Least Squares Estimates for Interaction Between Trade Type of Project and Level of Education Using Change in Wealth Measured by Assets Ownership as the Dependent Variable

Model	Coefficients	t	Sig.	Collinearity Statistics	
				Tolerance	VIF
(Constant)		-.173	.863		
Trade & Read/Write	.239	2.942	.004	.945	1.059
Trade & Prim/Prep	-.007	-.087	.931	.967	1.034
Trade & Secondary	-.061	-.755	.451	.945	1.059
Trade & Two-year institute	-.092	-1.148	.253	.980	1.021
Trade & University	-.123	-1.536	.127	.967	1.034
Observations: 151, R=0.31, R^2= 0.10, Adjusted R^2 = 0.094					

Source: Author's calculations

From table (4-12), the trade accompanied by read and write ability variable showed high and positive significance. The increase of people who are working in the trade sector and are able to read and write by one unit leads to the increase in the change in wealth by 0.239 when compared to the illiterate beneficiaries. This could be attributed to the necessity of people who work in trade to be able to read and write in order to manage their business.

Testing for the correlations between the independent variable and the dependent variables is another source of confirming the relationships between variables and their directions. The following table shows the correlation between the wealth index and the level of education.

Table 4-13: Correlation between Wealth Index and Level of Education

			Wealth index change	Level of Education
Kendall's tau_b	Wealth index change	Correlation Coefficient	1.000	-.209(**)
		Sig. (2-tailed)	.	.001
		N	151	151
	Level of Education	Correlation Coefficient	-.209(**)	1.000
		Sig. (2-tailed)	.001	.
		N	151	151
Spearman's rho	Wealth index change	Correlation Coefficient	1.000	-.264(**)
		Sig. (2-tailed)	.	.001
		N	151	151
	Level of Education	Correlation Coefficient	-.264(**)	1.000
		Sig. (2-tailed)	.001	.
		N	151	151

Source: Author's calculations
****Correlation is significant at the 0.01 level (2-tailed)**

Kendall's tau-b and Spearman's rho use the ranks of the data to calculate correlation coefficients. Since the wealth index and level of education variables are ordinal, Kendall' tau-b and Spearman's rho are suitable for the correlation test. Table (4-13) shows that the correlation test is significant at 99%. Also, the correlation between the two variables is not high and its direction is negative. This is the same result derived from the regression model previously conducted. The additional information from the correlation is that the correlation coefficients of both Kendall's and Spearman's show that the correlation is not so high, -0.209 and -0.264 respectively. Being negatively correlated means that the higher the levels of education beneficiaries have the less the positive change in their wealth indices. This might be because the experience in managing projects that illiterate beneficiaries have exceeds that of the more educated beneficiaries. This is due to the fact that illiterate beneficiaries spend more time in practical work than the educated beneficiaries. However, this does not mean that people should not be educated in order to have higher income. The lack of experience should be compensated by providing beneficiaries with more training before offering loans to them. According to the

survey conducted, none out of the 151 beneficiaries received any sort of training, although this is theoretically required according to the rules of the MFI.

After analyzing the results of the model and before writing the conclusion and policy implications, a qualitative research was conducted in order to validate results and explore more in-depth analysis. The qualitative analysis has many advantages; including studying a phenomenon in depth, as well as empowering marginalized populations through hearing their voices. Hearing the voice of beneficiaries adds strength to the findings of quantitative models. The interviews with 5 beneficiaries included the questions below:

- How did microcredit affect your income?
- List advantages and disadvantages you see in microcredit out of your experience
- What is more important to you in managing your project; technical experience or education?
- What sort of support do enterprises like yours now need after the revolution, and how can microfinance help?
- What are your suggestions to improve microfinance?

Concerning the effect on income, the discussions showed that microfinance had either created a source of income or increased existing income. The beneficiaries listed the advantages and disadvantages of microfinance from their own perspectives. The advantages listed were the ownership of business, flexible hours, and creating job opportunities. The disadvantages they mentioned were high interest rates, fines imposed on late repayment, and no training courses being offered.

After the beneficiaries mentioned the fines imposed on late repayment as a disadvantage, discussions revealed the existence of a vicious circle where loan takers cannot pay the high interest, while the MFIs raise interest rates to compensate the low repayment rates. The solution

to this vicious circle could be the new Islamic trend which offers loans without interest rates, with beneficiaries paying a percentage of their net profits.

Concerning the education and technical experience issue, beneficiaries stated that both complement each other. However, some prioritized technical experience. After the Egyptian revolution, they had some recommendations and requests regarding the enhancement of microfinance, including decreasing interest rates, organizing marketing fairs, providing export opportunities, facilitating regulations, and decreasing administration costs of loans. The area of Al-Darb Al-Ahmar is famous for producing carpentry and sea shells products; hence, many of the beneficiaries requested that MFIs could help them export their products.

To conclude, the negative significance of 'education levels' which was expected, before conducting the survey, to be a positively significant variable to change in wealth has revealed the importance of the accumulated technical experience. This was also validated through the sequential transformative strategy which allowed for more in-depth analysis through a qualitative research.

CHAPTER FIVE

5. CONCLUSION AND POLICY IMPLICATIONS

This study aims to measure the improvement of microcredit beneficiaries' quality of life. More precisely, the goal is to measure the effectiveness of microfinance in reducing poverty from the beneficiaries' perspective. This chapter attempts to take stock of all major efforts at poverty alleviation through microfinance in Egypt, as well as compare those attempts to others in developing countries such as Bangladesh, India and Indonesia. It also shows the legal and regulatory framework in which microfinance operates in Egypt. Finally, it presents the conclusions and policy implications derived from the findings of the survey conducted.

Typically, formal financial services are not available to poor people because of collateral requirements, high interest rates, and the complicated and long application procedures. The high interest rates caused by high transaction costs are attributed to the lack of collateral and the low amounts of the desired loans. In attempts to achieve poverty reduction in poor countries, the number of MFIs has grown rapidly, from 618 to 3,133 between 1997 and 2005, and, correspondingly, the number of clients who benefited from microfinance increased from 13.5 million to 113.3 million over the same period (Daley-Harris 2006).

The aim of micro-finance, according to Otero (1999), is not just to provide capital to the poor to combat poverty on an individual basis, but also to effect change at an institutional level. It seeks to create institutions that deliver financial services to the poor, who are continuously ignored by the formal banking sector. Littlefield and Rosenberg (2004) argue that the poor are generally excluded from the financial services sector of the economy, so MFIs have emerged to address this market failure. In most of the studies, the results show that microfinance does not help extremely poor people. This is because very poor people, who are often malnourished, ill,

and unskilled individuals, need, first of all, to be fed, cured and trained. These basic needs must be met before concentrating on establishing an income generating activity. Microfinance as an intervention would not be efficient to solve these problems (Segrado 2005).

It is known that there are two microfinance models in Egypt; NGOs and banks. It is estimated that Egypt's microfinance industry currently reaches only about 5% of the more than 2 million potential borrowers, but some MFIs believe that the market is much larger – up to 4 million – when households and underemployed persons are included.

In 2004, a National Strategy for Microfinance in Egypt was developed, and in December 2005 it was launched. Its objective was to develop a microfinance industry in which sustainable financial services for lower market segments are integrated into the overall development of a broad, inclusive, and diverse financial sector through adopting a Sector Development Approach. The Egyptian Banking Institute (EBI), the Social Fund for Development (SFD), the United Nations Development Program (UNDP), USAID, and the German Development Agency (KFW) joined efforts to put forward this strategy in order to enhance the legal and institutional environment in which microfinance operates in Egypt (The National Strategy for Microfinance in Egypt, 2005).

This national strategy came out with a number of initiatives, including the establishment of the Egyptian Microfinance Network by 12 NGO-MFIs and the SFD to represent the interests of the industry and support its growth and development; the establishment of the first MF policy forum by the Egyptian Microfinance Network (EMFN) to maintain a policy dialogue with the government to enhance the regulatory environment affecting MF industry; the development of the first MF Programs Map in Egypt and the first salary survey of staff working in MF Programs in Egypt by the EMFN with the technical support of USAID; the establishment of credit guarantee mechanisms to facilitate the access of NGO-MFIs to wholesale lending by banks; the

establishment of a credit information sharing system among the member MFIs of EMFN, which will eventually share information with the private credit bureau in Egypt (I-Score); and the implementation of several training and technical assistance programs to support the institutional development of MFIs with the support of donors (e.g. USAID, KFW, and EU) (USAID, 2009).

However, such imperative initiatives did not highly influence the microfinance industry in Egypt. This implies that microfinance has unknown problems that are yet to be discovered. Accordingly, this research attempted to search for these unknown and unusual challenges.

As some literature emphasized, this research also found that microfinance should be evaluated as a tool for eradicating only poor people, and not those who are very poor. The beneficiaries of this study were all among poor people, not the very poor, since they were not under the poverty line before acquiring the loan and since 80% of them were literate. Some of the beneficiaries may well have been on the edge of the virtual line, but were not under it. The results of this study show that there is an enhancement in the status of the borrowers measured by the assets owned.

Another challenge that hinders the effect of microfinance on the Egyptian economy is the weak institutional linkages between the programs targeting SMEs in Egypt. In other words, there is little opportunity for maximizing complementarities between public programs to generate positive spill-over effects. Also, access to services is still concentrated in the Greater Cairo and Alexandria urban regions. Thus, OECD (2010) recommended that the institutional setting of MSME policy be reconfigured with a single body overseeing and co-ordinating the work of the ministries. In addition, a one-stop shop arrangement for assisting and informing SME should be rolled out across Egypt's regions, as applied in Morocco in their Regional Investment Centers.

Based on the findings of this study, the current system of FMF does not lead to the most desirable result. Education was found to be negatively correlated with a positive change in

income, which initially may seem counterintuitive. However, more analysis revealed that the uneducated entrepreneurs had more time throughout their lives to be practically trained. This does not mean to encourage illiteracy, but rather means that increasing, or even introducing, enough practical training to the loan applicants before handing them loans may be beneficial. The training should include the technical aspect as well as the financial, marketing, and managerial aspects. The survey showed that none out of the 151 interviewees received any sort of training.

The analysis showed that 72.2% admitted that their incomes have increased, which is the same percentage as the repaying beneficiaries. This indicates that the main incentive to pay back a loan is the experience of a real increase in income. Therefore, feasibility studies should be an essential prerequisite before any applicant is issued a loan. This is applied in almost all big microfinance institutions, such as the SFD, Banque Misr, Credit Agricole Bank, and the Egyptian National Bank. However, this is not always followed in smaller MFIs. Lack of proper feasibility studies leads to incurring losses for both parties: the beneficiaries and the MFIs. Therefore, it is highly recommended for MFIs to help beneficiaries in such studies prior to the loan approval.

Many studies agree that microfinance is effective for only poor people, and not those who are very poor, as they already lack life essentials. Therefore, MFIs must be more selective in choosing clients. This selectivity would be designed to prevent wasting resources and compromising their sustainability due to the low rates of repayment. Researchers must search for other alternatives for very poor people, other than microfinance.

Micro, small, and medium-sized enterprises (MSMEs) account for about 90% of active enterprises in Egypt and contribute to over 80% of GDP and 75% of total employment. Despite this, according to a survey conducted by NILEX (the Egyptian stock exchange for growing medium and small companies), although 75% of SMEs apply for banking loans, 92% of

applications are rejected. Therefore, loans to SMEs account for only 6% of the total loan portfolio of Egyptian banks.

Since law is an essential regulator of any activity, presenting the legal and regulatory framework related to MFIs is crucial. Legally, under Egyptian law there is no explicit legal requirement to obtain permission to lend, but there are different laws related to the MF industry in Egypt. These include the NGO Law, the Banking Law, and the Single Regulator Law (and the draft General Rules for MFCs to be issued), in addition to other relevant laws that affect the industry.

Laws related to MFIs involve NGOs, Banks, Microfinance Companies, and Cooperatives. Firstly, according to the NGO law, an NGO can be registered as an association or a foundation. To register as an association, an NGO must: (i) be incorporated by at least ten individuals and/or legal entities, (ii) managed by a board of directors of five to fifteen members, and (iii)have the number of Egyptian members of the board of directors equal to or greater than the number of non-Egyptian members of the NGO. A foundation can be registered by one or more individuals and/or legal entities who wish to allocate funds or moveable or fixed assets to the benefit of the foundation, or for nonprofit purposes. The NGO law was issued to govern NGOs that provide community development services. Thus, the law does not differentiate between NGO-MFIs and any other NGO implementing community service programs.

Secondly, the minimum capital requirement for Egyptian banks is EGP 500 million, or USD 50 million or its equivalent in free currency for branches of foreign banks. There are no legal or regulatory obstacles to direct lending by licensed banks to micro-entrepreneurs or poor clients. The main problem is that in addition to outreach constraints and lack of experience or interest in microfinance, the Banking Law and CBE's policies are not deliberate with regards to microfinance, and therefore do not provide incentives for banks to engage in the provision and/or

expansion of their microcredit programs. In addition, the Central Bank of Egypt's loan classification and provisioning requirements limit a bank's ability to grant unsecured loans, which is a common feature of micro-loans where borrowers have little or no physical collateral.

Thirdly, the new Single Regulator Law and the proposed draft of the General Rules for Microfinance Companies will facilitate commercial micro-lending. With the exception of taking deposits, foreign exchange, and remittance services, the proposed draft General Rules for Microfinance Companies allows MFCs to provide direct credit to individuals, households, entrepreneurs, and companies, with or without tangible collateral. MFCs can also provide other non-banking financial services after fulfilling the conditions and requirements of the relevant laws (e.g., insurance law in case of micro-insurance and leasing law in case of micro-leasing). Generally, microfinance companies are considered to be a new concept in the Egyptian microfinance market whose impact should be evaluated.

The fourth entities are the cooperatives that are registered and supervised by the Ministry of Social Solidarity with basic reporting requirements. In addition to individuals, other cooperatives and NGOs are allowed to own shares in a cooperative. Any member of a cooperative cannot own more than 20 percent of its shares, with the exception of public entities. A cooperative can only lend to its members and all loans should be used for the purpose of productive activities similar to the cooperative's objectives and within its geographic area. Still, cooperatives are not yet as widely spread in Egypt as NGOs or banks.

Incorporating the legal framework in which microfinance operates into the results of this research, coordination should take place between all entities working in the microfinance industry. This will enable beneficiaries to find more choices that better suit their needs from training, insurance services, having feasibility studies before starting their project, and having the exposure to internal and external exhibitions to market the products. Actually, GAFI is planning

to establish a network of SME centers across the country. They could act as contact points, gathering information about all the government's SME programs and thus guiding beneficiaries in the right direction. This initiative should be properly marketed and publicized. Sometimes many useful initiatives and programs are not well communicated to relevant people, leading to the misallocation of resources.

Commercialization of microfinance has gained momentum since the 1990s (Drake and Rhyne 2002; Cull, Demirguc-Kunt and Morduch 2008). However, starting in 2005 the global trend to commercialize microfinance was intensified. Egypt's strategy targets the economically active poor, and is based on the concept that the commercialization of the microfinance industry encourages competitiveness and innovation, thus redirecting the trajectory of this sector from a subsidy based to a market driven approach. In Indonesia, commercialization of microfinance was widely implemented. According to Hamada (2010), commercialization alone does not automatically solve the problem of funding, but rather faces another problem, namely the difficulty of fund mobilizing. Hamada (2010) challenges the ability of commercialized MFIs to reduce poverty among the poor and the poorest. This is because the commercialized MFIs might shift away from serving poor clients in pursuit of commercial viability, which is referred to as mission drift (Kono & Takahashi, 2010).

Accordingly, commercialization is not the magical solution to solve the MFIs financial sustainability problem because it will compromise the benefits to the poor. Thus, the solution is ensuring efficiency in managing the available resources. Since the results proved that training prior to starting the project is essential, it is highly recommended to have a governmental supervisory entity that ensures MFIs are providing sufficient training sessions to all beneficiaries prior to approving loans requests. Moreover, this entity should ensure that MFIs are closely monitoring the performance of all the entrepreneurs and providing assistance when needed. MFIs are considered a tool for economic development rather than being considered a bank; therefore,

their chief role should be enhancing the capacity building of micro borrowers. However, some MFIs lack the necessary skills required for this mission. The solution for this could be modifying the NGO laws which do not differentiate between NGO-MFIs and any other NGO implementing community service programs. This differentiation should be in the terms of imposing certain conditions on MFIs before registering them, including the obligation to have proper training capacities and staff able to prepare feasibility studies and monitor the enterprises throughout the loan period.

In brief, when microfinance was known as a poverty reduction tool, it has caused a long debate to take place among researchers. Later, as many researchers found it beneficial in alleviating poverty albeit with a questionable magnitude, the debate took another trend. The new debate is about how to manage microfinance more efficiently; whether to commercialize it or not. In Egypt, a new initiative is taking place which is to convert the microfinance current system to the Islamic one. This will create a debate among defenders and those who oppose this initiative. In general, the debate about microfinance impact on poverty reduction has slowed down while another set of debatable issues related to increasing microfinance efficiency has evolved.

Almost all studies have limitations and this study is no exception. The limitation is the existence of a missing variable, which is the accumulated experience. Drawing from two sources, the importance of experience was found to exceed the importance of education. The first source is the negative significance of education, which was then confirmed by an in-depth analysis using a qualitative method. Therefore, there is a missing variable in the model, namely the years of experience the beneficiary had before obtaining the loan. However, this variable is very tricky when used because the quality of accumulated experience and the level of experience are not measurable because people may exaggerate the number of years of experience they have. In other words, "years of experience" variable is not very indicative. Still, this difficulty does not eliminate this pragmatic limitation.

On the other side, this research has its own contribution compared to other studies. Level of education is usually measured as the number of years of education, but in this study this variable was divided into six dummy variables starting from the illiterate and going to the university educated. Moreover, when the education showed negative significance to change in wealth index, interaction between education and other variables was conducted. Additionally, sensitivity analysis using the assets owned with the most positive change as dependent variables and the same independent variables. Lastly, the study used qualitative research before drawing conclusions in order to test and validate the findings that arose from the quantitative model.

1) Name:

2) Gender:

3) Age:

4) Marital status:

5) Number of children (if any): Girls ☐ Boys ☐

6) Level of education:

a) Illiterate
b) Read/Write
c) Primary
d) Prep.
e) Technical Secondary
f) General Secondary
g) 2-year Higher Institute
h) 4-year University

7) When did you get the loan?

8) How much is the loan amount? .....

9) Are you paying the loan in time? Yes ☐ No ☐

10) What is your project type? ……

11) How many workers work with you?

12) Did your income level increase after getting the loan? Yes ☐ No ☐

13) How much was your monthly income before getting the loan?

……

14) How much is your monthly income after getting the loan?

……

15) What type of dwelling does your household live in?

a) Apartment ……..… …..1
b) Free Standing House ……2
c) Shared Apartment…… 3
d) Single Room ……..… 4
e) Other _____ 6

16) Is your dwelling owned or rented by your household?
a) OWNED ……..……..…. 1
b) OWNED JOINTLY ……2
c) RENTED ……..…..…… 3
d) OTHER _____6

17) Is this the same place you used to live in before getting the loan? Yes ☐ No ☐

18) If No, how was your first residence look like?
a) OWNED ……1
b) OWNED JOINTLY ……2
c) RENTED ……. 3
d) OTHER _____6

Does your household have:	Before the loan	After the loan
19) Electricity?	Yes No	Yes No
20) A radio with cassette recorder?	Yes No	Yes No
21) A color television?	Yes No	Yes No
22) A black and white television?	Yes No	Yes No
23) A video or DVD player?	Yes No	Yes No
24) A mobile?	Yes No	Yes No
25) A telephone?	Yes No	Yes No
26) A satellite dish?	Yes No	Yes No
27) A personal home computer?	Yes No	Yes No
28) A sewing machine?	Yes No	Yes No

29) An electric fan?	Yes No	Yes No
30) An air conditioner?	Yes No	Yes No
31) A refrigerator?	Yes No	Yes No
32) An automatic clothes washer?	Yes No	Yes No
33) A half automatic clothes washer?	Yes No	Yes No
34) A half automatic clothes washer?	Yes No	Yes No
35) Private toilet?	Yes No	Yes No

36) What kinds of toilet facility do members of your household usually use?

	Before loan	After loan
a. Modern Flush Toilet	Yes No	Yes No
b. Pit Toilet/Latrine Toilet	Yes No	Yes No

Does any member of this household own:	Before the loan	After the loan
37) A watch?	Yes No	Yes No
38) A bicycle?	Yes No	Yes No
39) A motorcycle or motor scooter?	Yes No	Yes No
40) An animal-drawn cart?	Yes No	Yes No
41) A car or truck?	Yes No	Yes No

42) Your project is achieving?

Losses ☐ Profits ☐ Neutral (costs = profits) ☐

43) Do you suffer from any problems in your project? Yes ☐ No ☐

44) If yes, what are these problems? (choose one or more)

a) Product demand is not sufficient
b) Competition is very high
c) Unskilled Labor
d) More funds are needed to develop the project
e) Other, …….

45) Who work with you?
a) Members of your family
b) Relatives
c) Others

46) Did you use funds from other sources (including your own money) in addition to the loan in financing your project?

Yes ☐ No ☐

47) Did you take any training from the organization accompanying taking the loan?

Yes ☐ No ☐

48) If yes, what are them? ……..

49) What is your assessment to the microfinance program?

Very good Good Bad Very bad

50) Why in all cases?

1. Increased income
2. Established project
3. High interest Rate
4. Low Interest Rate
5. Forbidden religiously "Haram"

Bibliography:

Abou Ali Hala, El-Azouny Hesham, El-Laithy Heba, Haughton Jonathan and Khandker Shahidur R. (2009) "Evaluating the Impact of Egyptian Social Fund for Development Programs"

Adjei Joesph Kimos, Arun Thankom and Hossain Farhad (2009) "The Role of Microfinance in Asset-Building and Poverty Reduction: The Case of Sinapi Aba Trust of Ghana", Brooks World Poverty Institute, BWPI working paper 87, Manchester University.

Ahlin, C., & Jiang, N. (2008). Can micro-credit bring development? Journal of Development Economics, 86(1), 1-21.

Amin, R., S. Becker, and A. Bayes (1998) "NGO-promoted Microcredit Programs and Women's Empowerment in Rural Bangladesh: Quantitative and Qualitative Evidence," Journal of Developing Areas 32:2, 222–236..

Ahmed, Zahid Shahab, (2003) "Poverty Alleviation through Micro-credit" Pakistan.

Al Amana Microfinance, http://www.alamana.org/

Alkire, Sabina (2008) "Choosing Dimensions: The Capability Approach and Multidimensional Poverty" MPRA Paper No. 8862

Arun, Thankom, Imai, Katsushi, Sinha, Frances, (2006) "Does the Microfinance Reduce Poverty in India? Propensity Score Matching based on a National level Household Data."

Asian Development Bank (2000) "Finance for the Poor: Microfinance Development Strategy" Manila: Asian Development Bank.

Balkenhol, Bernd, (2006) "The Impact of Microfinance on Employment: what do we know?" Bureau of Statistics, ILO.

Barsoum, Ghada, "Who Gets Credit? The Gendered Division of Microfinance Programs in Egypt" (2006) Canadian Journal of Development.

Basu, Anupam, Blavy, Rodolophe, and Yulek, Murat (2004) "Microfinance in Africa: Experience and Lessons from Selected African Countries" IMF working paper WP/04/174.

Baulch, Robert and Neil McCulloch (2000), 'Tracking pro-poor growth.' ID21 insights No. 31. Sussex: Institute of Development Studies

Benito, Carlos A., (2000) "the causes of poverty in Latin America and the Caribbean: The role of political institutions and governance", Sonoma State University, Economics Department Rohnert Park, California.

Bendig, Mirko and Giesbert, Lena and Steiner, Susan (2009) "Savings, Credit and Insurance: Household Demand for Formal Financial Services in Rural Ghana".

Bourguignon, Francois and Chakravarty, Satya R. (2003) "The measurement of Multidimensional Poverty". Journal of Economic Inequality.

Brandsma, Judith and Chaouali, Rafika (1998) “Making Microfinance Work in the Middle East And North Africa” World Bank

Calkins, Keith G., (2009) http://www.andrews.edu/~calkins/math/edrm611/edrm13.htm

Lukas Menkhoff and Ornsiri Rungruxsirivorn, "Village Funds and Access to Finance in Rural Thailand", Discussion Paper No. 417.

Case, A. and A. Deaton. (2002) “Consumption, health, gender and poverty”. Working Paper Princeton University, 7/02.

Churchill, Craig F. 1995. “The Impact of Credit on Informal Sector Enterprises in South Africa: A Study of Get Ahead Foundation’s Stokvel Lending Programme.” Clark University MA Thesis, Worchester, MA.

Clark, Heather. (2001) "Islamic Banking Principles Applied to Microfinance Case Study: Hodeidah Microfinance Program, Yemen", Special Unit for Microfinance (SUM), United Nations Capital Development Fund (UNCDF).

Coleman, B. (1999) “The Impact of Group Lending in Northeast Thailand”. *Journal of Development Economics*, 60: 105–141.

Creswell, John W. (2009) “Research Design, Qualitative, Quantitative, and Mixed Methods Approaches” Third Edition, SAGE

Cull, Robert, Asli Demirgüç-Kunt and Morduch, Jonathan, (2008) “Microfinance meets the market”, World Bank, Policy Research Working Paper 4630.

Cuong, N.V., Bigman, D., den Berg, M.V., & Thieu, V. (2007). “Impact of micro-credit on poverty and inequality: The case of the Vietnam Bank for social policies, Paper submitted to a conference called: Microfinance: What Do We Know?” Groningen, the Netherlands

Daley-Harris, S. (2006) “State of the Microcredit Summit Campaign Report”

Drake, D and Rhyne, E (2002) “The commercialization of microfinance: balancing business and development” Bloomfield, Conn., Kumarian Press.

Deutsch, J. and J.G. Silber. (2005) “Measuring multidimensional poverty: An empirical comparison of various approaches”. Review of Income and Wealth, 51; 145-174.

Duclos Jean-Yves, Sahn David E. and Younger Stephen D. (2008), “Robust Multidimensional Poverty Comparisons” A conference in Brazil titled “The many dimensions of poverty”

Eastwood, Robert and Lipton, Michael (2001) “Pro-poor Growth and Pro-growth Poverty Reduction" Asian Development Bank.

El-komi, Mohamed and Croson, Rachel (2010) “Microfinance Experiments: Equity Finance” University of Texas, Dallas

Filmer, Dean and Lant H. Pritchett, (2001), "Estimating Wealth Effects without Expenditure Data – or Tears: An Application to Educational Enrollments in States of India," *Demography*, volume 38 – number 1, 115-132.

Fusco, Alessio (2003), “On the definition and measurement of poverty: The contribution of multidimensional analysis”, University of Nice Sophia-Antipolis

Grameen Bank, http://www.grameen-info.org/

Hamada, Miki (2010) “Financial Services to the Poor: An Introduction to the Special Issue on Microfinance” The Developing Economies, March, vol. 48, no. 1 pp. 1–14

Hietalahti J and Linden M, (2006) “socio-economic impacts of microfinance and repayment performance: A case study of the small enterprise foundation, South Africa”.

Hossain, Farhad and Knight, Tonya (2008) "Financing the Poor: Can micro-credit make a difference? Empirical observations from Bangladesh", the University of Manchester: BWPI Working Paper 38.

Hossain, F. (2002), "Small Loans, Big Claims". Foreign Policy 12, 79-82.

Howe, L.D., Hargreaves J.R., Gabrysch S., Huttly, S. (2009) “Is the wealth index a proxy for consumption expenditure? A systematic review”, Journal of Epidemiology and Community Health.

Imai, Katsushi S. and Azam, Md Shafiul (2010), “Does Microfinance Reduce Poverty in Bangladesh> New Evidence from Household Panel Data” Research Institute for Economics and Business Administration, DP2010-24, Kobe University, Japan

Imai, Katsushi S., Arun, Thankum and Annim, Kobina Samuel (2010), “Microfinance and Household Poverty Reduction: New Evidence from India” Economics Discussion Paper Series-EDP-1008, Manchester University

Imbens, G. and J. D. Angrist (1994), “Identification and Estimation of Local Average

Treatment Effects”, Econometrica 62 (2), 467-475.

Iqbal, Farrukh and Riad, Nagwa (2004), “Commercial Microfinance in Egypt. The Case of the National Bank for Development”, World Bank.

Islam, Asadul (2007), "Using Non-Experimental Methods to Evaluate the Impact of Microfinance: Evidence from Bangladesh" Monash University, Australia and Bangladesh Institute of Development Studies (BIDS)

Islam, Nazrul (2009), "Can Microfinance Reduce Economic Insecurity and Poverty? By How Much and How?" DESA working paper No 82.

Islam, Tazul. "Microcredit and poverty alleviation" Ashgate Publishing Limited, 2007.

Jensen, Jette (2002) "Reducing the Gender Dimension of Poverty: Microfinance: policies, Processes and Practices." United Nations, Department for Economic and Social Affairs, Division of the advancement of women, Ghana.

Kai, Hisako and Hamori, Shigeyuki (2009), "Microfinance and Inequality", Kobe University.

Karnani, Aneel (2007), "Microfinance Misses its Mark", Stanford Social Innovation Review.

Khan, A.R. 2005. Growth, employment and poverty: An analysis of the vital nexus based on some recent UNDP and ILO/SIDA studies. Paper prepared under the joint ILO-UNDP program on Promoting Employment for Poverty Reduction.

Khandker, S. (1998) Fighting poverty with microcredit: experience from Bangladesh, New York: Oxford University Press for the World Bank.

Khandker, S. (2001) "Does Micro-finance Really Benefit the Poor? Evidence from Bangladesh", Asia and Pacific Forum on Poverty

Khandker, Shahid R. (2003) "Micro-Finance and Poverty, Evidence Using Panel Data from Bangladesh." Policy research working papers No 2945: World Bank.

Kondo, Toshio (2007), "Impact of Microfinance on Rural Households in the Philippines" Operations Evaluation department, Asian Development Bank.

Kono, Hisaki and Takahashi, Kazushi (2010), "Microfinance Revolution: Its Effects, Innovations, and Challenge" The Developing Economies 48, no. 1 pp. 15-73.

Lawson, David, McKay, Andrew and Okidi, John (2003)"Factors Affecting Poverty Dynamics and Persistence in Uganda", University of Nottingham.

Lenoir R. (1974), Les exclus. Un Français sur dix, Le Seuil or see Saith R., Social exclusion: the concept and application to developing countries, Queen Elizabeth House Working Paper Series N°72

Littlefield E., Rosenberg R. (2004), "Microfinance and the Poor: Breaking Down the Walls between Microfinance and the Formal Financial System" Finance & Development 41, no. 2, 38 – 40

Mallick R., (2002) “Implementing and evaluating micro-credit in Bangladesh, Development in Practice.”.

Massoumi, E. (1986), “The Measurement and Decomposition of Multidimensional Inequality”, Econometrica; 54; PP. 991-997.

Matovu, Dan (2006) “Microfinance and Poverty Alleviation, a case study of Uganda finance trust.”, Göteborg university.

McPhee, Chantal and St-Onge, Annette (2009) “Case study: Al Amana of Morocco”, Journal of Enterprising Communities: People and Places in the Global Economy; 3; PP.59-70

McKernan, Signe-Mary (2002) “The Impact of Microcredit Programs on Self-Employment Profits: Do Noncredit Program Aspects Matter?” The Review of Economics and Statistics, Vol. 84, No. 1, pp. 93-115.

Menon, Nidhiya (2006b) “Non-Linearities in Returns to Participation in Grameen Bank Programs.” Journal of Development Studies 42, no. 8: 1379–400.

Montgomery, Richard, Debapriya Bhattacharya, and David Hulme. (1995) “Credit for the Poor in Bangladesh: The BRAC Rural Development Programme and the Government Thana Resource Development Programme” Working Paper No. 12, University of Manchester, Institute for Development Policy and Management and the Department of Economics, University of Reading.

Morduch, Jonathan (1999) “The Microfinance Promise” Journal of Economic Literature, Vol. 37, No. 4, 1596 1614. Available online at: http://links.jstor.org/sici?sici=00220515%28199912%2937%3A4%3C1569%3ATMP%3E2.0.CO%3B2-F

Nanor, Michael Ayertey (2008), “Microfinance and Its Impact on Selected Districts in Eastern Region of Ghana”, Faculty of Social Sciences, College of Art and Social Sciences, Ghana

Osman, Magued, Zakareya Enas and Mahrous, Walaa, (2006) “Targeting The Poor In Egypt: A ROC Approach”, Economic Research Forum.

Panda, D. K. (2009), “Participation in the Group Based Microfinance and its Impact on Rural Households: A Quasi-experimental Evidence from an Indian State” Global Journal of Finance and Management, Volume 1, Number 2 (2009), pp. 171-183.

Planet Finance, (2008) “National Impact Survey of Microfinance in Egypt”, AKAM, CIDA, GTZ, IDRC, SFD, UNDP

Pitt, M. and S. Khandker (1998). "The Impact of Group-Based Credit Programs on Poor Households in Bangladesh: Does the Gender of Participants Matter ?" Journal of Political Economy 106(3): 958-997.

Ravallion, Martin and Chen, Shaohua (2003), "Measuring Pro-Poor Growth" *Economics Letters*, 78(1), 93-99.

Rawlings Laura, Sherburne-Benz Lynne and Domelen Julie Van (2004) "Evaluating Social Funds: A Cross-Country Analysis of Community Investments", World Bank

Remenyi, Joe and Quinones, Benjamin. (2000) "Microfinance and Poverty Alleviation: Case studies from Asia and the Pacific." New York. 79, 131-134, 253-263.

Ricardo N. Bebczuk, (2009) "SME Access to Credit in Guatemala and Nicaragua: Challenging Conventional Wisdom with New Evidence".

Richard, H. Adams, JR and John, Page (2003) "Poverty, Inequality and Growth in Selected Middle East and North Africa Countries, 1980-2000", World Bank.

Roodman, David and Morduch, Jonathan (2009) "The Impact of Microcredit on the Poor in Bangladesh: Revisiting the evidence", Center for Global Development.

Rutstein, Shea O. & Johnson, Kiersten (2004), "DHS Comparative Reports No. 6, The DHS Wealth Index", Measure DHS+

Salkind, Neil J., (2004) Statistics for People Who Think they Hate Statistics, second edition.

Sanabel, (2009) the Microfinance Network of the Arab Countries, "Microfinance Industry Profile.

Schmidt, M. & Kolodinsky, J. (2007). Microenterprise Development Program Success: A path analysis of factors that lead to and mediate client success. Journal of Developmental Entrepreneurship, 12(1), 47-69.

Segrado, Chiara. (2005) "Islamic microfinance and socially responsible investments", University of Torino.

Sen Amartya (1979), *Issues in the Measurement of Poverty*, Scandinavian Journal of Economics, 81, pp. 285-307

Sen, Amartya (1982), *Poverty and Famines: An Essay on Entitlements and Deprivation*, Oxford, Clarendon Press.

Sharma, Manohar (2000), "Impact of Microfinance on Poverty Alleviation: What Does Emerging Evidence Indicate?" International Food Policy Research Institute, Policy Brief No. 2

Segrado, Chiara (2005), "The involvement of commercial banks in microfinance: the Egyptian experience, case study" University of Toronto, Canada

Sherraden, Margaret S. (1998) *Community Economic Development and Social Work*. Binghamton, New York: Haworth Press. pp. 113–114.

Sinha, Frances (2003), "Impact Assessment of Microfinance in India" Paper prepared for the conference Current issues in Microfinance, South Africa

Stata Corporation, 2005, STATA 9 Reference Manual, College Station, Texas: STATA Press.

Steel, William F. and Andah, David O. (2003) "Rural and Micro Finance Regulation in Ghana: Implications for Development and Performance of the Industry, Africa Region Working Paper Series No. 49

USAID (2009) "The Legal and Regulatory Environment for Microfinance in Egypt" A Diagnostic Study with Focus on NGO-MFI Transformation Issues, Chemonics International Inc. in coordination with the Consultative Group to Assist the Poor (CGAP)

Vatta, Kamal, (2003) "Microfinance and Poverty Alleviation", Economic and Political Weekly, Vol. 38, No. 5, pp. 432-433.

Weiss, John, Montgomery, Heather and Kurmanalieva, Elvira, (2003) "Micro Finance and Poverty Reduction in Asia: What is the Evidence?" African Development Bank Institute.

Weiss, John, Montgomery, Heather and Kurmanalieva, (2005) "Great Expectations: Microfinance and Poverty Reduction in Asia and Latin America" African Development Bank Institute.

Yansaneh, Ibrahim S., (2003), "Construction and use of sample weights" United Nations Secretariat, Statistics Division.