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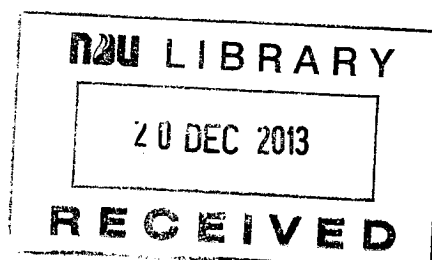# Faculty of Business Administration & Economics
Graduate Division

THE EFFECTS OF MICROFINANCE
ON POVERTY REDUCTION

**A Thesis Submitted in Partial Fulfillment
Of the Requirements for the Degree
Of the Master of Business Administration
(M.B.A.)**

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NDU-Lebanon
2013

Approval Certificate

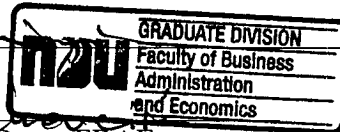# THE EFECTS OF MICROFINANCE ON POVERTY REDUCTION

BY

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DECLARATION

I hereby declare that this thesis is entirely my own work and that it has not been submitted as an exercise for a degree at any other University.

Lara Assad.Matar

ABSTRACT

After many years of civil war, which completely paralyzed the Lebanese economy and demolished the local businesses, it was not before the early 90's that Lebanon started the process of reconstructing the local economy.

It has succeeded into fostering one of the most advanced commercial banking sectors in the region.

For the poor in need of funds, banks were not the best answer to where they could resolve, thus the microfinance movement emerged to become the great innovation in financial intermediation that reduces the costs and risks of lending to poor households.

We will tackle the MFI program Ameen in this thesis and try to answer the main research question: what is the effect of microfinance on poverty reduction? A question that summarizes this memoir.

The literature part required an overview of lots of articles and books as well as academic books, those opened the door to develop my research question more and study the effect of microfinance.

In order to obtain a fruitful conclusion, we have conducted a panel data analysis to study the effect of different factors such as age, gender, economic sectors, number of children and the amount of the micro loan on household's consumption and income. We have deduced that microfinance is effective in reducing poverty within some limits

Keywords: microfinance effectiveness, microfinance ineffectiveness, Ameen/Vitas, household income, household consumption

LIST OF TABLES

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This thesis is the result of approximately 12 months of work, during this period I have been accompanied and supported by many people.

I am glad now to have the opportunity to express my sincere gratitude for all of them.

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Finally, I would like to express my deep sense of gratitude to my family, in particular my mother and father, who have always been a role model to me; a good example of determination and hard work. I acquired a lot of values through them as I witnessed really well that nothing happens due to a magic power, as in fairy tales, but every task in life happens due to work, ambition, and of course determination.

THE EFFECTS OF MICROFINANCE
ON POVERTY REDUCTION

Table of Contents

CHAPTER 1: Introduction

1.1 General background about the topic

Despite the fact that policy-makers are strenuously trying to improve the lives of the under-privileged; over one billion people in the world continue to live with per-capita income of less than one dollar per day. In fact, one of the Millennium Development goals is the alleviation of poverty and the fundamental transformation of economic and social structures. A way to attain these goals is to provide financial services to low income households, or those that have been excluded from the formal banking sector for lack of collateral for example. These financial resources are needed to improve someone's situation and help him avoid the poverty trap.

The problem in most developing countries is the lack of access to financial resources for the people who need it the most (Schrieder and Sharma, 1999) this is in general and in particular it is the case of Lebanon On one side some economists believe that this problem can be counteracted in these countries by introducing microfinance to their economic systems. On the other side, some detractors believe that government assistance often creates dependency and disincentive that makes matters worse not better. However despite the dim view of the few, excitement is building around a set of unusual financial institutions prospering in far-off corners of the world, namely Bolivia, Bangladesh, Indonesia and many more...

Even though most microfinance programs are not optimally designed nor offering the most desirable outcome, microfinance seems to offer a "win-win" solution, where both financial institutions and poor clients can profit. After all microfinance is a credit methodology, which employs effective collateral substitute for short-term and working capital loans to micro-entrepreneurs. (Hubka and Zaidi, 2005)

In Lebanon, the government has given very little support to low-income households to help them escape poverty. The main NGO-sponsored program designed to help these people is Ameen/Vitas. This Microfinance institution offers incentive micro-financial services to the disadvantaged people.

1.2 The need of the study

Poverty is the world's most essential issue nowadays. In Lebanon nearly 28 percent of the Lebanese population can be considered poor and eight percent as extremely poor (Laithy et al, 2008.). This raises the alarm for a need of a poverty-reduction program in Lebanon. Moreover, poverty is known to be the cause of many social problems like famine, lack of education, discrimination, heath problems, violence, remoteness ... All the above problems will adversely affect a country's economic, social, political and environmental development. In the literature about poverty, it is argued that the main reason for people living in poverty is the lack of access to finance. The concept of microfinance was considered as a solution to this problem. Its premise is to offer small loans to individuals or groups usually shunned by financial institutions due to their credit worthiness and/or lack of collateral and fixed income. This study will fill an existing gap in the literature about the effect of micro loans on poverty in Lebanon.

1.3 Purpose of the study

In this thesis we try to quantify the effect of microfinance on poverty alleviation in Lebanon. To do this, we restrict our study to a sample of hundred Lebanese from Byblos city that profited from microfinance loans in 2010 and 2011. These loans were given by a Lebanese microfinance institution called Ameen/Vitas.

In the literature, microfinance is found either to alleviate or to exacerbate poverty. The absence of consensus in the literature brings to light the below question:

- What is the effect of microfinance on poverty in Lebanon?

Therefore, the purpose of this study is to show how microfinance works, and how it affects the living standard (income, consumption) of the poor. Moreover, the objective is also to study the influence of socio-demographic factors on poverty. Hence, in this thesis we test the following null hypotheses:

- H_0: Microfinance has a significant and positive effect on household's income

- H_0: Microfinance has a significant and positive effect on household's consumption

In order to verify the above mentioned hypotheses we first test the significance of the difference in the mean of consumption (income) before and after having access to microfinance. Second, we estimate two multiple linear regression equations in order to calculate the elasticity of consumption (income) with respect to micro loans. The dependent variable in the first equation will be household's consumption in 2011 and in the second equation it will be household's income in 2011. The independent variables are common for the two equations and will account for some socio-demographic factors. The latter will be the age, the number of children in the household, the two micro loans taken in 2010 and 2011 and dummy variables that account for the economic sectors, the gender type and the marital status.

1.4 Brief overview of all chapters

The thesis is organized into six chapters. In the first chapter we provide a general overview about the topic. We briefly define microfinance and its impact on poverty. We also defend in this chapter the need and importance of our study while giving clues to how the research will be conducted. In chapter two we give an overview about the existing literature concerning the effect of microfinance on poverty. In this chapter we describe the advantages and disadvantages of microfinance. In fact we conclude that microfinance may have a positive or a negative impact on poverty. In chapter three we give a brief history of some of the most important Microfinance Institutions (MFI) around the world. In chapter four we introduce Ameen/Vitas and give a brief overview of it is services. In chapter five we elaborate the methodology that will be used in order to test our two hypotheses. In chapter six we discuss the results of our tests and estimations. Finally chapter seven stands for the conclusions of this study and its limitations. We also propose in the last chapter some recommendations.

Chapter 2: REVIEW OF LITERATURE

2.1 Microfinance and poverty reduction:

After the implementation of microfinance programs in poor areas around the world, several positive impacts have been found through a number of studies.
According to these studies, microfinance programs have proven to be able to reduce poverty through increasing individual and household income levels, increasing household consumption, improving healthcare, increasing education levels and most importantly, helping to empower women in society.

It was not; however, a unanimous thumbs-up. In contrast to the previous many positive impacts of microfinance programs listed, other studies have highlighted several key problems and negative impacts produced by the implementation of microfinance programs in poor areas of the world.
Arguing that these products were consistently missing their targets, it was clearly said by other researchers that it had shifted from its original goal and needs to be coordinated as they compared microfinance to a "magic bullet" that had a fairly turbulent ride lately, and had fallen into a problem sector that needs to be strictly regulated. (de Quidt et al. ,2012).
While other studies have shown that microfinance programs may serve well the moderately-poor more than the needy-poor. Other reservations were in due to the observations of several cases of domestic violence. It is common knowledge that many microfinance programs target women; therefore, resulting in men forcibly coercing their wives to get loans for them by resolving to intimidation and violence.

Furthermore, some studies have shown that the reliance on microfinance programs in order to aid the poor may be one of the main reasons behind the decrease of the governmental and charitable assistance.
There are mixed conclusions as to the overall impact of microfinance institutions.
David Roodman investigates in *Due Diligence*.(2011) "He finds no evidence that small loans lift people out of poverty en masse but argues that financial services, like clean water and electricity, are essential to a modern life. The practical question is

not whether microfinance should continue, but how it can play to its strengths, which lie in providing useful services to millions of poor people in a businesslike way."

This leads to the key question of this paper: What is the real effect of microfinance programs on reducing poverty in Lebanon.

2.2 The various effects of microfinance

The academic literature is undecided in regards to the specific impact that microfinance has on alleviating poverty. In what follows, I will review different studies, briefly discussing the study designs and key findings.

2.2.1 Positive Impacts of Microfinance Programs

Khandker's (2005) is one of the many studies that dealt with the positive and direct effects of microfinance programs on poverty. In the research, the main objective was to estimate the long-term impacts of micro-finance on household consumption and poverty in Bangladesh, and that was based on the data collected from the surveys done between 1991 and 1992, and between 1998 and 1999. The samples Khandker worked on were taken out from 87 villages in 29 states, and referring to the Bangladeshi terminology, we could say 87 villages in 29 "thanas". The samples were surveyed by the BIDS and the World Bank. Afterwards, eight programs were drawn randomly from each of BRAC, Grameen Bank, and BRDB's RD 12 project areas; five non-program thanas were also chosen randomly. Three villages from each state were also picked randomly, and the programs had been operating for a minimum of three years. As it is known, natural factors may affect any study, which is why the surveys were conducted three times, but every time during a cropping season. The first time from November until February, during the *Aman* rice. The second from March until June during *Boro* rice, and the last from July until October during *Aus* rice. In order to check the increase of the participation in the program among rural households, results were collected and compared. The results in 91/92 were 26.3%, while the results in 98/99 were 45.6%. These results show how popular and beneficial the programs were, otherwise the numbers wouldn't have increased that much or even would have decreased instead.

In the re-survey period, an interesting fact was observed. In 91/92 households were members of one program each, while in the re-survey of 98/99, many cases of households were members of more than one program at once. This phenomenon explains and clarifies customer's satisfaction, which is known by cross selling in the banking industry. Another eye-catching manifestation was related to genders; an increase of 126% in female borrowing was shown, while a decrease of 24% in male borrowing was witnessed. This clarifies how the programs worked successfully on targeting women and how they affected household welfare.

Due to the researches undertaken, one can see how women started having their own assets and how powerful they became after being empowered; women started exercising power in household decision-making. This was otherwise uncommon in the surveyed areas. Khandker (2005) found that aggregate moderate poverty has declined from 83% in 91/92 to reach 66 % in 98/99, basing his research on the consumption data and the poverty line consumption. The reduction in the incidence of moderate poverty was 20% among program participants while it was 15% among non-participants. The reduction among participants was of 19% in the incidence of extreme poverty and 13% among the not targeted group. Not only were that but also increased consumption levels (food and other things) were noticed among program participants in that period of time. The non-land asset ownership has been, as well, affected by the program.

The study of Remenyi and Quinones (2000) is relevant as well since it studies the effects of microfinance on the average income in the four countries mentioned in here: Indonesia, Bangladesh, Sri-Lanka and India. The results are as follows for each of these countries. *(i)*In Indonesia, non-borrowers reported a 3 % rise while borrowers presented a 12,9% rise average of their annual income.*(ii)* In Bangladesh, always talking about the rise of annual incomes, it was 29.3% for borrowers and 22 % for non-borrowers. *(iii)* In Srilanka, 15.6% average rise against 9% for non-borrowers. *(iv)* While in India, an obvious contrast was reported; 46% increase in annual income for borrowers, but 24% for non-borrowers. Summing up all the results mentioned above and drawing a fruitful conclusion, one can say that the household income of the families who have access to credit is improving and compared to others families who do not have that accessibility, the rate of increase is significantly high. As a re-

sult, it could be argued that microfinance is of a great benefit to its demographic target.

This subject is also tackled by Jorge H. Maldonado, Claudio González-Vega and Vivianne Romero (2003). Maldonado, González-Vega and Romero (2003) used data from different surveys of the households of clients of microfinance organizations (MFOs) in Bolivia. Another issue to examine was schooling decisions at the household level, some models were used to examine if microfinance has also influenced education not only incomes. They found that in Bolivia, after participating in microfinance programs, the demand for children education has increased and obviously that was due to the incomes rise.

In addition to that, Imai, Gaiha, Thapa and Annim (2010) test the hypothesis that deals with the reduction of poverty due to microfinance at macro level by studying the role of microfinance - volume/scale of activities on poverty, using cross-sectional data covering 48 countries in the developing regions in 2007. The cross sectional data are supplemented by a two-period (2003 and 2007) panel over 61 countries, based on the Microfinance Information Exchange (MIX) data on MFIs and the new World Bank poverty estimates. It is declared that a country with a high MFIs gross loan portfolio will have a low level of FGT (The Foster-Greer-Thorbecke), a poverty measurement tool. Based on randomized evaluations, it goes on to rebuke contemporary micro evidence pointing to no or weak effect on poverty and insists that there is robust confirmation of the poverty reducing role of microfinance. Significantly, microfinance loans are negatively linked not only the poverty headcount ratio, but also with the poverty gap and squared poverty gap, declaring that the effect will even reach the poorest and benefit them. Their assessment has added significance since it was on a collision course with the tide that seemed to be turning against microfinance as a means of poverty alleviation.

Furthermore, the studies of Al –Mamun. A., Abdul Wahab, S. & Malavizhi ,C.A (2011) , concentrate on AIM (Amanah Ikhtiar Malaysia's) a microcredit program. This program is basically applied in Malaysia, trying to improve the socio-economic conditions and to reduce poverty, and that by providing the poor house-

holds with collateral free credit, and that through using the group based Grameen Bank model.

They tried to examine how participation in (AIM) affected employment rate of hard-core poor client's household and community in Peninsular Malaysia, and that by using a cross sectional design with a random sampling method.

The first internal impact study conducted by Gibbons and Kasim (1990) found out a noticeable rise of client's monthly household income from an average of Ringgit Malaysia RM 142 per month before participation to RM 220 after participation, which is significant, a 55% increase in monthly household income. Another impact study was held in 1990, and it showed improvement as well. Around 98% of them experienced an increase in household income while in the first study it was of 70%. The pilot branch recorded an 88% increase in household income while the previous study where newer branches recorded only 56% increase. 77% is the percentage of the overall increase in 1990 compared to 45% previously, with an average increase of RM 4668 per year or RM 391 per month.

Salma (2004) researches showed that the household income, expenditure, savings and assets increased for both AIM and PPRT a non microcredit program participants compared to non-participants. In addition to that, these increases are higher for AIM clients than PPRT clients. Salma (2004) therefore concluded that the microcredit program contributes in a big part to generating income, but non microcredit program like PPRT do not. The latest studies have shown and deduced that there is a relationship between the level of income and the use of loans; briefly the more loans being utilized, the higher the income in summary.

2.2.2 Negative Impacts of Microfinance Programs:

The idea of Microfinance as means for poverty alleviation does also have its detractors. In the following section we will cite some studies that reported more findings that were neither as clear-cut nor as praising to the program especially in terms of eradicating poverty, empowering women and increasing demand for children's education.

Namely Morris and Barnes (2005) investigate the effect of microfinance through examining the impacts of three microfinance programs in Uganda (FINCA, FOCCAS and PRIDE). The sampling frame encloses surveys of clients of FINCA, FOCCAS, and PRIDE and of three comparison groups of non-clients. The survey was first conducted in November and December 1997 and repeated later on in November and December 1999 in order to evaluate the impact. The frame included three different geographic areas of Uganda (Mbale, Masaka, and Kampala). The samples were selected randomly for different areas and client statuses along with some sampling methodology variations

In 1999, the clients mentioned irregular capital flows and their participation in MFI programs were associated with the rise of expenditures in durable household assets, and of course that was an evident problem by that time. Instead of investing the funds, the clients are using them in a wrong way in order to buy household assets. Therefore, instead of reaping the benefits of an entrepreneurial investment, these clients were burdened with repayments for non-yielding assets. On the other end, some micro-entrepreneurs who did correctly employ the funds made available by the program experienced intense competition, which in turn affected the demand for their products or services and their profit margin. Many participants also withdrew from the MFI program due to elements associated with the lending strategy. Data suggested that microfinance organizations should consider the feasibility of providing individual loan products to participants who were diligent in repaying their group loans. These individuals want to "graduate" to larger loans than the groups provide. We can deduce that in fact microfinance did not help to alleviate poverty it only helped to reduce financial vulnerability of poor individuals through the diversification of available income sources and the accumulation of assets.

Furthermore, Aneel Karnani (2007) exposes how microcredit yields some non economic benefits and does not significantly alleviate poverty. In some instances microcredit makes life at the bottom of the pyramid worse. The author argues that the best way to eradicate poverty is to create jobs and to increase worker productivity. The reasoning behind this is perfectly evident in the following two illustrations. *"(1)* A micro-financier lends $200 to each of 500 women so that each can buy a sewing machine and set up her own sewing microenterprise. *(2)* A traditional financier lends $100,000 to one savvy entrepreneur and helps her set up a garment manufacturing business that employs 500 people. In the first case, the women must make enough money to pay off their usually high-interest loans while competing with each other in exactly the same market niche. Meanwhile the garment manufacturing business can exploit economies of scale and use modern manufacturing processes and organizational techniques to enrich not only its owners, but also its workers." Aneel Karnani (2007) The paper mocks microfinance's vision that all poor are entrepreneur. It states that most people lack the necessary skills, vision, creativity and persistence to be entrepreneurial. He goes on to exemplify that even in developed countries, with higher levels of education and access to financial services, about 90 percent of the labor force is employees, not entrepreneurs.

Moreover, Karnani (2007) tackles the major selling point of microfinance that it empowers women. He concludes that it was true microfinance empowers women, but it does so by using non-economic ways regarding the fact that microcredit cannot overcome ingrained patriarchal systems of control. The author then analyzes the case of China, India and Africa, whose populations make up about three-quarters of the world's poor population. While similar in many ways, the path of these regions to economic development has been dissimilar and with markedly different results.

In China, a large percentage of the population is employed. Simultaneously the percentage of people living in poverty has declined significantly in recent decades.

In Africa, a small and shrinking fraction of the population is employed, while the incidence of poverty remained unchanged during the same period.

India's performance lies somewhere between the two: the number of people in jobs has grown some, and the number of people in poverty has shrunk a little.

He suggests that it is possible for an economy to invest in both microenterprises and large enterprises, but it needs to prioritize development approaches that have a higher pay off. Otherwise, they will miss the mark of lifting people out of poverty.

Poverty and social exclusion, gender relations and children's welfare are treated by Marcus R, Porter B and Harper C (1999) where they discuss current debates and reviews research concerning the impact of microfinance. It is deduced that the workload of the children can increase when parents participate in microfinance programs. In worst case scenario, this will lead to school dropouts or health issues when performing jobs that are not compatible with their state. As a result of the parents' poor planning, children may end up suffering since their parents may ask for their help in order to get out of their desperate struggles. This is when we can say that the parents are trying to assimilate a work load larger than the one they could naturally take. This study completely contradicts the previously discussed paper of Jorge H. Maldonado, Claudio González-Vega and Vivianne Romero (2003) where it is said that the increased in income, generated by participating in microfinance programs in Bolivia, affected children's education positively.

2.2.3 Mixed results

Many studies associated with microfinance reported some mixed results and were undecided on the impact of the programs. One of such studies is that of Morduch (1998).In his study, a survey was collected by the Bangladesh Institute for Development Studies in collaboration with the World Bank. The survey was done in three different periods of time in order to capture the variations among the seasons; it was basically done during the rice seasons, in December and January, in April and May, then in July and August. It covers 87 villages. 1798 households, 1538 of which are eligible to participate and have access to programs were studied in the survey. Within the final group, 905 were participants. The survey did not reach a real conclusion since the interpretation of the survey gave some mixed results when comparing.

The borrowers and non-borrowers of micro-loans comparison shows similar consumption between the two (non–eligible households consume 8% more than the

relevant control group) while non-eligible households within the program villages have much more variable levels. Regarding the education the children of borrowers and non-borrowers, the children of borrowers are more likely to be sent to schools. However, the consumption per capita is very similar for borrower and non-borrower households, thus the simple differences show no real advantages to microfinance eligibility.

The results of around 15 studies were summarized by Stewart R, Van Rooyen C, Dickson K, Majoro M, De Wet (2010). Eleven of the studies included in the in-depth survey were of micro-credit interventions, two were of combined credit and savings interventions and two were of savings schemes alone. They evaluate microfinance programs in Ethiopia, Ghana, Kenya, Madagascar, Malawi, Rwanda, South Africa, Tanzania (Zanzibar), Uganda and Zimbabwe, and include both rural and urban initiatives. Both micro-credit and micro-savings have shown positive effects; they improve the poverty levels and increase the accumulation of assets. They even have a good influence on health since they favor the poor's nutrition and the food security. On the other hand, the study has treated a serious problem which is related to child's labor; children were taken out of school because of the difficulty in paying the school expenses. Moreover, evidences showed that micro-credit is empowering women and impacting positively the housing ability of a client. There is little evidence that micro-credit has any impact on job creation, and there are no studies measuring social cohesion. Stewart R, Van Rooyen C, Dickson K, Majoro M, De Wet (2010) have concluded that some people are made poorer rather than being made richer by microfinance. In fact, it is found that the consumption level rises but the investment level does not due to micro-credits. Thus, poor people's businesses fail to produce enough profit to pay high interest rates, their investment in other longer-term aspects of their futures is not sufficient to give a return on their investment and because the context in which microfinance clients live is by definition fragile. The emphasis on reaching the 'poorest of the poor' may be flawed. As it was said, not everyone is an entrepreneur, that's why the loans must be dedicated to potential entrepreneurs but not to everyone. This is very similar to the idea treated by Aneel Karnani (2007).

Banerjee, Duflo and Kinan (2010) dealt with an untraditional approach in studying the impact on the decrease of poverty. Their results contradict those of Stewart R, Van Rooyen C, Dickson K, Majoro M, De Wet (2010). Spandana, which is one of the fastest growing MFIs in the area, was studied by them as the effect of introducing this new program was analyzed. They chose randomly 104 slums in a large city in India. They found out that there was no effect on the average monthly expenditure per capita fifteen to eighteen months after the program was introduced. It was as well evident that participants were outspending non-participants in terms of buying durable goods. The results did not reach a fruitful conclusion since the effects were varied; for instance, some households used the loan to start a business, some others used it to expand a business already there. Some used the loan for buying personal things or even for the daily expenses. It could be said that there was no real positive effect on consumption. It was suggested that it might be a delayed one, and that things can be different when it comes to a long-term plan.

2.3 Conclusion:

Summing up all the above section, the literature findings on the impact of the MFI programs are varied. Some talk about poverty alleviation characteristics of the programs, and go as far as proposing its impact on the restoration of the very fabric of society where children have a higher chance of education and women get the privilege of becoming empowered. However, some others were less impressed with the impact of the programs claiming benefits are over-reported and microcredit is missing its target demographic. In some cases it was deduced that the impact was more adverse than beneficial.

Having all these diverging outcomes and opinions around makes it difficult to ascertain the true value of the programs and its real impact.

We will try and connect these inconsistencies and attempt to find the conclusive and convincing impact of micro-credit on poverty reduction by reducing the scope to tackle Lebanon's MFI program Ameen/Vitas

Thus, the importance of this research lies on the ability to demonstrate that indeed microfinance has a positive effect on households' consumption and income.

Chapter 3: Microfinance Institutions around the world

The United Nations proclaimed 2005 as the "Year of Micro-credit" then it went further the next year by awarding a Nobel Peace Prize to the highly acclaimed pioneer of modern microfinance: Prof. Muhammad Yunus founder of Grameen bank. Microfinance has come a long way since the early days of Grameen bank, it now spread over five continents and numerous countries. The idea of Grameen Bank has been duplicated in Bolivia, Chile, China, Ethiopia, Honduras, India, Malaysia, Mali, the Philippines, Sri Lanka, Tanzania, Thailand, the United States, and Vietnam.

The chapter begins with a brief history about Grameen Bank, in section two an overview of Banco Solidario, in section three an overview of Rakyat Bank, section four an overview of Compartamos MFI and finally in section five an overview of a failure case of MFI the Good Faith Fund .

3.1 A Brief history of Grameen Bank, Bangladesh:

Grameen Bank's success story is as suitable as any to further illustrate the concepts of microcredit and microfinance. What makes it more appropriate is the fact that it was conceived by a Bangladeshi Prof named Muhammad Yunus and not from some highly acclaimed academy or from ideas that started in privileged economies. Yunus described the situation that stimulated him *"Bangladesh had a terrible famine in 1974. I was teaching economics in a Bangladesh university at that time. You can guess how difficult it is to teach the elegant theories of economics when people are dying of hunger all around you. Those theories appeared like cruel jokes. I became a drop-out from formal economics then wanted to learn economics from the poor village next door to the university campus"*. He found that most villagers were unable to obtain credit at reasonable rates, so he reached into his own pocket and started lending them money allowing them to buy materials for their projects like rice processing, bamboo weaving, and traditional craft making. Ten years later, Yunus had unwittingly set up a bank.

What made Grameen Bank a success story was adopting the group lending program:

- Loans made to individuals.
- Groups consisted of 5 borrowers each.
- The whole groups are held liable for repayments
- Loans have a yield of around 20%.
- Loans have a life of one year.
- In case of any individual member of a group defaults, the whole group will be held denied subsequent loans.

However, Grameen bank reported repayments rates averaged 98%. Currently, Grameen boasts over 2 million of which 95% are women with a portfolio of around 30-40 million a month

3.2 Banco Solidario, Bolivia:

Banco Solidario started as a non-governmental Organization (NGO) in the mid-to-late 1980s and provided only small capital loans, which were dedicated to entrepreneurial activities, to groups with at least one year of experience in their proposal occupation.

Loans criteria were as follows:

- Loans distributed to individuals.
- Joint liability lending to 3 or 4 individuals.
- Loans have a yield of 12-24%.
- Period of 1-60 months (120 months for a housing loan).

By 1992, Banco Solidario boasted a client base of around 17,000 clients and a loan portfolio of 4 million dollars. Even with such a large client base portfolio, Banco Sol reported a past-due loans level of 1.78% and a ROE of 22.8% in 2006. It has come a long way since it now serves more than 110,000 clients and disburses funds of 172 million dollars.

3.3 Rakyat, Indonesia.

Like BancoSol, the Bank Rakyat Indonesia (BRI) is financially self-sufficient its targeted clients are poor as non poor households. BRI lending criteria are as follows:

- No group lending.

- Individual borrowers are required to put collateral, so the very poorest are excluded.

- Borrowers start with small loans and depending on repayment performance the loan might increase.

- Annualized interest rates are 34% in general and 24% if loans are paid without any delay.

In 1998, despite the financial crisis in Indonesia, repayment rates of Bank Rakyat Indonesia were 97.8%. More strikingly the program's repayment rates and profits on loans to poor households have exceeded the performance of loans made to corporate clients. It now serves around 2 million borrowers and 16 million depositors and disbursed funds of 28.6 billion dollars.

3.4 Compartamos, Mexico

Compartamos is the largest MFI in Mexico serving primarily rural borrowers; it became a multi-bank holding company in 2006 due to the support of leading bankers, such as Alfredo Harp Helu, then later in 2008 it was listed on the Mexico City Exchange. Microfinance loans offered by Compartamos had the following criteria:

- Offer joint –liability loans to female, it was not till recently that they started to allow men to borrow.

- Compartamos charge an interest of slightly more than 3.5% monthly.

The bank currently has more than 2.5 million customers, of whom 95% are women, with the average loan totaling 6,071 pesos (about 463$).

3.5 Good Faith Fund, United States

In 1986, the then governor of Arkansas, Bill Clinton invited Muhammad Yunus for a visit. Mr. Clinton wanted to discuss and explore the possibilities of application of microfinance for his constituency.

A program, afterwards, was launched based on the Grameen Funds in order to import microfinance to the rural economy of Arkansas. Good Fail Fund became one of the first MFIs to be established in America, with the purpose of providing loans to micro-entrepreneurs. Taub, an American sociologist, had a lot of questions regarding this program, his opinion was that it was a good and successful one in theory, but his questions were about how effective it was in the areas outside of poor economic de-

velopment. In Taub's words (1998), *"the Good Faith Fund has never been able to deliver a meaningful volume of customers, provide substantial loan services to the really poor, or achieve anything close to institutional self-sufficiency."*

The most important argument was about the difference between rural Arkansas and rural Bangladesh; there were a number of social differences that may influence the effectiveness of the program. Primary was the inability of potential borrowers to form a group. In Bangladesh, the poverty rate is much higher than in the United States, and the population density is even higher, thus potential borrowers may find other entrepreneurs among the poor without facing any difficulty, which is not the case in rural Arkansas. Nowadays, the Good Faith Fund mainly focuses on career training through their Business Development Center and Asset Builders program. They have aimed enterprises which are not served well by the commercial banking sector, and gave them larger amounts of money. These small or medium-sized enterprises may benefit more than the big ones through this program. These loans provide the same service, but at $100,000 or more, they can hardly be considered "micro" credit.

Chapter 4: Background of Microfinance in Lebanon:

The chapter begins with an introduction about the importance of microfinance in Lebanon. In Section two we define Ameen/Vitas and present the services it offers.

4.1 Importance of microfinance in Lebanon:

The Microfinance industry in Lebanon has witnessed slow growth over the years, in comparison to the other countries in the Middle east and worldwide.

The general consensus of economist is that microfinance in Lebanon matters for three main reasons:

- First, economists as well as donors believe that constraints on access to credit for the low income households might have negative effect on how well Lebanon can achieve rapid economic growth.
- Second, access to microfinance can have some positive effect on the alleviation of the economic conditions of the poor families.
- Third, access to microfinance is important for equity.

Most of the poor do not have the assets, such as buildings or land, required to access the standard bank credit. Microfinance requires nominative collateral accessible to the poor, such as reputation or household goods. MFIs gave some life to the economy in Lebanon, since it provided microcredit to the under-privileged. In Lebanon, only two major markets oriented MFIs are incorporated: Al- Majmoua and Ameen/Vitas which will be the subject of my study.

4.2 Defining Ameen/Vitas S.A.L, Lebanon

Ameen was originally created by global communities (Formerly CHF International) as a micro-credit program, later evolving and becoming Ameen/Vitas s.a.l.
It has taken an important role in the Lebanese Microfinance since 1999, and it has become in 2003 known by its name as a Lebanese service company.
"Financing for a better Lebanon" was Ameen/Vilas' motto. The objective of the enterprise was to help their clients develop and improve their quality of life. Vitas s.a.l. became the first registered Lebanese microfinance institution in 2007 after registering with the Central Bank of Lebanon. Vitas provide responsible financial services to micro entrepreneurs, small and medium enterprises (SME), and salaried employees. Ameen services its clients across Lebanon not only directly but also in partnership with banks located all over Lebanon, it is also engaged in direct-lending. Since its inception, Ameen has contributed massively by providing high quality financial services to over 46,000 borrowers and disbursed over 90,000 loans totaling more than US $ 130 million. The institution provides 5 types of loans: business, personal, housing ICT and Kiva loans. The interest rate usually ranges from 1.1% to 1.3% per month, and that depending on the loan type. .

Business loans:

- **Target:** Micro entrepreneurs and Small and Medium Enterprises (SMEs)
- **Sector:** Public and private.
- **Amounts:** The micro loans range from 300$ - 5,000$ for individuals, and from 5,100$ - 15,000$ for SMEs.
- **Purpose:** Support and advance client business activities.

Personal loans:

- **Target:** Low income individuals.
- **Amounts:** The micro loans range from 300$ - 5,000$.
- **Purpose:** Household consumption including weddings, automobile purchase, education and healthcare.

Housing loans:

- **Target:** Low income individuals.
- **Amounts:** The micro loans range from 5,100$ - 15,000$ for individuals.
- **Purpose:** Intended for renovation, rebuilding, repairing or expanding the premises.

ICT loans (in partnership with Cisco Systems):

- **Target:** ICT driven businesses and startup in rural and peri-urban areas in Lebanon.
- **Amounts:** The micro loans range from 300$ - 10,000$.
- **Purpose:** Support ICT entrepreneurs along with their innovations and advancement.

KIVA loans:

- **Target:** Micro enterprises.
- **Amounts:** The micro loans range from 300$ - 1,200$.
- **Purpose:** General improvements.

KIVA loans main feature is a 0% interest capital which catapulted this product into one of the most popular micro loans.

Chapter 5 : Methodology

This chapter deals with the methodology adopted in conducting the study. The chapter begins with an introduction where the purpose of my study is stated. This introduction includes the main questions to be answered. Section two presents the sample and research design and the variables to be studied; section three gives a brief presentation of the methodologies adopted.

5.1 Introduction:

As we concluded earlier, the real impact of the microfinance programs may vary, some reported positive impacts while others did not. We also gave a brief overview of some of the most important microfinance institutions (MFI) around the world, their impact on stakeholders and the failure cases of MFI. Relying on the literature review, and the fact that we couldn't presume any result; the objective of this thesis is to fill the gap regarding the real economic impact of microfinance in Lebanon. We will assume the following three research questions:

1. Does microfinance affect positively household consumption?

2. Does microfinance affect positively household income?

3-What are the factors affecting total households consumption and total households income?

Those research questions are transformed into hypotheses in the form of null and alternative in section 5.3

5.2 Sample and Research design:

5.2.1 Sample for the study and data collection:

The sources of data used in conducting this study are primary data, collected with the help of Mr. Ziad Al Halabi, CEO of Ameen /Vitas in Lebanon. This study covers only Byblos region even though Ameen's activities are extended to all the Lebanese territory. We were obliged to limit our study to the Byblos region because of *(i)* the availability and accessibility of information, and *(ii)* to also ensure a more detailed investigation which could generate more valid and reliable results. The population of the study included a 100 random individuals from the Byblos area who took their first loan in 2010, and the second starting 2011. The sample is a mixture of individuals working in different economic sectors, and having different socio-demographic characteristics such as gender, age, marital status and number of children. The simple random sampling technique was used because it ensured that all respondents have equal chance of being selected.

5.2.2 Definition of the variables:

This study will make use of two dependent variables and of six independent variables. This is necessary since we will target separately each dependent variable and will study the effect of each independent on the dependent to be able to answer our last research question.

Dependent variables:
- Household consumption: over two periods 2010 and 2011
- Household income: over two periods 2010 and 2011

Independent variables: We will limit our study to the following independent variables, although other factors such as education, degrees, years of expertise would have been as important, the availability of the data were centered only on the following variables.

- Economic sector: it will be measured by using four dummy variables: sector0 (hunting, transport or agriculture) =1, others =0), sector1 (manufacturing=1, others=0), sector2 (retail trade = 1, others =0), sector3 (service industries= 1, others=0).

- Gender: it will be measured by using two dummy variables: male and female. Male takes the value 1 if the individual is a male and 2 if female.

- Status: it will be measured by using three dummy variables: married (married=1, others=0), single (single =1, others=0), divorced (divorced = 1, others= 0).

- Age.

- Number of children.

- Loan size: it will be represented by credit1 for first loan starting in 2010, and credit2 for the second loan starting 2011.

The data analysis program "EVIEWS", was used to input data from the Excel sheets, to be studied by accepting or rejecting the hypotheses at $\alpha = 1\%, 5\%, 10\%$ significance level.

MS EXCEL was also used to make tables needed for the discussions of the results.

5.3 Research Methodology.

Two different methodologies are used in this thesis for a better study of the outcome:

5.3.1 Descriptive and inferential statistics.

Using a Student test, we test whether the sample mean of the consumption (income) has increased after the first loan given in 2010. Thus, we test if the difference

in the mean of consumption (income) is significant versus the alternative that it is positive. This test will answer the first two research questions stated above. Rejecting the null hypotheses means that consumption (income) has increased after the first loan. In this case we conclude that the loan positively affected the consumption (income).

We denote respectively the sample mean for consumption and income before the first loan by m_1 and n_1 and after the first loan by m_2 and n_2. We will test the following hypotheses for the means of consumption and income. It is a one sided test for a dependent sample.

1- Consumption after the first loan in 2010:

$$H_0: m_2 - m_1 = 0$$
$$H_1: m_2 - m_1 > 0$$

2- Income after the first loan in 2010:

$$H_0: n_2 - n_1 = 0$$
$$H_1: n_2 - n_1 > 0$$

5.3.2 Regression model

We estimate two regression models, with the dependent variables being consumption and income in 2011, and the independent variables being the four types of economic sectors, genders, two types of status, age, number of children and the two loans taken, the first in 2010 and second in 2011.

The regression model:

Estimating the equation for consumption starting 2011:

$$C_i = \alpha + \beta_1 X_{1i} + \beta_2 X_{2i} + \beta_3 X_{3i} + \beta_4 X_{4i} + \beta_5 X_{5i} + \beta_6 X_{6i} + \beta_7 X_{7i} + \beta_8 X_{8i} + \beta_9 X_{9i} + \beta_{10} X_{10i}$$
$$+ \beta_{11} X_{11i} + \beta_{12} X_{12i} + \varepsilon_i$$

For $i = (1 \rightarrow 100)$

Estimating the equation for income starting 2011:

$$I_i = \alpha + \beta_1 X_{1i} + \beta_2 X_{2i} + \beta_3 X_{3i} + \beta_4 X_{4i} + \beta_5 X_{5i} + \beta_6 X_{6i} + \beta_7 X_{7i} + \beta_8 X_{8i} + \beta_9 X_{9i} + \beta_{10} X_{10i} +$$
$$\beta_{11} X_{11i} + \beta_{12} X_{12i} + \varepsilon_i$$

For $i = (1 \rightarrow 100)$

Where:

α = Constant.

β_1 = Coefficient of (agricultural, transportation or hunting)sectors.

β_2 = Coefficient of the manufacturing sector.

β_3 = Coefficient of the retail trade sector

β_4 = Coefficient of service industries households sector.

β_5 = Coefficient for the age

β_6 = Coefficient for the gender

β_7 = Coefficient for the married

β_8 = Coefficient for the single

β_9 = Coefficient for the divorced

β_{10} = Coefficient for the number of children

β_{11} = Coefficient of the log of the first loan given in 2010 (credit1)

β_{12} = Coefficient of the log of the second loan given in 2011 (credit2)

ε = *error term*

We included in the equations the current loan and its lag in order to study their effects on the current consumption (income).

To test the three research questions, we individually test the significance of the following coefficients:

(1)- $H_0: \beta_k = 0$

$H_1: \beta_k \neq 0$ **For:** $k = (1 \rightarrow 12)$

To test whether the first loan given in 2010 and the second loan given in 2011 have increased income (consumption) in 2011, we test the following:

(2)- $H_0: \beta_{11} = 0$ $H_0: \beta_{12} = 0$

$H_1: \beta_{11} > 0$ $H_1: \beta_{12} > 0$

Chapter 6: Findings

This chapter presents the findings of the study; it begins with an overview of the data collected then continues with testing the first methodology: the descriptive/inferential model and analyzing the result. Section two presents the second methodology: the regression models and analyzing the results

6.1 Testing the descriptive/inferential methodology

In this section, we will study the effect of microfinance on household's income and consumption. This will answer research questions 1& 2:

6.1.1 Consumption after first loan in 2010:

Table 1:Consumption Descriptive Statistics before and after first loan in 2010:

	N	Minimum	Maximum	Mean	Std. Deviation
consumption before	100	$200	$2,200	$980.40	$460.305
consumption after	100	$300	$3,000	$1,277.48	$582.300
Valid N (listwise)	100				

We test the null hypothesis that the mean difference in consumption after the loan and before the loan is zero, against the alternative that this difference is greater than zero. Using a simple student test, if we reject the null hypothesis, we then conclude that consumption is greater after the first loan. Thus, we can say that microfinance loan has increased consumption. The hypotheses that are tested are below:

$$H_0: m_2 - m_1 = 0$$
$$H_1: m_2 - m_1 > 0$$

The t statistic under H_0 is:

$$t = \frac{\bar{d} - (m_2 - m_1)}{Sd}$$

$$= \frac{297.08 - 0}{20.493478}$$

$$= 14.496$$

Where, $\bar{d}$ is the mean of the difference scores across the two measurements (before and after the first loan). It is calculated as the difference between the sample means of the consumption before and after the loan. Thus, $\bar{d} = \bar{x}_1 - \bar{x}_2$ Where $\bar{x}_1$ and $\bar{x}_2$ are respectively the sample means of the consumption before and after the first loan. Sd is the standard error of $\bar{d}$. It is calculated as follows:

$$Sd = \frac{\sum_{k=1}^{100}(d - \bar{d})^2}{n - 1}$$

In this experiment there are $n = 100$ observations (individuals) under both conditions. Therefore there is $n - 1$, or 99 degrees of freedom. The above t-statistic is compared to the Student critical value at 5% significance level. The latter is $t = +1.\,64485$. Because the observed value of the test statistic ($t=14.496$) exceeds the critical value $t = +1,\,64485$, the null hypotheses is rejected. Therefore, we can deduce that after the first loan the overall consumption has increased. This answers the first research question.

6.1.2 Income after first loan in 2010:

Table 2:Income Descriptive Statistics before and after first loan in 2010:

	N	Minimum	Maximum	Mean	Std. Deviation
income before	100	$200	$3,800	$1,164.65	$624.106
income after	100	$380	$4,000	$1,613.90	$808.192
Valid N (listwise)	100				

We test the null hypothesis that the mean difference in income after the loan and before the loan is zero; against the alternative that this difference is greater than zero. Using a student test, if we reject the null hypothesis, we then conclude that income is greater after the first loan. Thus, we can say that microfinance loan has increased income .The below hypotheses are tested using the below t-test.

$$H_0: n_2 - n_1 = 0$$
$$H_1: n_2 - n_1 > 0$$

The t statistic under H_0 is:

$$t = \frac{\bar{d} - (n_2 - n_1)}{Sd}$$

$$= \frac{449.25 - 0}{40.38}$$

$$= 11.12$$

Where, $\bar{d}$ is the mean of the difference scores across the two measurements (before and after the first loan). It is calculated as the difference between the sample means of the income before and after the loan. Thus, $\bar{d} = \bar{x}_1 - \bar{x}_2$ Where $\bar{x}_1$ and $\bar{x}_2$ are respectively the sample means of the income before and after the first loan.

Sd is the standard error of $\bar{d}$. It is calculated as follows:

$$Sd = \frac{\sum_{k=1}^{100}(d - \bar{d})^2}{n-1}$$

In this experiment, there are $n = 100$ observations (individuals) under both conditions. Therefore, there is $n - 1$, or 99 degrees of freedom. The above t-statistic is compared to the student critical value at 5% significance level. The latter is $t= +1. 64485$. Because the observed value of the test statistic (t=11.12) exceeds the critical value $t= +1, 64485$, the null hypotheses is rejected. So we can deduce that after the first loan the overall income has increased. This answers the second research question.

6.2 Regression model:

To test the effect of the independent variables on the dependent variable (income or consumption), we conducted a linear regression analysis for each of the two regression models of this study. Before discussing the results of these regression analyses, we first checked the presence of multicollinearity. The problem of multicollinearity occurs if the explanatory variables are highly correlated .The presence of multicollinearity leads to three main problems. First, the R^2 will be high indicating a good fit for the model while individual coefficients will have high standards deviations .The latter may lead to conclude that these coefficients are not significant. Second, the regression becomes sensitive to small changes in the specifications. Third, the confidence intervals for the coefficients will be very wide. To avoid perfect collinearity, we drop the divorced variable from the regression equation and the constant.

The two dependent variables-consumption and income- in addition to credit1 and credit2 will be taken in log.

The objective is to smooth the data and have an economic interpretation for the corresponding coefficients. The latter will be interpreted as the credit elasticity of consumption (income).

6.2.1 EVIEWS output for consumption:

$$logC_i = \beta_1 sector0_i + \beta_2 sector1_i + \beta_3 sector2_i + \beta_4 sector3_i + \beta_5 age_i + \beta_6 gender_i$$
$$+ \beta_7 \; married_i + \beta_8 single_i + \beta_{10} number \; of \; children_i \; + \beta_{11} log(credit_1)_i$$
$$+ \beta_{12} log(credit_2)_i + \varepsilon_i$$

$$for \; i = (1 \rightarrow 100)$$

Table 3: Testing The Classical assumptions :

Durbin-Watson stat	2.30611
Breush-Godfrey Serial Correlation LM prob	0.0995
Heteroskedasticity Breush-Pagan-Godfrey prob	0.7925
Jarque-Bera prob	0.53167

In order to be able to use the ordinary least square method, it is mandatory to test and prove the three classical assumptions listed below:

1-No Serial Correlation.

Durbin Watson and Breush Godfrey tests are used to test the absence of autocorrelation in the residuals. H_0 goes for the absence of autocorrelation, and H_1 for the presence of serial correlation in the residuals. In table 3, the result of Durbin Watson statistic is equal to 2.3061, the p is near 0, and so roughly speaking we do not reject the null hypotheses. Since the DW test is inconclusive .We apply the Breush-Godfrey Serial Correlation LM to test the autocorrelation in the residuals at order=1. The results are shown in table 3, the p-value (0.0995) greater than α equal to 1% and 5%, we cannot reject null hypothesis meaning that the residuals are not serially autocorrelated.

2-No Heteroskedasticity.

We also test the homoscedasticity of the residuals .Using Table 3 we have the p-value of Breush-Pagan-Godfrey, p-value (0.7925) greater than α equal 10%, where H_0 goes for Homoscedasticity (the variance of residual (u) is constant) and H_1 goes for Heteroskedasticity (the variance of residual (u) is not constant. We cannot reject null hypothesis, residuals do have constant variance which is desirable meaning that residuals are homoscedastic.

3-Normally Distributed Errors.

Table 3, shows the result of Jarque-Bera test, used to test the normality of the residuals as per the following hypotheses, where H_0 that the residuals are normally distributed and the alternative H_1 that they are not normally distributed. Jarque Berra p value is 0.5316 greater than 1%, 5% and 10%, we cannot reject null meaning that residuals are normally distributed.

Table4 : Regression model for consumption

Variable	Coefficient	t-Statistic	Prob.
SECTOR0	3.593569	4.614822***	0.0000
SECTOR1	3.660504	4.613274***	0.0000
SECTOR2	3.749603	4.758926***	0.0000
SECTOR3	3.804016	5.027326***	0.0000
AGE	-0.002282	-0.566715	0.5723
GENDER	0.15873	1.581677	0.1173
MARRIED	-0.335519	-1.126783	0.2629
SINGLE	-0.656656	-2.060062**	0.0423
CHILDREN	0.100357	2.601495**	0.0109
LOG(CREDIT1)	0.323013	3.388495***	0.001
LOG(CREDIT2)	0.132142	1.849524*	0.0677
R^2=0.48401		Adjusted R^2=0.42604	

Note: *, **, * are the 10%, 5% and 1% significance levels.**

6.2.2 Analyzing the findings for the consumption regression model:

Table 4 shows that the estimated coefficients of the dummies representing the economic sectors are all significant. The dummy variable "single", the variable number of children, the log (credit1) and log (credit2) are also significant variables. We also test whether log (credit1) and log (credit2) has individually a positive and significant effect on consumption using the below two one sided test $t-$ tests:

1- H_0: $\beta_{11} = 0$ $\qquad\qquad$ H_1:$\beta_{11} > 0$

2- H_0:$\beta_{12} = 0$ $\qquad\qquad$ H_1: $\beta_{12} > 0$

For a significance level of α =10%.

We conclude that log (credit1) is significant at10 %(p value (0.0005) <0.1)

We conclude that log (credit2) is significant at10% (p value (0.03385) <0.01)

Secondly table 4 shows that the model's goodness of fit is rather average (R squared =0, 48401) .It indicates that 48.40% of the variance in log(C) can be explained jointly by the independent variables.

Third, by comparing the first three types of sectors : (hunting, transport and agriculture) , the manufacturing , the trade sector -to the fourth sector -the service industries- we conclude that people working in these sectors consume less than those working in the fourth sector.

We can also compare the marginal consumption between sectors. In fact, we find that people working in the first sector (sector0) consume less than those working in sector3 by 0.214 (3.804-3.59), meaning that a worker in sector3 consumes $21.4 more than sector0.

We find that people working in the manufacturing sector (sector1) consume less than people working in sector3 by0.14 (3.804-3.66), meaning that a worker in sector3 consumes $14 more than sector 1.

Finally, we find that people working in the retail trade sector (sector2) consume less than those working in sector3 by 0.06(3.804-3.74), meaning that a worker in sector3 consumes $6 more than sector2.

The results highlight the importance of the service industries and how Ameen loan specifically has a positive effect on boosting its consumption.

As for the marital status we noticed that only the dummy variable "single" (male/female) is significant. We conclude then that single people consume less than divorced people by 65$.

Moreover, the number of children is found to have a positive impact on consumption. An increase in the number of the children by 1 will increase household's consumption by 10 US dollars.

Finally, if we compare the two credits, we can deduce that for a 1% increase in the first credit, consumption increases by 0.323% and a 1% increase in credit 2, consumption increases by 0.13%. This suggests that the acquisition of credit1 induced more consumption than the second one, a possible explanation will be that the first loan was used to finance basic needs like equipments, raw materials etc...

Thus, we can conclude that indeed the micro loans provided by Amen/Vitas helped in increasing household's consumption in different economic sectors, the impact of other variables like number of children and single status had smaller effect.

6.2.3 EVIEWS output for income:

$$\log I_i = \beta_1 sector0_i + \beta_2 sector1_i + \beta_3 sector2_i + \beta_4 sector3_i + \beta_5 age_i + \beta_6 gender_i$$
$$+ \beta_7\ married_i + \beta_8 single_i + \beta_{10} number\ of\ children_i + \beta_{11} log(credit_1)_i$$
$$+ \beta_{12} log(credit_2)_i + \varepsilon_i$$

$i = (1 \rightarrow 100)$

Table 5: Testing the Classical

assumptions:

Durbin-Watson stat	2.3831
Breush-Godfrey Serial Correlation LM prob	0.0450
Heteroskedasticity Breush-Pagan-Godfrey prob	0.9361
Jarque-Bera prob	0.8954

In order to use the ordinary least square method, it is mandatory to test and prove the three classical assumptions listed below:

1-No Serial Correlation.

Durbin Watson and Breush Godfrey tests are used to test the absence of autocorrelation in the residuals. H_0 goes for the absence of autocorrelation, and H_1 for the presence of serial correlation in the residuals. In table 5, the result of Durbin Watson statistic is equal to 2.3831, the p is near 0, and so roughly speaking we do not reject the null hypotheses. Since the DW test is inconclusive .We apply the Breush-Godfrey Serial Correlation LM to test the autocorrelation in the residuals at order=1. The results are shown in table 5, the p-value (0.0450) greater than α equal to 1% .we cannot reject null hypothesis meaning that the residuals are not serially autocorrelated.

2-No Heteroskedasticity.

We also test the homoscedasticity of the residuals .Using Table 5 we have the p-value of Breush-Pagan-Godfrey, p-value (0.9361) greater than α equal 10%, where H_0 goes for Homoscedasticity (the variance of residual (u) is constant) and H_1 goes for Heteroskedasticity (the variance of residual (u) is not constant. We cannot reject null hypothesis, residuals do have constant variance which is desirable meaning that residuals are homoscedastic.

3-Normally Distributed Errors.

Table 5, shows the result of Jarque-Bera test, used to test the normality of the residuals. JB test the null H_0 that residuals that are normally distributed, and the alternative H_1 that they are not normally distributed. Jarque Berra p value is 0.8954 greater than 10%, thus we cannot reject null meaning that the residuals are normally distributed.

Table6 : Regression model for Income :

Variable	Coefficient	t-Statistic	Prob.
SECTOR0	2.503134	3.281201***	0.0015
SECTOR1	2.352977	3.026954***	0.0032
SECTOR2	2.693752	3.489805***	0.0008
SECTOR3	2.712114	3.658663***	0.0004
AGE	0.005366	1.360061	0.1772
GENDER	-0.202589	-2.060605**	0.0423
MARRIED	0.148939	0.510565	0.6109
SINGLE	-0.001891	-0.006056	0.9952
CHILDREN	0.006937	0.183567	0.8548
LOG(CREDIT1)	0.344029	3.683853***	0.0004
LOG(CREDIT2)	0.252956	3.613958***	0.0005
$R^2$0.47636		Adjusted $R^2$0.41753	

Note:*, **, * are the 10%, 5% and 1%   significance level.**

6.2.4 Analyzing the findings for the Income regression model:

Table 6 shows that the estimated coefficients of the dummies representing the economic sectors are all significant. The dummy variable "gender" and the log (credit1) and log (credit2) are also significant variables. We also test whether log (credit1) and log (credit2) has individually a positive and significant effect on income using the below two one sided test $t-$ tests: for a significance level of $\alpha =10\%$.

1- $H_0: \beta_{11} = 0$ $H_1: \beta_{11} > 0$

2- $H_0: \beta_{12} = 0$ $H_1: \beta_{12} > 0$

For a significance level of $\alpha =10\%$.

We conclude that log (credit1) is significant at10 %(p value (0.0002)<0.1)

We conclude that log (credit2) is significant at10% (p value (0.00025)<0.01)

Secondly table 6 shows that the model's goodness of fit is rather acceptable (R squared =0, 47636) indicating that 47.63% of the variance in log (I) can be explained jointly by the independent variables.

Third, by comparing the first three types of sectors, (hunting, transport and agriculture), the manufacturing, the trade sector to the fourth sector -the service industries-we conclude that people working in these sectors earn less than those working in the fourth sector.

We can also compare the marginal income between sectors. In fact, we find that people working in the first sector (sector0) earn less than people working in sector3 by0.21 (2.71-2.50), meaning that a worker in sector3 earns $21 more than a worker in sector0.

We find that people working in the manufacturing sector (sector1) earn less than people working in sector3 by 0.36(2.71-2.35), meaning that a worker in sector3 earns $36 more than a worker in sector1.

Finally, we find that people working in the retail trade sector (sector2) earn less than people working in the service industries sector3 b by0.02 (2.71-2.69), meaning that a worker in sector3 earns $ 2 more than a worker sector2.

The results highlight the importance of the service industries and how Ameen loan specifically have a positive effect on boosting its income.

As for the gender, we have noticed that between male and female, the females earn less than their male counterpart by 20.2 $.

Finally, if we compare the two credits, we can deduce that for a 1% increase in the first credit, income increases by 0.34% and a 1% increase in credit 2, income increases by 0.25%. Another possible explanation will be that the first loan, assuming it was used to finance, basic needs encouraged more income.

Summing up, it is deduced that the micro loans provided by Ameen/Vitas helped in increasing household's income in different economic sectors, the impact of other variables like gender had smaller effect.

6.3 Conclusions.

The participants must have made the most out of the microfinance program Ameen/Vitas; otherwise, neither the mean of the income nor the mean of the consumption would have increased after the first loan. In other terms, the overall consumption has increased as they invested their money in businesses that will generate in increase in income in the near future. As a result, we answer the first two research questions.

Regarding the third research question, we are now able to draw the conclusion that the four types of economic sectors, the number of children and coefficients of log (credt1) and log (credit2) have positive effect on household consumption:

As for the total household income, we also find out that the four types of economic sectors, the gender and coefficients of log (credt1) and log (credit2) have positive impact.

Chapter 7: Conclusions

7.1 Introduction & Analysis:

After a meticulous and thorough analysis of our data and subsequent results, we are inclined to conclude that microfinance does indeed affect positively household consumption and income as proved in both the inferential and the regression models.

Those findings comply with the previous research, such as that of Kandkher (2005) who proved that the level of household consumption has increased with the introduction of micro –loans, or the research of Remenyi Joe and Quinones (2000) that proved that the income of borrowers rose versus the income of non borrowers.

In the third research question, we investigated the factors affecting household consumption and income, and drew attention to the importance of the service industry in Lebanon.

While it is strongly believed that microfinance is a mean to empower women, some of our deductions begged to differ.

We compared subsequent income of men and women who utilized the microfinance facilities and noticed that the women entrepreneurs were generating significantly less returns on their investments than their male counterparts.

These results are somehow consistent with the study of Marcus R, Porter B and Harper C (1999), who found that microfinance negatively, affects the family structure.

While the focus of this study was to explore the impact of microfinance on the poor, the most adequate conclusion would be the confirmation of the existence of a relationship between microfinance programs and the improved quality of life.

7.2 Limitation of the research:

Although this thesis indicates that the Ameen clients who took micro-loans have displayed improved standard of living as a result of improved income and consumption, the challenge is all about how to generalize those results.

The benefits of microfinance services to the poor have proved tricky to measure and require a deeper analysis.
The drawbacks were the time restrictions and the difficulty to obtain closely guarded data of which we managed to scrape no more than a 100 individuals.

This limitation discarded the possibility of dividing the clients into more detailed economic sectors or the division into different levels of poverty as in: extreme poor, moderate poor and vulnerable non- poor.

In other words by collecting a bigger sample , without being restricted to one area, I could have divided my data into segments, and studied the effect of each variable as well as further exploring the issue of inequality between male and female sexes, such as access to resources and decision making .

Finally, further researches in this domain are needed in order to understand deeply how poverty alleviation takes place through microfinance institutions. I have personally showed a great interest in this area, but I am very well convinced that microfinance is just a drop in the ocean in the continuous war against poverty worldwide.

REFERENCES

Annim, S.k., Gaiha ,R., Thapa ,G., & Imai ,K.S.(2010). Microfinance and Poverty. A Macro Perspective. Economics Discussion Paper series, RIEB, Kobe University.

Aneel, K. (2007). Microfinance misses its Mark. Stanford Social Innovation Review.

Al –Mamun , A., Abdul Wahab , S., & Malavizhi,C.A. (2011). Examining the effect of Microcredit on Employement in Peninsular Malaysia. *Journal of Sustainable Development.* Vol 4,No 2, pp174-183.

Abou-Ismail, K., Hamdan, K., & Laithy, H. (2008) Poverty, Growth and Income Distribution in Lebanon. Country Study published by IPC, No 13.

Banerjee, A.E., Duflo, R., & Kinan, C.(2010). The Miracle of Microfinance? Evidence from a Randomize Evaluation. Bureau for Research and Economic Analysis of Development. Working paper 278.

Barnes, C., & Morris, G. (2005). An Assessment Of The impact of Microfinance. A Case Study for Uganda. *Journal of Microfinance* Volume 7, No 1. pp39-54.

Claudio, G.V., Maldonado, J.H., & Romero, V., (2003). The influence of Microfinance on the Education Decisions of Rural Households: Evidence from Bolivia. Presented at the 2003 Annual Meeting of the American Economic Association, Canada.

Craig, P. A., & Sengupta, R. (2008). The Microfinance Revolution: An Overview. *Federal Reserve Bank of St. Louis Review*, Volume 90, No1, pp. 9-30.

De Quidt, J., Fetzer, T., & Ghatak, M. (2012). The industrial organization of microfinance: Some lessons from the Indian Crisis.

Dickson, K., De Wet, T., Majoro, M., Stewart, R., & Van Rooyen ,C. (2010). What is The Impact of Microfinance on Poor People? A Systematic Review of Evidence from Sub-Saharan Africa Technical report. London: EPPI-Centre, Social Science Research Unit, University of London.

Gibons,D.S &Kasim,S.,(1990).Banking in the Rural Poor, Center for Policy research,University Science Malaysia,Malaysia.

Hubka, A., & and Zaidi, R. (2005). Impact of Government Regulation on Microfinance. Prepared for the World Development Report 2005.

Khandker, S.R.(2005). Microfinance and Poverty: Data from Bangladesh. *The World Bank Economic Review*. Vol. 19, No. 2, pp. 263.

Marcus, R., & Porter Band Harper, C., (1999). Money Matters: Understanding Microfinance. *The journal of Modern African Studies*. Volume 38 No.3, pp. 511-549.

Morduch, J., (1998). Does Microfinance Really Help the Poor? New Evidence from Flagship Programs in Bangladesh. Department of Economics and HIID Harvard University and Hoover Institution Stanford University.

Morduch,J., (1999). The Microfinance Promise. *Journal of Economic Literature* Vol. XXXVII, pp. 1569–1614.

Quinones, B., & Remenyi, J, . (2000). *Microfinance and Poverty Alleviation: Case studies from Asia and the Pacific*. New York.

Roodman, D. (2011). Due Diligence: An Impertinent Inquiry into Microfinance. Center for Global Development.

Schrieder, G., & Sharma, M. (1999). Impact of finance on poverty Reduction and Social Capital Formation . A Review of Empirical Evidence. *Saving and Development*. Vol. 23, No 1. pp. 67-93.

Salma M.A (2004).Comparative Case Study on Outreach and Impact of Ikhtiar Loan Scheme and Special Program for Hardcore Poor in *Seberang Perai Pulau Pinang*. University Sains Malysia.

Electronic Resource:

Kiva,Vitas Lebanon s.a.l last retrieved 28-02-2013.
From :http://www.kiva.org/partners/115.