



***Microcredit, micro-enterprises, and self-employment of women:  
experience from the Grameen Bank in Bangladesh***

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## **Abstract**

Microcredit is a provision of small collateral-free loans to poor people in order to foster income generation and poverty reduction through enhancing self-employment. In Bangladesh, formal sector financial institutions are gender biased. Women constitute only less than one percent of total number of borrowers. In the microfinance sector, the scenario reverses in favor of women. In the Grameen Bank, ninety seven percent borrowers are women.

The study intends to assess whether the participation in the microcredit program of the Grameen Bank help participating women to create self-employment for them through starting micro-enterprises. The analysis is based on a household-level survey of five hundred and seventy ( $N=570$ ) households. The results from the descriptive analysis and multivariate models indicate that the participation in the microcredit program of the Grameen Bank does not promote self-employment for women through enabling them to start micro-enterprises at the household level. But, the results indicate that the same participation significantly helps husbands of women members to start micro-enterprises and to create self-employment opportunities for them and significantly increases capital of existing household micro-enterprises that are managed and controlled by husbands or other male members in the household.

**Keywords:** Microcredit, Grameen Bank, Women Self-employment, Rural Employment, Bangladesh

## ***Microcredit, Micro-enterprises, and Self-employment of Women: Experience from the Grameen Bank in Bangladesh***

### **1. Introduction**

The micro-enterprises contribute to the reduction of poverty and vulnerability of poor through enabling them to break the vicious cycle of poverty and also enabling them to enhance self-empowerment, respect and social dignity. It allows poor people to increase their income, accumulate assets, and enter into mainstream society. The benefits of starting micro-enterprises go beyond an individual and a household. Others in the society are also get benefited from the microenterprise development as it fosters social relations or networks, civic engagement, community solidarity, and social capital (Ssewamala et al. 2006). The contribution of the micro-enterprises is also important at the macroeconomic level. These organizations contribute to innovations, jobs and economic growth. In Thailand, small firms create employment opportunities for 60% of the workforce and contribute 50% to the GDP. In the United States of America, 50% of the labor force work in small enterprises and these small enterprises supply 38% to the GDP (Paulson and Townsend 2004). Tokman (1996) emphasizes the importance of promoting microenterprise sector as a safety net for unemployed people in the societies where unemployment insurance is not available.

The entrepreneurs are the ones who create self-employment for themselves through starting and sustaining micro-enterprises. Like micro-enterprises, entrepreneurship has also been acknowledged as a factor that contributes to the economic development of a country. Audretsch and Keilbach (2005) argue that entrepreneurship capital has a positive and large impact on regional labour productivity. They also claim that only risk-oriented entrepreneurship capital has the same types of impacts on growth. The innovative entrepreneurial activities have been recognized as more effective than general entrepreneurship for the economic growth (Mueller 2007). Similarly, Wong et al. (2005) find that the high growth potential entrepreneurship has significant impact on economic growth. The fast growing new small and medium enterprises are accounted for the most of the new jobs. Yamada (1996) and Iyigun and Owen (1998) find a negative relationship between the level of economic development and the level of self employment in the labour force. Acs et al. (1994), and Carree et al. (2002) find a non-linear U-shaped relationship between economic development and entrepreneurship. At the initial stages of economic development, when per capita income goes up, a shift occurs in the economies from agriculture to manufacturing which implies economies scale in production. During this period, larger enterprises become more cost efficient and on the other hand, small and medium enterprises become cost inefficient. As a result, many small and medium enterprises get closed (Lucas 1978). Another reason is that the rising real wages increases the opportunity cost of self-employment; for this reason, many self-employed persons leave their self-employment status and join large enterprises as employees. On the other hand, at the higher levels of economic development, increasing income and wealth enhance the demand of consumers for goods and services, which creates more opportunities for people to start new micro-enterprises. Virgrill

(2008) argues that the relationship between entrepreneurship and economic development is more complex than what is illustrated by the U-shape relationship. The relationship seems to be S-shaped.

The non-availability of the required funds is one of the main constraints that the potential entrepreneurs face (Evans and Jovanovic 1989, Holtz-Eakin et al. 1994, Carter and Rosa 1998, Verheul and Thurik 2001). The formal sector financial institutions leave out poor people through the collateral requirement, credit rationing, preference for high income clients, bureaucratic and lengthy procedure of loan sanctioning. On the other hand, informal sector financial sources are exploitative in nature (Bhaduri 1983, Rao 1980, Bardhan 1980, Ghosh 1986, Ghate 1992, Flotz 2004, Pertick 2005). The households that are wealthier are more likely to start a business (Holtz-Eakin et al. 1994, Paulson and Townsend 2004). Paulson and Townsend (2004) conclude that financial constraints serve an important role in determining the shape of the patterns of entrepreneurship in Thailand. The availability of the required funds determines the probability of survival of small and new businesses (Evans and Jovanovic 1989, Bates 1990). Cressy (1996) has an opposite view in this regard; he argues that human capital is the main factor in determining the probability of survival of businesses and the correlation that exist between financial capital and survival is spurious.

The constraints, particularly financial, that entrepreneurs face in establishing businesses, especially micro-enterprises, have a gender dimension. Women are more likely to be constrained than men and they have on an average a smaller amount of capital for startups (Verheul and Thurik 2001, Carter et al. 1997). Tiggers and green (1994) have identified three reasons that work behind women's disadvantageous position in the capital market: (1) women are likely to have lesser amount of equity and less experience; (2) resource lenders may discriminate women against due to their outmoded gender beliefs; and (3) the reduced rate of the number of applications for loans by women due to women's own belief that they will be discriminated (Carter et al. 1997). Fletschner (2008) argues that women are more likely to be non-price rationed and women's demand for capital and supply of funds are determined by legal, social, cultural and economic constraints they face. From the available literature, she also finds the collateral requirement, finding a male guarantor for taking loans, the authorization of loan application by the husband or a male member in the household, preference of lenders for financing of those activities that are usually run by male, lack of knowledge about the availability of funding, discrimination, transaction costs, risk averse behavior of women and the literacy requirement as factors behind the gender discrimination in the financial sector. Intrahousehold dynamics are more important in determining the financial constraints of women than man. Women have approximately 42% higher probability to be constrained in finding adequate funds when their husbands are also constrained. On the other hand, men are only 12% likely to be financially constrained when their wives are also financially constrained. Women who have more control on the family budget have higher probability of meeting their capital needs (Fletschner 2008).

Considering the limitations of formal and informal sector financial institutions in providing women with the amount of fund that is required for starting micro-enterprises microcredit programs have been evolved. Microcredit indicates those small loans that are given

to poor people without collateral for income generating purposes. While the formal sector financial institutions, for example commercial banks, are male biased in terms of giving loans, microcredit programs target women for giving loans. Currently, ninety seven percent of all members of the Grameen Bank in Bangladesh are women. The reason why women have been targeted for giving microcredit in Bangladesh is that women's access to credit has been recognized as an important factor that significantly contributes to the household welfare (Mayoux 1999, Hashemi et al. 1996). The access of women to microcredit increases consumption (Pitt and Khandker 1996), improves nutritional level and enhances aspiration for children's education in the household (Panjaitan-Drioadisuryo and Cloud 1999), and contributes to the reduction of household poverty (Chowdhury et al. 2005).

The main objective of targeting women for giving microcredit is to empower women in the household through helping them to create self-employment for them by establishing micro-enterprises. One may confuse these micro-enterprises of women with the family micro-enterprises that managed and controlled by male members in the household. Usually, women do not have any controlled on family micro-enterprises. Keeping this objective in mind, this paper intends to evaluate whether the access to microcredit program of the Grameen Bank has enabled women to start the micro-enterprises where are fully managed and owned by them. The article is organized as follows. Section two describes the microcredit sector and the Grameen Bank in Bangladesh. The estimation strategy has been discussed in section three. Section four discusses the availability of data. Section five presents the results; and finally section six summarizes and draws conclusion of the paper.

## **2. Microcredit Sector and the Grameen Bank in Bangladesh**

Muhammad Yunus, the founder of the Grameen Bank, undertook a project in 1976 to identify the causes and the extent of poverty of the people living in the surrounding villages of the University of Chittagong in Bangladesh. He found some poor women who were forced to sell their handicraft products to middlemen at prices that were much lower than the market price because these poor women got their raw materials from those middlemen on credit. Then Professor Yunus tried to estimate the amount of capital, which was required by those poor women to buy the required raw materials to produce the handicraft products. Professor Yunus, to his surprise, found that forty-two poor women lacked a capital amounting to a total of only Tk. 856 (\$21). Out of these forty-two poor women some required as little capital as only Taka 10 or 20 and the highest amount required was Taka 65 [Counts, (1996), Yunus (1998)]. Professor Yunus thus realized that the lack of required capital, to continue or start income generating activities in rural areas, was the root cause of poverty. He provided those forty-two poor women, who lacked the required capital amount of Tk. 856, from his own pocket. After that, he started contacting and pursuing the formal sector commercial banks to provide these poor people the required amount of capital to continue or start production of handicraft products. Initially, formal sector commercial banks refused to provide credit to these poor people, because these poor women did not have the required collateral to provide with. Formal commercial banks also argued that the proposed loans to those poor women were so tiny that interest income from those

loans would not cover administrative costs of loans. In response to the questions raised by the executives of the formal sector commercial banks about the required collateral to receive loans Professor Yunus offered himself as a guarantor of those loans.

From that arrangement the Grameen Bank began its difficult journey to achieve a great objective, poverty free Bangladesh and in global perspective, a poverty free world. Professor Yunus and his colleagues have devised a unique technology to provide small credit to poor people without collateral, which is now known as Grameen Bank model and the small loans, provided to poor people, are known as microcredit.

In 1983, the research project became a specialized formal sector financial institution through a government statute and it was named as the Grameen Bank. It is now regulated by the central bank of Bangladesh, Bangladesh Bank, like other formal sector financial institutions. During the period of 1986 to 2005, the Grameen Bank had achieved a growth rate of twenty five percent per annum in cumulative disbursement of all loans (table 1). In 1986, the cumulative disbursement of all loans was \$57 million. It went up to \$7,591 million in 2008 with a growth rate of twenty four percent per annum. The yearly disbursement of loans was \$18 million in 1986 and it increased to \$904 million in 2008. During this period the yearly disbursement achieved a yearly growth rate of 19 percent. The Grameen Bank provides its members with loans for constructing houses; during the period 1986 to 2008 six hundred sixty six thousand houses were constructed with these loans. In 1986, the total amount of member deposits was \$4 million and it increased to \$934 million in 2008. During the same period, the total deposits of members had attained a growth rate of twenty seven percent. The total number of members of the Grameen bank was 7.7 million in 2008, but the same membership size was only 0.23 million in 1986. The growth rate in the total number of members was around sixteen percent per year during the period of 1986 to 2008. The microcredit program of the Grameen Bank covers more than ninety percent of the total area of the country. Currently, it covers eighty four thousand villages out of eighty six thousand villages in the country. But it had only coverage of six percent of the whole country in 1986.

### 3. Estimation Strategy

Given the extensive geographic coverage of microcredit in Bangladesh it is difficult to find out a perfect 'control' group that could be used to estimate the impact of microcredit on women self-employment and ownership of micro-enterprises. The choice of a household to attend a microcredit program is likely to be related to the outcome of interest ( $Y_i$ ) i.e. the ownership of micro-enterprises by women in this paper. Given the outcome for household  $i$ , I estimate the following equation:

$$(1) \quad Y_i = \beta' x_i + \gamma MC + u_i$$

where  $x$  is a vector of some control variables that I assume to be exogenous (for example, education of the household members, distance of the household from the nearest market, etc.), and MC represents the microcredit program participation, and  $u_i$  is the error term.

The participation in the microcredit programs is defined by the equation given below:

$$(2) \quad MC = \delta' x_i + v_i$$

Where  $x_i$  represent some control variables and  $v_i$  represent the error term of the model. While the impact of MC is estimated using the equation (1), it is assumed that the error terms of equations (1) and (2), i.e.  $u_i$  and  $v_i$ , are not correlated. But, these two error terms become correlated, if the characteristics of the household that influence the microcredit program participation decision also determine the outcome variable, i.e.  $Y_i$  in equation (1). This problem is known as the selection bias problem. In such a situation, the OLS estimation of equation (1) yields a biased estimate of the parameter of interest  $\gamma$ . Two types of selection biases make  $u_i$  and  $v_i$  correlated: (1) non-random selection of households to participate in microfinance program, and (2) non-random selection of places to establish branches of microfinance institutions.

The Grameen Bank in Bangladesh accepts those people as members who have less than 50 decimal of land. This selection criteria generates the first type of two types biases that have been mentioned above. Besides the selection criteria of the Grameen Bank, the self-selection of program participants is also another source of the first bias. Since it is expected that households with greater entrepreneurial capability are more likely to join the program, this may also bias the econometric estimation of program benefits. The non-random program placement also creates biases in estimating benefits of the program. For example, if microcredit programs are implemented in those areas which have more business opportunities or have better communication infrastructure or have more dynamic leaders or are poorer, then such criteria for selecting places for program implementation create biases in estimating program benefits.

On the basis of the above arguments, we can say that a comparison between a group of program participants, who are self selected, and a group of non-participants, who are not self-selected, would generate a bias in estimating the impact of microcredit on outcome variables. In the same way, the estimates will be biased if program group members are selected from a place that has been non-randomly selected by the Grameen Bank on the basis of some characteristics and comparison group members from a place without those characteristics. On the basis of the above understanding; the present study uses an alternative survey method (Coleman 1999, Chowdhury 2000) than is commonly employed. We selected new members from a newly established branch as well as old branches of the Grameen Bank, who were yet to receive or just received the first loan, as members of the comparison group. Since, the comparison group members are also self-selected like the program members, the bias arising from self-selection in estimating program benefits disappears. The Grameen Bank selects all their areas of operation non-randomly according to their own criteria. Thus, in our investigation, both the program branch and the comparison branch have been selected under similar criteria. Therefore, the bias,

which arises from non-random program placement, is also avoided from our sample. Now, the program impacts can be estimated through using a single equation:

$$(3) \quad Y_{ij} = H_{ij}\alpha_y + L_j\theta_y + MC_{ij}\beta_y + v_{ij}$$

where,  $Y_{ij}$ ,  $H_{ij}$ ,  $L_j$  and  $MC_{ij}$  are micro-enterprise ownership of women, vector of household characteristics, and vector of local characteristics respectively; and  $V_i$  represents the error of the model that arises from the household and village level variables that are not included in the model. In the equation 3,  $MC_{ij}$  is the microcredit variable which is represented by the duration (in months) of the membership of the household  $j$  in the village  $i$  in the Grameen Bank's microcredit program.

#### 4. Data

Four-stage random sampling technique has been applied in selecting program households and comparison households. In the first stage, one district had been randomly selected out of 64 districts in Bangladesh. In the second stage of random sampling, three branches of the Grameen Bank, two branches for selecting program households and the other one for selecting comparison households, had been selected randomly for data collection purpose. Program households had been selected from two more than eight years old branches (program branch) of the Grameen Bank and comparison households had been selected from a newly established Grameen Bank branch (comparison branch). In the third stage, thirty *centres*<sup>2</sup> from the comparison branch and sixty centers from two program branches were selected. In the fourth and final stage, the study randomly selected six members from each of the program branch centre and seven members from each of the comparison branch centre.

In total, the study collected information from two hundred and ten member households of the comparison branch and from three hundred and sixty member households of program branches. However, during the examination of the filled in questionnaires, it was found that some questionnaires contained illogical as well as incomplete answers. The study dropped these questionnaires. This left the study with two hundred and five useable questionnaires from the comparison branch and three hundred and sixteen usable questionnaires from two program branches usable.

Besides information on microcredit and self-employment, the survey collected detailed information on a variety of factors. For example, demographic information (age, sex, marital status, etc.) and socio-economic information (education, employment, food consumption, expenditure on health, etc.) were collected for all household members. Detailed village-level information was also collected, such as distance to nearest primary school, secondary school, market and district headquarters, along with variables describing village infrastructure, such as the presence of schools, markets, roads, electricity, etc. Information relating to the size of loan received, date of joining and other membership characteristics was provided by branch officials and matched to the data.

## 5. Results

The micro-enterprise ownership of women in program as well as comparison group is illustrated in table 3. Women in the program group are not better off in terms of micro-enterprise ownership than women in the comparison group; only six percent women in the program group have micro-enterprises in their ownership, and on the other hand approximately seven percent women have their own micro-enterprises. This comparative scenario indicates that the participation in the microcredit program of the Grameen Bank does not improve the micro-enterprise ownership of participating women. The chi square test also indicates that women in the program group are not different from women in the comparison group in terms of micro-enterprise ownership.

The results that have been presented in table 4 also confirm the finding from table 3. Table 4 presents the results of the probit model that has been formulated for examining the determinants of the micro-enterprise ownership of women. The microcredit variable, membership duration in the microcredit program of the Grameen Bank, is not statistically significant, but it shows the expected positive sign. This result indicates that microcredit program membership does not help significantly participating women members in starting their own micro-enterprises. The results in table 4 indicate that household dynamics are more important than the access to microcredit in determining women's micro-enterprise ownership. The age of the household head, the total number of male members in the age category of 0 to 15, the total number of female members in the age category of 25 to 40, and the total number of male members in the age category of 40 to 59 are the significant determinants of women's micro-enterprise ownership. The age of the household head and total number of female members in the age category of 25 to 40 positively influences the micro-enterprise ownership of women. On the other hand, the total number of male members in the age category of 0 to 15 and the total number of male members in the age category of 40 to 59 significantly negatively determine women's micro-enterprise ownership.

The results from table 3 & 4 indicate that women are not using their microcredit loans from the Grameen Bank for starting micro-enterprises. Now the question is what they do with their microcredit loans. In pursuit of the answer of this question, the impacts of the participation of women members in the microcredit program of the Grameen Bank on the micro-enterprise ownership of husbands of participating women and the capital of existing businesses of participating households have been assessed.

The employment status of husbands of participating microcredit program women members is presented in table 5. The ownership of micro-enterprise is higher among husbands in the program group than husbands in the comparison group. In the program group, thirty seven percent husbands own micro-enterprises compared to twenty three percent husbands in the comparison group. The chi-square test also indicates that the micro-enterprise ownership of husbands in the program group is significantly different from that of husbands in the comparison group. This result indicates that women members of the Grameen Bank hand over their microcredit loans to their husbands who start micro-enterprises that are only run and managed by them. This finding is also evident from the results (table 6) of the probit model on the determinants of the micro-enterprise ownership of husbands of participating women members.

The results in table 6 indicate that the microcredit variable, membership duration, has a positive sign and it is statistically significant. These results signify that the participation of women in the microcredit program of the Grameen Bank significantly positively determines the ownership of micro-enterprises by husbands of participating women. It is evident from the results in table 6 that intra-household dynamics are less important for male members than female members in the household in terms of micro-enterprise ownership. Only two inside household variables are significantly important for determining the micro-enterprise ownership of husbands of participating women members. These two factors are: the total number of female members in the age category of 0 to 15 and the total value of household productive assets. Both these factors significantly positively determine the micro-enterprise ownership of husbands. Apart from these two, two additional factors representing the environment outside the household are also important for determining the micro-enterprise ownership of husbands. The existence of a primary school in the locality and the distance of the nearest commercial bank branch from the household are significant determinants of micro-enterprise ownership of husbands. The existence of primary school increases the likelihood of owning a micro-enterprise by husbands. On the other hand, the distance of the nearest commercial bank branch significantly reduces the probability of micro-enterprise ownership by husbands. It means that when distance of the commercial bank branch goes up the likelihood of owning a micro-enterprise goes down. The result is logical in the sense that higher distance of the commercial bank branch indicates lesser access to finance. Three variables that reflect the access of the household to finance have come out as statistically significant determinant of micro-enterprise ownership of husbands. These three variables are: membership duration in the microcredit program of the Grameen Bank, the total value of household productive assets, and the distance of the nearest commercial bank branch. It is clear from these results that the access to finance is more important for husbands than women members in owning micro-enterprises.

The households in the program group have sixty five percent higher amount of capital than the households in the comparison group (Table 7). The average micro-enterprise capital of program group households is around sixteen thousand taka, and on the other hand the average micro-enterprise capital of comparison households is taka five thousand five hundred. The t test result also indicates that program group households have significantly higher amount of capital compared to comparison group households. Table 8 shows the average capital of program group households before and after membership in the microcredit program of the Grameen Bank. The after membership capital is sixty percent higher than before membership capital. The total amount of micro-enterprise capital of program households before microcredit program membership was Taka five thousand one hundred; and the same capital increased to around Taka sixteen thousand after taking membership in the microcredit program. These results illustrate that the participation of women members in the microcredit program significantly increases the capital of micro-enterprises, which are managed and controlled by husbands or other male members, of households. This finding is also supported by the results of the ordinary least square model on micro-enterprise capital presented in table 9.

The membership duration in the microcredit program is a significant positive determinant of the micro-enterprise capital of households. It means that the total amount of micro-enterprise capital increases with the increase in the membership duration and it also indicates that microcredit program participation by women members is important for micro-enterprise capital of households. Besides this variable, five additional variables are also significant determinants of micro-enterprise capital. These variables are: total number of male members in the age category of 25 to 40, the total value of productive assets, the existence of a higher secondary school in the village, the distance of the nearest market from the household and the distance of the nearest commercial bank branch from the household. Except the variable on the distance of the nearest commercial bank branch from the household, other four above-mentioned variables positively determine the micro-enterprise capital. When the distance of the nearest commercial bank branch from the household goes up the total amount of micro-enterprise capital goes down.

Finally, it can be said from the above-mentioned results that the participation in the microcredit program of the Grameen Bank does not enhance the ability of participating women to start their own-managed micro-enterprises. But, the same participation significantly enhances the ability of husbands of women members to start micro-enterprises and also significantly increases micro-enterprise capital of participating households.

## **6. Summary and Conclusion**

The entrepreneurship and micro-enterprises have been recognized as factors that contribute to the economic development of a country. The non-availability of the required funds is one of the main constraints that entrepreneurs face in establishing micro-enterprises. This financial constraint has a gender dimension as women are likely to be more constrained than men. In developing countries, formal sector financial institutions do not provide poor people with the necessary funds that are required for starting micro-enterprises. On the other hand, informal sector does not also help poor people due to its exploitative nature. The Grameen Bank came into existence in the seventies with its microcredit program keeping in mind credit constraints of poor people in starting micro-enterprises. The installment based small loans that are given to poor people without collateral are known as microcredit. Women are specifically targeted for giving microcredit loans. In Bangladesh, ninety seven percent members are women. It is assumed that the access to microcredit helps women members of the Grameen Bank to start micro-enterprises that are owned and managed by them.

Keeping this in mind, this paper intends to evaluate whether the participation in the microcredit program of the Grameen bank helps participating women members in starting micro-enterprises. The descriptive results and the results from the multivariate techniques indicate that the participation in the microcredit program does not help women members to start their micro-enterprises. The results indicate that women are not using their microcredit loans from the Grameen Bank for starting micro-enterprises. This result is not surprising in a Muslim predominant country like Bangladesh. The socio-cultural environment is not conducive for women to start a micro-enterprise of their own. In spite of some positive changes in socio-

cultural attitude of the society towards women's participation in the economic activities in the last two decades, still it is regarded in the rural areas as unacceptable to see women to run their businesses outside home in the market places. Goetz and Sen Gupta (1996) and Chowdhury (2008) have also found similar results in their studies. Goetz and Sen Gupta (1996) have found that the control on microcredit loans does not remain with women members in most of the cases. Using data from the three largest microfinance institutions in Bangladesh, Chowdhury (2008) argues that the access to microcredit does not contribute to the women entrepreneurship development at the household level. Women members use their microcredit loans for increasing the capital of existing businesses that are usually managed by male members in the household. Going one step forward, the present paper argues that the participation of women in the microcredit program of the Grameen Bank helps husbands of women members to start micro-enterprises that are managed and controlled by only husbands. It means that the control on microcredit loans goes from the women members to their husbands.

Fletschner (2006) finds that intra-household dynamics are more important for women than men in terms of the access to a loan. Similarly this paper also finds that intra-household dynamics are more important for women than men in starting micro-enterprises. Although the microcredit program of the Grameen Bank has been initiated with the objective of promoting micro-enterprise development among poor women, it is evident from the results of this paper that a mere access to microcredit does not enhance self-employment of women though enabling them to start micro-enterprises. The improvement in the intra-household dynamics and the socio-cultural environment is also required side by side giving microcredit to poor women for enabling them to start micro-enterprises owned and managed by them.

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**Table 1** Performance of the Grameen Bank

Performance Indicator	1986	1990	2000	2008
Cumulative Disbursement (All Loans, in million USD)	57	248	3060	7591
Disbursement During the Year (All Loans, in million USD)	18	69	268	904
Housing Loan Disbursement During the Year (in million USD)	0.19	224.60	1.41	2.21
Number of Houses Built cum (in thousand)	2.04	91.2	53.3	66.6
Total Deposits (Balance) (in million USD)	4	26	127	934
Number of Members (in million)	0.2	0.9	2.4	7.7
Female Members (%)	74	91	95	97
Number of Villages covered	5,170	19,536	40,225	83,566
Number of Branches	295	781	1,160	2,539

**Table 2** Variables Used in the Analysis

Variables	Labels	Mean	Std. Dev.
empbusm	Micro-enterprise Ownership of the Grameen Bank (GB) Member (dummy)	0.06	
empbusm	Micro-enterprise Ownership of the Husband of the GB Member (Dummy)	0.32	
tcap	Total Micro-enterprise Capital (in Taka)	11,729	
hage	HH head's age	39.71	10.00
hedu	HH head's total years of schooling	3.21	3.98
medu	Total years of schooling of microcredit program member	2.27	3.23
edumo	Total schooling of all members except household male head	7.40	8.82
edufo	Total schooling of all members except household female head	4.74	6.37
Tfm0t15	Total number of HH female members between 0 to 15	1.17	1.05
Tmm0t15	Total number of HH male members between 0 to 15	1.23	1.05
tfm16t24	Total number of HH female members between 16 to 24	0.36	0.59
tmm16t24	Total number of HH male members between 16 to 24	0.47	0.73
tfm25t40	Total number of HH female members between 25 to 40	0.65	0.49
tmm25t40	Total number of HH male members between 25 to 40	0.62	0.58
tfm40t59	Total number of HH female members between 40 to 59	0.22	0.42
tmm40t59	Total number of HH male members between 40 to 59	0.46	0.50
tfm60a	Total number of HH female members between 60 and above	0.05	0.23
tmm60a	Total number of HH male members between 60 and above	0.08	0.27
pass	Total value of HH productive assets (before membership)	9386	17956
hsland	Total area of homestead land (in decimal, before membership)	7.52	7.62
pschool	Existence of primary school in the village (dummy)	0.79	-
school	Existence of higher secondary school in the village (dummy)	0.26	-
electricity	Existence of electricity in the village (dummy)	0.79	-
dmarket	Distance to the nearest market	0.82	0.74
dbank	Distance to the nearest bank from the house	1.32	0.94

**Table 3:** Employment Status of MFI Members of the Program Group

Employment Status	Program Group	Comparison Group
Micro-enterprise Ownership	19 (6.01%)	14 (6.83%)
Housewife and Poultry	8 (2.53%)	4 (1.95%)
Housewife	273 (86.39%)	177 (86.34%)
Others	16 (5.06%)	10 (4.88)
Total	316	205
Pearson Chi2	0.3214	
Pr	0.956	

**Table 4:**

Determinants of the Micro-enterprise Ownership by Women Members of the Grameen Bank

Variable	Labels	Coefficients
mdur	Grameen bank membership duration	0.0005
hage	HH head's age	0.0552***
hedu	HH head's total years of schooling	0.0259
medu	Total years of schooling of microcredit program member	-0.0232
edumo	Total schooling of all members except household male head	0.0012
edufo	Total schooling of all members except household female head	-0.0189
tfm0t15	Total number of HH female members between 0 to 15	-0.0129
tmm0t15	Total number of HH male members between 0 to 15	-0.2494**
tfm16t24	Total number of HH female members between 16 to 24	0.2976
tmm16t24	Total number of HH male members between 16 to 24	0.0042
tfm25t40	Total number of HH female members between 25 to 40	0.6350*
tmm25t40	Total number of HH male members between 25 to 40	-0.1674
tfm40t59	Total number of HH female members between 40 to 59	0.0753
tmm40t59	Total number of HH male members between 40 to 59	-0.7946**
Tmm60a	Total number of HH male members between 60 and above	-0.7704
pass	Productive Assets (BM)	-7.82e-06
hsland	Total Area of Homestead Land (BM)	0.0046
pschool	Existence of Primary School in the Village (Dummy)	0.1989
school	Existence of Higher Secondary School in the Village (Dummy)	0.0710
electricity	Existence of electricity in the Village (Dummy)	0.3049
dbazar	Distance to the Market	-0.2442
dbank	Distance of the Nearest Bank from the House	-0.1051
Constant		-3.5948
Observations		489
LR Chi2(13)		38.44
Prob > Chi2		0.0163
Pseudo R2		0.1591

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table 5: Employment Status of Husbands of the Grameen Bank Members**

Employment Status	Program Group	Comparison Group
Agriculture	69 (21.84%)	51 (24.88%)
Micro-enterprise Ownership	118 (37.34%)	47 (22.93%)
Daily Labourer	32 (10.13%)	39 (19.02%)
Housewife	68 (21.52%)	43 (20.98%)
Others	29 (9.18%)	25 (12.20%)
Total	316	205
Pearson Chi2	16.99	
Pr	0.002	

**Table 6:**

Determinants of the Micro-enterprise Ownership by Husbands of Women Members of the Grameen Bank

Variable	Labels	Coefficients
mdur	Grameen bank membership duration	0.0055***
hage	HH head's age	-0.0028
hedu	HH head's total years of schooling	0.0076
medu	Total years of schooling of microcredit program member	-0.0083
hedu	HH head's total years of schooling	0.0038
medu	Total years of schooling of microcredit program member	0.0048
Tfm0t15	Total number of HH female members between 5 to 15	0.1232*
tmm0t15	Total number of HH male members between 5 to 15	-0.0042
Tfm16t24	Total number of HH female members between 16 to 24	-0.0445
tmm16t24	Total number of HH male members between 16 to 24	-0.0870
Tfm25t40	Total number of HH female members between 25 to 40	0.0258
tmm25t40	Total number of HH male members between 25 to 40	0.0531
Tfm40t59	Total number of HH female members between 40 to 59	-0.0218
tmm40t59	Total number of HH male members between 40 to 59	0.1151
tmm60a	Total number of HH male members between 60 and above	-0.2146
Tfm60a	Total number of HH female members between 60 and above	-0.1014
pass	Productive Assets (BM)	0.00001***
hsland	Total Area of Homestead Land (BM)	0.0040
pschool	Existence of Primary School in the Village (Dummy)	0.3707**
school	Existence of Higher Secondary School in the Village (Dummy)	-0.0406
electricity	Existence of electricity in the Village (Dummy)	0.1891
dmarket	Distance of the Nearest Market	0.1111
dbank	Distance of the Nearest Bank from the House	-0.2202***
Constant		-1.2121
Observations		517
LR Chi2(13)		45.52
Prob > Chi2		0.0034
Pseudo R2		0.0703

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table 7: Micro-enterprise Capital**

Group	Mean (Taka)	Std. Err.
Comparison	5,515	1,228
Program	15,812	1,707
t (pr)	4.42 (0.00)	

**Table 8: Micro-enterprise Capital of the Program Group Households**

Membership Status	Mean (Taka)	Std. Err.
Before Membership	5,100	763.15
After Membership	15,812	1,707
t (pr)	7.72 (0.00)	

**Table 9: Determinants of the Micro-enterprise Capital of the Household**

Variable	Labels	Coefficients
mdur	Grameen bank membership duration	119.19***
Hage	HH head's age	36.92
Hedu	HH head's total years of schooling	327.33
Medu	Total years of schooling of microcredit program member	72.55
hhmfu5	Total Female Members Under 5	221.74
Hhmmu5	Total Male Members Under 5	352.16
tfm5t15	Total number of HH female members between 5 to 15	2237.64
tmm5t15	Total number of HH male members between 5 to 15	314.33
tfm16t24	Total number of HH female members between 16 to 24	780.37
tmm16t24	Total number of HH male members between 16 to 24	-1637.45
tfm25t40	Total number of HH female members between 25 to 40	1288.66
tmm25t40	Total number of HH male members between 25 to 40	4623.95*
tfm40t59	Total number of HH female members between 40 to 59	-1564.31
tmm40t59	Total number of HH male members between 40 to 59	522.60
tfm60a	Total number of HH female members between 60 and above	-6902.93
tmm60a	Total number of HH male members between 60 and above	-636.41
pass	Productive Assets (BM)	0.34***
hsland	Total Area of Homestead Land (BM)	80.25
pschool	Existence of Primary School in the Village (Dummy)	314.56
school	Existence of Higher Secondary School in the Village (Dummy)	5393.89*
electricity	Existence of electricity in the Village (Dummy)	3055.57
dmarket	Distance of the Nearest Market	3276.76*
dbank	Distance of the Nearest Bank from the House	-4850.76***
Constant		-9052.34
Observations		515
R-squared		0.18

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

## Notes

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<sup>1</sup> Dr. Chowdhury is Professor in the Department of Finance and Executive Director of the Center for Microfinance and Development, University of Dhaka.

<sup>2</sup> Each Grameen Bank branch consists of 50-60 centres, each centre consists of 8 groups and each group consists of 5 members.