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**Alleviating Poverty through Microfinance: Evidence from Grameen Bank**

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**Abstract**

This paper examines the role of microfinance in alleviating poverty within the framework of the Grameen Bank of Bangladesh. By considering the definition of poverty given by the Grameen Bank, this paper specifically investigates the impact of microfinance on poverty alleviation. A survey that includes two separately selected samples was conducted among the respondents. The first sample was drawn from the members of the Grameen Bank and it constituted the treatment group. The second sample which constituted the control group was drawn from the households, who were not served by any microfinance institutions although they were eligible. Independent sample tests have been carried out by comparing the treatment and the control groups to observe the impact of microfinance on poverty alleviation. The results show that microfinance helps to alleviate poverty by addressing the factors that cause poverty. This implies that microfinance is an important factor for poverty alleviation.

**Keywords:** Microfinance; Poverty Alleviation; Grameen Bank

**1. Introduction**

Microfinance is the provision of financial services including loans, savings, remittances and insurance for the poor people. The poor who have little access to formal financial systems might benefit from these services. Microfinance institutions target the poor, specially the women, to improve their overall economic conditions. Grameen Bank, the pioneer of microfinance, tries to reduce poverty by providing microfinance to the poor rural women of Bangladesh. The success rate of its poverty reduction depends largely on how poverty is defined.

Poverty is a condition characterized by the lack of food and other basic needs. Microfinance is a means to alleviate poverty by allowing the poor to have access to loans, the lack of which might cause poverty. The Grameen Bank gives loans to the poor for generating

income, so they can bring prosperity to their lives. It encourages the members to save money on regular basis. It also attempts to improve the condition of housing while making its members conscious about education, health and sanitation.

The role of the Grameen Bank in alleviating poverty has been studied by many scholars for about last three decades or so (Chowdhury, Ghosh and Wright, 2005; Hossain, 1988 and 2002; Hulme and Mosley, 1996; Khnadker, 2001; Khandker and Samad, 2013; Pitt, Khandker and Cartwright, 2006; Rahman, 2002). It was argued in the studies that loans to the poor generally raise income and alleviate poverty. Although poverty is a broad concept and varies from country to country, most of the studies used a narrow definition of poverty relating it mainly to low income and expenditure, employment, land purchase and labor force participation. Hossain (2002), for example, examined the impact of Grameen Bank on rural poverty with respect mainly to income, employment, capital accumulation and ownership of assets such as livestock. Chowdhury, Ghosh and Wright (2005) studied the effect of microcredit on poverty with regards to objective and subjective poverty; whereas, the former one was based on the costs associated with obtaining minimum daily calories and the latter one is related to the perception of the household head about poverty.

An effective anti-poverty program must start with a broad-based definition of poverty, which might precisely include the variables that cause poverty. At Grameen Bank, in Bangladesh, there is a clear definition of poverty so that it can measure the success in helping people rise out of poverty through microcredit (Yunus and Weber, 2008). The Grameen Bank's definition of poverty is based on ten points. It is wide-ranging and indicates a specific living condition of a member of the Grameen Bank. While microfinance and poverty alleviation is a popular subject of discussion and debate, academic research on this topic is almost absent where the Grameen Bank's definition of poverty is taken into consideration. Literature indicates that an important question, still unresolved empirically, is how the Grameen Bank alleviates poverty with regard to its own definition of poverty. Until we understand how Grameen Bank alleviates poverty by considering its own definition, an important aspect of the contribution of microfinance will remain unexplored. Hence, the main objective of this study is to enhance knowledge in this regard.

Apparently, Grameen Bank's microfinance helps to alleviate poverty, as it is an important mean for increasing income, raising savings and consumption. It also facilitates better

housing by supporting the borrowers with housing loans. The increase in income, access to education loans and scholarship programs of the Grameen Bank inspires the borrowers to spend more on education, thereby, resulting into high literacy rates among the borrowers. Microfinance also positively affects the health and sanitation of the borrowers by increasing their ability to spend on them. The remainder of this paper is structured as follows. The second section reviews literature on microfinance and poverty. Section three describes the data and research methods. The fourth section presents results and discussions. The final section makes concluding remarks.

## **2. Literature Review**

As poverty results from a multiplicity of causes, alleviating poverty, therefore, means addressing the causes of poverty. Poverty alleviation is about increasing the ability of the poor to meet the basic needs even during the times when their income is squeezed. The following literature reviews attempt to demonstrate the impact of microfinance on poverty alleviation from different perspectives.

It is observed that, life in rural Bangladesh is constantly vulnerable to income erosion as a result of contingencies that may be brought about by structural reasons, sickness, death of an earning member of a family, and other unforeseen events (Sharif, 1997). Johnson and Rogaly (1997) argued that if poverty is understood as low levels of annual income per household, reducing poverty is about raising average income levels. Microfinance is an important intervention for fighting poverty as it helps the poor to increase income and build assets. According to Khandker (2011), microfinance facilitates production and consumption. Small loans from a microfinance institution create employment for the poor, especially women. With an easy access to microfinance programs, the poor regularly saves to build financial and physical capital. He also argues that easy loan repayment terms help the poor by levelling off consumption, building assets and net worth, and by helping the unemployed to become self-employed (Khandker, 2001).

In a study, Harper (2003) claims that loans help to increase the income and asset position of the borrowers. The accumulation of savings contributes to improved standards of living. It serves to capitalize on the productive activities, which sustain the family and thereby, enhancing the income of the family. The experience shows that many relatively poor households can save in quantity when given attractive saving vehicles, suggesting that one way to address

the borrowing constraints faced by poor households is may be to address saving constraints instead of addressing just the credit side (Morduch, 1999). There is evidence that microcredit can help poor families to break out of the poverty cycle through the accumulation of assets and improvement in human capital (Mahmud, 2004). Providing microfinance can give poor people the means to protect their livelihoods against shocks, as well as, to build up and diversify—also a means of protecting—their livelihood activities by investing in loan capital (Johnson and Rogaly, 1997).

Alleviating poverty starts with creating food security for the poor. Food security, at the household level, is defined in its most basic form as access, by all people at all times, to the food needed for a healthy life (Zeller and Richard, 2002). The poor faces different shocks such as illness or death of primary income earner, theft of livestock, crop failure due to flood, drought and heavy rainfall. These shocks may lead to loss of income and household welfare, and reduction in consumption which further increases the extent of poverty. The poor households, with the support of microfinance are less vulnerable through sustainable income-generating activities (Zaman, 2004). In his study, Hossain (2002), found that the income in member households was 43 percent higher than in target group households in control villages and 28 percent higher than in non-participating households in the Grameen Bank villages. Rahman (2002) believes that the Grameen Bank loan is expected to raise the level of income for the loan-takers and hence, raise the total income of the family as a whole.

The increase in the consumption of clothing indicates an improvement in the level of affluence. Rahman (2002) argues that consumption of clothing and expenditure on them can reflect the improvement in the standard of consumption, more than reflected by food consumption or number of meals. In her empirical study on Grameen Bank, she found that expenditure on clothing is significantly higher for the loan-taking groups as compared to the control groups.

Poverty also results from the lack of housing, which, as Hossain and Sen (1992) have mentioned, is a good indicator of one's standard of living. However, the poor often lacks good housing facilities and they are bound to live in dilapidated houses. The Grameen Bank helps the poor to own habitable houses by granting them housing loans. The borrowers can also make additional income by using general loans which allows them to build houses. Uddin (2012) found a positive relationship between microfinance participation and housing condition. He

claims that the rise in income through profitable use of loans and the availability of housing loan increases a borrower's ability to invest in housing.

Education tends to have a significant impact on increasing rural incomes, and hence, reduces rural poverty. The spread of education is less among the rural people as many of them fail to understand its true value. Krogh, Hansen, Wendt and Elkjaer (2009) claims that persuasion, advocacy and awareness will often be required in combination with scholarships or other financial support to motivate families to send their daughters to school, even though in most cases, education systems do not discriminate between boys and girls in terms of access. Yunus (2004) affirms the Grameen Bank encourages the borrowers to enrol their children in school, stay there, and also excel there. It also gives scholarships for higher education to the children of its borrowers. Helen Todd (cited in Wright, 2000) found higher rates of higher level schooling of the children of the members of Grameen Bank compared to the children of non-members.

The poor often lives in impoverished health conditions which lowers their physical ability to work. Less work means less income, therefore, resulting in a person's inability to see a doctor. Poor health thus indicates a dimension of poverty and it may further deteriorate the extent of poverty. Nanda (2009) studied women's participation in rural credit programs and demand for formal health care, where he found a positive impact of women's participation on their decision to seek formal health care. The study also found a positive relation between economic empowerment through access and control over resources and reduction of health problems.

The survey of literature suggests that microfinance is an important means for alleviating poverty by addressing the basic causes of poverty. Since the previous studies relied heavily on the narrow definition of poverty, this study, by considering the Grameen Bank's comprehensive definition of poverty, is expected to fill the vacuum of our knowledge in this regard and contribute to the existing literature.

### **3. Data and Research Methods**

The data for the study were collected from primary sources. A questionnaire survey was conducted during the period of April-May 2011 in the district of Barisal, Bangladesh. The survey included two separately selected samples. The first sample was from the households of

the treatment group and second one from the control group. The treatment group incorporates the households who were the members of the Grameen Bank. A sample of three hundred households from the treatment group was selected on a non-random basis. The main criterion for selection was the willingness of the respondent households for us to investigate their income, savings, credit, asset holdings and others. At the same time a condition of at least two-year membership period was imposed while selecting them with the assumption that such a period is required to get the considerable benefit of microfinance services.

In contrast, the households of the control group came from two sources: households who were not served by the Grameen Bank or other microfinance institutions although they were eligible; and those who joined any microfinance institutions and were yet to receive loans. A total of one hundred respondents were selected from the control group. They were also selected on a non-random basis with the criterion of their willingness to share their information on the variables of interest. A household is defined as a person or a group of persons who lives in the same house, have common cooking and eating arrangements and acknowledge one adult member as the head of the house.

The study used personal interviews through questionnaire. A personal interview was adopted because the main advantage of such an interview is that the researcher can adapt the questions as necessary, clarify doubts and ensure that the responses are properly understood by repeating or rephrasing the questions. The respondents were interviewed in their village homes at their convenience so that they could pay proper attention to the questions. The questionnaire survey was followed by group discussions which helped the respondents to share their ideas, feelings and experiences with the Grameen Bank.

In order to analyse the data, both descriptive and inferential statistics have been used. The descriptive statistics were used to know the average performance of the variables. Independent sample tests between the treatment and the control groups were performed to know whether microfinance participation brings any significant changes to the members as compared with non-members. Where there is no evidence of baseline data, the comparative analysis between the treatment group and control group is a suitable method to study the impact of participation in the microfinance interventions (White and Flanagan, 2006). We recognize the data constraints. But, with the quality of the data, statistical analyses and interviews of the respondents, we are reasonably confident that our findings are valid.

#### 4. Results and Discussion

This section shows the sample characteristics along with empirical results on the relationship between microfinance and poverty alleviation. The impact of microfinance on poverty alleviation can be understood by looking at the changes in the variables mentioned in the ten-point definition of poverty.

##### 4.1 Sample Characteristics

Table 1 presents the socio-economic profile of the treatment and the control households by age, educational attainment, marital status, family size, earning members and their occupation. Age distribution of the treatment group shows that, only 6 percent of the respondents come from the lowest age group (20–24) and 7 percent from the highest age group (55 and above). The age structure of the members implies that the poor belongs to various age groups and every group ranging from 25 to 54 has a significant representation. Like the treatment group the age distribution of the control group also shows significant representation in every group ranging between 20 and 49. Only 5 percent members belong to the age of 50 and above.

Table 1: Sample characteristics

Variable	Treatment group		Control group	
	Frequency	Percent	Frequency	Percent
1. Age distribution				
20 – 25	18	6	16	16
25 – 30	50	17	16	16
30 – 35	48	16	14	14
35 – 40	55	18	13	13
40 – 45	41	14	17	17
45 – 50	55	18	19	19
50 and above	33	11	5	5
Total	300	100	100	100
2. Educational attainment				
No education	91	31	38	38
Primary	96	32	30	30

Secondary	73	24	19	19
Higher secondary	40	13	13	13
Total	300	100	100	100
3. Marital status				
Single	3	1	-	-
Married	266	89	91	91
Divorced and others	31	10	9	9
Total	300	100	100	100
4. Family members				
2 – 3	54	18	32	32
4 – 5	168	56	47	47
6 – 7	72	24	20	20
8 – 9	6	2	1	1
Total	300	100	100	100
5. Earning members				
One	213	71	76	76
Two	73	24	22	22
Three	14	5	2	2
Total	300	100	100	100
6. Occupation				
Farmer	19	6	2	2
Day labourer	102	34	37	37
Others	179	60	61	61
Total	300	100	100	100

Source: Author's survey

The educational attainment indicates that 31 percent of the members in the treatment group did not have any formal education. Among those, who attained some education shows about one in every three respondents has primary education; about one in every four respondent has secondary level education. Only 13 percent have higher secondary education. The respondents in the control group also have almost same patterns of educational background. The



high concentration of members to low level of education indicates a high association between illiteracy and poverty because a fairly educated woman is more likely to find a job elsewhere which may be a better option to fight poverty than joining this bank.

The marital status of respondents shows that most of the members in both the treatment and the control groups are married, about 89 percent in the treatment group and 91 percent in the control group. The percentage of divorced and others are almost same in both groups. The number of respondents in the unmarried group was almost insignificant. The marital status indicates that married women have to support their families and thus their number is highest of all in the treatment group. The divorced, widowed or abandoned belong to a disadvantaged group and they have to work harder to support themselves and their families. However, unmarried women remain mostly dependent on their parents. As a result, their rate of participation in microfinance intervention is lowest.

The same table shows most of the respondents in the treatment group have family members between four and five. About one in every four respondents has family members between six and seven. It is only 18 percent of the respondents who have family members between two and three. In contrast, family size in the control group shows 47 percent have the family size between four and five, 32 percent between two and three and 20 percent between six and seven. The size of family is an important consideration because a poor but large family takes much time to come out of poverty given the number of earning members remaining same. As a result, it is assumed that, the larger the family size, the higher the extent of poverty. The present sample also shows that most of the respondents, 80 percent, in the treatment group have relatively larger family members.

Table 2: Frequency distribution

Variable	Frequency	Percent
1. Membership period		
02 – 04	143	47.7
05 – 07	59	19.7
08 – 10	49	16.3
11 – 13	14	4.7
14 – 20	24	8.0
21 – 27	11	3.7

Total	300	100
2. Monthly income		
2001 – 5000	27	9.0
5001 – 8000	126	42.0
8001 – 11000	79	26.3
11001 – 14000	37	12.3
14001 – 17000	22	7.3
17001 – 26000	9	3.0
Total	300	100
3. Monthly food expenditure		
2001 – 5000	105	35.0
5001 – 8000	156	52.0
8001 – 11000	31	10.3
11001 – 17000	8	2.7
Total	300	100
4. Weekly instalment		
1 – 200	61	20.5
201 – 400	115	38.7
401 – 600	65	21.9
601 – 800	17	5.7
801 – 1000	10	3.4
1001 and above	29	9.8
Total	297	100
5. Annual savings		
501 – 1500	64	21.3
1501 – 2500	68	22.7
2501 – 3500	97	32.3
3501 – 4500	33	11.0
4501 – 5500	15	5.0
5501 and above	23	7.7
Total	300	100

6. Price of houses		
5001 – 25000	81	27.0
25001 – 45000	124	41.3
45001 – 65000	48	16.0
65001 – 85000	24	8.0
85001 – 105000	18	6.0
105001 and above	5	1.7
Total	300	100
7. Price of land		
10001 – 40000	52	44.8
40001 – 70000	33	28.4
70001 – 100000	17	14.7
100001 – 130000	3	2.6
130001 and above	11	9.5
Total	116	100
8. Earning assets		
4001 – 24000	96	73.3
24001 – 44000	13	9.9
44001 – 64000	10	7.6
64001 – 84000	4	3.1
84001 and above	8	6.1
Total	131	100
9. Domestic animals		
1000 – 15000	54	50.5
15001 – 29000	32	29.9
29001 – 43000	13	12.1
43001 – 57000	4	3.7
57001 and above	4	3.7
Total	107	100

Source: Author's survey

The number of earning members illustrates that most of the families, 71 percent in the treatment group and 76 percent in the control group, have only one earning member; 24 percent

households in the treatment group and 22 percent in the control group have earning members of two. The patterns of family size and earning members suggest that most of the poor families have a small number of earning members to feed a large number of members. The occupation indicates that only 6 percent of the respondents in the treatment group are farmers, 34 percent day labourers and the rest depend on informal sectors. The pattern of occupation in the control group is almost same as that in the treatment group.

Table 3: Descriptive statistics

Variable	N	Minimum	Maximum	Mean	Std. Deviation
Membership period	300	2	26	6.71	5.158
Monthly income	300	2400	25000	9001	3588
Monthly food expenditure	300	2400	15000	6048	2002
Weekly instalment	297	5	4470	487	487
Annual savings	300	560	90000	3317	5506
Price of houses	300	6000	180000	42060	27018
Price of land	116	10000	800000	65509	80028
Earning assets	131	4000	250000	27298	34728
Domestic animals	107	1000	95000	17823	16795

Table 4: Group statistics

Variable	Membership status	N	Mean	Std. Deviation	Std. Error Mean
Monthly income	Member	300	9001	3588	207
	Non-member	100	7390	3812	381
Monthly food expenditure	Member	300	6048	2002	116
	Non-member	100	5533	2125	212
Annual savings	Member	300	3317	5506	318

	Non-member	100	1435	1649	165
Price of houses <sup>1</sup>	Member	178	45309	27146	2035
	Non-member	97	28082	24805	2519
Price of houses <sup>2</sup>	Member Type I	178	45309	27146	2035
	Member Type II	122	37320	26223	2374
Consumer durables	Member	300	26158	13756	794
	Non-member	100	14413	9837	984
Attending school	Member	286	.93	.261	.015
	Non-member	77	.75	.434	.049
Using sanitary latrine	Member	300	.97	.180	.010
	Non-member	100	.57	.498	.050
Ability to spend on clothing	Member	300	.55	.498	.029
	Non-member	100	.28	.451	.045
Per capita income	Member	300	2039	952	55
	Non-member	100	1836	1080	108
Per capita consumer durables	Member	300	6068	4292	248
	Non-member	100	3663	2797	280
	Member	300	685	569	33

Per capita savings	Non-member	100	368	474	47

Note : <sup>1</sup> In this category member means one who took house loan to repair or build her house.

<sup>2</sup> Member Type I indicates those who took house loans to repair or build their houses while Member Type II includes those who are the members of the Grameen Bank and yet to receive house loans.

Table 5: Independent sample test

Variable	Treatment group	Control group	Difference	% difference over control group
(1) Average household				
Monthly income	9001	7390	1610	22***
Monthly food expenditure	6048	5533	515	9**
Prices of consumer durables	26158	14413	11745	81***
Annual savings	3317	1435	1883	131***
Prices of house <sup>1</sup>	45309	28082	17227	61***
Prices of house <sup>2</sup>	45309	37320	7989	21***
Attending school	.93	.75	.17	23***
Using sanitary latrine	.97	.57	.40	70***
Spending ability on clothing	.55	.28	.27	96***
(2) Average per capita				
Monthly income	2039	1836	203	11*
Consumer durables	6068	3663	2405	66***
Annual savings	685	368	317	86***

\*\*\*. Significant at 0.01 level, \*\*. Significant at 0.05 level, and \*. Significant at 0.10 level

Note : <sup>1</sup> Comparison between the treatment and the control groups. Those who took house loan to repair or build their houses were considered from the treatment group.

<sup>2</sup> Comparison within the members of the Grameen Bank; the members who took house loans belong to the

treatment group and those who are yet to receive such loans belong to the control group.

## **4.2 Independent Sample Tests**

In this section, the empirical findings and discussion are mentioned. However, the chronology of the variables as mentioned in the ten-point definition of poverty has not been maintained here. Keeping the variables same, they have been arranged in different ways for the convenience of analysis.

### **4.2.1 Food and Clothing**

The ability of the borrowers to spend on food and clothing increased largely due to the rise in income after joining the Grameen Bank. The results show that the monthly expenditure on food was Tk. 6,048 for the treatment group and Tk. 5,533 for the control group (Table 4). A low standard deviation of expenditure in the treatment group shows the consistency of expenditure as compared with that in the control group. The households in the treatment group recorded 9 percent higher average monthly expenditure on food consumption over that of the control group (Table 5). The comparison of average expenditure on food produces a significant difference at 5 percent level. The ability to spend on clothing like daily clothing, winter clothing and mosquito netting by the treatment group was also higher in comparison to that of the control group. The evidence shows that 55 percent members of the treatment group were able to maintain all these clothing all the year round while only 28 percent households of the control group could maintain to do so. The differential ability to spend on clothing by the treatment and the control groups is statistically significant at 1 percent level.

The results imply that the households in the treatment group attained the ability to spend more on food and clothing. The higher ability to spend on food and clothing is associated with participation in the microfinance program of the Grameen Bank. The poor borrowers got engaged in various income-generating activities after they had joined the bank. In line with the social development programs of the bank, every member tried to maintain additional sources of income by rearing domestic animals or by planting vegetables, and fruit-giving trees around their houses. With the increase in income they have also invested the same to generate additional income. At the same time, they have saved as much money as they could every week. All these activities allowed the members to end up with additional income that helped them to spend not

only on food consumption but also on clothing.

In addition to spending on food and clothing, the ability of the borrowers to generate income was also higher in compared to that of the control households. The average monthly income was Tk. 9,001 for the treatment group and Tk. 7,390 for the control group. The income of the treatment group is also more stable than that of the control group which is evident from low standard deviation (Table 4). The independent sample test with regards to average income shows households in the treatment group registered about 22 percent higher average monthly income as compared to that of control households which is statistically significant at 1 percent level (Table 5). A comparison between the treatment group and the control group with regards to monthly per capita income also shows a significant difference between the groups. The average per capita income of the treatment group was Tk. 2,039 and of control group was Tk. 1,836. The treatment group thus registered about 11 percent higher per capita income as compared with that of the control group. The difference of income is statistically significant at 10 percent level.

It is evident that there is a significant and positive relationship between the intervention of the Grameen Bank and increase in income. The old saying *money begets money* applies to the borrowers of the bank because access to loans opened their opportunities to make investment and generate additional income. With the help of microfinance the households gained access to financial capital which they invested in various profitable sectors such as grocery shops, milk cows, paddy cultivation, paddy and rice trading, land leases, goat and bullock raising, vegetable trading, bamboo and cane works and others. The return on investment increased their average income, which the households without microfinance intervention failed to earn. Thus, the households participating in microfinance program have been able to increase their income at individual and household levels.

#### **4.2.2 Additional Sources of Income**

The study found that the poor are able to increase asset ownership through their participation in microfinance. With the increase in income, many borrowers bought land which gave them a sense of self-worth. Land ownership is more important to the poor as they often lack it.

Table 2 shows that 39 percent (116 members) bought some land after joining the Grameen Bank. The average price of such land was Tk. 65,509 with the maximum of Tk.



800,000 and minimum of Tk. 10,000 (Table 3). A few members, 12 percent, had land worth more than Tk. 100,000. The evidence shows a good number of members bought some land by the profit from the loans. The land ownership is highly associated with the period of membership because the members can move towards larger loans and make big investment with the increase in membership period.

The Grameen borrowers also increased the ownership of other earning assets which work as additional sources of income. The data in Table 2 shows that about 44 percent own some assets such as agricultural equipment, vehicles and transportation like rickshaw, van, pushcart and sanitation materials that can be used to generate additional income. The average market price of such assets was Tk. 27,298 with the maximum of Tk. 250,000 and minimum of Tk. 4,000 (Table 3). The rural poor have the practice of rearing up domestic animals such as cow, goat, buffalo, chicken and even pigeon to increase their sources of income. These assets can be used to generate income on emergency basis. About 36 percent of members had domestic animals with the average market price of Tk. 17,823 (Table 2 and 3). The participation of the poor in income-generating activities through microfinance intervention helped them to own more assets. Many members who took loans from moneylenders on land-mortgage took them back paying off their debt. The increased income also helped some members to lease-in land which enhanced their sources of income.

#### **4.2.3 Loan Instalment and Annual Savings**

The process of development through borrowing mechanism depends on the fact that a person who takes a loan must be able to generate income higher than the loan instalment. The Grameen members repay the loans on weekly basis and the amount of weekly instalment indicates the loan size. Generally a large loan produces a large weekly instalment. The result shows that about 80 percent of the borrowers had weekly instalment over Tk. 200. It is important to note that about 10 percent of the members had weekly instalment above Tk. 1,000, indicating their high capacity to use loans as compared with other borrowers. The average weekly instalment was Tk. 487 with a maximum of Tk. 4,470 (Table 2 and 3).

The descriptive statistics shows all members of the Grameen Bank maintained some savings. A comparison indicates the average annual saving per household was Tk. 3,317 for the treatment group and Tk. 1,435 for the control group (Table 5). The average saving of the

treatment group was 131 percent higher than that of the control group and the difference is significant at 1 percent level. A highly significant saving per capita was also found from treatment households over that of control households. The average saving per capita of the treatment group was Tk. 685 and for the control group was Tk. 368, indicating the treatment group registered 86 percent higher per capita saving as compared with that of the control group. The difference of savings is statistically significant at 1 percent level.

The Grameen Bank is able to increase savings both at individual and household levels. The higher growth of savings in target households was due mainly to the culture of saving introduced by the Grameen Bank. Within the framework of this bank, every member is highly encouraged to save a minimum amount of money every week. They are persuaded to save not only to increase their financial assets but also to increase their investible resources. There may be unavailability of loans from the bank in future or a borrower may not get the required amount of loan. Thus, savings may work as a good substitute for such barriers. There is also a relation between saving and loan, that is, the higher the saving the larger will be the loan size. Hence, the members try their best to save money, but this type of motivation and effort is missing in case of the households who are not involved with any microfinance institution. Consequently, there exists a significant difference in the savings of the treatment and the control households.

#### **4.2.4 Housing Condition**

Table 4 shows 59 percent constructed new houses or repaired the existing ones either by the profit of loans or by the housing loans. About 73 percent of the members were living in the houses worth of at least Tk. 25,000. A comparison was also made between the treatment and the control groups with respect to the prices of house in order to know whether microfinance had any notable impact on housing. The members who built their houses either by loans or by their profit were considered for the treatment group. The comparison indicates that the average price of houses of the treatment group was Tk. 45,309 which is considerably higher than the average price of Tk. 28,082 of the control group (Table 5). The average price of houses of the treatment group was 61 percent higher than that of the control group, which is statistically significant at 1 percent level. When compared based on those who took housing loans and those who were waiting to receive them also produced a significant difference. The average price of houses of the members with housing loans was 21 percent higher than that of the members without

housing loans. The difference of prices between the groups is significant at 1 percent level.

House ownership is an indication of self-worth and it increases one's status in the society. Poor households carry out some business activities in their houses. Hence, house ownership is necessary not only for living but also for doing some business there. The Grameen Bank helped the poor to build their houses as quickly as possible. The social development program of the bank also reminds the members of the fact that they will not live in dilapidated houses, and that they will repair their houses and work toward constructing new houses at the earliest opportunity. A member can take out a housing loan for constructing a new house. These initiatives thus help the members to improve their housing condition.

#### **4.2.5 Education, Health and Sanitation**

The educational attainment in the Grameen Bank is measured by whether the target households, who have children above the age of six, are sending them to school or not. The evidence of sending eligible children to school has found to be higher in the treatment group than that of the control group. The treatment households were sending 93 percent of their eligible children to school, but the control households were sending only 75 percent. A comparison of proportions between two groups produces a statistically significant difference at 1 percent level (Table 4 and 5). As Grameen Bank pays more attention to the literacy of the children of its members through persuasion, motivation and financial support, it made a big difference between the treatment and control groups.

The households in the treatment group are more conscious about health, sanitation and drinking water. No member was found to keep the actual account of spending on healthcare. But they agreed that they could spend more on healthcare than before. The incidence of using sanitary latrines was much higher than that of the control group. In the control group households, only 57 percent have access to sanitary latrines. By contrast, as high as 97 percent of the households in the treatment group have access to sanitary latrines. An independent sample test demonstrates a significant difference at 1 percent level between the treatment and the control groups with respect to the use of sanitary latrines.

With the enhancement of economic condition, the Grameen Bank members can spend more on health and sanitation. There are some reasons for having better health and sanitation practices among the members, compared with non-members. The participation in microfinance

increased health awareness that led to improved nutrition encouraged appropriate health-seeking behaviour and reduced exposure to health hazards. The Grameen Bank persuaded health-promoting activities such as better hygiene, healthy eating patterns, physical exercise, and safe practices. As a result, they had better knowledge about health practices and health education.

## **5. Concluding Remarks**

The present study clearly indicates that the Grameen Bank plays an important role in alleviating poverty. This bank has reduced poverty by extending microfinance to poor rural women who were generally excluded from the formal financial systems. The poor took loans from the Grameen Bank, used them efficiently and generated income. The increase in income led to an increased spending on food and clothing, the very basic needs of a human being. The borrowers enhanced their additional sources of income through the ownership of different earning assets. Income smoothing was followed by consumption smoothing. The borrowers took small loans first and gradually moved towards large loans over the period. They used the loans successfully and generated income in excess of weekly instalments. A part of their income is also saved to increase financial capital for the future. The findings thus suggest that microfinance is an important means for increasing income, smoothing consumption and rising savings.

The Grameen Bank also facilitated better housing for the poor. With the growth of income, the borrowers pay more attention to their housing condition. The availability of housing loans at low interest rates has helped them to build new houses. A good number of borrowers either constructed new houses or repaired the existing ones after being involved with the Grameen Bank. Their housing condition was found to be much better than that of the control households. The result implies that microfinance is valuable for the poor as they graduated towards better housing evident from the higher prices of their houses.

The microfinance participation also increased the borrowers' access to education. The rise in income, access to education loans and scholarship programs of the Grameen Bank inspired the borrowers to spend more on education. These resulted in higher literacy rates among the borrowers when compared with the control households. Hence, the Grameen Bank has been successful in contributing to educational attainment. The Grameen Bank also created positive impact on health and sanitation. Better health and sanitation practices require both knowledge

about them and the ability to treat them. The participation in training programs organized by the Grameen Bank enhanced their knowledge about basic health and sanitation practices. Members also got healthcare services at low costs from the Grameen healthcare centres. With the increase of knowledge and income, it is rational to argue that the Grameen members can spend more on health and sanitation than non-members.

The present study suffers from some limitations. The variables taken into consideration may not be appropriate proxy indicators for assessing the impact of microfinance. Some benefits can easily be stated as concept but difficult to measure in practice. For example, a borrower may attain the ability to spend more on food and clothing, but it may not reveal their quality. When personal funds are added to a loan for making investment, measuring the benefit of the loan becomes very difficult. Therefore, the impact assessment by addressing these issues is an interesting avenue for further research.

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## Appendix 1

The ten-point definition of poverty:

1. The bank member and her family live in a tin-roofed house or in a house worth at least 25,000 taka (roughly equivalent to \$370). The family members sleep on cots or a bedstead rather than the floor.
2. The member and her family drink pure water of tube-wells, boiled water or arsenic-free purified by the use of alum, purifying tablets or pitcher filters.
3. All of the member's children who are physically and mentally fit and above the age of six either attend or have finished primary school.
4. The member's minimum weekly repayment instalment is 200 taka (around \$3).
5. All family members use a hygienic and sanitary latrine.
6. All family members have sufficient clothing to meet daily needs, including winter clothes, blankets, and mosquito netting.
7. The family has additional sources income, such as a vegetable garden or fruit-bearing trees, to fall back on in times of need.
8. The member maintains an average annual balance of 5,000 taka (around \$75) in her savings account.
9. The member has the ability to feed her family three square meals a day throughout the year.
10. All family members are conscious about their health, can take immediate action for proper

treatment, and can pay medical expenses in the event of illness.

## **Appendix 2**

The sixteen decisions of the Grameen Bank:

1. We shall follow and advance the four principles of the Grameen Bank—discipline, unity, courage and hard work—in all walks of lives.
2. Prosperity we shall bring to our families.
3. We will not live in a dilapidated house. We shall repair our houses and work towards constructing new houses at the earliest opportunity.
4. We shall grow vegetables all the year round. We shall eat plenty of them and sell the surplus.
5. During the plantation seasons, we shall plant as many seedlings as possible.
6. We shall plan to keep our families small. We shall minimize our expenditures. We shall look after our health.
7. We shall educate our children and ensure that we can earn to pay for their education.
8. We shall always keep our children and the environment clean.
9. We shall build and use pit-latrines.
10. We only drink water from tube-wells. If it is not available, we shall boil water or use alum to purify it.
11. We will not take any dowry in our son's weddings, neither shall we give any dowry in our daughter's weddings. We shall keep the centre free from the curse of dowry. We shall not practice child marriage.
12. We shall not commit any injustice, and we will oppose anyone who tries to do so.
13. We shall collectively undertake large investments for higher incomes.
14. We shall always be ready to help each other. If anyone is in difficulty, we shall all help him or her.
15. If we come to know of any breach of discipline in any centre, we shall all go there and help restore discipline.
16. We shall introduce physical exercises in all our centres. We shall take part in all social activities collectively.