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# **Re-visiting the Women's Empowerment through Microfinance: New Evidence from Bangladesh**

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## **Abstract**

Previous literature has produced inconclusive evidence on the link between microcredit and women's empowerment. This study, therefore, has re-visited the issue by conducting a household survey in the 4 districts of Bangladesh to examine whether microcredit is really empowering. In doing so, we have done a thorough review of the previous literature. Our results from the logistic regression indicate that microfinance has actually increased women's empowerment in Bangladesh. We have found positive impact of most of the selected indicators on women's empowerment. However, for achieving full benefit of microfinance in empowering women it must be supplemented by a significant amount of skills training and educational opportunities for these poor women and intensive awareness campaigns with an integrated approach.

**Keywords:** Microfinance, Women's Empowerment, Logistic Regression, Bangladesh.

**JEL Classifications:** C01, C21, D60, I32 and I38

## **1. Introduction**

For more than three decades microfinance programs are being considered as an important development strategy all over the world, especially in developing countries. To alleviate poverty and thus to enhance economic development, it has gained huge reputation worldwide (Aruna and Jyothirmayi, 2011). Governments and nongovernment organisations (NGOs) in these countries have been introducing and operating various credit programs that generally target the poor. Most of these programs intentionally target women. This is because women are more credit constrained than men, have limited access to the wage labour market, have negligible share of power in household decision making, have higher records of loan repayment rates than that of men, and thus they are small credit risk, and are more likely to share the benefits of loan with other family members, especially their children. An increase of social and political consciousness, training and skill development of this disadvantaged group might also be the reasons for targeting women (Pitt et al., 2006; Hashemi et al., 1996 and Kato and Kratzer, 2013).

Women constitute half of the population in any country, but their unemployment rate is higher than that of men in virtually every country. Therefore, their strong participation in economic activities is absolutely essential for economic growth and nation building. Referring a recent World Bank report, Sarumathi and Mohan (2011) argue that gender discriminating societies experience greater poverty, slower economic growth, weaker governance, and lower living standard for all people. So empowerment of women is vital but it is a global challenge because traditionally women have been marginalized in male dominated societies, especially in developing countries. Also women constitute about 70 percent of world's poor (Khan and Noreen, 2012). Therefore, one of the top priorities of development agencies and governments

around the world is women's empowerment. International aid donors, governments, policy makers and other development experts view microfinance or microcredit as an important strategic tool to empower women involving them in the development process (Ali and Hatta, 2012).

There are many empirical studies on the relationship of microfinance/microcredit and women's empowerment (see, for example, Hashemi et al., 1996; De Gobbi, 2005; Pitt et al., 2006; Garikipati, 2012; and Kato and Kratzer, 2013), but their findings are inconclusive. This indicates that further research on the issue is still imperative. However, we think that along with pursuing another empirical study using field survey data, it is also important to make a systematic evaluation of the previous literature and existing survey results. Therefore, in this paper, first, we would evaluate the findings of past empirical studies carried out in Bangladesh. Second, we would investigate the impact of microfinance on women's empowerment using data from a primary survey conducted in four districts of Bangladesh. The reason for choosing studies in Bangladesh is that Bangladesh is one of the pioneers in developing modern microcredit/microfinance programs, and the Grameen Bank, a microfinance institute in Bangladesh, and its founder Professor Muhammad Yunus obtained a Nobel Peace Prize in 2006.

## **2. Conceptual framework: Microfinance and Women's Empowerment**

Although microfinance and microcredit are very often interchangeably used, there is a slight conceptual difference between these two terms. The concept of microfinance is wide which includes a broader range of financial services, e.g. credits, savings, insurance, housing loans,

remittances, money transfers, and other financial products. On the other hand, microcredit, which is always a fundamental and most important component of microfinance, refers specifically to loans and the credit needs of poor clients. Generally the amount of such loan is less than US\$1000 in many countries although a few exceptions are also observed worldwide. It is designed as a system of credit delivery and mobilizing savings especially designed to meet the financial requirement of the poor (Bhusal, 2010). The proceeds of microcredit are meant to be used as capital for a small business so that they may become self-sufficient and eventually get out of their poverty. Through microcredit, poor people get a loan without collateral or a steady income provided that they use it to start a business enterprise. As a result, the household income and savings facilities of these families are expected to increase which ultimately improves the overall living standards.

History revealed that the concept of microcredit/microfinance existed in the past. Savings and credit groups had been operational worldwide for centuries. However, this existence was not in a systematic manner (Muhammad, et al., 2012). In the early 1700s, the author and nationalist Jonathan Swift initiated this concept in Ireland and provided small loans to rural poor with no collateral by one of the earlier and longer-lived micro credit organizations, the Irish Loan Fund system. Although Swift's idea began slowly, by the 1840s the institution flourished a lot with about 300 funds all over Ireland. The institution used to make small loans with interest for short periods. From 1870, the credit unions developed by Friedrich Wilhelm Raiffeisen, expanded rapidly over a large sector of the Rhine Province and other regions of the German States (Global Envision, 2006). The modern history of microfinance starts from the initiatives of Economics Professor Muhammad Yunus of Bangladesh who first developed his microcredit project at Zobra village in Chittagong district in 1976 in order to alleviate poverty and improve lives of the poorest inhabitants of Bangladesh (Grameen Bank, 2012). Currently his adopted model is

being followed all over the world to eliminate poverty, reduce unemployment, restrict migration from rural to urban areas, and empower women.

For the last few decades, microfinance institutions (MFIs) are being regarded as the banks for the poor. Under the microfinance programs, loans are small which are often paid back in daily, weekly or monthly installments. To ensure greater security of the loans, MFIs generally provide loans to groups of people rather than individuals though lending to individuals has become more popular. Today MFIs offer diversified loan products to the poor under the umbrella of “microfinance” (UNFPA 2010).

The term “empowerment” is viewed differently by different scholars. Sen (1993) notes that empowerment is reflected in a person’s capability set, and capability depends on many factors including personal characteristics of a person, proper food, good health, good shelter and social arrangements. Mayoux (1998) believes empowerment is related to the process of internal change while Kabeer (2001) thinks it is related to the capacity and right to make decisions. Kabeer (1999) views that empowerment constitutes three dimensions: resources (access and future claims to material, human and social resources), agency (process of decision making, negotiation, etc.), and achievements (well-being outcomes). Empowerment can exist both at individual and collective levels, and both empowerment are innately linked (Sen, 1990). World Bank (2001), on its PovertyNet, defines empowerment as “the process of increasing the capacity of individuals or groups to make choices, and to transform those choices into desired actions and outcomes” (IFAD 2011:12).

Therefore, the concept of empowerment has more than one dimension. Clearly visible dimensions for women's empowerment are women's absolute well-being and women's relative well-being. For *absolute well-being*, women's empowerment is considered as the process of improving the welfare of women which is indicated by outcomes that measure current status in terms of literacy, health and nutrition, labour force participation, contraceptive use, mobility and ownership of clothing and assets. For *relative well-being*, women's empowerment is viewed as the process of improving the position of women relative to men within the household which is indicated by women's involvement in intra-household process such as decision making, control over household income and assets, and loans taken (Ali and Hatta, 2012). UNIFEM (2000) opines that women's empowerment consists of "gaining the ability to generate choices and exercise bargaining power... developing a sense of self-worth, a belief in one's ability to secure desired changes, and the right to control one's life" (IFAD 2011:12).

The above discussion reveals that women's empowerment is conceptually complex. It is also methodologically difficult and challenging to measure and analyze. Its meaning is very relative too. The meaning, outcomes, and goals of empowerment vary based on cultural, regional, social and political perspectives (Ali and Hatta, 2012). Whereas measurement of empowerment is very important because of its policy significance, and women's empowerment has been identified as a primary development goal. Yet, till now, no rigorous method for measuring and tracking changes in levels of empowerment has been developed by the World Bank or any other major development agency (Malhotra, Schuler and Boender, 2002). The process element of empowerment is not measured by the most of empirical studies (Osmani, 2007; Latif, 2001); however some key methods that researchers have used to measure empowerment are: Gender Development Index (GDI), Gender Empowerment Measure

(GEM), Qualitative surveys, ethnographic investigations, focus group discussion and case studies.

### **3. A brief note on microfinance programs in Bangladesh**

Bangladesh's microfinance programs are considered as a successful event worldwide which started in 1976 by Professor Yunus who later established Grameen Bank. The Grameen Bank model and microfinance in general got so much international attention and coverage that the country is considered as the birthplace of modern microfinance (Bhusal, 2010). Here microcredit programs are implemented by NGOs, Grameen Bank, state-owned and private commercial banks, and specialised programs of some ministries of Bangladesh government. Total loan outstanding in the microfinance sector is around Taka 248 billion, including Taka 72 billion of Grameen Bank, with total savings Taka 168 billion. The total clients of this sector are 35 million, including 8.4 million clients from Grameen Bank. As of June 2011, (excluding Grameen Bank) there are more than 18,000 branches of 576 NGO-MFIs licensed by Microcredit Regulatory Authority (MRA), a government body established to regulate MFIs in Bangladesh. Total loan outstanding of this sector (only licensed MFIs) has increased by 20.0 per cent in June 2011 compared to June 2010. The total savings has also increased by 23.25 per cent in June 2011 compared to previous year. In five years duration, savings per member has increased more than double: Taka 2495 in 2011 compared to Taka 1,207 in 2006. The loan outstanding per borrower has increased by more than 100 per cent during the same period. These two indicators imply an increase of income level of the poor resulting in an increase in their need for higher amount of loans from the MFIs. This sector (without Grameen Bank) employs 112, 000 people, and thus it is believed that the sector has been contributing to socio-economic progress of Bangladesh (MRA, 2014).



Although more than one thousand MFIs are operating in the country, only 10 large MFIs and Grameen Bank represent 87% of total savings and 81% of total loan outstanding of the sector (Bhusal, 2010). MFIs are operating more than 85,000 villages in Bangladesh, and over 37 percent of the households have access to micro credit, which is among the highest coverage in the world (Ahmad, 2006).

MFIs have the potential to play various roles to accelerate socio-economic development of a country. The main ones are: (i) to fill up a needed gap within the financial services industry by offering small loans, or micro-loans, to the people who are unable to access conventional loan services, (ii) to reduce poverty, unemployment rate and gender inequality, (iii) to empower women providing microcredit, training, education and increase social awareness. (iv) to stimulate local economies by providing finance for small businesses, and (v) to reduce rural urban income gap and to induce rural development. In this paper, we will focus on the third point, i.e. microfinance and women's empowerment.

#### **4. Microfinance and Women's Empowerment in Bangladesh: Review of Past Findings**

The study of Hashemi, et al. (1996), published in *World Development*, is probably the first empirical study that examined the effects of rural micro credit program on women's empowerment in Bangladesh. This study was conducted via the joint efforts of ethnographic study and a sample survey of credit program participants and comparison groups. The study is based on the credit programs of Grameen Bank and Bangladesh Rural Advancement Committee (BRAC).

Six villages were selected to conduct ethnographic research during 1991-94 to document process of change both in women's roles and status and in norms related to reproduction. Along with various structured instruments, participant observation and informal interviews were used to collect data. In two villages Grameen Bank was operating; BRAC was operating in other two villages, and there were no credit programs in the remaining two villages. Six men and six women were included in the ethnographic research team who were given intensive training on qualitative research methods at the beginning of the project.

The sample survey was carried on 1300 married women under age 50 in late 1992. Using a random multistage cluster design four separate samples were drawn which included villages from all over Bangladesh. The selected four groups were: Grameen Bank members, BRAC members, nonmembers living in the Grameen Bank villages but are qualified to join either Grameen Bank or BRAC, and a comparison group living in villages with no BRAC or Grameen Bank program, but qualified to join the credit programs. A series of questions related to different aspects of empowerment were developed through extensive observation, personal interviews with respondents in the ethnographic study villages and with credit program staff.

The study constructed eight indicators to measure the empowerment. These are: mobility, economic security, ability to make small purchases, ability to make larger purchases, involvement in major household decisions, relative freedom from domination within the family, political and legal awareness, and involvement in political campaigning and protests. Among these components, making large purchases and involvement in family decisions were

given different weights while the remaining six components were given equal weight. Respondents were given different points based on their responses on these indicators, and empowerment is classified based on the scores obtained.

The study uses logistic regression models, and the results are: i) membership duration with MFIs significantly and positively affects three of the eight empowerment indicators: ability to make small independent purchases, involvement in major family decisions, and participation in political campaigns or public protests. It also positively affects the composite empowerment score. This implies that the longer a woman is a member of MFI, it is more likely that she will be empowered, and she will make more contribution to her family's support. When membership duration was adjusted, both Grameen Bank and BRAC credit programs had significant positive effects on five of the eight empowerment indicators: women's economic security, ability to make small and large purchases, political/legal awareness, contribution to family support, and the composite empowering score. BRAC alone had a significant positive influence on women's mobility, and Grameen Bank alone had a significant effect on women's involvement in major decision making. The study also reveals that women's contribution to family support, which is achieved for being member of the credit programs, significantly affects the composite empowering score and all of the eight empowerment dimensions except two: relative freedom from domination by the family, and political/legal awareness. The study's overall conclusion is that microcredit has empowered women in Bangladesh.

This study is a significant contribution about the activities of major MFIs in empowering poor women in Bangladesh. However, like many other studies, this study suffers from possible bias due to unobserved individual, household and village/area characteristics and endogeneity of

decision involved in program participation. Unobserved heterogeneity that may affect the estimates is unobserved attitudes and characteristics of husbands, wives and other family members, pre-existing women's empowerment and independence. The study compares and contrasts the results of program villages with non-program villages, and thus neglects the village level unobserved characteristics. Also measurement scores for identifying empowerment is not equal for all indicators; rather these are different in the study. Hence the findings may suffer from consistency as well. The authors also did not advance any hypothesis why the program women are less likely to be a victim of domestic violence compared to non-program women.

Mahmud (2003) also studied the impact of microcredit on women's empowerment in Bangladesh. Applying an analytical framework, the author uses the household survey data of 1998. This data set is based on longitudinal study on the evaluation and monitoring of microcredit programs in rural Bangladesh which covered nearly 2000 households in 91 villages (80 villages were program and 11 were non-program villages) of 22 rural *thanas* (sub-districts) of Bangladesh. Through multi-stage sampling method, the villages were randomly selected.

The findings of this study are that initial conditions of women's empowerment in poor and non-poor households were more or less similar before joining the program. Microcredit program participation increased women's access to resources like self-employment and mobility into certain public spaces like health care centre and the NGO office. Participation effects on women's access to household incomes were found greater. Both poor and non-poor women were found to play more active role in household decision making as a result of

program participation. Microcredit program participation directly and the presence of a program in the village indirectly both have increased women's welfare (Mahmud, 2003).

This study, too, has not addressed unobserved characteristics of chosen villages and individuals. The increased mobility of microcredit program participants is not surprising due to the fact that program women are required to visit the NGO offices or MFIs, are often encouraged to be self-employed and are always motivated to visit public health services.

Parvin, et al (2005) conducted a research in Dumuria *thana* (sub-district) of Khulna district taking 80 sample of 6,000 beneficiaries of microcredit to examine the women's empowerment. Respondents were selected randomly, and a proportionate and stratified random sampling method was followed. Out of 10 activities, respondents were selected proportionately from each activity type. During group meeting, informal discussion was also conducted with a large number of women. Interview of key informants were also conducted, and relevant secondary data were collected and used to supplement primary data. Three major indicators of empowerment are considered. These are participation in household decision making, control over income and access to assets. Along with simple statistical analysis Weighted Mean Index (WMI) method were used to conduct the study. A WMI was constructed for each of the three indicators, and finally an aggregate WMI was calculated to examine the overall empowerment situation.

The results revealed by the study indicate that women's participation level in decision making for children's education and marriage related matter remains more or less the same before and

after joining the microcredit program. However, after being involved in micro credit program women's earnings significantly increased their capability to express their opinion and make decision for meeting personal needs, buying household assets, availing treatment and recreational facilities independently. Such development of decision making can be considered as the progress of women's empowerment. The invariant decision making for children's education and marriage related matter before and after joining the microcredit program may be due to the fact that the social structure of Bangladesh generally allows women to take joint decision with their husbands and other family members in these matters.

The study also found that women generally had no full control over their personal earnings. Women living with their husbands have just partial control over their income, and there were cases (25% of surveyed project members) where women had no control at all. However, more control on women's income was observed in case of widows, divorced and abandoned women compared to women living with their husbands.

With regard to access to assets, the study found no significant improvement in the level of empowerment of women. This is because women's access to assets in Bangladesh is determined by their religion, level of income, amount of savings and the attitude of husbands and other family members towards them. In most of the cases women's earnings are fully spent for household consumption, and hence no savings and no assets are observed (Parvin et al., 2005).

This study is based on only three specific elements of empowerment; it should have considered other elements of women's empowerment too. Also this is a small sample study which depends on only one area; out of 6000 population a sample of 80 may not be quite representative. Moreover, the author used primary and secondary data, but did not mention how both types of data are compiled. A comparison between program and non-program participants has not been made to draw the conclusion.

Pitt, et al. (2006) examined the effects of microcredit programs on women's empowerment in Bangladesh. The data source for this research was a large household survey conducted in 1998-99 by the Bangladesh Institute for Development Studies (BIDS) in collaboration with the World Bank. Randomly selected from 87 villages of 29 *thanas* in rural Bangladesh, the survey interviewed 1,798 households where 24 were program *thanas* and 5 were non-program *thanas*. From a list of program villages in each program *thana*, three villages were randomly chosen where a program had been operational for at least 3 years before the survey. Three villages from each non-program *thana* were also randomly selected. From each village, 20 households were drawn via stratified random sampling method. Out of the selected 1,798 households, 1,538 were target and 260 were non-target households, and 59% (905) of target households participated in a credit program. The surveyed program villages had either male or female credit group or both credit groups; the both credit groups were dominant in the survey.

The researchers identified and grouped 10 factors which are related to empowerment of women. These are: (i) purchasing, (ii) resource, (iii) finance, (iv) transaction management, (v) mobility and networks, (vi) activism, (vii) household attitudes, (viii) husband behavior, (ix) fertility and parenting, and (x) combine all previous nine variables.

The estimated results revealed by the study were that microcredit programs for women increase the overall empowerment of landless women, but male credit program has negative effects on women's empowerment. Besides, female credit (a) positively and significantly affects women's ability to purchase items; (b) significantly increases women's access to and control over economic resources; (c) significantly increases the empowerment factor associated with finance, e.g. deciding and implementing household borrowing and fund spending; (d) significantly increases a woman's power to oversee and conduct major household economic transactions; (e) significantly increases the mobility and networking of women; (f) positively affects women's awareness and activism; (g) significantly increases the household attitude towards women, but not the husband's opinions and actions; and (h) significantly increases the women's power related to family planning and parenting matters (Pitt, et al. , 2006).

The study of Pitt, et al. (2006) is an extensive study which examines the effect of men's credit program participation, in addition to women's credit program participation, on women's empowerment. The study has given due attention to heterogeneity bias using a large set of qualitative responses to questions designed for households.

The study of Hoque and Itohara (2009) also attempts to explore the effects of microcredit program on rural women's empowerment in Bangladesh. The study is based on Rampur village under Palashbari sub-district of Gaibandha district. Using a structured questionnaire the study collected primary data of 180 women of the village. Of these 180 women 50% were active members of MFIs and rest were individual housewives. The respondents from both groups



were selected randomly. The study used binary logit model to measure empowerment of women based on 12 selected explanatory variables.

The study found that only 21% of the respondent women were empowered and 69% of empowered respondent women were the active members of microcredit programs which imply that microcredit is contributing to some extent in empowering rural Bangladeshi women. Women's institutional participation, media exposure, family land holdings, own use of credit, duration of microcredit use and monitoring by the concerned MFIs were found significant factors for women's empowerment (Hoque and Itohara, 2009).

In this paper endogeneity issue remains unaddressed too. The study also indicates that 31% of non-members of MFIs are also empowered. Thus microcredit is not the only element in empowering rural poor women though it is a significant contributor.

Based on qualitative research methodologies Bhusal (2010) conducted a research to explore the impact of microfinance in empowering women of northern Bangladesh. The study includes a non-participant observation, semi-structured focus group interviews and four family case studies. Five short-term and five long-term beneficiaries of Rangpur Dinajpur Rural Service microfinance were selected for interviews with different questions on socio-economic and political domains for a comparative study.

The obtained results of the study do not indicate the convincing improvement of women's empowerment. The social mobility of long-term microfinance beneficiaries increased just slightly, and they possessed an added value of self-worth. However, no significant progress was observed regarding financial conditions of the family, gender disparity and powerlessness. The study concludes that the link between minimalist microfinance and women's empowerment is not as strong as it is normally perceived (Bhusal, 2010).

The selected sample in this research is narrow to draw a generalized conclusion regarding microcredit and women's empowerment due to the fact that there are millions of active microfinance borrowers and a substantial number of MFIs who are working with different models. The study attempted to measure different levels of women empowerment based on data obtained from qualitative interviews and observation, but women empowerment is a concept like cognitive skills and quality of life which cannot be measured directly (Swain and Wallentin, 2007).

Karim (2008) and Rahman (1999) opine that microcredit in Bangladesh is actually disempowering women. Karim's ethnographic work details observations of women's interactions with five largest NGO micro-finance providers: Grameen Bank, BRAC, Proshika, Human Development Forum and Association for Social Advancement (ASA). Karim thinks that poor women with debt are being used inappropriately as vehicle for development where 95% of these loans are controlled by men. Rahman's study suggests that in male dominated society of Bangladesh female's position is relatively vulnerable which encourages NGOs to target women for loans in order to make profit. Loans are granted to women, but these are appropriated by men.

The mixed results are found on the issue of micro finance and violence against women (element of women's empowerment). Kabeer (2001) and Hashemi et al (1996) found that microfinance reduced violence; on the other hand, Goetz and Sen Gupta (1996) and Rahman (1999) found that micro finance increased violence. Both are possible as women are not a homogenous group; it is a diverse mix of different situations or areas with different families. The reasons for reduction of violence are that women are considered valuable in the family as they bring the loan money. As a result, economic pressure in the family decreases; the status of women increases which contributes to decrease violence. On the other hand, the arguments for increasing the violence might be due to the fact that women may be now less obedient or less tolerant to their husbands because of their income or financial independence; sometimes they might attempt to challenge gender structure. They may not listen to their husbands' advice to go outside for a meeting or shopping. So increasing the violence is just the reaction of husbands to all these activities.

Regan-Denham (2012) developed a conceptual framework and awarded point to the elements of empowerment if increased as a result of micro-finance interventions. He applied his methodology on 20 previous studies, and concluded that, among these 20 studies, 4 studies found micro credit is very empowering for women, 10 moderately empowering, 2 slightly empowering and 4 disempowering. His overall observation is that microcredit participation in Bangladesh to be empowering for women though empowerment is not equal for all women.

## **5. Data and Methodology**

### *5.1 Data*

Primary data have been used in this research and these data were collected from a field survey of 364 households from 20 villages in four districts (Comilla, Chandpur, Narayangonj and Narshingdi) of Bangladesh. The household survey includes questions on demographics, production activities, microfinance participation and outcomes of interests such as income, consumption, health, education and women empowerment. We also collected detailed data on characteristics of villages, which include information on distance to nearest educational institutions, district council, health complex and market. The key variables presented in Table 1 were selected based on ground that they may affect the outcomes of interests. Other variables such as number of doctors and prices of other farm products were not selected due to high correlation with selected variables.

The descriptive statistics show that almost all households were headed by men despite all microfinance participants are women. Thus, we do not include gender of households in the analysis. The seniority of microfinance membership also varies significantly: some households just joined the services about one month before the survey while others received the services for 20 years. On average, 30 percent of the households surveyed are poor, using the international poverty line of \$1.25 PPP per person per day.

### 5.2 Empowerment after joining microfinance

We focus examining the effects of microfinance on empowerment by comparing selected indicators of empowerment at the time of the survey and the outcome before they join microfinance services. The data was collected from 18 yes-no and Liker-scale questionnaires regarding issues from child immunisation to political votes.

**Table 1.** Descriptive statistics of independent variables

Main variables	Mean	Std.	Min	Max
<i>Household characteristics</i>				
Age of household head (years)	40.21	7.87	20.00	69.00
Gender of household head (male=1)	0.98	0.13	0.00	1.00

Ethnicity (minority=1)	0.12	0.33	0.00	1.00
Education of HH (illiterate=1)	0.26	0.44	0.00	1.00
Education of Spouse (illiterate=1)	0.43	0.50	0.00	1.00
Occupation (farmers/labourers=1)	0.77	0.42	0.00	1.00
Type of employment(full-time=1)	4.79	1.29	2.00	9.00
Household size (people)	2.84	1.17	1.00	7.00
Shocks encountered (yes=1)*	0.32	0.47	0.00	1.00
Household income (Taka)	210424	112328	6400	741875
Income per adult-equivalent (Taka)	97978	55285	3200	428322
Household consumption (Taka)	103189	49264	12000	344000
Consumption per adult-equivalent (Taka)	47768	22290	6000	153841
Duration in microfinance (months)	32	28	1	240
Total loans received (Taka)	52387	56917	1000	450000
Outstanding loans (Taka)	9726	27291	0	275000
Borrowed loans (yes=1)	0.93	0.25	0.00	1.00
Received training (yes=1)	0.31	0.46	0.00	1.00
Poverty status measured by \$1.25 PPP/person/day (poor=1)	0.30	0.46	0.00	1.00
<i>Village characteristics</i>				
Illiteracy rate (percent)	19.10	11.69	1.00	44.00
Distance to health centre (km)	12.05	25.35	0.50	99.00
Wheat prices (Taka/kg)	23.41	4.87	15.00	30.00
Casual wage (Taka/day)	300.00	72.64	150.00	500.00

Note: \* answer "yes" to the question "In the past 12 month does your family suffer from shocks such as crop failure, severe sickness, death, divorce, burglary and fire".

Table 2 presents differences in empowerment after joining microfinance. The higher response average indicates better outcomes with the exception for water sources and toilet uses, where lower score indicate an improvement. A t-test reveals that there are significant improvements in all measures of empowerment after participating in microfinance. A Wilcoxon test also confirms that median of responses for all criteria differs at 1% significant level.

**Table 2.** Differences in empowerment measures after joining microfinance

Empowerment indicator	Before	After	Difference	t-test (p-value)
Antenatal care facilities	0.25	0.62	0.37	0.00
Immunization	0.68	0.87	0.19	0.00
Diarrhoea remedies for children	0.49	0.82	0.33	0.00
Family planning services	0.41	0.78	0.36	0.00
Maternal care services	0.29	0.59	0.30	0.00
Malaria/TB treatment	0.25	0.52	0.27	0.00

Accessibility to medicines	0.31	0.78	0.47	0.00
Purchasing of stationery	0.32	0.85	0.53	0.00
Extra-curriculum activity	0.27	0.83	0.56	0.00
Feel secure and strong	0.23	0.84	0.62	0.00
Source of drinking water	1.51	1.42	-0.09	0.01
Change in toilet condition	1.89	1.43	-0.46	0.00
Tuition fees missed	1.52	1.75	0.23	0.00
Decision on Child's education	1.39	2.49	1.10	0.00
Decision on children's marriage	1.58	2.69	1.11	0.00
Decision on buying household items	1.70	2.60	0.90	0.00
Decision on buying personal items	1.62	2.43	0.81	0.00
Decision on buying assets	1.84	2.70	0.86	0.00
Decision on contraceptives	1.55	2.50	0.95	0.00
Decision on medical treatment	1.65	2.52	0.87	0.00
Decision on recreations	1.57	2.57	1.00	0.00
Decision on visiting relatives	1.58	2.58	1.00	0.00
Decision on voting	1.63	2.50	0.87	0.00
Decision on borrowing	1.57	2.70	1.13	0.00
Control on income	1.55	2.55	1.01	0.00
Access to family assets	1.63	2.56	0.93	0.00
Feeling proud and dignified	1.74	2.69	0.95	0.00
Freedom to move	1.61	2.54	0.93	0.00

We measure progress in women empowerment by taking the difference between responses on these questions at the present period and those for the previous period (i.e., before participation in microfinance services). The additional advantage of this approach is that it is equivalent to taking first difference in panel data, and hence, effects of unobserved time-invariant factors will be dropped out. We recode changes in empowerment indicators into binary outcomes that equal one if the changes were positive (i.e., the condition gets better after joining microfinance) and zero otherwise. Please note that two questions (source of drinking water and toilet use) were reversely coded, thus, negative changes for these variables indicate that the condition improved.

The average improvement is presented in Figure 1, showing that health care for children and women are in the lower end with about 30 percent of households were improved. In contrast, important

indicators such as feeling proud and dignified, control of income and decision to children’s education were improved in more than 80 percent of households. However, results in Figure 1 did not take into account the effects of other covariates.

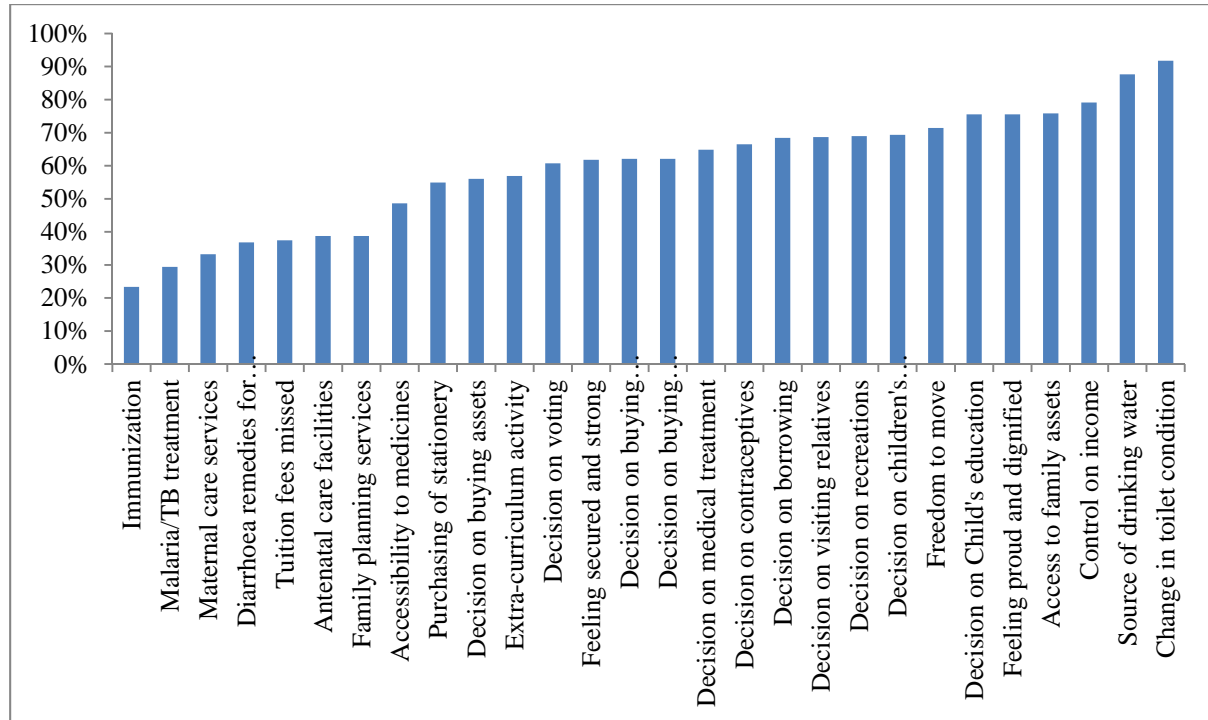


Figure 1. Proportion of households’ improved empowerment indicators

Both t-test and Wilcoxon test rejected the null hypothesis of no improvement at 1 percent level for all indicators.

### 5.3 Methodology

We use logistic regression to estimate these changes, after controlling for the key variables of interest. One of the main issues in analysing effects of microfinance services is the selection bias. Since microfinance participants select themselves to receiving services, unobserved individual characteristics of microfinance members (e.g., risk attitudes, social and business skills) would affect outcomes of interest such as household income, poverty status and women empowerment. In particular, we estimate the impacts of microfinance on women empowerment using the following equation:

$$y_{ij} = \alpha + \beta_1 MF_{ij} + \beta_2 H_{ij} + \beta_3 V_j + u_j + \varepsilon_{ij}$$

where  $y_{ij}$  is the outcome of interest (women empowerment) for household  $i$  in village  $j$ ; MF is the measure of participation in microfinance;  $H$  includes household characteristics;  $V$  represents characteristics of the village;  $u$  presents the unobserved characteristics of the household that assumed to be stable within a village; and  $\varepsilon$  is the random error term. We argue that  $u$ , which is a part of the composite error term, is correlated with participation in microfinance (in other word, microfinance participation is endogenous). Thus, standard estimation would produce bias results.

There are two possible estimators to address this endogeneity issue. The first is fixed-effects estimator, which use a dummy variable for each village (using on arbitrarily selected village as a reference). These village dummies will capture all observed and unobserved effects within a village, including  $u$ . The second is a random-effects estimator, which assumes that observed and unobserved effects are strongly correlated. And hence, the effects of  $u$ , can be mitigated by using a set of observable village characteristics. The fixed-effects estimator is consistent but it is not efficient when the distribution of  $u$  is random (i.e., endogenous is not an issue).

We use a Hausman specification test to select between the two estimations. Under the null hypothesis of no endogeneity, parameters estimated by fixed-effects and random effects are similar. Thus, if the null hypothesis is rejected, a fixed-effects estimator is preferred; otherwise the random-effects estimator is preferred. The test results show that the null hypothesis is not rejected for almost all indicators. Thus, we report the results from the random effects for the indicators of empowerment.

## **6. Results and Discussions**

We use logistic regression and report the odd-ratios for the ease of interpretation. Also, we choose the membership duration as a proxy for participation in microfinance. We expect that the longer household participates in microfinance program, the more likely that women will be



empowered. This choice has several advantages to other variables (e.g. outstanding loans): it reflects the cumulative effects of microfinance and relatively easy for respondents to recall.

The results of random effect estimation are reported in Table 3. The obtained results confirm that most indicators (19 out of 28) of women empowerment improved significantly after participating in microfinance. Only 9 indicators are not found significant. For example, the odd of antenatal care facilities after participating in microfinance for two years is 5.60:1 compared to those who joined microfinance for only one year. For three years in MF it is 7.61:1 and for four years or more in MF, it is 7.57:1. The biggest gain is decision on child's education where the odd of improvement when participating in microfinance for three years is 23 times compared to those participating for one year only. Among the other significant indicators of improvement, decision on visiting relatives, decision on medical treatment, decision on contraceptives, decision on buying personal items, decision on buying household items, purchasing of stationery, participating in extra-curriculum activity, malaria/TB treatment, diarrhoea remedies for children, access to pure drinking water, control on income, and feeling secure and strong in the family are notable.

Interestingly, we have not found any significant improvement in relation to access to family assets, freedom to move, decision on borrowing, decision on voting, decision on buying assets, decision on children's marriage, accessibility to medicines and family planning services. With regard to these indicators of empowerment, husband decision or at least joint family decision plays a dominating role in the Bangladesh society.

Table 3: Effects of microfinance participation on women's empowerment (Random effects)

Empowerment indicators	2 years in MF		3 years in MF		4 years or more in MF	
	Odd-ratio	SE	Odd-ratio	SE	Odd-ratio	SE
Antenatal care facilities	5.60***	3.45	7.61***	5.03	7.57***	5.39
Immunization	2.35	1.78	0.77	0.77	4.30*	3.70
Diarrhoea remedies for children	3.94**	2.49	1.95	1.57	5.14**	3.99
Family planning services	2.45	1.44	1.33	0.94	2.90	2.05
Maternal care services	4.22**	2.74	2.21	1.72	2.35	1.96
Malaria/TB treatment	1.40	0.82	6.30***	4.27	5.28**	3.72
Accessibility to medicines	0.79	0.36	1.32	0.66	1.31	0.70
Purchasing of stationery	2.18*	1.01	3.08**	1.59	0.81	0.45
Extra-curriculum activity	2.24*	1.05	3.09**	1.65	1.79	0.99
Feel secure and strong	2.16*	1.00	4.10***	2.13	2.54*	1.35
Source of drinking water	8.89**	7.54	3.71*	2.90	1.57	1.22
Change in toilet condition	1.71	1.37	5.71	8.57	75.09**	136.97
Tuition fees missed	0.93	0.47	1.23	0.64	3.66**	2.04
Decision on Child's education	3.46	3.58	23.02***	25.51	7.43**	7.20
Decision on children's marriage	1.33	0.90	2.99	2.49	2.67	2.18
Decision on buying household	0.53	0.35	3.77*	2.80	2.06	1.50
Decision on buying personal	2.80	2.56	5.62*	5.03	6.00**	5.40
Decision on buying assets	1.11	0.75	1.01	0.75	0.93	0.70
Decision on contraceptives	3.63	3.29	4.42*	3.94	3.95	3.41
Decision on medical treatment	1.18	0.75	3.28*	2.34	4.00*	2.94
Decision on recreations	1.32	0.89	2.65	2.04	4.16*	3.29
Decision on visiting relatives	0.85	0.56	4.70**	3.65	5.64**	4.41
Decision on voting	0.47	0.29	0.67	0.44	0.85	0.57
Decision on borrowing	0.40	0.37	0.27	0.23	0.53	0.46
Control on income	2.90	2.34	3.46	2.64	4.36*	3.64
Access to family assets	1.57	1.26	1.31	0.95	1.63	1.24
Proud and dignified	1.58	1.25	1.38	0.97	2.24	1.70
Freedom to move	2.58	1.69	1.51	0.89	1.09	0.66

Notes: (1) Significant level: .01 - \*\*\*; .05 - \*\*; .1 - \*. (2) The control variables used in random effects model are age of the household head, education of the household head and spouse, ethnic minority status, occupation of

the household head, type of employment, number of people in the family, dependency ratio, log of income per capita, and village dummies.

## **7. Conclusions**

Microfinance program is considered as an important development strategy to reduce poverty and to empower the rural women in Bangladesh like many other developing countries. More than one thousand MFIs are operating in Bangladesh covering more than 85,000 villages, and over 37 percent of the households have access to micro credit.

We have discussed the history, role and importance of microcredit programs, analysed the concepts of microcredit, microfinance and women empowerment, and described the extent and development of microcredit programs in Bangladesh. We have particularly focussed on the detailed evaluation of findings of the past empirical studies on microcredit and women's empowerment in Bangladesh. Finally we have presented and analysed our survey results of microfinance on women's empowerment in Bangladesh.

Our study reveals that microfinance has positive impact on women's empowerment in Bangladesh although the extent of impact varies on different measures. Women's empowerment in relation to decision on child's education, antenatal care facilities, decision on visiting relatives, decision on medical treatment, decision on contraceptives, decision on buying personal items, decision on buying household items, purchasing of stationery, participating in extra-curriculum activity, malaria/TB treatment, diarrhoea remedies for

children, access to pure drinking water, control on income, and feeling secure and strong in the family has increased noticeably after taking microfinance facilities.

Microfinance may not *always* be empowering for *all* women, but most women do experience some degree of empowerment by this opportunity. Therefore, it has the potential to have powerful impact on women's empowerment. Microcredit to women strengthens women's financial base and enhances economic contribution to their families and communities; it increases bargaining power and decision making, improves welfare, reduces subordination and strengthens women's voice. All these play an important role in empowering them.

One thing is clear that microcredit alone will not completely empower women or improve lives of women who have been oppressed for ages by the traditional male dominated society in Bangladesh. Minimalist microfinance has many limitations and, thus, cannot contribute effectively to empower poor women. The capacity building of these poor women is essential to enjoy the empowerment. To increase empowerment through capacity building microcredit must be supplemented by a significant amount of skills training and educational opportunities for these poor women. Social and political awareness of these women must be raised, and proper training for group members on entrepreneurship must be organized with integrated approach by MFIs and other NGOs. MFIs should monitor regularly that allocated loans to women are being used for its proper cause, and women have full control on it. Bangladesh government should also take a comprehensive program, e.g. setting up a separate comprehensive training and educational unit, for these poor women to increase their capacity building and productivity. Various social development activities such as adult education, trade-related technical and vocational training must be provided to these women to enhance women's

income-generating activities which in turn will empower them. Therefore, new models of microfinance should be developed where poor women should be looked as entrepreneurs as well as stakeholders in order to empower them in an effective manner.

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