

Impact evaluation of microfinance: a HEPM perspective

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Abstract. Microfinance services were primarily conceived for poverty alleviation and millions of borrowers have benefited across various countries. This study measures microfinance impact on borrowers from the following dimensions viz. enterprise, household, individual and security. The impact was measured by comparing the borrowers' poverty level before and after microfinance (within impact), and then with and without microfinance (between impact) using Household Economic Portfolio Model (HEPM). In general, it was observed that microfinance has had a favorable impact on borrowers. The income level of borrowers has increased after they availed the loan indicating that participant borrowers' financial position is better than that of the non-participant borrowers. The results confirm that both industry survival and growth are achievable thereby advocating that microfinance is a sustainable development tool in the current scenario. Hence, policymakers should continue framing strategies that are in favour of extending microfinance to micro-enterprises that are deprived of mainstream finance. **Keywords:** Microfinance, Impact analysis, Poverty, Grameen Bank, HEPM Model

1 Introduction

Poverty is a problem almost all over the globe. In a country well governed, poverty is something to be ashamed of. In a country badly governed, wealth is something to be ashamed of." In respect of almost all the countries, it is a long-standing fatal ailment. A person who thinks but never does and a person who does but never thinks have equally been responsible for failure that ultimately turns into poverty. Mother Teresa held us not God responsible for the poor death out of hunger (2019). Microfinance has been regarded as a milestone for setting development policy for poverty alleviation. It is considered as a probable solution to decrease poverty when the concept emerged during the period of eighties. The attractiveness is even more as a development model when it gives attention to the women for a betterment of their lives. The government together with development agencies wishes to adopt the microfinance model across the countries after formal recognition of the concept. Mohammad Yunus has been addressed as the 'Father of Microfinance' for his brilliant contribution to this field of development strategy (Goldstein, J 2011). On the other hand, Milford Bateman argues

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that other strategies like the provision of basic services and logistics are more effective than microfinance for poverty alleviation. Giving focus only on microfinance undermines all the other strategies of the spectrum (Bateman M and H J Chang, 2012). Microfinance is the supply or lending side of the system. It gives small credits to the poor for income-generating activities which help them accumulating capital together with raising life standards (Littlefield E et al. 2003). Nobel Prize winner in Economics in 1976, Milton Friedman quoted “The poor stay poor not because they are lazy but because they have no access to capital” (Smith P and E Thurman, 2007).

There is well-documented criticism of microfinance for poverty alleviation (Duvendack M 2011). However, Donor and government have been supporting it for the last few decades as a social obligation and sometimes political as well. The effectiveness of the microfinance system has been documented with different outcomes in different times and places across the globe. Therefore, it is not clear and conclusive about the impact of micro-finance. This study has been focused on whether microfinance has positive impact on Grameen Bank borrowers’ poverty. It intends to find out whether there is a significant positive change in borrowers’ business, household, individual, and security level. An upward trend of microfinance channeling tiny amount of money to the people leaving below the poverty line has been observed predominantly for the last some decades. However, the assessments of these types of initiatives are quite lacking (Mokhtar S H 2011). This study has been designed to fill up this issue. The rest portion of this work will be presented through literature review including microfinance for poverty alleviation, different impacts and conceptual framework. Thereafter, it will present research method and material, results and discussion followed by conclusion.

2 Literature Review

The idea of microfinance is to make an effective and efficient tool for breaking the cycle of poverty. It starts with the promise to lift millions out of poverty, to empower women, to help those on the margin of society. Economist and Nobel Laureate Muhammad Yunus repeatedly quoted two tenets are, “Credit is the fundamental human right” (Yunus M, 1987) and “Poverty will one day be found only in a museum” (Yunus, M 2007). His micro loan concept allows poor people on the bottom of the income ladder to realize their dreams. (Roodman and Morduch 2014) gave a well-noted work on the impact of microcredit on households. However, their study has been based on field survey in Bangladesh. Contradictory findings of this work have produced lasting confusion. (Pitt and Khandker, 1988) apply a quasi-experimental design to find out microfinance impact. They concluded that microfinance raised household expenditure particularly in case of lending to women. Khandker (2005) applying panel data analysis concluded that microfinance helped extremely poor people even more than moderately poor people. But using simpler estimators than Pitt and Khandker (1988), Morduch (1999) finds no impact on the level of expenditure. Nevertheless, he found that microfinance reduces volatility in consumption. These conflicting results had never been openly confronted and reconciled. Opinion and findings cause a stalemate position and require further studies to conclude. A replication exercise shows that all these studies’ evidence for impact is weak Roodman, D. and J. Morduch (2014).

Microfinance has been intended to break the cycle of poverty, increase employment, enhance earning capacity and ultimately help financially marginalized people in the society. Alternatively, these borrowers need to take loan from family, friends or even from loan sharks at an informal level with extremely high interest rates. However, some studies found that microfinance is not working as has been intended and it has lost its mission (Duvendack M 2011, Hickel J 2015) They argued that microfinance merely creates poverty worse because many clients divert microcredit to pay for basic amenities rather than invest in the business. This makes their businesses either stop or fail that consequently plunges them into further

debt. For example, in South Africa, 94 percent of all microfinance loans are used for consumption (TRT.World, 2017). This means borrowers are not generating new revenue with the original loan. Consequently, they need to receive another loan to pay off the existing loans and so forth. This plunges them into deep down more debt. Even in some cases, they have found themselves caught up in a dangerous cycle of death like committing suicide (Taylor M, 2011). However, microfinance can serve as a valuable tool for the financially no served or underserved marginalized people when used appropriately. Either way, microfinance is an important topic in the financial kingdom. If it is used appropriately, it could be an influential instrument for poverty alleviation (Cautero, R.M, 2019).

2.1 Microfinance Different Impacts

Microfinance may not be the solution to poverty. There are many more important structural things to be focused on. However, for the time being, Microfinance has been serving millions gaining access to financial services, learning saving, being able to pay for school fees on time when due, being able to pay for health emergencies when it happens and being able to invest in an income generating activities. It seems a solution today addressing all these issues. It makes difference in borrowers' lives. Most people agree that microfinance began for the right reason and whilst it has undoubtedly helped. In the right hand, some poor people start business and make progress. In the wrong hand, it has created an unbearable burden too. Some structural changes need to be addressed with more regulation to smooth the operation and to prevent the loan sharks.

In Bangladesh, several researchers studied the impact of microfinance in different studies. Khandker, Samad (1998) studied 1800 borrowers in 86 villages and got evidence of positive changes by different variables like consumption, income, expenditure, wealth accumulation, savings, employment etc. He also concluded that about five percent of the borrowers got rid of poverty by their respective categories per year. Other researchers like Hashemi, Schuler (1996), also Husain (1998) found similar nature positive findings for the impact of microfinance in Bangladesh. All the authors here concluded that microfinance provided the better life for the poor people and lead them at least reduction of poverty or sometimes out of poverty.

This has been a major debatable issue to find out the impact of microfinance on borrowers' poverty in recent years (Duvendack M 2011, Milana C and A Ashta, 2012) Some researchers like Bhuiya, Khanam (2016), Pitt, Khandker (2006), Rahman, Luo (2017) and Woller and Parsons (2002) discuss the positive impact of microfinance whereas other researchers like Bateman (2010), Hulme (2007), Roodman and Morduch (2014) and (Sinclair H, 2012) do not opine the same. However, many researchers conclude that there is a significant positive impact for some few development indicators whereas it is not true for others development indicators [29-35]. Some other works do not agree the same rather put a positive impact on some else indicators (McIntosh C et al. 2011). Because of inadequate proof for positive impact, microfinance may be losing credible grounds (Lascelles, D. and S. Mendelson, 2012)

2.2 Conceptual Framework

It is very important to discuss how microfinance is successful and what are the theories behind it. Osmani and Mahmud (2015) pointed out microfinance theory working in three different ways. Firstly, microfinance uses the group-lending approach to make the borrowers giving the higher level of effort for the successful outcome. It makes the borrowers socially liable to behave desirably through choosing the acceptable risky projects (Moral Hazard). Secondly, when the information is asymmetric between lenders and borrowers, the

microfinance market can behave in peculiar or strange ways. This sort of market disappointment is due to the wrong selection of borrowers (Adverse Selection). Microfinance practices joint liability lending design to avoid adverse selection which contributes the improved performance of the credit market. Thirdly, there have been issues when borrowers have earned the desired returns that make them capable of repaying the loan. However, the borrowers do not want to repay and the lender cannot do anything lawfully for enforcement because of the absence of collateral. In this case, the lender will be able to threaten borrowers through no further credit in the near future. If the lender can make this threat credible, then borrowers will be induced to value the accessibility of future loans (Contract Enforcement).

Poverty is the dependent variable in this study. We measure poverty in relative terms rather than in absolute terms. It is represented by different poverty variables in line with HEPM and other factors. For example, we take “Business revenue” as a poverty variable in the business level impact measurement of microfinance. Then, we measure whether a participant borrower’s business revenue has increased or not compared to herself after at least one year with microfinance. If a participant borrower agrees more for business revenue increment compared to herself after taking microfinance, she is better off towards poverty alleviation. We can conclude that microfinance has positive impact on poverty remaining other things constant. This is before-after approach and it happens within participant borrowers. We also measure whether a participant borrower’s business revenue has increased or not, after at least one year with microfinance compared to a non-participant borrower. If a participant borrower agrees more for business revenue increment after taking microfinance compared to a non-participant borrower, she is better off towards poverty alleviation. We can conclude that microfinance has positive impact on poverty remaining other things constant. This is parallel approach and it happens between participant and non-participant borrowers.

3 Research Method

Household Economic Portfolio Model (HEPM) has been used in this study to overcome impact assessment limitations. In measuring microfinance impact, the fungibility issue has more importance and weight than the endogeneity or selection bias issue. However, these issues may be solved by using the Household Economic Portfolio Model (HEPM) model recommended by Assessing the Impact of Microenterprise Services (AIMS) (Khalily M B, 2004) HEPM recommended that the impact assessment research should be conducted at the following three levels namely Microenterprise level, Household level and Individual level. In addition, Microfinance impact indicators include improvements in health, nutrition, education, food security, quality of housing, infant mortality, gender disparities and women empowerment, self-esteem and respect (Epstein, M.J. and C.A. Crane, 2005, Kabeer, N, 2005) Mokhtar (2011) found that microfinance promoted borrowers in many ways like decision making, self-esteem, etc. and economic or financial security increasing personal savings, more optimistic for future, effectiveness in coping with negative shocks. Nader Nader, Y.F., 2011 and Hashemi, Schuler (1996) also showed that microfinance provided financial and social security to the borrowers. Based on these literatures, this study found that many microfinance borrowers have impacts in terms of their respective security level from different perspectives. Hence, this level has been added with previous three levels and measured in line with them. The security level impact has been further split into social, financial, food and health levels as per discussion and experience with the borrowers.

The primary data has been collected through survey questionnaire during the middle of 2019 in the four divisions of Bangladesh for which it has major operations and borrowers are accessible. Broadly, the picked areas are from the branched of four divisions namely Dhaka, Chittagong, Rajshahi and Khulna of delta Bangladesh. Simple Random Sampling has been used to select and interview borrowers. With reference to Krejcie and Morgan (1970), this

study required about 400 borrowers from GB in calculating the satisfactory sample response. The respondents are expected to complete the questionnaire at the time of their business, household, training, meetings, and loan repayments or otherwise wherever available.

This research applies a control group (non-participant borrowers) and an experiment group (participant borrowers). The control group (non-participant borrowers) has been selected from the borrowers of GB who applied for the loan but not entertained or who intended to be borrowers but unsuccessful for their respective limitations. This best effort has been given to avoid selection bias in the research. The participant borrowers have been compared with non-participant borrowers after one year with respect to their business activities, household condition, personal life and security position. Both participant and non-participant borrowers have been asked whether their businesses, household, individual or personal life and security issues have impact after one year they receive microfinance loan or otherwise operating alternatively without microfinance loan. The borrowers have been given Five Point Likert Scale in the survey questionnaire. They have been requested to score how much they agree that microfinance has impact on business, household, individual and security levels in terms of different further splitting variables. The given scale is from 1 to 5, Strongly Disagree to Strongly Agree

In order to operationalize the HEPM framework, the study has tested four hypotheses at each level. Firstly, the business level consists of four poverty variables namely revenue, fixed asset, current asset and employment. Secondly, the household level consists of four poverty variables namely income, immovable property, movable property and expenditure. Thirdly, the individual level consists of four poverty variables namely control, honor, capacity and confidence and finally, the individual level consists of four poverty variables namely social, financial, food and health security.

3.1 Within Impact

Chi Square Test has been used to measure whether there is significant impact of microfinance on borrower business, household, individual and security level within participant (Experiment Group) and non-participant borrowers (Control Group). In line with prior studies as discussed in the literature review section, it can be said that microfinance has impact on borrowers' poverty level if it makes significant difference on borrowers' poverty before and after its treatment. It is named as within impact. The hypotheses are divided into four levels as below:

Business Level - H1: Microfinance makes significant difference on borrowers' business revenue, fixed asset, current asset and employment within participant and non-participant borrowers.

Household Level – H2: Microfinance makes significant difference on borrowers' household income, immovable property, movable property and expenditure within participant and non-participant borrowers.

Individual Level – H3: Microfinance makes significant difference on borrowers' control, honor, capacity and confidence within participant and non-participant borrowers.

Security Level – H4: Microfinance makes significant difference on borrowers' social, financial, food and health within participant and non-participant borrowers.

3.2 Between Impact

Independent Sample T Test has been used to measure whether there is significant impact of microfinance on borrower business, household, individual and security level between participant (Experiment Group) and non-participant borrowers (Control Group). In line with

literature discussed earlier, it can also be said that microfinance has impact on borrowers' poverty level if it makes significant difference with and without its treatment. It is named as between impact. The hypotheses are divided into four levels as below:

Business Level – H5: Microfinance makes significant difference on borrowers' business revenue, fixed asset, current asset and employment between participant and non-participant borrowers.

Household Level – H6: Microfinance makes significant difference on borrowers' household income, immovable property, movable property and expenditure between participant and non-participant borrowers.

Individual Level – H7: Microfinance makes significant difference on borrowers' control, honor, capacity and confidence between participant and non-participant borrowers.

Security Level – H8: Microfinance makes significant difference on borrowers' social, financial, food and health between participant and non-participant borrowers.

4 Results

4.1 Business Level Impact

Table 1 shows microfinance impact on borrowers' poverty at business level further divided into business revenue, fixed asset, current asset and employment generation on various level of measurement within the group.

Table 1. Business Impact within the Groups.

Business Revenue			Fixed Asset	
Degree of agree	Participant (%)	Non-Participant (%)	Participant (%)	Non-Participant (%)
Strongly Disagree	4.5	31.0***	14.3	33.0***
Disagree	19.5	27.8	20.3	22.0
Neutral	21.3	21.8	21.3	27.3
Agree	30.0***	8.5	21.5	7.8
Strongly Agree	24.8	11.0	22.8*	10.0
Current Asset			Employment	
Degree of agree	Participant (%)	Non-Participant (%)	Participant (%)	Non-Participant (%)
Strongly Disagree	12.3	28.5	2.5	21.3
Disagree	18.0	31.8***	15.3	28.8
Neutral	21.0	21.8	21.3	35.3***

Agree	24.5***	9.5	26.3	8.8
Strongly Agree	24.3	8.5	34.8***	6.0
Note: ***, ** and * indicates 1%, 5% and 10% level of significance respectively				

About 30.0% participant borrowers agree (at 1% significance level) that microfinance borrowings have increased their business revenue and 24.8% participant borrowers strongly agree the same. In total, about 54.8% participant borrowers have reported positive impact of microfinance in this respect. In case of non-participant borrowers, about 31% respondents strongly disagree (at 1% significance level) that their business revenue has increased and 27.8% respondents disagree the same. Totally, about 58.8% respondents disagree that their business revenue has increased and only 19.5% respondents have reported increase in their business revenue. This is in sharp contrast to the findings of participant borrowers where 54.8% have reported increase in business revenue. This result is similar to studies on microfinance borrowers by Khandker (1998), Dunn and Arbuckle (2001), and Afrane (2002) who found that microfinance loan significantly increased the microenterprise's business revenue.

In case of fixed asset, about 22.8% participant borrowers strongly agree (at 10% significance level) that microfinance borrowings have increased it and 21.5% participant borrowers agree the same. In total, about 44.3% participant borrowers have reported positive impact of microfinance for fixed asset. In case of non-participant borrowers, about 33.0% respondents strongly disagree (at 1% significance level) that their fixed asset has increased and 22.0% respondents disagree the same. Totally, about 55.0% respondents disagree that their fixed asset has increased and only 17.8% respondents have reported increase in their fixed asset. This is quite opposite to the findings of participant borrowers where 44.3% have reported positive impact. This result conforms the finding of Dunn and Arbuckle (2001) and Khandker (1998) who found microfinance loans significantly increased the microenterprise's assets.

About 24.5% participant borrowers agree (at 1% significance level) that microfinance borrowings have increased their current asset and 24.3% participant borrowers strongly agree the same. In total, about 48.8% participant borrowers have reported positive impact of microfinance. In case of non-participant borrowers, about 31.8% respondents disagree (at 1% significance level) that their current asset has increased and 28.5% respondents strongly disagree the same. Totally, about 60.3% respondents disagree that their current asset has increased and only 18.0% respondents have reported increase in their current asset. This is also in sharp contrast to the findings of participant borrowers where 48.8% have reported increase the same. This result also conforms the findings of Dunn and Arbuckle (2001) and Khandker (1998) who found microfinance loan significantly increased the microenterprise's assets.

In terms of employment generation, about 34.8% participant borrowers strongly agree (at 1% significance level) that microfinance borrowings have increased it and 26.3% participant borrowers agree the same. In total, about 61.1% participant borrowers have reported positive impact of microfinance for employment generation. In case of non-participant borrowers, about 35.3% respondents have been neutral (at 1% significance level) that employment generation has increased and 21.3% and 28.8% respondents strongly disagree and disagree respectively the same. Totally, about 50.1% respondents disagree that employment generation has increased and only 14.8% respondents have reported increase the same. This is dissimilar to the findings of participant borrowers where 61.1% have reported increase in employment generation. An increase in employment is an indication that the business has been growing and requires more workers (Hossain, M. and C.PP. Diaz, 1997)

Table 2 shows microfinance impact on borrowers' poverty at business level further divided into business revenue, fixed asset, current asset and employment generation comparing between the group.

Table 2. Business Impact between the Groups.

Business Level	Participant Borrower N ₁ =400		Non-Participant Borrower N ₂ =400		P Value
	Mean	S D	Mean	S D	
Business Revenue***	3.51	1.187	2.41	1.302	0.000
Fixed Asset***	3.18	1.367	2.40	1.288	0.000
Current Asset***	3.31	1.340	2.38	1.228	0.000
Employment***	3.76	1.157	2.50	1.101	0.000
Note: ***, ** and * indicates 1%, 5% and 10% level of significance respectively					

In case of participant borrowers, all the four variables approach from neutral to agree as they score between 3 to 4. However, in case of non-participant borrowers, all the four variables approach from disagree to neutral as they score between 2 to 3. Their respective mean scores are statistically different at 1% significance level. It can be concluded that participant borrowers have positive impact on business revenue, fixed asset, current asset and employment whereas non-participant borrowers nearly disagree about their position. Therefore, the two groups show different outcomes, which indicate that microfinance has positive impact on business level.

4.2 Household Level Impact

Table 3 shows microfinance impact on borrowers' poverty at household level further divided into household income, immovable property, movable property and expenditure of basic amenities on various level of measurement within the group. About 30.5% participant borrowers strongly agree (at 1% significance level) that microfinance borrowings have increased their household income and 20.8% participant borrowers agree the same. In total, about 51.3% participant borrowers have reported positive impact of microfinance for household income. In case of non-participant borrowers, about 28.8% respondents disagree (at 1% significance level) that their household income has increased and 18.5% respondents strongly disagree the same. Totally, about 47.3% respondents disagree but 32.0% respondents agree that their household income has increased. This is contrast to the findings of participant borrowers where 51.3% have reported increase in household income. This finding conformed Mahjabeen (2008) and Nader (2008) who showed that microfinance loan increased household income of microfinance borrower in Bangladesh and in Egypt respectively.

In case of immovable property, there has been no statistically significant result that confirms that microfinance borrowing has increased it. However, 21.8% and 19.0% participant borrowers agree and strongly agree respectively the same. In case of non-participant borrowers, about 29.3% respondents have been neutral (at 1% significance level) that their fixed asset has increased. Therefore, microfinance borrowings have little impact for addition of immovable property. With reference to movable property, 30.5% and 43.3% have

neutral view (at 1% significance level) for participant and non-participant borrowers respectively. Since both participant and non-participant borrowers are neutral, microfinance borrowings have almost no impact for the addition of movable property.

Table 3. Household Impact within the Groups.

Household Income			Immovable Property	
Degree of agree	Participant (%)	Non-Participant (%)	Participant (%)	Non-Participant (%)
Strongly Disagree	12.0	18.5	15.8	18.8
Disagree	14.5	28.8***	22.3	22.5
Neutral	22.3	20.8	21.3	29.3***
Agree	20.8	7.5	21.8	23.5
Strongly Agree	30.5***	24.5	19.0	6.0
Movable Property			Expenditure	
Degree of agree	Participant (%)	Non-Participant (%)	Participant (%)	Non-Participant (%)
Strongly Disagree	2.5	17.5	4.3	21.3
Disagree	12.3	24.5	6.3	17.0
Neutral	30.5***	43.3***	22.8	26.0***
Agree	29.3	8.8	31.5	12.3
Strongly Agree	25.5	6.0	35.3***	23.5
Note: ***, ** and * indicates 1%, 5% and 10% level of significance respectively				

About 35.3% participant borrowers agree (at 1% significance level) that microfinance borrowings have increased their expenditure on basic amenities and 31.5% participant borrowers agree the same. In total, about 66.8% participant borrowers have reported positive impact of microfinance in this case. In case of non-participant borrowers, about 26.0% respondents have been neutral (at 1% significance level) that their expenditure has increased. Therefore, participant borrowers have positive impact on their expenditure of basic amenities whereas non-participant borrowers remain at same level of expenditure.

Table 4 shows microfinance impact on borrowers' poverty at household level further divided into household income, immovable property, movable property and expenditure on basic amenities comparing between the groups.

Table 4. Household Impact between the Groups.

Business Level	Participant	Non-Participant	
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	Borrower N₁ =400		Borrower N₂ =400		P Value
	Mean	S D	Mean	S D	
Household Income***	3.43	1.368	2.91	1.442	0.000
Immovable Property***	3.06	1.353	2.76	1.180	0.001
Movable Property***	3.63	1.068	2.61	1.061	0.000
Expenditure***	3.87	1.095	3.00	1.445	0.000
Note: ***, ** and * indicates 1%, 5% and 10% level of significance respectively					

In case of participant borrowers, all the four variables approach from neutral to agree as they score between 3 to 4. However, in case of non-participant borrowers, all the four variables approach from disagree to neutral as they score between 2 to 3. Their respective mean scores are statistically different at 1% significance level. It can be concluded that participant borrowers have positive impact on household income, immovable property, movable property and expenditure whereas non-participant borrowers nearly disagree or become neutral about their position. Therefore, the two groups show different outcomes, which indicate that microfinance has positive impact on household level.

4.3 Individual Level Impact

Table 5 shows microfinance impact on borrowers' poverty at individual level further divided into borrowers' control, honor, capacity and confidence on various level of measurement within the group. About 32.5% participant borrowers strongly agree (at 1% significance level) that microfinance borrowings have increased their individual control and 22.3% participant borrowers agree the same. In total, about 54.8% participant borrowers have reported positive impact of microfinance in this case. In case of non-participant borrowers, about 32.8% respondents have been neutral (at 1% significance level) that their individual control has increased. Therefore, participant borrowers have positive impact on individual control. The findings were similar to those by Dunn and Arbuckle (2002), Garikipati (2008), as well as Husain (1998) who found that microfinance loans provided a greater opportunity for female borrowers to make business and family decisions.

In respect of individual honor, 30.5% and 34.0% participant and non-participant borrowers have been neutral (at 1% significance level) respectively. Both the groups do not show any impact for having more individual honor through borrowings. Therefore, microfinance borrowings do not make any difference for increasing their individual honor.

For individual capacity building, 45.3% participant and 35.8% non-participant borrowers have strongly agreed (at 1% significance level) their enhancement. Both the groups show positive impact for having individual capacity building. Therefore, microfinance borrowings do not make comparative difference for increasing their individual capacity.

Table 5. Individual Impact within the Groups.

Degree of agree	Control		Honor	
	Participant (%)	Non-Participant (%)	Participant (%)	Non- Participant

				(%)
Strongly Disagree	7.3	21.3	16.5	13.3
Disagree	9.0	15.3	23.0	17.0
Neutral	29.0	32.8***	30.5***	34.0***
Agree	22.3	12.3	9.3	12.3
Strongly Agree	32.5***	18.5	20.8	23.5
Capacity			Confidence	
Degree of agree	Participant (%)	Non-Participant (%)	Participant (%)	Non-Participant (%)
Strongly Disagree	7.3	21.3	4.8	18.5
Disagree	8.8	17.0	11.8	17.0
Neutral	21.3	23.3	25.8	26.0
Agree	17.5	2.8	16.3	1.3
Strongly Agree	45.3***	35.8***	41.5***	37.3***
Note: ***, ** and * indicates 1%, 5% and 10% level of significance respectively				

In respect of individual confidence, 41.5% participant and 37.3% non-participant borrowers have strongly agreed (at 1% significance level). Both the groups show positive impact for having individual confidence building. Therefore, microfinance borrowings do not make comparative difference for increasing their individual confidence. The findings are consistent with those of Goetz and Gupta (1996), Afrane (2002), Nader (2008), and (1996) who found microfinance loan upgraded the borrowers' confidence in managing their business, income, and increased their involvement in the community.

Table 6 shows microfinance impact on borrowers' poverty at individual level further divided into borrower control, honor, capacity and confidence comparing between the groups.

Table 6. Individual Impact between the Groups.

Individual Level	Participant Borrower N ₁ =400		Non-Participant Borrower N ₂ =400		P Value
	Mean	S D	Mean	S D	
Control***	3.64	1.225	2.92	1.365	0.000
Honor**	2.95	1.347	3.16	1.320	0.026
Capacity***	3.85	1.284	3.15	1.569	0.000
Confidence***	3.78	1.235	3.22	1.540	0.000

Note: ***, ** and * indicates 1%, 5% and 10% level of significance respectively

In case of participant borrowers, all the four variables approach from about neutral to agree as they score between about 3 to 4. However, in case of non-participant borrowers, all the four variables approach similarly with relatively lower score in the same range. Their respective mean scores are statistically different at 1% except honor, which is different at 5% significance level. It can be concluded that participant borrowers have positive impact on borrowers' individual control, honor, capacity and confidence whereas non-participant borrowers report differently. Therefore, the two groups show different outcomes, which indicate that microfinance has positive impact on individual level.

4.4 Security Level Impact

About 41.5% participant borrowers strongly agree (at 1% significance level) that microfinance borrowings have increased their social security and 21.3% participant borrowers agree the same. In total, about 66.8% participant borrowers have reported positive impact of microfinance in this respect. In case of non-participant borrowers, about 29.0% respondents strongly disagree (at 1% significance level) that their social security has increased and 19.5% respondents disagree the same. Totally, about 48.5% respondents disagree that their social security has increased and only 28.6% respondents have reported increase in their business revenue. This is in sharp contrast to the findings of participant borrowers where 66.8% have reported increase in this respect.

For financial security, about 39.5% participant borrowers strongly agree (at 1% significance level) that microfinance borrowings have increased their financial security and 20.5% participant borrowers agree the same. In total, about 60.0% participant borrowers have reported positive impact of microfinance in this respect. In case of non-participant borrowers, about 32.0% respondents strongly disagree (at 1% significance level) that their financial security has increased and 21.3% respondents disagree the same. Totally, about 53.3% respondents disagree that their financial security has increased and only 23.0% respondents have reported increase in their financial security. This is in sharp contrast to the findings of participant borrowers where 60.0% have reported increase in this respect.

In respect of food security, about 42.3% participant borrowers strongly agree (at 1% significance level) that microfinance borrowings have increased their food security and 24.0% participant borrowers agree the same. In total, about 66.3% participant borrowers have reported positive impact of microfinance in this respect. In case of non-participant borrowers, about 35.0% respondents strongly disagree (at 1% significance level) that their food security has increased and 26.3% respondents disagree the same. Totally, about 61.3% respondents disagree that their food security has increased and only 14.1% respondents have reported increase in their food security. This is also in sharp contrast to the findings of participant borrowers where 66.3% have reported increase in this respect.

For health security, about 23.8% participant borrowers have been neutral (at 5% significance level) that microfinance borrowings have increased their health security. In case of non-participant borrowers, about 33.3% respondents strongly disagree (at 1% significance level) that their health security has increased and 25.3% respondents disagree the same. Totally, about 58.6% respondents disagree that their health security has increased and only 13.8% respondents have agreed the same. Therefore, it can be concluded that microfinance has comparative positive impact in this respect.

Microfinance impact on borrowers' poverty at security level further divided into social, financial, food and health comparing between the groups. In case of participant borrowers, all the four variables approach from neutral to agree as they score between 3 to 4. However, in case of non-participant borrowers, all the four variables approach from disagree to neutral

as they score between 2 to 3. Their respective mean scores are statistically different at 1% significance level. It can be concluded that participant borrowers have positive impact on borrowers' social, financial, food and health security whereas non-participant borrowers report negatively. Therefore, the two groups show different outcomes, which indicate that microfinance has positive impact on security level.

5 Conclusion

Comparing within the groups, participant borrowers have agreed for business revenue, strongly agreed for fixed asset, agreed for current asset and again strongly agreed for employment generation with microfinance on borrowers' poverty at business level. On the other hand, non-participant borrowers have strongly disagreed for business revenue & fixed asset, disagreed for current asset and neutral for employment generation without microfinance. Comparing between the groups, it can be concluded that participant borrowers range from neutral to agree position for impact on business revenue, fixed asset, current asset and employment whereas non-participant borrowers nearly disagree about their position. Therefore, the two groups show different outcomes, which indicate that microfinance has positive impact on business level. This results are consistent with Khandker (1998), Dunn and Arbuckle (2001) Afrane (2002) and Hossain and Diaz (1997).

Comparing within the groups, participant borrowers have strongly agreed for household income, no impact for immovable property, neutral for movable property and again strongly agreed for expenditure considering microfinance positive impact on borrowers' household level. On the other hand, non-participant borrowers have disagreed for household income, been neutral for immovable & movable property and expenditure without microfinance. Comparing between the groups, it can be concluded that participant borrowers range from neutral to agree position for impact on household income, immovable property, movable property and expenditure whereas non-participant borrowers nearly disagree or become neutral about their position. Therefore, the two groups show different outcomes, which indicate that microfinance has positive impact on household level except for certain cases. This finding conformed Mahjabeen (2008) and Nader (2008) works.

Comparing within the groups, participant borrowers have strongly agreed for control, been neutral for honor and again strongly agreed for capacity and confidence considering microfinance positive impact on individual level. On the other hand, non-participant borrowers have been neutral for control and honor and strongly agreed for capacity and confidence without microfinance. Comparing between the groups, it can be concluded that participant borrowers have positive impact on borrowers' individual control, honor, capacity and confidence whereas non-participant borrowers report differently. Therefore, it can be concluded that microfinance has comparative positive impact on individual level. The findings were similar to those by Dunn and Arbuckle (2001), Garikipati (2008) and Husain (1998).

Comparing within the groups, participant borrowers have strongly agreed for social, financial, food but been neutral for health considering microfinance positive impact on security level. On the other hand, non-participant borrowers have strongly disagreed for social, financial, food and health security without microfinance. Comparing between the groups, it can be concluded that participant borrowers have positive impact on borrowers' social, financial, food and health security whereas non-participant borrowers report negatively. Therefore, it can be concluded that microfinance has positive impact on security level for all cases in this respect.

Microfinance has been devised to give positive impacts on borrowers through poverty eradication and their welfare. This work finds positive impacts, which favors academic debate for microfinance. The microfinance industry has been rising quickly. By the year 2017,

it got a portfolio of \$ 114 billion with 139 million borrowers across the world. During this period, over 25 million borrowers (including Grameen Bank) are being served with a loan portfolio \$ 7.8 billion in Bangladesh (Microcredit Regulatory Authority, 2017). These huge amounts of investment involving millions of borrowers in microfinance need to be assessed for the industry survival and growth. Policy maker can get an insight of current positive impact scenario of microfinance and continue subsidy together with favorable policy towards it. However, Robinson (Robinson M, 2001) argued that the microfinance loans' impact on borrowers' poverty is undermined through subsidized credit policy. The reason for this may be the government-subsidized credit policy has been applied as a political instrument to attract supporters who can be often non-poor as well. This should be handled carefully.

References

1. *Compassion, Famous Quotes about Poverty* Compassion International (Incorporated, US, 2019)
2. J. Goldstein, Did the father of microfinance just get fired (2011)
3. M. Bateman, H.J. Chang, *World Economic Review* **(1)** (2012)
4. E. Littlefield, J. Morduch, S. Hashemi, *Focus note*. **24**,1-11 (2003)
5. P.P. Smith, E. Thurman, *A billion strap: Microcredit, Barefoot banking and the business solution for ending poverty* (McGraw Hill, New York, 2007)
6. M. Duvendack, What is the evidence of the impact of microfinance on the well-being of poor people, EPPI-Centre, Social Science Research Unit, Institute of Education (2011)
7. S.H. Mokhtar, *Microfinance performance in Malaysia* (Lincoln University, 2011)
8. M. Yunus, *Credit for self-employment: A fundamental human right* (Grameen Bank, 1987)
9. M. Yunus, *Banker to the poor: Micro-lending and the battle against world poverty* (PublicAffairs, 2007)
10. D. Roodman, J. Morduch, *Journal of Development Studies* **50(4)**, 583-604 (2014)
11. M.M. Pitt, S.R. Khandker, *Journal of political economy* **106(5)**, 958-996 (1998)
12. S.R. Khandker, *The World Bank Economic Review* **19(2)**, 263-286 (2005)
13. J. Morduch, *Journal of economic literature* **37(4)**, 1569-1614 (1999)
14. J. Hickel, *The microfinance delusion: who really wins* (The Guardian, 2015)
15. TRT.World, Roundtable: Does Microfinance empower or impoverish (2017)
16. M. Taylor, (2011) 'Freedom from poverty is not for free': rural development and the microfinance crisis in Andhra Pradesh, India. *Journal of Agrarian Change*, **11(4)**, 484-504.
17. R.M. Cautero, (2019) What is Microfinance and Why Is It Important? *The Balance* -

Banking and Loans.

18. S.R. Khandker, H.A. Samad, Z.H. Khan, (1998) Income and employment effects of micro-credit programmes: Village-level evidence from Bangladesh. *The Journal of Development Studies*, 35(2), 96-124.
19. S.M. Hashemi, S.R. Schuler, A.P.P. Riley, (1996) Rural credit programs and women's empowerment in Bangladesh. *World development*, 24(4), 635-653.
20. A.M. Husain, , (1998) Poverty alleviation and empowerment: the second impact assessment study of BRAC's rural development programme. 1998: BRAC, Research and Evaluation Division.
21. C. Milana, A. Ashta, (2012) Developing microfinance: A survey of the literature. *Strategic Change*, 21(7-8), 299-330.
22. M.M.M. Bhuiya, , (2016) Impact of microfinance on household income and consumption in Bangladesh: empirical evidence from a quasi-experimental survey. *The Journal of Developing Areas*, 50(3), 305-318.
23. M.M. Pitt, S.R. Khandker, J. Cartwright, (2006) Empowering women with micro finance: Evidence from Bangladesh. *Economic Development and Cultural Change*, 54(4),791-831.
24. M.W. Rahman, J. Luo, Z. Minjuan, (2015) Welfare Impacts of Microcredit Programmes: An Empirical Investigation in the State-Designated Poor Counties of Shaanxi, China. *Journal of International Development*, 27(7),1012-1026.
25. Woller and R. Parsons, (2002) Assessing the community economic impact of microfinance institutions. *Journal of Developmental Entrepreneurship*, 7(2),133.
26. M. Bateman, , (2010) Why microfinance doesn't work? The destructive rise of local neoliberalism. London, New York, Zed,
27. Hulme, D., (2000) Is microdebt good for poor people? A note on the dark side of microfinance. *Small Enterprise Development*, 11(1),26-28.
28. Sinclair, H., (2012) Confessions of a microfinance heretic: How microlending lost its way and betrayed the poor. Berrett-Koehler Publishers.
29. De Mel, S., D. McKenzie, and C. Woodruff, (2008) Returns to capital in microenterprises: evidence from a field experiment. *The quarterly journal of Economics*, 123(4),1329-1372.
30. Ghalib, A.K., I. Malki, and K.S. Imai, (2015) Microfinance and household poverty reduction: Empirical evidence from rural Pakistan. *Oxford Development Studies*, 43(1),84-104.
31. Imai, K.S., T. Arun, and S.K. Annum, (2010) Microfinance and household poverty

- reduction: New evidence from India. *World Development*, 38(12),1760-1774.
32. Imai, K.S., et al., (2012) Microfinance and Poverty - A Macro Perspective. *World Development*, 40(8),1675-1689.
 33. McKenzie, D.J. and C. Woodruff, (2006) Do entry costs provide an empirical basis for poverty traps? Evidence from Mexican microenterprises. *Economic development and cultural change*, 55(1),33-42.
 34. Mukherjee, A.K., (2015) Empowerment through government subsidized microfinance program: Do caste and religion matter? *International Journal of Social Economics*, 42(1),2-18.
 35. Van Rooyen, C., R. Stewart, and T. De Wet, (2012) The impact of microfinance in sub-Saharan Africa: a systematic review of the evidence. *World Development*, 40(11),2249-2262.
 36. McIntosh, C., G. Villaran, and B. Wydick, (2011) Microfinance and home improvement: using retrospective panel data to measure program effects on fundamental events. *World Development*, 39(6),922-937.
 37. Lascelles, D. and S. Mendelson, (2012) Microfinance banana skins 2012: the CSFI survey of microfinance risk—staying relevant. Report for the Centre for the Study of Financial Innovation (CSFI), Printed by Heron, Dawson, & Sawyer, London, UK,
 38. Osmani, S.R. and W. Mahmud, How Does Microcredit Work?, A Review of the Theories of Microcredit.: Institute of Microfinance.
 39. Khalily, M.B., (2004) Quantitative approach to impact analysis of microfinance programmes in Bangladesh—what have we learned? *Journal of International Development*, 16(3),331-353.
 40. Epstein, M.J. and C.A. Crane. (2005) Alleviating global poverty through microfinance: factors and measures of financial, economic, and social performance. in *Documento presentado en la conferencia sobre pobreza mundial organizada por la Harvard Business School*, Boston, MA.
 41. Kabeer, N., (2005) Is microfinance a'magic bullet'for women's empowerment? Analysis of findings from South Asia. *Economic and Political weekly*, 4709-4718.
 42. Nader, Y.F., (2008) Microcredit and the socio-economic wellbeing of women and their families in Cairo. *The Journal of Socio-Economics*, 37(2),644-656.
 43. Krejcie, R.V. and D.W. Morgan, (1970) Determining sample size for research activities. *Educational and psychological measurement*, 30(3),607-610.
 44. Khandker, S.R., (1998) Micro-Credit Programme Evaluation: A Critical Review 1. *IDS bulletin*, 29(4),11-20.

45. Dunn and Arbuckle, The impacts of microcredit: a case study from Peru AIMS, USAID. Empowerment of Women (Eds.). H. AMM. Dhaka, BRAC, 2001.
46. Afrane, S., (2002) Impact assessment of microfinance interventions in Ghana and South Africa: A synthesis of major impacts and lessons. *Journal of Microfinance/ESR Review*, 4(1),4.
47. Hossain, M. and C.PP. Diaz, (1997) Reaching the poor with effective microcredit: evaluation of a Grameen Bank replication in the Philippines. *Philippine Sociological Review*, 45(1/4),89-121.
48. Mahjabeen, R., (2008) Microfinancing in Bangladesh: Impact on households, consumption and welfare. *Journal of Policy modeling*, 30(6),1083-1092.
49. Garikipati, S., (2008) The impact of lending to women on household vulnerability and women's empowerment: evidence from India. *World development*, 36(12),2620-2642.
50. Goetz, A.M. and R.S. Gupta, (1996) Who takes the credit? Gender, power, and control over loan use in rural credit programs in Bangladesh. *World development*, 24(1),45-63.
51. Robinson, M., (2001) Shifting the microfinance paradigm: from subsidized credit delivery to commercial financial services. *The Microfinance Revolution Sustainable Finance for the Poor*, 71-73.