

AN INSIGHT INTO THE ECONOMIC IMPACT OF MICRO CREDIT AT THE HOUSEHOLD LEVEL: WHAT DOES THE REALITY SAY?

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Abstract

This article investigates the economic impact of micro credit at household level. Cross section data from four villages of Manikgonj district were used to achieve the objectives of the study. As the findings of the study show household average monthly income of a borrower and non-borrower increased between 'before' and 'after' period. Estimated model shows that the relationship between change in income and borrowing is negative. Monthly consumption expenditure of borrower decreased significantly while non borrower's expenditure increased significantly which indicates that increased income of borrowers was not consumed. Family debt of borrowers increased by 523% during last five years but non borrower's debt decreased by 36 % during the same period. So, it may be, that borrower spent their increased income to rep(1Y their loan. The impact of micro credit on employment generation is very insignificant. Each of the loan cases studied shows that about 75 percent borrower were unable to generate only single employment which clearly indicates that micro credit had no positive significant impact on employment and income generation.

Key Words: Micro credit, Borrower, Before, After, Consumption Expenditure, Income.

Introduction

Micro-credit refers to programs that are poverty focused and that provide financial and business services to very poor persons for generation of self-employment and income. With the advent of Grameen Bank (GB) and other such programs (institutions) micro-credit obtained a new identity, a new meaning and a place in the development literature of the study. It is no more a mere concept. It is now a worldwide movement. Dr. Muhammad Yunus advocates that Credit is a human right and once this right is established, the entitlement to other rights for leading a dignified life becomes easier. He also advocates that credit empowers to break the vicious cycle of poverty by instantaneously creating self-employment and generating income. But the existing evidence on the impact of micro-credit on poverty in Bangladesh is not very clear. There is work that suggests that access to credit has the potential to significantly reduce poverty (Khandker 1998); on the other hand there is also research which argues that micro-credit has minimal impact on poverty reduction (Morduch 1998). The burning question is how much changes in income, employment, consumption and debt were due to borrowing from micro-finance programs? In this circumstance it is very important to consider the economic impact of micro credit at household level. It is the proper time to analyse the impact on household income, expenditure, employment and debt, which this research involves. This study is expected to provide information about the impact of micro credit on household income, expenditure, employment and debt. The findings of the study may provide empirical evidence to the policy makers in formulating fruitful plans. It is also hoped that results from this research would also be helpful for probable diagnosis and practical solutions to many problems of micro credit.

Review of Literature

Paul Mosley, 1997, recognized that assessments of the impact of microfinance services are complex and entail several methodological challenges. As he states, the evaluation of any

project or activity, including micro finance, aims ideally at knowing the effects and who is affected, but also the causes. While being increasingly used in micro finance impact assessments, not least due to its limited data requirements, this method is beset by a number of methodological challenges, i.e. sample selection bias, misspecification of causal relationships and motivational problems.

Lisa Young Larance, 1998, reported that a rural Bangladeshi woman's identity and relationships are traditionally decided by patriarchal practices and *purdah* norms, which contribute to her isolation and therefore limit her involvement in community life. NGO involvement can change this dynamics. Observations at one GB center have shown how NGO affiliation enables members to attain dignity while simultaneously altering traditional village practices. Villagers have done so by taking advantage of the center space to establish and strengthen social ties that reach beyond their familial networks. This process has been nurtured by GB membership norms at the center building.

Kene Ezemenari, Anders Rudqvist, K. Subbarao, 1999, has outlined the factors critical for evaluating the impacts of projects and programs. Identification of the counterfactual is the organizing principle of a good impact evaluation. In order to determine the effects of the intervention, it is necessary to identify what would have happened without the intervention. Further to identifying the counterfactual, it is necessary to (a) clearly define control groups; and (b) identify all variables which will impact on program outcomes.

Hassan Zaman, 2000, explores the relationship between micro-credit and the reduction of poverty and vulnerability. The main argument is that micro-credit contributes to mitigating a number of factors that contribute to vulnerability, whereas the impact on income-poverty is a function of borrowing beyond a certain loan threshold and to a certain extent contingent on how poor the household is to start with.

H. I. Latifee, 2003, noted that poverty reduction is undoubtedly a doable proposition.) It can be significantly and rapidly reduced with Grameen type micro-credit programs provided: 1) required funds are available to the nascent micro-credit industry at reasonable costs, 2) a professionally, competent and motivated staff is engaged in performing the operational tasks, 3) the communication or knowledge gap between donors and practitioners is minimized. 4) the gap between words and deeds, assurances and actions, is narrowed down and an enabling environment is created by removing the obstacles that stand in the way of growth of micro-credit industry.

Shahidur R. Khandker, 2003, Program evaluation compares outcomes of treatment groups with those of control groups. Finding control group in a non-experimental setting is very difficult. Traditionally, resorting to instruments for identifying program effects is done with cross-section data. However, finding good instruments is equally difficult. Pitt and Khandker (1998) used quasi-experimental method relying on exogenous eligibility conditions as a way of identifying program effects. Some of the conditions are restrictive and might not be reliable, for example, the non-enforceability of landholding criterion for program participation. Results may be sensitive to methods used in impact assessment.

Objectives of the Study:

The broad objective of the study is to analyze economic impact of micro credit at household level. However the specific objectives are:

- To measure the impact of micro credit on household income and employment;
- To estimate the impact of micro credit on changes in household income;
- To suggest the fruitful measures to find out the new dimension of micro credit to improve the livelihood of the borrower.

Hypothesis of the Study:

The main purpose of hypothesis building is to test whether the micro credit program has a positive impact on changes in family income in the study area. On the basis of the fitted regression model following hypothesis is considered to test.

Null Hypothesis: The micro credit has positive impact on changes in family income in the study area. That is $\beta > 0$ in the fitted regression model.

Alternative Hypothesis: The micro credit has no positive impact on changes in family income in the study area. That is $\beta < 0$ in the fitted regression model.

Data and Methods:

Research on impact of micro credit, where the collection of primary data is involved, requires selection of an area, which would offer a scope to fulfill the objectives of the study. To evaluate the impact it is important to select an older area. Manikgonj district is one of the oldest areas where micro credit program was initiated from the very beginning. That is why Manikgonj district was selected as a study area. Keeping in mind, the main objectives of the present study, some preliminary study were made in Manikgonj. Cross section data from four villages of Manikgonj district were used to achieve the objectives of the study. The sample of the study consists of 95 borrower household and 53 non borrower household which makes total sample 148. Tabular, statistical as well as econometric techniques were applied to analyze the data. In particular ANOVA model was estimated to show the impact on income. It should be noted that all information were collected on the basis of before joined (joining) with micro credit (BEFORE) and after joined (joining) with micro credit (AFTER).

Analytical Framework:

Endogeneity arises if there are other factors that affect the intervention and outcome simultaneously making it difficult to disentangle the pure effect of the intervention. The key to disentangling project effects from any intervening effects is determining what would have occurred in the absence of the program (at the same point in time). When one establishes a functional relationship between treatment (inputs) and outcomes in a regression equation, endogeneity manifests itself when there is a non-zero correlation between the treatment, and the error term in the outcome regression. The problem is to identify and deal with the main source of endogeneity relevant to each intervention. If one could observe the same individual at the same point in time, with and without the program, this would effectively account for any observed or unobserved intervening factors or contemporaneous events and the problem of endogeneity does not arise. The analysis of covariance (ANCOVA) essentially allows separate parallel regression lines to be fitted through the data for the treatment (borrower) and control groups. The regression lines measure the outcome variable for a given year $(t + n)$ relative to an earlier year (t) . Insofar as a program like micro credit has a tangible effect this will be picked up by the distance between the two lines that is by the difference in intercept terms. The statistical significance of this distance gives a test for the impact of the program.

Specification of the model:**Analysis of Variance (ANOVA) model:**

To show the impact of micro credit on household income, following ANOVA model was estimated:

$$Y_{mic} = \alpha + \beta D_i + u_i \dots \dots \dots (1)$$

Where, Y_{mic} = change in monthly household income (change in before and after income)

$$D_i = 1, \text{ if household is a borrower} \\ = 0, \text{ otherwise (i.e. non-borrower)}$$

Model (1) may enable us to find out whether micro credit has a positive impact on changing household income or not.

Assumption of the model:

- 1) All other variable rather than borrowing such as age, number of family member, number of income earner, assets etc. are held constant.
- 2) The disturbances satisfy the usual assumption of the classical linear regression model.

Expected findings of the model:

If the above assumptions are satisfied then we will obtain from model (1)

Mean change in household income: $E(Y_{mic} / D_i=0) = \alpha$

Mean change in borrower income: $E(Y_{mic} / D_i=1) = \alpha + \beta$

That is the intercept term α gives the mean change in non-borrower income and the slope

coefficient β tells by how much the mean change in borrower income different from the mean change in non borrower income, $\alpha + \beta$ reflecting the mean change in borrower income.

Results and Discussion:**Estimation of the analysis of variance (ANOV A) model:**

The results corresponding to the regression of ANOV A model (1) are as follows:

Dependent variable: change in monthly family income

Table-1
Estimated results of the ANOVA model

Variables	Co-efficient	t values	Significance e value(p)	F	Sig. of F value
Constant	3865.075	13.767	.000	13.755	.000
Borrower	-1299.602	-3.709	.000		

As these estimated result of the ANOV A model shows, the estimated mean change (increase) in monthly family income of non borrower is Tk.3865.075(= estimated α) and that of borrower is Tk.2565.473 (=3865.075 - 1299.602), i.e., (= estimated ($\alpha + \beta$)). Since estimated β is statistically significant both at 5% and 10% level of significance, the results indicates that the mean change (increase) in monthly family income of borrower and non borrower are different. Actually borrower's average change(increase) in income is lower than that of non borrower by Tk.1299.602 (=estimated β). Following the assumptions of the model, it may very well be that only due to borrowing(micro credit) the mean monthly income decreased (increased less) by Tk.1299.60 comparing with the non borrower during last five years in the study area.

Testing the hypothesis of the study:

As the above table shows 't' value of the slope coefficient (β) is statistically significant at any level (1 %, 5% and 10%) of significance. So we may reject our null hypothesis. Alternatively we may accept our alternative hypothesis that the micro credit has no positive impact on changes in family income in the study area.

Monthly consumption expenditure:

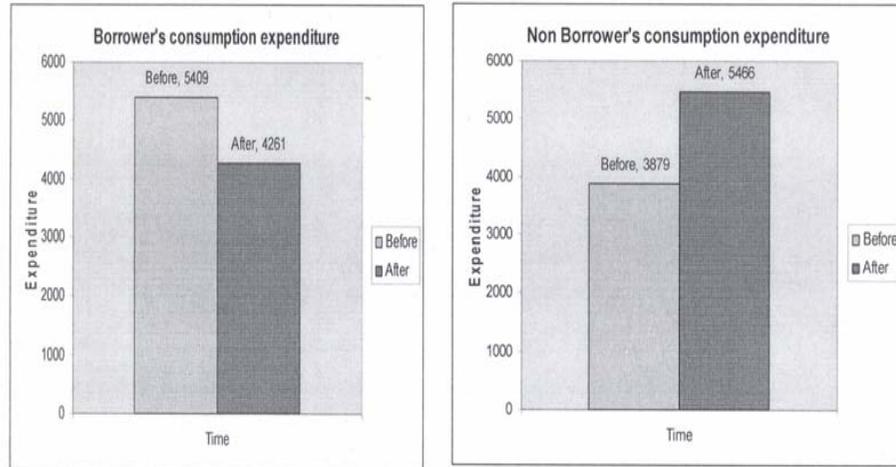
Monthly consumption expenditure decreased by 21.22% of borrower whereas it increased by 40.91% of non borrower. It is notable that although income increased by 84%,

Table-2
Monthly consumption expenditure

	Present(after)	Past(before)	% Change
Borrower	4261	5409	- 21.22
Non-borrower	5466	3879	40.91

Source: Field Survey May, 2011.

Consumption expenditure decreased by 21 % of borrower which indicates that borrower's other expenditures increased significantly which exhausted the increased income.



Monthly Family income:

Monthly family income of borrowers increased by 84.17%, which is 66.93% for non borrowers. It may be noted that income of non borrower was near about double before the intervention of

Table-3
Monthly Family income:

	Present	Past	% Change
Borrower	5613.37	3047.89	84.17
Non-borrower	9639.62	5774.55	66.93

Source: Field survey May, 2011.

micro credit. Also we cannot conclude that this increase of income is due to borrowing.

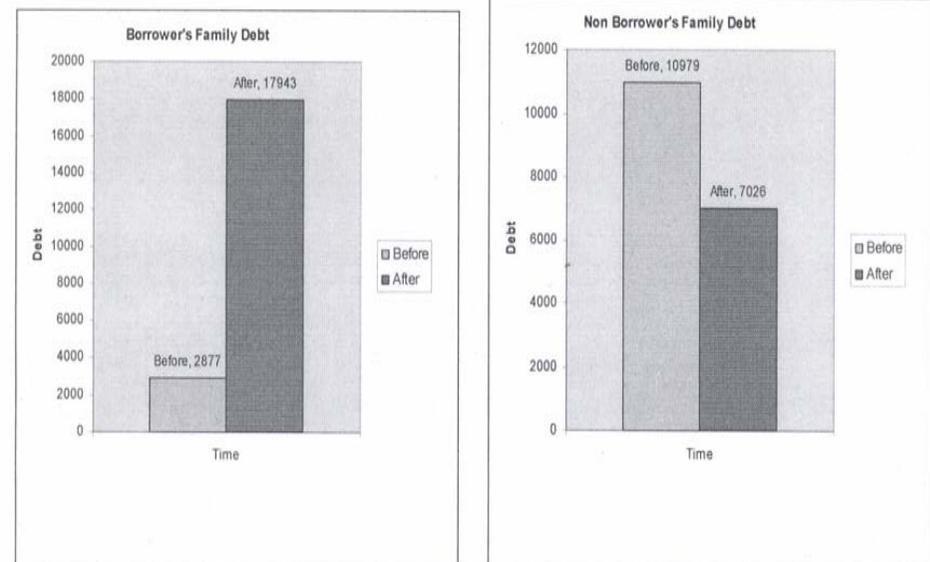
Family debt of borrower and non borrower:

Analysis shows that borrower's total debt increased by 523% during last five years whereas non borrower's debt decreased by 36% in the same time period.

Table-4
Family debt of borrower and non- borrower.

	Present	Past	% change
Borrower	17943.2737	2877.4468	523.58(increased)
Non-borrower	7026.8868	10979.2453	- 36.00 (decreased)

Source: Field Survey May, 2011.



Average family debt of borrower:

Before borrowing total family debt of Grameen Bank borrower was Tk.1929 which is Tk.16007 after five years of borrowing. That is family debt increased 729% of GB borrower which is highest out of four NGO. This percentage is 351 %,612% and 269% for ASA, BRAC and ARAB respectively.

Table-5
Average family debt of borrower by NGO

NGO	Present debt	Past debt	% change
Grameen Bank	16007.0154	1929.3750	729 .64 (increased)
ASA	27093.6842	6000	351.56 (increased)
BRAC	11400	1600	612.5 (increased)
ARAB	15395.8333	4166.6667	269.50 (increased)'. '

Source: Field Survey May, 2011.

Impact of micro credit on employment generation:**Impact on employment of last (recent repaid) loan.**

From first income source of last loan 65.3% household could not generate a single employment.29.5% household generated one employment from first income source. It is notable that from second and third income source there was not a single employment.

Table-6
Impact on employment of last loan

	First Income source	Second Income source	Third Income source
Percentage of household who generated no(0) employment from last loan	65.3	100	100
Percentage of household who generated single employment from last loan	29.5	0	0
Percentage of household who generated two(2) employment from last loan	4.2	0	0
Percentage of household who generated three (3) employment from last loan	1.1	0	0

Source: Field Survey May, 2011.

Impact on employment of second loan.

From first income source of second loan 74.7% household generated not :a single employment.22.1 % household generated one employment from first income source. It is notable that from second and third income source there was not a single employment.

Table-7
Impact on employment of second loan

	First income source	Second income source	Third income source
Percentage of household who generated no(0) employment from second loan	74.7	100	100

	First income source	Second income source	Third income source
Percentage of household who generated single(1) employment from second loan	22.1	0	0
Percentage of household who generated two(2) employment from second loan	3.2	0	0
Percentage of household who generated three (3) employment from second loan	0	0	0

Source: Field Survey May, 2011.

Impact on employment of first loan.

From first income source of first loan 80% household generated not a single employment. 20% household generated one employment from first income source. From Second income source only 1.1 % household generated two employments. It is notable that from third income source there was not a single employment.

Table-8
Impact on employment of first loan

	First Income source	Second Income source	Third Income source
Percentage of household who generated no(0) employment from first loan	80	98.9	100
Percentage of household who generated single(1) employment from first loan	20	0	0
Percentage of household who generated two(2) employment from first loan	0	1.1	0
Percentage of household who generated three (3) employment from first loan	0	0	0

Source: Field Survey May, 2011.

Conclusion:

Borrower's income and consumption expenditure have been decreased due to micro credit in the study area. Family debt of borrower increased by a remarkable amount for borrowing and they are now in a chain of vicious circle of borrowing which made them as permanent poor instead of reducing their poverty. The overall economic condition of borrower has been deteriorated significantly due to micro credit. So some policy implications emerged from the results of this research. Loan should be disbursed directly on project because the inefficient and comparatively uneducated borrower misuse their loan money and they are unable to select a profitable and feasible project. Projects have to be selected by the NGO which will be labor intensive and will generate new employment and income. Monitoring is completely absent in micro credit in the study area. Since the borrowers are very poor and illiterate it is impossible to make a project profitable for them without proper, regular and strict monitoring by the NGO authority. Present interest rate is too high for borrower which is one of main barrier of profitability of a credit. The poor borrower does not care about interest rate because they are needy and they also can not calculate the most complicated interest rate of micro credit and the NGO is misusing this opportunities. So tolerable interest rate have to be set by all NGOs. Governments have to control and monitor all NGOs in a very strict hand otherwise the poor borrower will become more poorer as they are at present. Research should not be only for research on which the fortune of thousands of poorest people depends on. For such important issues, some fruitful and effective research should be conducted by highly efficient and unbiased researcher, which will be able to find out actual problems and to show the actual path.

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