

Poverty and Microfinance: An Investigation into the Role of Microcredit in Reducing the Poverty Level of Borrowing Households in Bangladesh and the Philippines

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It is often argued that the formal and informal financial sectors in developing countries have failed to serve the poorer section of the community. Collateral, credit rationing, a preference for high income clients and large loans, and lengthy bureaucratic procedures of providing loans keep poor people outside the boundary of the formal sector financial institutions in developing countries.¹ On the other hand, the informal financial sector has also failed to help the poor. Monopolistic power, excessively high interest rates, and exploitation through the undervaluation of collateral have restricted the informal financial sector in providing credit to poor people for income generating and poverty alleviation purposes.²

The limitations of both financial sectors in providing financial services, especially credit, have encouraged microcredit programs to evolve. These programs were initiated with the objective of providing poor people with small credit without collateral. The harmony among group members, the strict discipline in providing credit and collecting repayments, and supervision of borrower's activities in the microcredit system have replaced the provision of collateral. Muhammad Yunus, the Nobel Peace Prize winner in 2006 and founder of the Grameen Bank in Bangladesh, calls this process of collateral substitution the "freeing of credit from the bondage of collateral."³ He further criticized collateral provisions for keeping poor people outside the credit facilities of formal financial sector institutions, stating that it constitutes a form of "financial apartheid."⁴

In 1976, Muhammad Yunus initiated the first microcredit program in Bangladesh with the promise of providing credit without collateral, in an attempt to alleviate poverty and unleash the creative potential of the poor. Years later, in 1986, Yunus founded the Grameen Bank, thus paving the way for future microcredit programs in developing and developed countries. In a speech at the microcredit summit in Washington, D.C. in 1997, Yunus compared his dream to eradicate poverty

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completely from this world with man's desire to fly 100 years ago. He mentioned that, in their first successful attempt in 1903, the Wright Brothers could stay in the air for only 12 seconds and fly for only 120 feet. Sixty-five years later, however, man was able to go to the moon and successfully return to Earth. Yunus mentioned that he would also be able to go to his moon, a poverty-free world, in fifty-five years time through microcredit.⁵ Keeping this in mind, it is therefore important to evaluate the poverty alleviation capacity of microcredit programs.

The present article is intended to analyze how effective microcredit programs are in alleviating the poverty level of borrowing households in Bangladesh and the Philippines. A quasi-experimental design has been formulated to achieve this objective. The survey design covers two types of households, program households and comparison households. Program households are those which have already received more than one loan from a microcredit program. Comparison households are those which have just joined a microcredit program and therefore have not received any loans from that program. There will be a comparison between the poverty level of both households to assess the impact of microcredit on borrowing households.

LITERATURE REVIEW

The empirical evidence on the impact of microcredit on poverty is very mixed. While some impact evaluation studies have found that access to credit by the poor has a positive, large, and permanent effect on living standards, other studies have found that poverty is not reduced through microcredit. They have shown that poor households simply become poorer through the additional burden of further debt.

Some studies, for example, Bruntrup et. al (1997), have only used descriptive statistics for analysis.⁶ They have not used any multivariate techniques to determine the impact of microcredit on poverty and poverty related aspects of borrowing households. Other studies, such as Mustafa et. al (1996) and Hussain (1984), were biased in selecting the sample households.⁷ Mustafa, et. al (1996) selected 200 additional so-called "success households" non-randomly for data collection. So far, only four studies, Hussain (1988), Hussain eds. (1998), Khandker and Chowdhury (1996), and Chowdhury et al. (2005) have directly assessed the impact of microcredit on poverty.⁸ These studies analyzed poverty and economic welfare from the point of view of objective poverty.

POVERTY IN BANGLADESH

Poverty has multidimensional characteristics in Bangladesh. The level of poverty is relatively high due to the fact that employment opportunities are limited and average income level is low. Poverty in Bangladesh is not only a phenomenon of low income; it is also a phenomenon of the poor quality and limited access to basic services like education, healthcare, water, shelter, and sewerage. In terms of poverty and inequality, large differences exist between rural and urban areas. The per capita

GDP of Bangladesh is one of the lowest in the world. In 2000, it was approximately \$400; it rises to \$1900 when the purchasing power parity is considered. Poverty is the main problem of Bangladesh, as a majority of the population lives under the world poverty line.⁹ Since the independence of Bangladesh in 1971, poverty alleviation has been declared as the main macroeconomic objective of all ruling parties, but their efforts have remained very limited in achieving this objective.

TABLE 1-POVERTY IN BANGLADESH (IN PERCENTAGE)¹⁰

	Region	1963-64	1973-74	1981-82	1983-84	1991-92	1995-96	2000
Household Expenditure Survey	Rural	43.6						
	Urban	-						
Muqtada (1986)¹¹	Rural		59.9					
	Urban		37.8					
	Urban		32.3					
Osmani and Rahman (1986)¹²	Rural		65.3	79.1	49.8			
	Urban		62.0	50.7	39.5			
BBS (1990/92), (1995), (1996), (2000)¹³	Rural			73.8	61.9			
	Urban			66.0	67.7			
World Bank (2002)¹⁴	National					58.8	51.0	49.8
	Rural					61.2	55.2	53.0
	Urban					44.9	29.4	36.6

A glance at table 1 indicates that the poverty situation did not experience any improvement during the period 1963–2000. The level of poverty in rural areas in 2000 was about 9 percentage points higher than that of 1963–64. In 1963–64, the percentage of the rural population living under the poverty line in the country, then East Pakistan, was about 44 percent. In 2000, it was about 53 percent.¹⁵ Compared to the poverty situation immediately after independence, the country had experienced about a 6 percent decrease in poverty in twenty-two years. The percentage of the rural population living under the poverty line went down from 60 percent in 1973–74 to 53 percent in 2000. The poverty level sharply deteriorated immediately after independence due to the destruction of infrastructure and

production systems during the liberation war in 1971 and severe drought and floods during the period 1972–1974.

POVERTY IN THE PHILIPPINES

In 1997, 4.5 million families—26.8 million Filipinos—were living under the poverty line. Poverty incidence in the population was estimated at 36.8 percent in 1997 (Table 2). This means their annual per capita income fell below the poverty line, which was estimated to be P12,577 for urban areas and P10,178 for rural areas in 1997. In the same year, the incidence of poverty was higher in rural areas compared to that of in urban areas. The incidence of poverty in urban areas was 17.9 percent in 1997, whereas it was 44.4 percent in rural areas.

TABLE 2-POVERTY INCIDENCE OF FAMILIES IN THE PHILIPPINES¹⁶

	1985	1988	1991	1994	1997
Philippines	44.2	40.2	39.9	35.5	31.8
Urban	33.6	30.1	31.1	24.0	17.9
Rural	50.7	46.3	48.6	47.0	44.4

In 1997, within various regions, the incidence of poverty was the highest (57.5 percent) in the Autonomous Region of Muslim Mindanao (ARMM). During the same year, the incidence of poverty was the lowest (6.4 percent) in the National Capital Region (NCR), i.e. Metro Manila. However, in 1991, the Cordillera Administrative Region (CAR) had the highest incidence of poverty (57 percent), whereas Metro Manila had the lowest incidence of poverty (13.2 percent). During the period 1991–1997, the poverty situation deteriorated in the ARMM, but improved in the CAR. During the following two years, 1997–1998, the overall poverty situation in the Philippines worsened. In 1997, the incidence of poverty in the Philippines was 31.8 percent; it increased to 40.6 percent in 1998. The main contributors towards deterioration were the Asian financial crisis and the adverse environmental effects caused by El Niño.

THE MICROFINANCE SECTOR IN BANGLADESH

Bangladesh has experienced exceptionally rapid growth in the microcredit sector since 1990. Prior to 1990, only a handful of organizations were operating in the microcredit sector. Following the innovation and success of the Grameen Bank in providing small collateral free loans to poor people for income generating activities, many non-governmental organizations (NGOs) adopted microcredit technology and started mobilizing poor people for microcredit activities. In the beginning, some of

these NGOs, such as the Bangladesh Rural Advancement Committee (BRAC) and the Association for Social Advancement (ASA), experimented with the Grameen Bank's microcredit delivery system. Gradually, they developed their own. Currently, apart from the Grameen Bank, more than 1000 NGOs are operating microcredit programs, and many more new ones are joining the microcredit revolution in Bangladesh.

TABLE 3—MICROCREDIT IN BANGLADESH (IN MILLIONS)¹⁷

MFI s	Cumulative Disbursement	Loans Outstanding	Savings (Net)	Number of Members
Grameen Bank	191,440.4	16,823.7	13,306.6	3.1
%	40.5	31.1	45.3	21.3
BRAC	107,310.2	11,493.2	6,285.9	4.1
%	22.7	21.3	21.4	28.0
ASA	72,009.4	10,023.7	2,804.8	2.3
%	15.2	18.6	9.6	15.7
Proshika	27,165.9	4,623.3	1,601.4	2.8
%	5.8	8.6	5.5	19.1
Other 599 MFIs	74,350.5	11,068.3	5,343.7	2.3
%	15.7	20.5	18.2	16.0
Total	472,276.4	54,032.2	29,342.4	14.7

Although more than 1000 NGOs are providing microcredit in Bangladesh, the contribution by a vast majority of them toward total annual loans disbursement is insignificant. Based on the CDF statistics in 2004, the three top microfinance institutions (MFIs)—the Grameen Bank, BRAC, and ASA—contributed more than 70 percent to total membership, total net savings, cumulative loan disbursement, and loans outstanding (Table 3). The BRAC is the largest MFI in terms of membership mobilization. Until December 2003, the BRAC had mobilized 4.1 million members, which was 21.3 percent of total membership. However, in terms of three other indicators—cumulative disbursement, loans outstanding, and net savings—the Grameen Bank was the largest. The Grameen Bank had cumulative loan disbursement of Tk191.44 billion, loans outstanding of Tk16.82 billion, and net

member savings of Tk13.31 billion. The cumulative loan disbursement of the Grameen Bank constituted approximately 41 percent of total disbursement, whereas the BRAC accounted for approximately 21 percent. In 2003, the loans outstanding and net savings of the Grameen Bank were 31 percent and 45 percent of the total, respectively. In the same year, the BRAC contributed 21.3 percent of total loans outstanding and 21.4 percent of total net savings. The ASA, in relation to these two MFIs, is quite small in terms of the indicators stated above. In 2003, the share of the ASA in total loan disbursement was 15.2 percent. The ASA, at the end of December 2003, had mobilized 2.3 million members.

THE MICROFINANCE SECTOR IN THE PHILIPPINES

There is no specific information about the current size of the microfinance sector in the Philippines. In their 1995 study, Chua and Llanto made an attempt to calculate the size of the microfinance sector.¹⁸ According to their report, there were 2,762 MFIs in the Philippines. The estimated total outreach of these organizations was 666,000; the average outreach of each organization was about 240. On the basis of Chua and Llanto's study, and the assumption that the microfinance sector experienced a growth rate of 10 percent per annum during the period of 1995–2007, it is estimated that the size of the total outreach of the microfinance sector was about 2.3 million by the end of 2007.

TABLE 4—MICROFINANCE IN THE PHILLIPINES

Type of Institution	Number	Gross Loan Portfolio (in US\$)	Active Borrowers
Bank	2	2,987,317	19,124
Cooperative/ Credit Union	8	1,650,312	13,682
Non-Profit (NGO)	25	3,802,568	40,471
Other	1	3,433,401	62,430
Rural Bank	31	5,635,603	14,794
Grand Total	67	292,378,424	1,680,523

Table 4 shows the outreach and the gross loan portfolio of 67 microfinance institutions in the Philippines. It illustrates that these 67 microfinance institutions had a total outreach of 1.7 million and a total gross portfolio of USD 292 million in 2007.

Currently, there are three types of players in the microfinance sector in the Philippines: rural and development banks, cooperative banks, and NGOs. Before 1998, governmental organizations were also active in the microfinance sector through different types of targeted credit programs. During the period between 1994 and 1996, as many as eighty-six targeted credit programs of the government were active in the microfinance sector. In 1998, as part of the financial liberalization program, the government under President Estrada dismantled all of above mentioned targeted credit program and encouraged the private sector to play the leading role in the microfinance sector. In their 1995 study, Chua and Llanto failed to incorporate the contribution of rural and development banks towards the calculation of the total outreach of the microfinance sector. Rural and development banks also conduct microfinance activities as part of their different banking activities; however, specific information regarding the size of microfinance activities of these banks is not available. It is really difficult to distinguish the total volume of microfinance activities of these banks from other activities. Among the development banks, Land Bank of the Philippines played the most important role in financing poverty alleviation activities until 1996. It was established by the government of the Philippines to finance agricultural reform and to extend credit to the growing agricultural sector.

In 1994, Land Bank of the Philippines established the Peoples Credit and Finance Corporation (PCFC), an apex microfinance institution, to free itself from the task of financing poverty alleviation activities so that it could concentrate fully on agricultural reform lending and agricultural finance. The PCFC began operations in 1996. In April 2002, the PCFC had 279 partner organizations (POs). Out of these 279 POs, 86 were inactive. The total amount of loans outstanding was about P1.5 billion. With 193 active POs, the PCFC served 581,249 borrowers. The average loan size was P5,732. During the same time, the recovery rate of the PCFC was 98.32 percent.

Microfinance institutions in the Philippines follow three types of methodologies in conducting their microfinance activities: the Grameen methodology, the ASA methodology, and the indigenous methodology. The Grameen methodology was developed by the Grameen Bank in Bangladesh. The ASA methodology was developed by Association for Social Development (ASA) in Bangladesh. Most recently, the ASA methodology has become famous for its cost-effective microcredit lending approach. Local microfinance practitioners in the Philippines have developed the indigenous methodology. Approximately 160 MFIs have adopted the Grameen methodology to conduct their microfinance activities. In a project initiated and financed by the United Nations Development Program (UNDP), sixteen MFIs that participated adopted the ASA methodology during the period 2001–2002. Apart from these, other MFIs follow their own methodology.

ESTIMATION STRATEGY

The impact of any development intervention, such as microcredit, can be estimated using the following empirical specification:

$$Y_{ij} = H_{ij}\alpha_y + L_j\theta_y + M_{ij}\beta_y + \mu_{ij} \quad (1)$$

where Y_{ij} is the outcome of the household i , in the village j , on which we want to measure the impact. H_{ij} is the vector of household characteristics; L_j is the vector of village level characteristics; and M_{ij} is the vector of microcredit variables $\alpha_y, \theta_y, \beta_y$, and μ_{ij} are the parameters to be estimated, and represents the unmeasured household and village characteristics that determine outcomes. Consider the following equation, which determines the extent of influence of different household and village characteristics on the decision to participate in the microfinance programs or the decision to borrow the amount of money from the microcredit programs.

$$M_{ij} = H_{ij}\alpha_y + L_j\theta_y + \varepsilon_{ij} \quad (2)$$

where M_{ij} , H_{ij} , and L_j are the same as those in equation 1; and ε_{ij} represents the unmeasured household and village characteristics that determine the decision to participate in the microfinance programs, or the decision to borrow the amount of money from the microcredit programs.

The estimations will be biased if μ_{ij} and ε_{ij} are correlated. Two types of selection biases make these two terms correlated: (1) non-random selection of households to participate in microfinance program and (2) non-random selection of places to establish branches of microfinance institutions.

MFIs all over the world accept those people as members who fulfill some criteria. This process generates the first of the two types of biases mentioned above.

In addition to the selection criteria of MFIs, the self-selection of program participants is also another source of the first bias. Since it is expected that households with greater entrepreneurial capability are more likely to join the program, this may also bias the econometric estimation of program benefits. The non-random program placement also creates biases in estimating benefits of the program. For example, if microcredit programs are implemented in those areas which have more business opportunities, better communication infrastructure, more dynamic leaders, or are poorer, then such criteria for selecting places for program implementation create biases in estimating program benefits.

On the basis of the above arguments, we can say that a comparison between a group of program participants who are self-selected, and a group of non-participants who are not self-selected, would generate a bias in estimating the impact of microcredit on outcome variables. In the same way, the estimates will be biased if

program group members are selected from a place that has been non-randomly selected by MFIs on the basis of certain characteristics and if the comparison group members are selected from a place without those characteristics. On the basis of the above understanding, the present study uses an alternative survey method than is commonly employed.²⁰ We selected new members, who just received their first loan, as members of the comparison group. Since the comparison group members are self-selected like the program members, the bias arising from self-selection in estimating program benefits is expected to disappear. In our investigation, households of both groups were from the same location. Therefore, the bias, which arises from non-random program placement, is also avoided from our sample. Now, the program impacts can be estimated through using a single equation:

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

where Y_{ij} , H_{ij} , and M_{ij} are defined as above; and v_{ij} represents the error of the model that arises from the household and village level variables that are not included. In equation 3, M_{ij} is the microcredit variable of household j in the area i . This model has been estimated using two specifications of the microcredit variable. The first specification is a simple linear specification, like the one in equation 3. The second is a quadratic specification:

$$Y_{ij} = H_{ij}\alpha_y + L_j\theta_y + M_{ij}^2\beta_2 + v_{ij} \quad (4)$$

The second specification has been designed to observe the non-linearity in the impact of microcredit on different outcome variables.

The variables included in the vector of household characteristics H_{ij} are occupation, education, and the demographic composition of households. The variables included in the vector of village-level characteristics L_{ij} are the existence of schools, markets, roads, and dummies for localities where sample respondents reside. Models 3 and 4 have been estimated using the logit regression technique.

DATA FROM BANGLADESH

A four-stage random sampling technique has been applied in selecting program households and comparison households. In the first stage, one district had been randomly selected out of sixty-four districts in Bangladesh. In the second stage of random sampling, three branches of the Grameen Bank—two branches for selecting program households and the other for selecting comparison group households—had been selected randomly for data collection purposes. Program households had been selected from two branches that were more than eight years old (program branches). Comparison households had been selected from a newly established Grameen Bank branch (comparison branch). In the third stage, we randomly selected thirty-five centers from the comparison branch and sixty centers from two program branches.²¹ In the fourth and final stage, the study randomly selected five members from each

of the program branch centers and six members from each of the comparison branch centers.

In total, the study collected information from 210 member households of the comparison branch. However, during the examination of the completed questionnaires of comparison households, it was found that some questionnaires contained illogical as well as incomplete answers. The study dropped these questionnaires. This left the study with 205 useable questionnaires from the comparison branch. In the program branch, the study grouped all members of each randomly selected center into three groups on the basis of the length of participation in the program: 2–4 years, 5–7 years, and 8 years or more (8+). The study randomly selected two program members from each group. Since 60 centers were selected randomly for data collection, the study expected 120 randomly selected program members from each group. In some centers, the study did not find any members belonging to the 2–4 year program group and/or the 8+ program group. In some centers, the study substituted missing members of the 2–4 year program group and the 8+ program group with the 5–7 year program group members. Finally, the study was able to collect information from households of ninety five 2–4 year group members, one hundred sixty 5–7 year members, and one hundred five 8+ group members. However, the study found some answers of respondents illogical and also found some questionnaires incomplete. These questionnaires were dropped. Finally, the study found that seventy-eight respondents from the 2–4 year group filled in questionnaires that were usable; one hundred twenty-three respondents from the 5–7 year group filled in questionnaires that were usable; and one hundred fifteen from the 8+ group filled in questionnaires that were useable, giving a total of 316 filled in, usable questionnaires from the two program branches. In total, the study had 521 (N=521) useable questionnaires from all program and comparison branches. The survey was conducted from February to April 1999.

DATA FROM THE PHILIPPINES

The Negros Women for Tomorrow Foundation (NWTF) is an NGO located in the Negros Occidental area of the Philippines. It has been established with the objective of giving collateral free credit to women to help them achieve self-sufficiency and self-reliance through increasing their income and thus, improving the fulfilment of basic needs. Project Dunganon (PD) is a microcredit project of the NWTF. It was started in 1988 as a Grameen Bank replication.

The data used in this study was collected by the International Rice Research Institute (IRRI) located in Los Baños in the Philippines as part of a research project. The 197 sample respondents of PD were drawn from the three municipalities of Negros Occidental, namely, Himamaylan, La Castellana, and Escalante. These three study sites were selected based on geographical representation to capture the intensity of poverty in the whole province served by the program. Himamaylan is located in the southwest part of Negros Occidental. La Castellana is in the central part, while Escalante is situated in the north.

Twenty percent of the total number of centers under PD branches from the three municipalities were selected using a table of random numbers for the survey. Sample respondents were randomly selected from every center. One member was randomly selected from each group of five people. This is under the assumption that each group is homogeneous and any member can be a representative of the whole group. All primary data were generated from a total of 197 member households belonging to 30 centers and 3 branch offices of PD. The survey was conducted from May to June 1998.

RESULTS FROM BANGLADESH

The poverty status of households is determined on the basis of a poverty line based on the cost of a minimum calorie requirement of 2112 and 58 grams of protein per person for maintaining a healthy productive life. The poverty line is estimated at Tk147 per week per equivalent adult male person. If the weekly per equivalent adult male person consumption expenditure of a household falls below Tk147.00, the household is classified as poor and coded as “1” (pov=1). If the weekly per equivalent adult male person consumption expenditure of a household exceeds Tk147.00, the household is classified as not poor and coded as “0” (pov=0).

TABLE 5-DISTRIBUTION OF POVERTY STATUS OF PROGRAM HOUSEHOLDS AND COMPARISON HOUSEHOLDS BY MEMBERSHIP DURATION(BANGLADESH)²²

	Poor		Not Poor	
	Number of Households	%	Number of Households	%
Comparison Group	127	64.47	70	35.53
Program Groups				
12-48 Months	37	44.44	41	52.56
49-84 Months	49	40.83	71	59.17
85-Above Months	40	38.46	64	61.54

Table 5 shows the distribution of the poverty status of program as well as comparison households by membership duration. The table shows that the poverty status of program households of the Grameen Bank improves with the increase in the membership duration. In the comparison group category, 64 percent of households are poor. Thus, 36 percent of comparison households are not poor. In the first membership duration category of program households, 13–48 months, the percentage of poor households’ declines to 44 percent of program households and consequently, 56 percent of households are not poor. The percentage of poor households further declines in the second membership duration category, 49–84

months, of program households. In this category, 41 percent of program households are poor and 59 percent of program households are not poor. In the last category of membership duration, while 38 percent of program households are poor, 62 percent of program households are not poor. The poverty status of program households in the last membership duration category, 84 months or more, is approximately 26 percent less than that of comparison households. This difference between program households and comparison households in terms of the poverty status indicates that microcredit significantly alleviates poverty of borrowing households.

TABLE 6-LOGIT ANALYSIS OF THE PROBABILITY OF A HOUSEHOLD FALLING BELOW THE POVERTY LINE²³

Independent Variable	Dependent Variable: Poverty	
	Linear Model	Quadratic Model
Microcredit	-0.0160*** (0.0039)	-0.0277* (0.016)
Microcredit ²		0.0000121 (0.00016)
Number of Obs	500	500
LR chi2(26)	165.74	166.28
Prob > chi2	0.0000	0.0000
Pseudo R2	0.2391	0.2399

Notes: Ratio of coefficient to its standard error shown in brackets. Equations also include control variables, but coefficients are not reported. *** p<0.01, ** p<0.05, * p<0.1

FIGURE 1-POVERTY AND MICROCREDIT

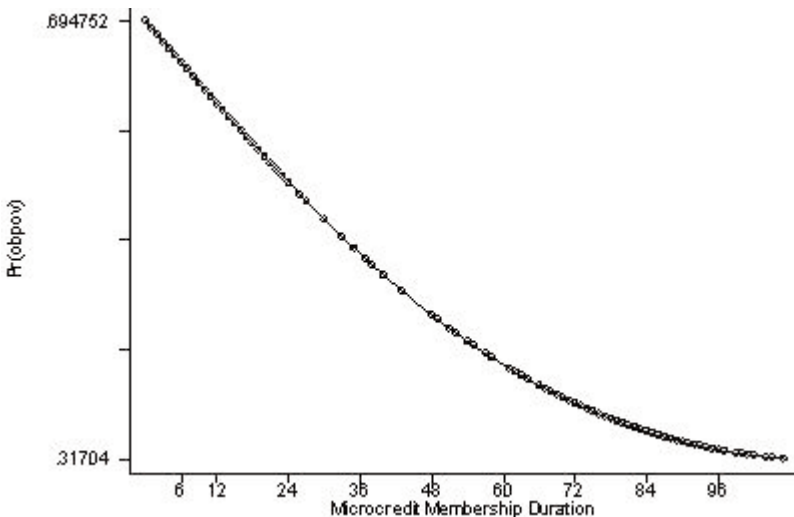


Table 6 shows the results of the logit models that have been formulated for analyzing the impact of microcredit on poverty of borrowing households in Bangladesh. On the right hand side of the models, the membership duration of households in the microcredit program of the Grameen Bank has been used as a proxy of microcredit. In the linear specification, the sign of the coefficient of the microcredit variable is negative. The negative sign of the microcredit variable indicates that poverty of households is decreasing with the increase in membership duration. The coefficient is significant at less than a 1 percent level. Therefore, it is evident from the results that microcredit significantly reduces poverty of borrowing households.

In the quadratic specification of the logit model, the coefficient of the microcredit variable, "Microcredit", which represents microcredit program membership duration, is statistically significant at a 10 percent level and it has a negative sign. The sign and the significance level of this coefficient also signify that microcredit program membership significantly reduces poverty of borrowing households. The sign of "Microcredit²", which represents the square of microcredit program membership duration and has been included to examine the non-linearity in the relationship between microcredit and poverty of households, is positive, but it is not significant at the expected level. The negative sign of "Microcredit" and the positive sign of "Microcredit²" indicate that microcredit reduces poverty of borrowing households at a declining rate. Figure 1 also illustrates this finding. It suggests that the relationship between microcredit and the poverty level of borrowing households is negative and this negative relationship is not linear. It also suggests that poverty of borrowing households reduces at a faster rate up to a membership duration of sixty months and after that membership duration, the poverty reduction capacity of microcredit declines. After membership duration of sixty months, poverty of borrowing households reduces at a slower rate.

Perhaps the reason behind this declining trend in poverty reduction is that economies of scale do not exist in micro-enterprises of borrowing households after sixty months of membership duration due to the limited infrastructural facilities in rural areas of Bangladesh. In short, markets are small in size. When borrowing households want to increase production of their micro-enterprises, they fail to do it because of the shortage in the demand for produced goods and services. This situation reduces the ability of borrowing households to increase their income significantly beyond a certain level and reduce poverty at a faster rate.

RESULTS FROM THE PHILIPPINES

A poverty line has been estimated for the survey area, Negros Occidental, on the basis of the poverty line provided by the National Statistical Coordination Board (NSCB) in 2000. The estimated poverty line is P140.63 per week per adult person. Households with per capita weekly total consumption less than P140.63 have been regarded as poor and coded as "1" (pov=1). Households with per capita weekly total consumption equal to or greater than P140.63 have been regarded as non-poor and

coded as "0" (pov=0).

TABLE 7-DISTRIBUTION OF THE POVERTY STATS OF PROGRAM HOUSEHOLD AND COMPARISON HOUSEHOLDS BY THE NUMBER OF

	Poor		Not Poor	
	Number of Households	%	Number of Households	%
Comparison Group	20	60.6	13	39.3
Program Groups				
2-4 Loans	57	58.8	40	41.2
5-Above Loans	34	54.0	29	46.0

LOANS TAKEN

Table 7 shows the distribution of the poverty status of program as well as comparison households by the number of loans taken. It shows that the poverty status of borrowing households improves with the increase in the number of microcredit loans taken. In the comparison group category, 61 percent of households are poor and thus, 39 percent of comparison households are not poor. In the first category of program households which took 2–4 loans, 59 percent of households are not poor. The incidence of poverty among these households is 3 percent lower than that of comparison households. The percentage of poor households further declines in the second category of program households. These households took 5 or more microcredit loans. In this category of program households 54 percent are poor and 46 percent are not poor. The extent of poverty in these program households is 7 percent lower than that of comparison households. The declining trend in the poverty status of borrowing households with the increase in the number of loans taken signifies the poverty reduction capacity of microcredit in the Philippines.

Independent Variable	Dependent Variable: Poverty	
	Linear Model	Quadratic Model
Microcredit	-0.0000393* (0.000024)	0.0000114 (0.000063)
Microcredit²		-1.49e-09 (1.99e-09)
Number of obs	176	176
LR chi2(21)	30.51	31.49
Prob > chi2	0.0823	0.0865
Pseudo R2	0.1274	0.1315

TABLE 8-LOGIT MODELS ON POVERTY IN THE PHILIPPINES²⁵

Notes: Ratio of coefficient to its standard error shown in brackets. Equations also include control variables but coefficients not reported. *** p<0.01, ** p<0.05, *
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p<0.1

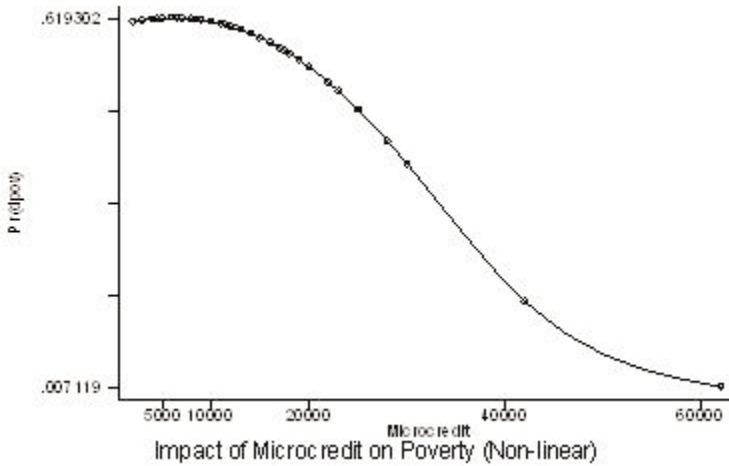


FIGURE 2-MICROCREDIT AND POVERTY OF BORROWING HOUSEHOLDS

Table 8 shows the results of the logit models that have been formulated for analyzing the impact of microcredit on poverty of borrowing households in the Philippines. In the right hand side of the models, the current amount of microcredit of borrowing households has been used as a proxy of microcredit. The coefficients of the microcredit variables in linear as well as quadratic logit models indicate that poverty of borrowing households reduces with the increase in total amount of microcredit. The coefficient of the microcredit variable, “Microcredit”, in the linear model is significant with the expected negative sign. This means microcredit reduces poverty of borrowing households significantly. The coefficient of “Microcredit” in the quadratic model does not have the expected negative sign, but “Microcredit2” has the expected negative sign. The net effect of these two variables, “Microcredit” and “Microcredit2”, is negative, which is illustrated in figure 2. This means the participation in microcredit programs reduces poverty of borrowing households. However, the declining trend in poverty is slower up to a loan amount of P20,000. The same trend increases after P20,000 and it continues up to P45,000. The declining trend again becomes slower after a loan amount of P45,000. This is perhaps due to the fact that a loan amount of P20,000 is not adequate compared to the requirement of households and a loan amount more than P45,000 is too big to manage these households.

CONCLUSION

In developing countries, especially in Bangladesh and the Philippines, poor people are excluded from the formal financial sector credit services due to the collateral requirements needed to obtain a loan. Informal financial sector sources, especially moneylenders, are exploitative in nature. Therefore, poor people do not receive the minimum amount of capital, which is required to start any income generating activities, from either of the financial sector sources. In Bangladesh, Professor Muhammad Yunus initiated the microcredit program in 1976 and established the Grameen Bank in 1986, to alleviate poverty of poor households by providing them with the minimum amount of capital as credit without collateral and exploitation. Following the success of the Grameen Bank, its model has been replicated in more than 100 countries all over the world.

This paper has assessed the impact of microcredit on the poverty level of borrowing households in Bangladesh and the Philippines. The results from Bangladesh and the Philippines show that the poverty of borrowing households decreases with the increase in microcredit program membership duration and microcredit loan size. The negative relationship between microcredit program participation and poverty of borrowing households is not linear in both the countries. In the case of Bangladesh, the poverty reduction capacity of microcredit declines after the membership duration of sixty months. In the Philippines, the declining trend in poverty, due to the participation in the microcredit program, is slower up to a loan amount of P20,000. The same trend becomes faster after P20,000 and it continues up to P45,000. The declining trend again becomes slower after a loan amount of P45,000. Nonetheless, the overall results from Bangladesh and the Philippines indicate that participation in microcredit programs does, indeed, reduce the poverty of borrowing households.

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²³ Author's calculations; Ratio of coefficient to its standard error shown in brackets. Equations also include control variables, but coefficients are not reported. *** p<0.01, ** p<0.05, * p<0.1

²⁴ Author's calculations.

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