A Research Proposal on

Evaluating the Impact of Micro-credit on Poverty in Bangladesh: A Panel Data approach

Dr. M. Jahangir Alam Chowdhury
Department of Finance and Banking
University of Dhaka
Dhaka – 1000, Bangladesh
mjac_dubd@yahoo.com

Abstract

Micro-credit is essentially the dispersion of small collateral-free loans to jointly liable groups in order to foster income generation and poverty reduction through enhancing self-employment. Since its introduction in Bangladesh in the seventies, the use of micro-credit as a tool for poverty alleviation has become widely accepted throughout the world. The empirical evidence of impact of micro-credit on poverty using cross-sectional data sets, however, is very mixed. While some studies have found that access to this type of credit by the poor has a positive, large and permanent effect on living standards, other studies have found that poverty is not reduced through provision of micro credit. These later studies have also found that through micro-credit the poor households simply become poorer through the additional burden of (further) debt. The drawback associated with impact assessment studies using one-period cross-sectional data is that the results of such studies do get biased due to the problem of “self-selection”. Presence of such problem has the potential to grossly inflate programme effects.

With this in mind, this study attempts to assess the impact of micro-credit empirically using a panel data set. Theoretical literature on panel data estimation as well as impact assessment show that with at least two observations on the same individuals the effect of unobserved factors can be “differenced out” and more reliable estimates of programme impacts can be obtained. The results of our proposed study will be important to policy makers in developing countries as well as the aid donors in the advanced countries.
0.0 Introduction

It is often argued that the financial sector in low-income countries has failed to serve the poor. With respect to the formal sector, banks and other financial institutions generally require significant collateral, have a preference for high income and high loan clients, and have lengthy and bureaucratic application procedures. With respect to the informal sector, money-lenders usually charge excessively high interest rates, tend to undervalue collateral, and often allow racist and/or sexist attitudes to guide lending decisions. The failure of the formal and informal financial sectors to provide affordable credit to the poor is often viewed as one of the main factors that reinforces the vicious circle of economic, social and demographic structures that ultimately cause poverty.

As a partial response to this failure, over the past two decades, there has been significant growth in what can be termed "micro-credit". Micro-credit is essentially the dispersion of small collateral-free loans to jointly liable groups in order to foster income generation and poverty reduction through enhancing self-employment. Perhaps the best known micro-credit institution is the pioneering Grameen Bank in Bangladesh. However, the Grameen model has been replicated in many countries (including high-income countries such as the United States), and one estimate suggests that over 10 million households world-wide are serviced by micro-credit (see Morduch, 1999).

In 1997, the World Bank, USAID and other international donor agencies arranged an international summit on microcredit. In that summit, representatives of international donor agencies and microcredit organizations have set a target to achieve. The target is to reach 100 million poor families by the year 2007 [Morduch, (1999); Yunus, (1997); Microcredit Summit Report, (1997)]. During that time, the Grameen Bank has also set a target for itself. The target is to reach 3 million poor Bangladeshi families by 2007. The Grameen Bank wants to help 70% of its members to graduate from below to above the poverty line by 2007 [Yunus, (1997)].
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Under these circumstances, it is important to evaluate the poverty alleviation capacity of microcredit. It is also very important from the policy perspective to know whether microcredit alleviates poverty or not. We need to know whether claims, made by the International Microcredit Summit and the Grameen Bank in Bangladesh to eradicate poverty through microcredit, are rhetoric or reality. We need to know the answers to a number of questions before making any comment on the microcredit summit’s target. Does microcredit increase the entitlement of borrowing households through increasing their income and assets? Does microcredit reduce poverty risk of borrowing households? Is it really possible for microcredit programs to alleviate poverty absolutely in Bangladesh?

With this in mind, the present study is intended to examine empirically the impact of micro-credit on poverty in Bangladesh. Unlike previous studies, the focus is on both objective and subjective poverty and particular attention is paid to the length of time program participants have had access to micro-credit. Most importantly, the project will be based on panel data.

1.0 Main Research Questions and Core Research Objectives

1.1 Main Research Hypotheses

The main hypothesis of this research is that microcredit reduces poverty of borrowing households. The poor households in rural areas fail to acquire the minimum amount capital that is required to improve the employment status of the members of the households due to lack of collateral. Microcredit programs provide poor households with this minimum capital to improve their employment status. Through improving employment status poor households increase their income and thus, improve the fulfillment of the basic needs. Gradually these households graduate from below to above the poverty line, i.e. poverty of the borrowing households alleviates.

Within this main hypothesis, three sub-hypotheses can be defined:
That the membership in the microcredit program improves the employment status and increases income of poor households;

That the membership in the microcredit program increases entitlement of poor households through increasing their asset base;

That the membership in the microcredit program improves the fulfilment of basic needs of poor households, i.e. the membership in the microcredit program increases the access to formal educational institutions for the children, increases the ability to see the qualified doctors during the sickness, improves the housing condition and increases the food availability.

How these hypotheses will be tested is highlighted further in the following sections that describe the analytical framework of the proposed research and its methodology.

1.2 Core Research Questions and Objectives

The main objective of this research is to assess the impact of microcredit on poverty of borrowing households.

Under this main objective, three main themes will take place. The first is the direct impact of microcredit on employment and income of borrowing households. The second is the indirect impact of microcredit on assets: it is anticipated that the participation in the microcredit program increases assets, tangible as well as intangible, of households through increasing their income. The participation in the microcredit program increases income of households and after a period of membership, households achieve the ability to generate some surplus after meeting all expenses. This surplus gradually helps households to increase their asset base. The third is the indirect impact of microcredit on the fulfilment of basic needs: it is anticipated that the participation in the microcredit program improves the fulfilment of basic needs (i.e. food availability, education, shelter and health) through increasing their income.
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It is also anticipated that the participation in the microcredit program makes this improvement sustainable in the long run through increasing the asset base.

The first part of the analysis will be designed so as to find out the effects of microcredit on employment, income and assets of borrowing households. For this purpose, answers to the following research questions will be sought for:

✓ Does microcredit improve the employment status of eligible members of poor households?
   ➢ Is so, how does microcredit improve the employment status of eligible members of poor households?

✓ Does the participation in the microcredit program increase income of poor households?

✓ Does the participation in the microcredit program increase the asset base of households?
   ➢ If households participate in the microcredit program, does it increase the total area of own land?
   ➢ If households participate in the microcredit program, does it increase productive assets?

The second part of the analysis will try to find out whether the participation in the microcredit program improves the fulfilment of basic needs of households. Research questions to be answered in this section of the study will be as follows:

✓ Does the participation in the microcredit program improve the ability of households to send their children to formal schools?
   ➢ If households participate in the microcredit program, does it increase total expenditures on education of households?
   ➢ If households participate in the microcredit program, does it improve the primary school enrolment of children in the age bracket of 6-11 years.
If households participate in the microcredit program, does it reduce the drop out of children of households from the secondary level?

Does the participation in the microcredit program increase the availability of food for the household members?
- If households participate in the microcredit program, does it reduce the food shortage months per year of households?
- If households participate in the microcredit program, does it increase the per-capita expenditure on food of households?

Does the participation in the microcredit program improve the access of households to health facilities?
- If households participate in the microcredit program, does it increase total medical expenditures of households?
- If households participate in the microcredit program, does it improve the ability of the members of households to see a qualified doctor during their sickness?

Does the participation in the microcredit program improve the quality of the shelter?
- If households participate in the microcredit program, does it increase the person living space for the members of the household?
- If households participate in the microcredit program, does it improve the quality of sidewalls of the house?
- If households participate in the microcredit program, does it improve the quality of the roof of the house?
- If households participate in the microcredit program, does it improve the value of the house?

Finally, the analysis will try to find out whether microcredit reduces poverty of households. In this part, subjective as well as objective poverty techniques will be used to understand the impact of microcredit on poverty. The following questions will be answered in this section:

Does the participation in the microcredit program reduce the subjective poverty of households?
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- If the participation reduces the subjective poverty, what is the rate of reduction?
- Does the participation in the microcredit program reduce the objective poverty of households?
- If the participation reduces the objective poverty, what is the rate of reduction?
- If the participation reduces the objective poverty, how long do households take to graduate from below to above the poverty line?

It is believed that the above analysis will provide a comprehensive assessment of the impacts of microcredit on employment, income, assets, basic needs and poverty of households. As stated above, these assessments are the main objectives of the research. In addition to these objectives, it is also aimed to evaluate the impact of microcredit on empowerment of women at household level.

Hence, the final objective of the study is to assess the impact of microcredit on poverty of households and to provide recommendations regarding ways of improving the poverty reduction ability of microcredit.

2.0 Scientific Contribution of the Research

Most of the previous studies used eligible non-participant households as members of the comparison group for the purpose of comparison between comparison group households and microcredit program group households to assess impact of microcredit on poverty of borrowing households. If the comparison group comprised of people who did not have any intention to join the program, but qualified to join, i.e. not self-selected, then a comparison between the microcredit program households and the comparison group households would not reflect true impacts of microcredit. The self-selection problem could be avoided by selecting a comparison group from new members, who have just applied for loan or just received a loan. This study uses new members instead of non-client members as comparison group members.
So far, only four studies, Hossain (1988), Hussain eds. (1998), Khandker and Chowdhury (1996), and Khandker (2002) have assessed directly impact of microcredit on poverty. These studies have used objective poverty measures to determine the poverty status of a household. An analysis based on objective measure of poverty can not provide or predict the real picture of “happiness” or “satisfaction with life” of household members [Ravallion and Lokshin, (1999)]. The present study directly assesses impact of microcredit on poverty and uses subjective as well as objective measures of poverty. The subjective poverty status of a household is measured on the basis of the answers of respondents to the question – “do you consider your family as poor on the basis of current yearly income and assets?” The answers are either ‘yes’ or ‘no’. The objective 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 and an additional 35% allowance for expenditure on non-food items. To the best of my knowledge, no impact assessment of microcredit studies, which combined subjective as well as objective poverty measures, has yet been done using panel data in Bangladesh or anywhere else.

So far I know, only one microcredit impact assessment study, Khandker (2002), has been conducted using a panel data set. Theoretical literature on panel data estimation as well as impact assessment show that with at least two observations on the same individuals, the effect of unobserved factors can be “differenced out” and more reliable estimates of programme impacts can be obtained. The present study also uses a panel data set and it will be the second study of its kind.

3.0 Policy Relevance

After the success of Grameen Bank in Bangladesh, international financial institutions (like the world bank, Asian Development Bank, African Development Bank, etc.) and international donor agencies (like USAID, CIDA, NORAD, etc.) are prescribing microcredit.
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for poverty reduction to developing countries. In 1997, international donor agencies and microfinance institutions announced to reach 100 million poor families with microcredit by the year 2007 at the international microcredit summit. The Grameen Bank in Bangladesh also announced to reach 3 million poor families with microcredit and to alleviate poverty of 70% of the borrowers by the same year.

On 22 February 1999, the United Nations General Assembly (UNGA) declared 2005 as the “International Year of Microcredit” through adopting a resolution (Resolution no 53/197). In this resolution UNGA recognizes the poverty reduction capacity of microcredit.

Against these backdrops, this study has tremendous policy relevance to the international financial institutions (like the World Bank), International Donor Agencies (like CIDA), governments of developing countries, the United Nations and microfinance institutions. This study will enable the above-mentioned parties to understand the poverty reduction capacity of microcredit. This study will also enable the above-mentioned parties to formulate their future polices efficiently related to microfinance and poverty reduction.

4.0 Literature Review

In spite of the existence of microcredit for over twenty-three years, it is surprising that there is a shortage of literature, which provides clear significant evidence of poverty alleviation capacity of microcredit. Only a few impact assessment studies have been conducted with carefully chosen treatment and control groups and these studies provide a mixed picture of the impact [Morduch, (1999)].

The empirical evidence on the impact of micro-credit on poverty is very mixed [see for example, Bruntrup et. al. (1997), Edgecomb and Barton, (1998), Mustafa, et. al. (1996), Hussain (eds.) (1998), Proshika (1995), Khandker and Chowdhury (1996), Pitt and Khandker (1996), Hossain (1984), Hossain (1988), Chowdhury and Khandker (1996), Morduch, (1999), Schrieder and Sharma, (1999), Sebstad and Chen, (1996)]. Some impact evaluation studies have found that access to credit by the poor has a positive, large and
permanent effect on living standards. However, other studies have found that poverty is not reduced through micro-credit--poor households simply become poorer through the additional burden of (further) debt. Since more money for micro-credit essentially means less money for other programs with similar aims.

Some studies, for example, Bruntrup et. al.. (1997), have only used descriptive statistics for analysis. They have not used any multivariate technique to determine the impact of microcredit on poverty and poverty related aspects of borrowing households. Some studies, for example, Mustafa, et. al. (1996), Hossain (1984), were biased in selecting the sample households. These two studies selected 200 so-called ‘success households’ non-randomly for data collection. None of them have used the complete framework\(^2\), which covers all aspects of poverty, for assessment of the impact of microcredit on poverty. Among the studies reviewed, the World Bank studies conducted in Bangladesh in 1996, Khandker and Chowdhury (1996), and Pitt and Khandker (1996), were to be found more sound from the methodological perspective.

Only four studies, Hossain (1988), Hussain eds. (1998), Khandker and Chowdhury (1996) and Khandker (2002), have directly assessed the impact of microcredit on poverty. These studies analysed poverty and economic welfare only from the point of view of objective poverty. None of these studies analysed poverty and economic welfare from the subjective point of view.

So far we know, only one impact assessment study, Khandker (2002), has been conducted using a panel data set. This panel data set has two waves of data collection. Khandker (2002) is the continuation of the World Bank studies, which have already been mentioned above, conducted in 1996. This study uses fixed effect method to assess the impact of microcredit on poverty and some outcome variables at the household level. According to this study, the participation in the microcredit programs reduces moderate poverty by 8.5 percentage points over a period of seven years. This means microcredit helps 1.22 percent borrowers to

\(^2\) The framework, which covers income, consumption, assets, basic, needs, living standard, poverty and poverty risk of households.
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graduate from below to above the poverty line on yearly basis. This poverty reduction rate is not that much significant for a country like Bangladesh

5.0 Methodology

5.1 Selection Bias and the Estimation Strategy

Impact of any development intervention like microcredit can be estimated using the following empirical specification:

\[ Y_{ij} = H_{ij} \alpha_y + L_j \theta_y + M_{ij} \beta_y + \mu_y \] (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; \( M_{ij} \) is vector of microcredit variables; \( \alpha_y, \theta_y \) and \( \beta_y \) are the parameters to be estimated; and \( \mu_y \) represents the unmeasured household and village characteristics that determine outcomes. Consider another equation as follows:

\[ M_{ij} = H_{ij} \alpha_y + L_j \theta_y + \epsilon_y \] (2)

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

The estimations will be biased if \( \mu_y \) and \( \epsilon_y \) 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 fulfil some criteria. This process generates the first of two types of biases that we have mentioned above. Besides the selection criteria of MFIs, 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 or have better communication infrastructure or have 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 some characteristics and control group members 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. We selected new members, who just received their first loan, as members of the comparison group. Since, the comparison group members are also self-selected like the program members, the bias arising from self-selection in estimating program benefits disappears. 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.
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The estimation of the impact of microcredit on poverty will be conducted at two levels through using econometric models. The first will be done using two waves of cross section data separately. The second will be done using the panel data. The results of these two types of estimations will be compared at the end.

5.2 Estimation Strategy with Cross Sectional Data

On the basis of the above-discussion, now, the program impacts can be estimated through using a single equation:

\[ Y_{ij} = H_{ij} \alpha_{ij} + L_{ij} \theta_{ij} + M_{ij} \beta_1 + \nu_{ij} \]  

(3)

where, \( Y_{ij} \), \( H_{ij} \), and \( M_{ij} \) are defined as above; and \( \nu_{ij} \) represents the error of the model that arises from the household and village level variables that are not included in the model. In the equation 3, \( M_{ij} \) is the microcredit variable, total amount of microcredit 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 equation 3.

The second is a quadratic specification:

\[ Y_{ij} = H_{ij} \alpha_{ij} + L_{ij} \theta_{ij} + M_{ij} \beta_1 + M_{ij}^2 \beta_2 + \nu_{ij} \]  

(4)

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

5.3 Estimation Strategy with Panel Data

5.3.1 First Differenced Estimator
With two period panel data \((t=1 & 2)\), we simply could pool the data and estimate an OLS regression model through including a dummy variable for \(t=2\):

\[
Y_{it} = \beta_i + \delta_i d_{2t} + H_{it} \alpha_b + L_{jt} \theta_j + M_{it} \beta_1 + \nu_{it} 
\]

\(d_{2t}\) is a dummy which represents \(t=2\). \(\delta_i\) captures an eventual change of the intercept over time. We are interested in the casual effect \(\beta_i\). A crucial assumption of OLS is that \(\nu_{it}\) is uncorrelated with independent variables in the model. If this assumption is violated, the estimate of \(\beta_i\) will be biased (omitted variable bias, problem of unobserved heterogeneity).

However, the panel data can avoid this problem. We assume that the unobserved factors are two types:

\[ \nu_{it} = \alpha_i + u_{it} \]

We assume \(\alpha_i\) as a time-constant local level error (fixed effect) and \(u_{it}\) as a time-varying household level error. After considering these two factors, the model becomes:

\[
Y_{it} = \beta_i + \delta_i d_{2t} + H_{it} \alpha_b + L_{jt} \theta_j + M_{it} \beta_1 + \alpha_i + u_{it} 
\]

With panel data we can “difference out” the time-constant error:

\[
Y_{i2} = \beta_0 + \delta_0 + H_{i2} \alpha_b + L_{j2} \theta_j + M_{i2} \beta_1 + \alpha_i + u_{i2} \]

\[
Y_{i1} = \beta_0 + H_{i1} \alpha_b + L_{j1} \theta_j + M_{i1} \beta_1 + \alpha_i + u_{i1} \]

Through subtracting the equation (8) from equation (7), we get:

\[
\Delta Y_{i} = \delta_0 + \Delta H_i \alpha_b + \Delta M_i \beta_1 + \Delta u_i
\]
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where $\Delta$ denotes the change from $t=1$ to $t=2$. This is a simple cross-sectional regression in differences. $\beta$ can be estimated consistently by OLS, if $u_{jt}$ is uncorrelated with independent variables (first differenced estimator). The big advantage is that the fixed effects have been cancelled out. Therefore, we no longer need the assumption that $a_i$ is uncorrelated with independent variables. Time-constant unobserved heterogeneity is no longer a problem.

5.3.2 Fixed-Effects Estimation

An alternative to differencing is the fixed effects transformation:

$$Y_{jt} = H_{jt} \alpha_h + L_{jt} \theta_f + M_{jt} \beta_i + \alpha_i + u_{jt} \tag{10}$$

Now we average this equation over time for each $i$:

$$\bar{Y}_{ij} = \bar{H}_{ij} \alpha_h + \bar{L}_{ij} \theta_f + \bar{M}_{ij} \beta_i + \alpha_i + u_{ij} \tag{11}$$

Through subtracting equation (11) from the equation (10), we get:

$$(Y_{jt} - \bar{Y}_{ij}) = \alpha_i (H_{jt} - \bar{H}_{ij}) + \theta_f (L_{jt} - \bar{L}_{ij}) + \beta_i (M_{jt} - \bar{M}_{ij}) + (u_{jt} - u_{ij}) \tag{12}$$

$$(Y_{jt} - \bar{Y}_{ij}) = \alpha_i (H_{jt} - \bar{H}_{ij}) + \beta_i (M_{jt} - \bar{M}_{ij}) + (u_{jt} - \bar{u}_j) \tag{13}$$

We have noted that the time invariant terms $L_f$ and $\alpha_i$ drop out after application of the difference operator. The above transformation is known as “within transformation”. The above model can be estimated by pooled OLS (fixed effect estimator).
6.0 Data Requirement and Sources

In the period January to May 1999, I carried out a survey of 954 households to assess impact of microcredit on poverty of households. This data formed the basis of the dissertation I submitted to the University of Stirling in the United Kingdom, for which I was awarded a Ph.D.(Economics) in 2000. (See the Appendix for methodology of data collection).

As the Appendix shows, of the 954 completed interviews, 432 were for households who had received micro-credit from the Grameen Bank. The Grameen Bank was established in 1976 by Muhammad Yunus (an Economics Professor at the University in Dhaka) and was the first micro-credit institution operating in Bangladesh. Given a key policy question concerns the longer term effects of micro-credit, the experience of the Grameen Bank is particularly important given its long history relative to other micro-credit institutions (such as Bangladesh Rural Advancement Committee (BRAC) or Association of Social Advancement (ASA)). The 432 member households were selected from two old branches of Grameen Bank and 420 member households of two branches of BRAC and ASA (210 households from each of the two branches). Information was also collected from 100 member households of the newly established branch of Grameen Bank. In total information was collected from 952 households of 5 branches of Grameen Bank, BRAC and ASA. To be able to re-examine the result, I have already obtained, by using panel data, it is the objective of the present study to re-interview these households, in order to create what we believe is the second panel dataset specifically constructed for evaluating directly the impact of micro-credit on poverty.

7.0 Dissemination Strategy

The dissemination plan includes the following strategies:

✓ publication of working papers in the UK at the University of Stirling and in Bangladesh at the University of Dhaka;

✓ publication of the papers on the Centre for Monitoring Poverty and Development in Bangladesh (CMPDB) website in the next year i.e. 2005;
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✓ presentation of results at seminars and workshops;
✓ publication of articles in the internationally reputed journals;
✓ results will be communicated to microcredit organizations and international donor agencies through inviting them to the seminars and workshops and also sending them working papers and published articles.

8.0 Short List of Key References

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9.0 Prior Training and Experience of Team Members in the Issues and Techniques Involved

Dr. M. Jahangir Alam Chowdhury has been trained as an economist and has in the past few years focussed primarily on research related to microfinance and poverty in Bangladesh, the Philippines and Malaysia. He completed his PhD research in United Kingdom at the University of Stirling under the Commonwealth Scholarship Program. The title of his PhD dissertation is “Microcredit, Enhancement of Entitlement and Alleviation of Poverty: An Investigation into the Grameen Bank’s Role in Bangladesh”. He has developed a comprehensive framework for assessing impact of microcredit on poverty of borrowing households and has employed this framework in his PhD research and research studies conducted in Bangladesh, the Philippines and Malaysia. Dr. Chowdhury teaches Statistics, Development Economics and Finance, and Microfinance at the Master’s level in the University of Dhaka in Bangladesh.

10.0 Expected Capacity Building for Researchers and Their Institutions

Very recently the authority of the University of Dhaka in Bangladesh has taken an initiative to establish a centre on microfinance. The proposed name of the centre is “Centre for Microfinance and Development Studies (CMDS)”. Within CMDS, there will be a cell on poverty analysis. This centre will act as a platform for researchers to conduct research activities on microfinance and poverty. This centre will also provide with the training facilities to the microfinance practitioners. A web page, which will contain information on microfinance organisations and their activities, will be hosted by the centre. A number of
Postgraduate students from the Department of Finance and Banking at the University of Dhaka will be drawn into this project and they will benefit from an exposure to microfinance research and poverty analysis. The practical exposure of those student to microfinance and poverty analysis will enhance the research capability of the proposed centre CMDS at the University of Dhaka in Bangladesh

11.0 **Any Ethical, Social, Gender or Environmental Issues or Risks Which Should be Noted**

None.
Appendix on Survey Design

A survey of 911 households was conducted in a district in Bangladesh. A four stage random sampling technique had been applied in selecting these households. In the first stage, one district had been selected in Bangladesh. In the second stage branches of microfinance institutions had been selected randomly for data collection purpose. In the third stage, centres of the Grameen Bank branches were selected. In the fourth and final stage, we selected program and comparison households.

In the first stage, we selected one district randomly out of 64 districts in Bangladesh. Two criterias had been used to select a district for data collection; the district should not be too far from the capital city of Bangladesh and the district should not have severely been affected during the 1998 flood\(^3\). The first criteria, the district should not be too far from the Capital City, was applied because of constraints of fund and time for data collection. In many areas of Bangladesh, 1998 flood washed away accumulated impacts of microcredit. Many households, who graduated from below to above the poverty line, became poor again. For those reasons, the second criterion was designed for selecting a district for data collection. After considering above criteria for selecting a district, we found five districts as eligible for selection for data collection. Out of five districts, one district, Comilla, had been selected randomly for data collection. Comilla is about 70 km away from the capital city, Dhaka, of Bangladesh.

In the second stage of random selection, five branches had been selected randomly for data collection. Out of these five branches four branches had microcredit operation of more than five years. The remaining one was a newly established branch at that time. For the selection of the program branches, the only criterion applied was that the branch should be more than eight years old. The impression one gets from the findings of Khandker and Chowdhury (1996) that it takes about eight years for microcredit borrowers to reach a position where they can maintain a reasonable standard of living even without taking any additional loans. Thus, the criteria, branch aged more than eight years, has been used in identifying eligible

\(^3\) Data collection was carried out in January to May 1999.
bank branches for data collection. The researcher found four branches of Grameen bank, which satisfied the criteria in Comilla district. Out of four eligible branches, two bank-branches had been selected randomly for data collection. The two branches, which had been selected for selecting program households, was about 4.5 kilometres away from the Comilla town. For that reason, we tried to locate a new Grameen Bank branch, which was also situated 4 to 5 kilometres away from Comilla town centre. We found only one branch within the above-specified range of distance. The comparison households had been selected from this newly established branch. We did not find any branch of BRAC and ASA with more than eight years of microcredit operation in Comilla, but we found 4 BRAC branches and 3 ASA branches with more than five but less than eight years of microcredit operation. One branch each from these two microfinance institutions, BRAC and ASA, had been selected randomly. We did not find any newly established branch of BRAC and ASA using the same criteria that we used to find out a new branch of Grameen Bank.

In the third stage of random sampling, centres\textsuperscript{4} were selected in all branches. In case of more than eight years old Grameen bank branches, 27 centres from each of the two branches had been selected randomly. In BRAC and ASA branches, 35 centres had been selected randomly from each of the two branches for selecting member households for data collection. In the newly established branch of Grameen bank 20 centres had randomly been selected from 26 centres of the branch. Since the comparison branch was a newly established branch, that is why, this branch had fewer centres.

In the fourth and final stage, member households in all branches of three microfinance institutions had been selected. In all branches except the newly established branch of Grameen bank all program borrowers of a centre had been organised into four groups: households with less than one year membership, membership between 2 to 4 years, 5 to 7 years and membership 8 years and above. In these branches two members from each group had been selected randomly for data collection. In branches of BRAC and ASA we did not find any member in the category of 8 years and above, as these branches had been

\textsuperscript{4} A branch of a microfinance institutions is consists of 50 – 60 Centres. Each centre consists of 30 to 50 members. In ASA, centres are called as Samity i.e. association. In BRAC, centres are called as group.
established 3-5 years after the establishment of Grameen Bank branches. Therefore, two members from each of the rest three groups had been selected randomly. A print out of the list of all members of each randomly selected centre was obtained from the branch offices to draw a sample of eight members in case of Grameen bank and six members in case of BRAC and ASA. In the newly established branch of Grameen bank, seven new members were randomly selected from each randomly selected centre. These five members had been selected randomly from the list of all members of each randomly selected centre.

The study selected new members instead of non-client members as comparison group members. New members had been selected from the newly established Grameen bank branch as well as more than five years old branches of Grameen bank, BRAC and ASA. The program members are self-selected from the perspective of initiative to join the microcredit program. If the comparison group comprised of people who did not have any intention to join the program, but qualified to join, i.e. not self-selected, then the comparison between the program group households and the comparison group households would not reflect true impacts of microcredit. The self-selection problem could be avoided by selecting a comparison group from new members, who have just applied for loan or just received a loan. New members are self-selected to join the program as did old program members (members participating in the program for more than one year). Therefore, one would expect the new members to possess similar socio-economic status of old program members before joining the program. The study ensured during data collection period that comparison group members hold similar characteristics of program members before membership to the microcredit program. The study used three important indicators to assess the equality of socio-economic status of program group households before microcredit program membership and current socio-economic status of comparison group households:

♦ perception of program households about their poverty (subjective) status before membership and perception of comparison households about their current poverty (subjective) status,
♦ average total area of living space of program households before the membership and average total area of current living space of comparison households.
In total, information was collected from 432 member households of two old branches of Grameen bank and 420 member households of two branches of BRAC and ASA (210 households from each of the two branches). Information was also collected from 100 member households of the newly established branch of Grameen bank. In total information was collected from 952 households of 5 branches of Grameen bank, BRAC and ASA.