

Microcredit versus Child Schooling Nexus: Exploring Child Schooling Decisions in Rural Bangladesh

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The study investigates if the microfinance loan burden influences the children's education of the borrowers. By surveying the microfinance borrowers of Agarpur and Thakurmollik—distant rural areas under the Barisal district (Southern part of Bangladesh)—and by applying the OLS regression technique and logistic regression technique, the study identifies that the amount of microfinance loan installment does not have any significant direct effect on the dropout or enhancement of child education. Instead, the dropout tendency increases as kids move from primary to secondary or higher secondary level or as the number of kids increases in the family. However, as more kids are going to primary school, the school dropout tendency decreases. Thus, in remote rural areas, children's school dropout appears as a matter of social behaviour rather than being an issue of microfinance loan burden.

JEL Classifications: O15, I24, I25

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1. INTRODUCTION

Microfinance, a general term for “small loans”, has often been pronounced as a key factor in the development of rural Bangladesh. The term got mass recognition in Bangladesh since the Nobel Peace Laureate, Dr. Muhammad Yunus commenced operating Grameen Bank in 1976. While the journey of Grameen Bank started with a project in Jobra Village in the Chittagong district during a famine, the major motivation of Dr. Yunus for initiating a structured microfinance system was the denial of access of rural poor people to commercial loans due to the lack of personal collateral, even though the requirement was less than a dollar (Kabir, 2016).¹

According to McKenzie and Woodruff (2008), the Grameen Bank project works in over eighty thousand villages and serves more than six million borrowers. Following the

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¹For detail, see Microworld.org

success of the Grameen Bank project during the 1970s and 80s, there was a rapid global growth in the number of new micro-finance institutions, many of them initiated by NGOs and funded by grants and subsidies from public and private sources. Besides being a development tool, microfinance has emerged as an effective tool for rural financial transactions in Bangladesh and many other countries for the poor and small-scale producers (McKenzie & Woodruff, 2008).

Most microfinance institutions in Bangladesh claim to alleviate at least the intense level of poverty; however, many academic researchers suspect that microfinance programmes have led poor people into a debt trap since these people often accept new loans to repay existing microfinance loans (Khandker, 1998). Moreover, with nearly \$15 billion of foreign investment injected into the micro-finance system by the end of 2008, most of which came from government development organisations such as the World Bank, the social and economic effects of these microfinance programmes were inconclusive. Some authors are very optimistic about microfinance (Hossain, 1988; Khandker, 1998; Schuler, et al. 1997; Remenyi, 1991; Holcombe, 1995) while others are extremely pessimistic (Adams & Pischke, 1992; Rogaly, 1996; Buckley, 1997), and some remain in the middle (Hulme & Thankom, 2009). Microfinance has benefited poor households and shows the potential to mitigate poverty (Khandker, 1998); however, there also has been empirical research where the findings show that microcredit has minimal impact on poverty reduction (for example, Morduch, 2000). Thus, the literature on microfinance is mixed in terms of impact analysis.

In addition to poverty alleviation, many economists claim that microfinance increases schooling rates and reduces child labour among the families of microfinance clients (Littlefield, et al, 2003; Maldonado & Gonzalez-Vega, 2008). The impact of education and children's schooling on economic development has been the subject of extensive empirical research; however, in the past, empirical research on the impact of microfinance on education was limited and the issue is largely unexplored. In particular, very limited research has been conducted on the impact of rural microloans on the life of rural children in terms of their schooling. Some recent studies, for example, Menon's (2005) on Pakistan and Nelson's (2011) on Thailand suggest that loans led to a large decline in school participation and an increase in child labour participation. However, very few have investigated the specific effects of microfinance programmes on children's continuation of schooling in Bangladesh. Studies on remote rural areas' schooling issues are almost missing. However, the topic is important because poverty cannot be fully alleviated unless the future rural generations are educated. In general, microfinance is predicted to be a major tool in rural poverty alleviation. Hence a positive linkage between microfinance and rural education could be beneficial.

Conceptually, the impact of microfinance which was developed with the motive to eliminate poverty should work in line with improving the standard of living and thus, improving human skills through enhanced children's education. This paper examines this perception by complementing various existing literature and doing empirical analysis based on a survey performed in some remote rural areas in the Southern part of Bangladesh. The respondents are the borrowers of micro-credit loans. Thus, the paper explores if there is any relationship between rural microfinance facilities and the stance of rural children's education. In particular, the paper attempts to identify if household involvement in microfinance loans

can influence the dropout of child education in the rural areas of Bangladesh. The study also examines if there is any other factor involved as a catalyst in this process. Therefore, the paper is an attempt to fill the void in the literature by providing a quantitative analysis of the potential impact of microfinance on rural children's education using primary data collected from remote rural microfinance borrowers.

By running a survey on the microfinance borrowers of the villages of Agarpur and Thakurmollik—two large remote unions (sub-districts) of Barisal district, and doing a cross-section analysis of 100 observations (school-aged children) collected from over 200 households by applying the logistic regression model and the Heckman's Two-step selection model, the study finds that neither the microfinance loan nor the demography of the borrower can significantly influence the dropout or enhancement of child education. However, some other factors are observed to influence drop-out decisions. For example, the number of school-going kids in the family and their level of schooling significantly influence the dropout issue. For each unit increase in kids going to primary school compared to other levels of education, there is a decrease in dropout. The dropout tendency increases as kids move from primary to secondary or higher secondary level. Besides, with an increase in the number of total kids in the family, there is an increase in dropout. This result follows the conventional perception that dropout from school increases, especially in rural areas, as the level of kids' education increases or the number of kids in the family increases.

In a recent study on Bangladesh, Bhuiya, et al. (2019) claims a positive relation between school attendance in rural areas and microfinance membership; however, fail to explain the nexus between microcredit loans and school enrollment. The current study extends the literature by mitigating this gap, particularly, by explaining the factors that influence kid's schooling in the rural areas of Bangladesh. The study evidence that the drop-out issue is subject to different socio-economic factors, and, at least in the remote rural areas, the microfinance loan burden neither contributes to increasing the level of children education of the borrowers nor causes any harm to kids' schooling.

This paper is organised in the following order. Section Two examines the literature on the extent to which economists believe that microfinance programmes have proved to be beneficial for the poor; and identifies a research gap. Section Three presents the details of data collection and econometric approaches adopted in this research. The empirical findings and the analysis of results and discussion are presented in Section Four. This paper is concluded in the final section, along with policy recommendations and limitations of this study.

2. MICROFINANCE: OVERVIEW AND THE REVIEW OF LITERATURE

2.1. Microfinance in Bangladesh: An Overview

Microfinance operations have been practiced in Bangladesh since the 1970s.² Under this operation, loan amounts up to BDT 50,000 are generally considered microcredit, and loans above this amount are considered microenterprise loans. According to the Central Bank report on Microfinance, Bangladesh has four major types of institutions for micro-finance activities—first, Grameen Bank (GB), which is a

²For detail, see Microworld.org

member-owned specialised institution; second, around 1500 Non-Governmental Organisations (NGOs) like BRAC, Proshika, ASA, BURO-Tangail, BEES, CODEC, SUS, TMSS, Action-Aid, etc.; third, commercial and specialised banks like Bangladesh Krishi Bank (BKB), Rajshahi Krishi Unnayan Bank (RAKUB); and finally, government-sponsored microfinance projects/Programmes like BRDB, Swanirvar Bangladesh, RD-12 and others under the Ministry of Women & Children Affairs, Ministry of Youth & Sports, Ministry of Social Welfare, etc.³ Microfinance institutions (MFIs) provide collateral-free loans to poor people and allow them to be involved in various income-generating activities and entrepreneurship.⁴ Within underdeveloped communities, microfinance institutions provide necessary credit access and financial services that are needed to develop rural economic activities.

According to the report published by the Microcredit Summit Campaign, which was held in 2010, the 3,552 MFI institutions have been serving 155 million MFI borrowers globally, which covers 533 million people in total including borrowers and their households. The Asian report on Bangladesh published by Microfinance Information Exchange (MIX) identified that BRAC provided a gross loan portfolio of BDT 2,027.34 million in 2017, whereas BURO Bangladesh provided BDT 466.32 million.⁵ The total amount of credit that was disbursed till 2013 by all the MFIs was BDT 515,364.60 million. According to InM (2015), there are about 1000 listed MFIs now operating in Bangladesh. Until June 2014, around BDT 403 billion (which includes Grameen Bank, 10 Government projects, and Commercial Banks) in microfinance loans were outstanding in the market, while the savings amounted to about BDT 237 billion (Ullah & Haq, 2017). The total clients in this sector are 33.73 million (including 8.62 million clients from Grameen Bank).⁶

2.2. Microfinance Institutions and Its Relationship with Education

The United Nations Millennium Development Goals Declaration was signed in September 2000 by 191 UN member states, which is a pledge to combat poverty, hunger, disease, illiteracy, environmental degradation, and discrimination against women. Among the eight Millennium Development Goals (MDG), a major goal is to achieve universal primary education.⁷ Some of the MFIs are involved in rural primary education. For example, BRAC runs primary schools in regions where the formal education system has not yet reached. These schools are complementing mainstream school systems with innovative teaching methods and materials.⁸ Among others, Grameen Bank offers scholarships that are given to the high-performing children of GB members.⁹ Also, education loans are given to the children of the members who reach the tertiary level of education.¹⁰

³<https://www.bb.org.bd/saarcfinance/seminar/cpbdesd.php>

⁴For detail, see GrammenBank.org

⁵For detail, see www.themix.org

⁶Report by the Microcredit Regulatory authority (MRA), retrieved from http://www.mra.gov.bd/images/mra_files/News/mcinbd17082015.pdf

⁷https://www.who.int/topics/millennium_development_goals/about/en/

⁸For detail, see www.brac.net

⁹Nobelprize.org (2006).

¹⁰For detail, see www.grameen.com

Microfinance works differently in different regions due to diversity in population density, peoples' attitudes towards debt, group cohesion, enterprise development, financial literacy, and financial service providers (Aghion & Morduch, 2005; Fischer & Ghatak, 2011). Several economists in their empirical research observed that microfinance does both harm and good to the livelihoods of the poor (Duvendack, et al. 2001). Many NGOs have successfully included girls and children of low-income parents in non-formal schooling. However, microfinance sometimes creates barriers to sustainable local economic and social development (Bateman & Chang, 2009). Several macroeconomists in their empirical findings signify that even the presence of these NGOs could not eliminate child labour, which interferes with schooling (Basu, 1999).

Khan (2003) describes education as a high priority for overall economic development. The demand for education depends both on household preferences and on budget constraints, both being influenced by income levels. The marginal utility of an extra unit of income is mostly higher for a poor household. The schooling decisions of poor households are positively influenced by income levels (Duryea & Pagés, 2002). Any adverse shock that reduces income is expected to negatively influence these decisions. However, Sharma & Zeller (1999) suggest that higher and particularly stable income flow in a household positively influences the demand for a child's schooling.

In the long run, human capital formation has been recognised as an effective tool for reducing poverty (Bils & Klenow, 2000; Lindahl & Krueger, 2001). Childhood education is indicated as a crucial element in poverty alleviation and economic growth at the macro level as well as for the household (Quaegebeur & Marthi, 2005). However, previous literature suggests mixed effects on education from microloans (Duvendack, et al. 2011). Especially, the empirical research observed that access to education is limited when households are engaged in Microloans (Barro & Wha, 2000).

The impact of borrowing on labour supply and schooling of children often depends on the gender of the credit programme participant (McKernan, 2002). When the loan participant is a female, the schooling of children is less affected compared to that of a male participant. Jacoby (1994) also observed that in rural regions, access to credit reduces child labour and increases schooling in developing countries. However, Shimamura & Lastarria-Cornhiel (2009) found that children of credit clients are less likely to attend school and often get involved in agricultural production, especially in the production of tobacco.

Ray (2000) in his research on Pakistan and Peru demonstrates that there is a strong negative correlation between household income and child labour, while there is a positive relationship between household income and school enrollment. In addition, as stated in the studies carried out by Ray and Lancaster (2005), there is a negative association between children's dropouts (which results in child labour) and access to credit across various countries. When a rural household is associated with microfinance and is engaged in land cultivation or any labour-intensive microenterprise, they tend to send their children to work during any difficulty to repay the loan (Maldonado and Gonzalez-Vega, 2008).

Aghion & Morduch (2005) argued that microfinance is useful to mitigate adverse shocks and keep household production stable, as well as increasing a family's spending

on healthcare and education. Since the capacity to spend on education increases, microfinance borrowers should be able to avoid their children's school dropouts. This, in turn, should be able to reduce poverty by improving the quality and productivity of future generations. However, research done by Islam and Choe (2009) suggests that children of primary school age have a higher enrolment rate compared to their older siblings, the latter being more likely to drop out of school and go to work to support their family. Maldonado and Gonzalez–Vega (2008) also support the idea that older children are more likely to show an education gap. Khandker (1998) observed a similar result for Bangladesh, especially for boys.

Theoretically, income generated in a household through participation in microcredit programmes should result in higher spending on schooling (Brownstein, et al. 2007). Most of the rural people in recent times recognise the importance of education and have the desire to educate their children. The financial constraints, however, prohibit them from doing so (Barnes, et al. 2001). MFIs can take initiatives to support child education by providing families with income stability, eventually enabling them to afford schooling. Although there are no tuition fees charged at the primary education level, there are other direct costs involved such as the uniform cost, stationery costs, tiffin meals, transportation costs, and opportunity costs involved in the process. Hence, improving kids' schooling among microcredit borrowers may not work in practice as expected.

In view of the above discussion, the impact of microfinance facilities on children's schooling is inconclusive and largely country-specific. For rural Bangladesh, empirical research on this topic is limited and the impact remains unexplored. Even though there have been some studies on overall education, few have investigated the effects of microcredit programmes on a child's education and continuation of schooling.

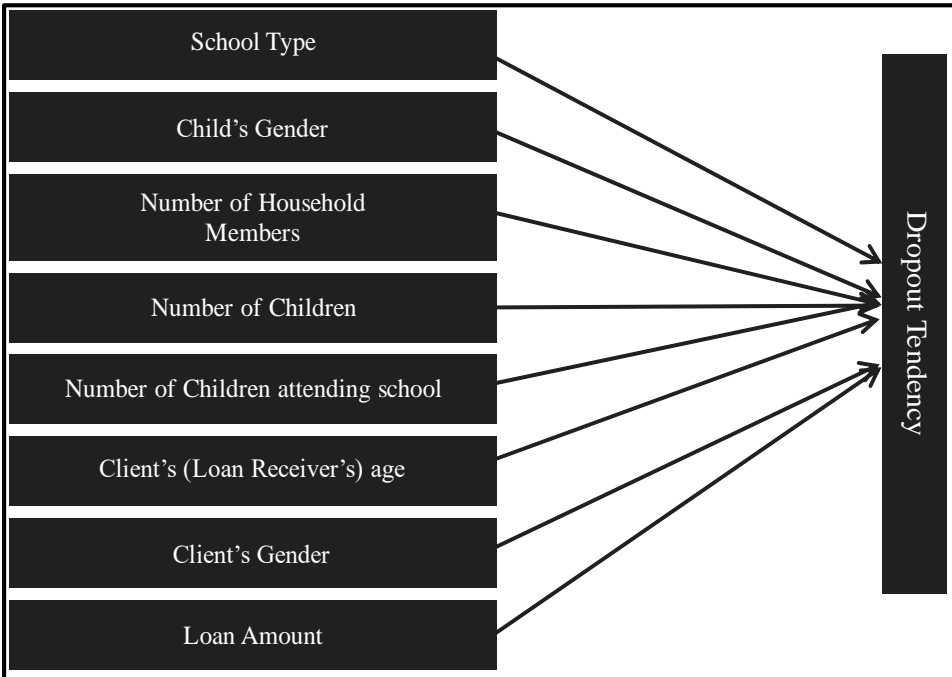
The review of related literature suggests that the impact of microfinance should work in line with improving the standard of living and hence developing the human index through children being educated. Thus, the study explores the relationship between micro-credit and its impact on reducing the dropout of children from schooling by complementing a survey on some remote rural areas of the southern part of Bangladesh.

3. METHODOLOGY

This study proceeded in three stages. First, primary data is collected through survey; second, quantification of qualitative survey data as per the model; and finally, the organised dataset has been estimated using the logistic model technique and Heckman's Two-step selection model technique.

3.1. Survey Data Collection and Sampling Procedure

This study relies on a primary data collection method. The stratified random probability sampling technique has been used for the survey, where each member of the strata has an equal chance of being selected as a subject, provided they have taken micro-credit from different MFIs. According to Leary, et al. (1995), a stratified random sample will typically reflect the characteristics of the population.

Fig. 1. Conceptual Framework

The survey of households was conducted in the villages under two unions of the Barisal district of Bangladesh, namely Agarpur and ThakurMollik. The unions are selected using two criteria. First, villagers of both unions are mass users of microfinance loans (according to the Grameen Bank and BRAC representatives); and second, both unions are at remote rural sites and have limited communication to the nearest town. The study covers all 212 households from the villages of Agarpur and ThakurMollik unions, who have taken microfinance loans for different purposes. Thus, the whole Strata is covered by this study. However, out of this population, 100 households are usable since they have school-going children. The remaining households are dropped from the study since their children are already grown up and mostly migrated to other locations.

This is a cross-sectional study, which analyses the relationship of school dropout tendency with different variables identified in the theoretical framework as shown in Figure 1. The framework is developed based on existing literature. The validity of the variables is tested using the econometric model designed in section 3.2. Observations collected from the villages of two remote unions are expected to portray a real image of the situation in remote rural Bangladesh.

3.1.1. Data Collection

Theoretically, the appropriate model for a research methodology requires linking the main research question to the purpose, aims, and objective of the research (Saunders, et al. 2009). The questionnaire developed for this study attempts to gain a better understanding of the impact of MFIs on the social well-being of the children along with

their families i.e., the clients of MFIs. Thus, the survey questionnaire had two parts. The first part of the questionnaire contains information about the household children, and the second part is about the household itself which includes the number of household members, participation in the MF loan or not, amount of loan taken, repayment of loan on a weekly basis and the total amount the household repay with interest.

The questionnaire is designed to collect information directly from microfinance borrowers in rural areas. The survey did not record any personal information and the respondents were informed that the data will not be used for any professional benefits other than academic purposes. A sample questionnaire is presented in the appendix, which includes both Yes/No responses and numeric values like the amount of loan, number of children, and payment numbers. The Yes/No responses are converted to quantitative form using dummies. This technique is used to quantify the qualitative information and to include that information in the econometric model (Holden & Lynch, 2004; Adam, et al. 2014).

Most of the respondents of the survey are primarily women who are directly engaged with microfinance borrowing. Respondents of the Agarpur union are relatively cooperative and are found relatively literate yet unemployed in terms of a fixed job. However, some difficulties were faced while surveying ThakurMollik. Some participants were hesitant to answer questions regarding the loan amount suspecting that the researchers had the intention to ask for money, while others misunderstood the researchers are government agents who went there to help them out of their loan misery. Some households even demanded money for responding to the questionnaire. Some respondents could not answer the percentage of interest that they were paying for microfinance loans. Hence, the researchers calculated the rate and cross-checked with households and officials of MFIs.

3.2. Data Organisation and Modeling

The qualitative survey data is quantified using the dummy variable technique and has been statistically analysed with the aid of the econometric model. We develop a model relying on the conceptual framework and apply the logistic estimation technique and Heckman's Two-step selection model to do an econometric analysis of that model. Thus, the study validates the factors that would statistically significantly influence the dropout tendency of children schooling among rural microcredit borrowers.

3.2.1. Statistical Modeling and Econometric Analysis

The basic relationship between the independent variable and dependent variable is given by –

$$Y = a + bX + \varepsilon \quad \dots \quad \dots \quad \dots \quad \dots \quad \dots \quad \dots \quad \dots \quad (1)$$

where Y denotes the value of the dependent variable for a given value of the independent variable (X). This regression equation of Y on X means that each unit change in X produces a change of b in Y , which is positive for direct and negative for inverse relationships. a is the constant for the model while ε represents the error term.

With a goal to illustrate the independent factors that may impact school dropout tendency for kids, we consider the households that meet both criteria of having school–

going children and being clients of the microcredit programme. In view of Equation 1, the survey data has been organised according to the following multiple regression model:

$$\text{Dropout} = \alpha + \beta_1 V_1 + \beta_2 V_2 + \beta_3 V_3 + \beta_4 V_4 + \beta_5 V_5 + \beta_6 V_6 + \beta_7 V_7 + \beta_8 V_8 + \varepsilon \quad \dots \quad \dots \quad \dots \quad \dots \quad \dots \quad (2)$$

The explanatory variables of Equation 2 are as follows: V_1 – Child’s Gender, V_2 – School Type, V_3 – Loan Receiver’s Age, V_4 – Loan Receiver’s Gender, V_5 – No. of Household members, V_6 – No. of Children, V_7 – No. of Children attending school, and V_8 – Loan Amount. In this model, if the Loan Amount (V_8) is significant, there exists evidence that involvement in microfinance loan-based activities influences the decision of school dropout for the kids. Other variables appear either as indirect factors or as control variables.

The detail for the variables is given below:

- Dropout Tendency: Dropout tendency has been considered as the dependent variable to test under which circumstances children are subject to drop out from school. The variable is coded as binary: dropout = 1 if the student discontinues schooling and 0 otherwise.
- Child’s Gender (V_1): This variable has been taken as a dummy which was considered as Male =1 and Female = 0. The variable illustrates whether dropout tendencies are prominent among girls or boys or both.
- School Type (V_2): This variable has been taken as a dummy which was considered as Primary school = 1 and Otherwise= 0. The variable illustrates whether the dropout tendency is higher or lower when the students are at their primary level compared to any higher level of study.
- Loan Receiver (Microcredit Client’s) Age (V_3): This variable is taken as an age group dummy variable. The age groups include 20–29, 30–39, 40–49, 50–above. Participants were rural inhabitants and less literate, so identifying the participants’ ages was challenging. Often the participants were unaware of their age and needed verification from alternative sources. For example, the household head’s age was mentioned as 20 while his son was approximately 12 years old and was a student of grade 7. Later, an elderly citizen confirmed that the household head’s age would not be any less than 30 years.
- Loan receiver’s Gender (V_4): Literature suggests that the number of student participants increases when the MC client is female compared to when the client is male (Khandker, 1998; Yunus & Weber, 2010). This issue was controlled by using the Loan receiver’s gender variable, such that (Father)Male=1 and (Mother)Female=0.
- Number of Household Members (V_5): During the survey, it was observed that 90 percent of the family had the nuclear family structure and the number of household members ranged from 3–6. This number is controlled to see if a larger or smaller number of family members would have any significant impact on a child’s drop out from school. The variable appears as numeric.
- The Number of Children in the Households (V_6): The number of children in the household is taken as a numeric variable to test if many children (e.g. –3 or

more children) in the family has any significant impact on the dropout tendency compared to fewer children (e.g.– 1 or 2 children).

- The Number of School-going Children (V_7): This variable was an approach to discover if there was any child in the household eligible for school– education but was being deprived of it. This is also a numeric variable. Besides the number of total children, separately controlling for the number of school-going children is important. In rural areas, there is a tendency to send the younger kids to school and to involve the elder ones in economic activities, irrespective of gender or the total number of kids.
- The Loan Amount Taken (V_8): The survey received a perception from the MF clients that they repay approximately 30 percent more than the principal amount. This interest rate is fixed if the loan is taken for 1 year and decreases when the loan is taken for 2 years. To see if the loan burden imposes any significant impact on a child’s schooling, this model controls ‘the amount of borrowing’. The variable appears as numeric, with the unit taken as BDT1000.

Abdulai & CroleRees (2001), Atamanov & Berg (2012), and others (for example, Joanne, et al. 2002; Sperandei, 2014 and Steyerberga, et al. 2001) suggest that the Logistic model approach is more reliable over the OLS approach when the dependent variable is a binary number. Hence, a logistic model approach is followed for this study. Heckman’s Two–step selection model approach is applied to verify the results.¹¹ Results for both the Logistic model and Heckman’s Two–step selection model estimation are presented and discussed in the Results (Section 4) section.

4. RESULTS

This section presents the estimated results and discusses the findings.

Table 1 presents the results of the Logit model. Here, Model 1 is estimated with suppressed constant, while Model 2 is estimated by taking ‘Loan receivers aged 20–29’ as a base and dropping ‘No. of household members’ from the Family Member group and ‘Child’s Gender’ from the Gender group since these variables are observed as insignificant. The results include the coefficient estimates, the b values, with their asymptotic t–statistics in the first column, and estimated marginal effects at the mean, the γ values, in the second column. Here, γ_i indicates the strength of the correlation between the probability of a parameter ‘happening’ and the respective explanatory variable, holding all other explanatory variables at their means.

Following both equations of Model 1 and Model 2, we observe that two variables (School type and No. of children attending school) significantly negatively influence the school dropout tendency, while one variable (total No of children) significantly positively influences the same. The coefficient of the three significant variables can be explained as follows:

School type: The coefficient for School type is -3.996 , indicating that compared to the higher level of education, there is a 3.996 percent decrease in the school dropout tendency among the primary level students, *ceteris paribus*.

¹¹Please see Morrissey, et al. (2016) and Strazzer, et al. (2003) for details.

Table 1
 Logit Model for Dropout Estimation (b and γ)

Variable (Dropout)	Model 1		Model 2	
	b	γ	b	γ
School Type	-3.996*** (0.861)	-0.493*** (0.128)	-3.963*** (0.842)	-0.493*** (0.126)
Gender				
Child's Gender	0.092 (0.730)	0.011 (0.090)		
Loan Receiver's Gender	0.757 (0.928)	0.093 (0.116)	0.803 (0.911)	0.100 (0.115)
Age				
Loan Receiver's Age 20–29	-0.416 (3.128)	-0.051 (0.384)	Base	
Loan Receiver's Age 30–39	-1.645 (2.990)	-0.203 (0.361)	-1.252 (1.334)	-0.156 (0.166)
Loan Receiver's Age 40–49	-1.063 (2.972)	-0.131 (0.363)	-0.722 (1.256)	-0.089 (0.158)
Loan Receiver's Aged 50 and above	-2.294 (3.291)	-0.283 (0.400)	-1.881 (1.488)	-0.234 (0.190)
Family Member				
No of Children Attending School	-2.053*** (0.581)	-0.253*** (0.084)	-2.029*** (0.584)	-0.252*** (0.084)
No. of HOUSEHOLD Members	0.552 (0.912)	0.068 (0.112)		
No. of Children	1.250*** (0.845)	0.154*** (0.108)	1.652*** (0.546)	0.148*** (0.040)
Loan Amount (Unit in 1000 BDT)	-0.008 (0.017)	-0.001 (0.002)	-0.008 (0.016)	-0.001 (0.002)
Cons			1.043 (1.906)	
Number of Obs.	100	100	100	100
Log Likelihood	-29.414		-	
			29.59833	
			9	

Note: Here, ***, **, and * indicate the significance level at 1 percent, 5 percent and 10 percent.

Number of Children Attending School: The coefficient for the number of children attending school is -2.053, indicating that with a one-unit increase in the number of children in a family that is attending school, there is a 2.053 percent decrease in the school dropout tendency, ceteris paribus. In other words, if the family has more school-going kids, the tendency to drop out decreases. This result indicates that if the family has more school-going kids, they all go to school together and are involved in other household and/or economic activities together after returning from school. However, if the number of school-going kids is less, generally the girl stays at home, or the elder son stays at home and the other goes to school.

Thus, the result reflects the traditional rural perception towards the elder kid or the female kid. In addition, the survey area being remote from the locality, traveling distance plays another important role behind this factor.

Number of Children: The coefficient for the No of children is 1.250, indicating that with a one-unit increase in the number of children in a family, there is a 1.250 percent increase in the school dropout tendency, *ceteris paribus*. This result conflicts with the result of the No. of School attending kids. The reason is the typical birth pattern and joint-family effect of rural families. When the number of children is greater, families generally have kids of different ages (both school-going and adults). Hence, the parents have grown-up kids to help with their economic activities, and the education of school-going kids is uninterrupted. However, if all kids are of school-going age, a drop-out tendency for one or more kids appears among parents.

The results are confirmed by the odd ratios estimated from the logistic model presented in Table 2, for both Model 1 and Model 2.

Table 2
Logistic Model for Dropout Estimation (Odds ratio)

Variable (Dropout)	Model 1 Odds ratio	Model 2 Odds ratio
School Type	0.018*** (0.015)	0.019*** (0.015)
Gender		
Child's Gender	1.095 (0.800)	
Loan Receiver's gender	2.131 (1.978)	2.232 (2.033)
Age		
Loan Receiver's Age 20–29	0.659 (2.064)	base
Loan Receiver's Age 30–39	0.193 (0.577)	0.285 (0.381)
Loan Receiver's Age 40–49	0.345 (1.026)	0.485 (0.610)
Loan Receiver's Aged 50 and above	0.100 (0.331)	0.152 (0.226)
Family Member		
No of Children Attending School	0.128*** (0.074)	0.131*** (0.076)
No. of Household Members	1.736 (1.581)	
No. of Children	3.491*** (2.950)	5.221*** (2.854)
Loan Amount (Unit in 1000 BDT)	0.991 (0.016)	0.991 (0.016)
Cons		2.838 (5.411)
Number of Obs	100	100
Pseudo R2		0.5219
Log Likelihood	–29.413936	–29.598339

Note: Here, ***, **, and * indicate the significance level at 1 percent, 5 percent and 10 percent.

Table 3 presents the results of Heckman's Two-step selection model estimation. For the Two-step model, the total number of observations includes 100, where the selected observation is 41 and the unselected observation is equal to 59. Selected observation indicates that the students continue schooling, while the unselected observation indicates that the students do not continue their schooling. Here Wald chi2 is 428.14 which is high, and the probability of chi2 is 0.000. Thus, the selection model is confirmed as a good model. The Lambda value is 0.115, which is significant at a one percent level, indicating that the model is acceptable. In addition, the RHO value is 0.779 which is greater than zero, so there is a correlation between the two models.

Table 3

Heckman's Two-step Selection Model for Dropout Estimation

Variable (Dropout)	Coefficient (Standard Error)
School Type	-2.443 ^{***} (0.705)
Gender	
Child's Gender	0.483 (0.554)
Loan Receiver's Gender	0.434 (0.620)
Age	
Loan Receiver's Age 20–29	-1.279 (1.849)
Loan Receiver's Age 30–39	0.175 ^{**} (0.071)
Loan Receiver's Age 40–49	-2.127 (1.705)
Loan Receivers Aged 50 and above	-2.866 (1.909)
Family Member	
No of Children Attending School	-0.9717 ^{***} (0.360)
No. of Household Members	0.275 ^{***} (0.045)
No. of Children	0.563 (0.4816)
Loan Amount (Unit in 1000 BDT)	Omitted
Number of Obs	100
Wald chi2	428.14 ^{***}
Lambda	0.115 ^{**}
RHO	0.779

Note: Here, ^{***}, ^{**}, and ^{*} indicate the significance level at 1 percent, 5 percent and 10 percent.

A total of four variables are observed to have a significant impact on school dropout. The variables are School types, Loan receivers aged 30–39, and No. of children attending school and No. of household members.

School types: the coefficient for School types is -2.443 , indicating that compared to the higher level of education, there is a 2.4 percent decrease in the school dropout tendency among the primary level students. This result follows the logistic model.

Loan Receivers aged 30–39: the coefficient for loan receivers aged (30–39) is 0.175 , indicating that for the loan holders whose age is between 30 to 39, their children's school dropout tendency is 0.17 percent higher compared to the others. This may happen due to the overall family expenditure pressure of the middle-aged group.

Number of household members: the coefficient for the number of a household members is 0.275 , indicating that with a one-unit increase in the number of household family members, there is a 0.27 percent increase in the school dropout tendency, *ceteris paribus*. This may be the larger-member-poorer family effect.

No. of children attending school: The coefficient for No. of children attending school is -0.971 , indicating that with one unit increase in the number of children in a family that is attending school, there is a 0.97 percent decrease in the school dropout tendency, *ceteris paribus*. This result follows the logistic model. The reasoning is the same as discussed above in Table 1.

Overall, findings of both the Logistic regression and Heckman's Two-step selection model combinedly support the negative influence of school type and the number of school-going kids on drop-out. The result suggests that social factors such as the number of kids in the family and the level of kids' education are influential in the dropout decision. In comparison, the loan installment burden of the microcredit borrowers does not show any significant motivation in the dropout decision. Hence, there is no evidence for microcredit to elevate or hinder Rural Child Education in Bangladesh, at least in the selected localities. The model has been estimated with alternative setups, the results are presented in Appendix 1. The results support the outcome of Table 2 and Table 3.

A few issues are worth mentioning to justify the results. First, there are some social beliefs in rural culture such as getting a female child married at an early age. One of the local Grameen Bank officers reported that the villagers have the belief that basic primary education is enough for girls because they will be homemakers in the future. For example, some responses are—*“Our daughter got married soon after she completed standard 7, the proposal was very good”*. Besides, most female children are observed to get admitted to school a year or two later than male children, since female children are mostly subject to taking care of their young siblings and helping with the household chores. Second, since these are remote areas, the distance they travel each day from home to school could be an important factor in school dropout decisions. There were several households where the children had to drop out because travel expenses were high when they had to cross the river (Shondha) via an engine boat. This perception explains the negative coefficient of the number of children attending school. Third, many children are observed not to start schooling before the age of 7, since their parents do not have an accurate idea or knowledge about the children's age. For example, some responses were like *“My third son was born before the last election”*, not sure about the exact age. Altogether, rural children commence schooling late compared to urban children. They also need to look after their family and mostly their young siblings when their father and/or mother are away for work

and actively participate in the chores. Fourth, multiple female dropouts occur as they started school late and couldn't pursue after primary or secondary because their family preferred sending the male children to school as the male children are considered the future bread-butter earners. On the other hand, male children leave schools to find full-time jobs and to support their families. For example, a few tea stalls and vendors in the market are found as school dropouts. Finally, there is a dropout tendency amongst youngsters due to a lack of interest in education.

5. CONCLUSION

Research on microcredit programmes operated in different regions of Bangladesh has observed mixed impact on different dimensions of the participant's socio-economic well-being. Considering such confusion, this research investigates if microcredit influences the school dropout decision of the microcredit holders about their kids. In particular, the study tests if the loan burden (weekly installment amount) significantly affects the school dropout decision. The results indicate that school dropout decisions are more of an outcome of social behaviour and beliefs. Essentially, the survey includes wood craftsmen, fishermen, agriculture farmers, van drivers, vendors, etc., who are mostly day labourers. These villagers lack future scopes and better opportunities, with each passing generation becoming reluctant to send their children to school, believing that they need only a basic education for these jobs. The youngsters also lack interest in attending school. As a result, the dropout tendency is enhanced at a higher level of education. However, no evidence is observed that microcredit loan amount significantly influences the dropout decision. Overall, the nationwide microfinance movement in Bangladesh has not very well served for, if not failed in, really alleviating rural poverty and promoting economic development in general as originally purported and expected because the household's ability to support kids' schooling as an important sign of poverty alleviation has not been much empowered.

A few policy measures could resolve the situation. First, awareness and support programmes for female child education are already in practice in Bangladesh, some boost up of the process in the remote areas would be effective. Second, there are primary schools in rural areas; however, more accessible, and attainable schooling facilities for children in remote locations require attention. Third, more intensive awareness programmes to enlighten the remote villagers on the importance of education to promote economic growth and a promising better future could work well. The microfinance institutions may work in collaboration with the government to resolve these issues, especially in remote rural locations that have difficulty accessing common rural facilities. The research offers future research scope—covering diversified areas in such study; controlling for loan purposes in the model; and including both microcredit borrower and non-borrower parents to understand a broader perspective which is out of scope for this study.

APPENDIX

1. Questionnaire Format:

Section- A

1. Name: _____ ID: _____
2. Gender: (a) F (b) M

3. School Type:
 a) Primary (b) Secondary
 Section– B
4. Number of HOUSEHOLD members: _____
5. Number of children: _____; _____ F _____ M
6. Participant of the MF loan:
 a) (a) YES (b) NO
7. Age of the borrower:
 a) 20–29
 b) 30–39
 c) 40–49
 d) 50 and above
8. Name of MFI: _____
9. (a) Total amount of loan taken: _____
 (b) Amount on a weekly basis (converted by the researcher): _____
10. Amount repaid per week: _____
11. Loan duration: _____ year(s)
12. Number of children attending school: _____
 (a) Primary _____
 (b) Secondary _____
13. Any dropout: (a) _____ YES (b) _____ NO
14. Open discussion or opinion:

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