# Socio-economic Profile of Households in Haor Region of Bangladesh: A Study on Micro-Credit Perspective

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**ABSTRACT**

**Purpose:** The study aims to construct the socio-economic profile of *Hoar* people in respect of micro-credit activities**.**

**Methodology:** Primary data have been collected from 2340 households consisting of 1560 micro-credit borrowers and 780 non-borrowers from 30 clusters of *Haor* region of Bangladesh. It has also conducted 30 KII and 30 IDI to cross check the survey data. Z-test, F-test, t-test and factor analysis have been used in analysing the data.

**Findings:** The *Haor* people live below the national and rural poverty levels. About 95% households have knowledge on micro-credits while 85.8% tried to get that support, 59.2% borrowed from formal, 18.4% from informal sources and 8.2% from the both. The reasons for exclusion from micro-credits are credit misappropriation, non-cooperation of authorities, bureaucratic complexity, budget limitations, ignorance and corruption. Other negative aspects are high interest rate, short term loan, insufficient amount, local loans are easier and client friendly, low cost and flexible terms and conditions are applied. Based on these findings, a set of recommendations have been developed to improve the current situation for the people of the studied area.

**Practical Implications:** The micro-credit authorities will gain pragmatic insights of the socio-economic characteristics of *Haor* people. They will also be able to re-structure or re-design micro-credit programs and concerned policies to get better results from the related programs.

**Originality/Value**: Appropriate micro-credit programs can maximize productivity to the *Haor* people which can bring them out from the vicious cycle.

**Limitations**: The study was restricted to the formal and informal micro-credit sources. Modern financial technologies were excluded for some practical reasons.

## 1. Introduction

*Haors* or *Bills* are large water bodies which are filled with water in the rainy season and partly dried up in the dry season. In Bangladesh, most *Bills* are located in the North-Eastern part of the country covering 19,998 sq. km (13.56% of total land) of the country. According to Bangladesh *Haor* and Wetland Development Board (BHWDB), 43% of total land of *Haor* districts is wetland under the 373 *Haors* (BHWDB, 2012). The *Haors* are concentrated in four districts (353) namely Sylhet (105), following Kishoregonj (97), Sunamganj (95) and Netrakona (52).

The *Haor* region is underprivileged in comparison to the main part of the country and hence in 1974, GoB established an autonomous body for the progress of *Bills* section (BHWDB, 2012).

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Though the *Bill* regions are resourceful with water, fishing, mineral, biodiversity and Boro-rice cultivation, the basic avenues for life and livelihoods are largely absent here. The people of the *Bill* regions are poorer than the other parts of the country.The long seasonality of wet monsoon (6–7 months from May to October) forces the *Haor* people to remain out of work for most of the time (HILIP, 2011). As a consequence, the lion part of *Bills*-people suffers from food insecurity and other basic needs (Kazal *et al*., 2017).

Due to poverty, most of *Bills* people depend on borrowings from money lenders and micro-credit institutions for their livelihood, mainly in crisis periods. A study documented that about 80% of *Haor* people borrowed money from different formal and informal sources and 59% of them borrowed for purchasing foods (Kazal *et al.,* 2010). The rate of interest of different types of micro-credits in Bangladesh vary from 12.5% to 43% and in some cases, it rose up to 110% (Raihan *et al.*, 2015). The rate of interest for the informal sector might be higher than the formal sectors. The type and nature of both money and food borrowings in the *Haor* region are still unexplored and needs an in-depth investigation to make proper policy for the socio-economic development of *Haor* people of the country. Circumstantial evidence shows that most of the *Haor* households cannot overcome the borrowing cycle. As a result, they become trapped to the lenders.

Conventional literature evidently shows that most of the marginalized households adopted credits from NGOs and local money lenders at a higher interest rates with inflexible terms and conditions during the shocking/lean period. Most of the time, they can not comply with the rigid terms and conditions. Sometimes they do sell their assets to repay the loans. Finally, the victim households' fall in the credit trap and they cannot increase real income by using the credit facilities as they normally desire. Besides, one credit creates another credit persistently. It continues generation after generation in those areas. In this context, we feel the necessity of an in-depth study which can bring out the real scenario. Moreover, field level study and observation have helped us to formulate some policy suggestions to get results in the long run.

The study aimed to develop the socio-economic profile of *Haor* and *Bill* people. Besides, identifying how micro-credit programs can play a significant role to improve their current economic condition was another objective. The findings of this study will help the lenders, borrowers, and concerned authorities to introduce or re-designing appropriate credit programs for the people of the affected areas. Moreover, the terms and conditions might be more client friendly by considering the study outcomes. This research will also support the government and non-government bodies and authorities to formulate sensible policies for the poverty alleviation of *Haor* people. Till now, no rigorous study is found on this issue. Diverse studies are highly required to achieve three targets of Sustainable Development Goals (1, 2 and 10) within the given time-frame.

## 2. Literature Review

Numerous studies (Mark, 2001; Shofi Ullah & Lu, 2013; Bangladesh Bank, 2015; Rahman, 2007; Habib & Jubb, 2015; Khandker, 2003, 2005; CGAP, 2010; Choudhury *et al*., 2017; Rabby, 2012; Khanom, 2014; Zaman, 2001; Ahmed, 2017; Uddin, 2011; Masahiro, S. 2008; Kombian, 2010; Peter, 2004) have shown that the assistance of micro-credits exceed charges and imparted loanee's revenues. Possessions donation, typical of existing and deficiency lessening, output of occupational and farming are affected. Moreover, upsurge prosperity, reserves, mobilize homegrown cheap food, increase feeding, ensure sustainable economy for main expenditures and increase capacity to manage the tremors. It also improves food eating, creates a sustainable community and increases achievement of benefits.

These play a mentionable role in authorizing women (Rahman, 2007; Khandker, 2003; Omorodion, 2007) in family as well as society. Khandker (1996, 1998) found micro-credit programs have a greater impact on the meagre families when females are the program members than males. It is documented that nearly one-third of the *Haor* people are extremely poor and they lie below the poverty line. Only about 30% of the *Haor* people lie in the upper poverty line (Chowdhury *et al*, 2002; IFAD, 2011).

The study also found that in respect of literacy rate, housing condition, drinking water, toilet facility, electrification and land holdings, the *Hoar* people are far behind from national standard. Their sources of income are limited to some specific professions. Even they can not move from home to other places easily for the structure of their villages. Sense of insecurity makes them compelled to stay at home for a long period of time. As a result, the lion part of *Haor*-people suffers from food insecurity and other basic needs (Kazal et al., 2010). Many of them stay far from modern and urban utilities throughout their life. For this reason, most of the Haor people depend on borrowings from money lenders and micro-credit institutions for their survival and livelihood, especially in crisis periods.

A study documented that about 80% of Haor people borrowed money from different formal and informal sources and 59% of them borrowed for purchasing foods (Kazal et al., 2010). Because of the fragmented nature of the houses, they are isolated from modern facilities there. Even the government initiatives do not reach them properly on time. According to Consulting Group to Assist the Poor (2010) micro-credit boosted billions of people to retain their eating steady, supporting expenses, and handle with shudders. Uncertainty from lower, irregular, and unreliable sources of income have been reduced in the *Hoar* areas of Bangladesh.

## 3. Methodology of the Study

The cluster-sampling design has been adopted considering *Haor*-attached mouzas/unions as a cluster. Total area was divided into 30 clusters for the survey. The size of 30 clusters is (internationally recognized) representative sample such as WHO's EPI cluster sampling design (Turner *et al.*, 1996). The recognized sample size determination formula[4] [on the basis of 70% indicator percentage (proportion of households lie below the upper poverty line), 95% confidence interval, 0.04×p relative precision and highest response distribution with an assumed design effect 1.5] yielded that at least 1544 targeted (micro-credits recipient) households were required to cover this study. For rounding-up, the sample size has been increased from 1544 to 1560.

Since the core objective of the study is to explore the socio-economic profile of *Hoar* people in respect of micro-credit, a control group must be selected to compare the cases by using sophisticated statistical techniques. The study has covered 780 households as a control (50% of the cases) group. The characteristics of the control households are almost similar to the cases (micro-credits recipient) households. Thus, the total sample size of the proposed study is 2340 underprivileged households.

The Key Informant Interviews (KII) has been conducted with the people who have knowledge on *Haor* economy and impacts of micro credits on livelihoods. The key informants were the community leaders, professionals, and other stakeholders including the NGO delegates working in *Haor* areas. The participants of In-depth Interviews (IDI) were the selected victims of the poverty cycle, local money-lenders and delegates of existing MFIs working in the *Haor* region. The study has conducted 30 KIIs and 30 IDIs to gain insights of the micro-credit activities. A structured interview schedule (questionnaire) has been developed and administered for conducting household surveys. Separate checklists have been used to collect data through IDIs and KIIs. The IDIs have been conducted covering the availability of the micro-credits in the community.

A well-trained fieldwork team was employed and sent to the project locale for collecting data and information. The study has used several descriptive tools and inferential techniques to achieve the project objectives. Among the descriptive statistical tools, percentage, average, cross-tabulation, Chi-square test, Z-test, t-test and F-test have been used to analyze the data. Factor analysis has been used to reduce the dimensions of causes of not inclusion in micro-credit and perception of micro-credit of the respondents. It is used to see the relationship among the observed variables (Manly, 2005; Rencher, 2002).

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[4] $n = \dfrac{p(1-p)Z^2}{(0.04 p)^2} \times Deff$

where, $p$ is the indicator percentage, $Z$ is the value of normal variate with 95% confidence interval, $0.04p$ is the relative error margin and *Deff* is the design effect.

**4. Analysis and Findings**

The study has found diverse issues. To keep the article's length short only the most relevant issues have been presented in brief here. Supporting analyses are available in the appendix section.

**4.1 Socio-demographic Profile of Households and Their Population**

The characteristics of respondents, viz., age, marital status, educational level, occupation, income earning status and disability status have been analyzed according to their micro-credit borrowing status in appendix–1. The household members have been analyzed according to the gender which is shown in the appendix–4.

*4.1.1 Socio-demographic Profile of the Households*

Appendix–1 shows that 69% are borrowers and 31% non-borrowers of the respondents. The relationship of respondents with household heads reveals that in total 81.4% are the household heads and 16.8% are their spouses. There are significant differences among these proportions in terms of borrowers and non-borrowers. The respondents' regard to households' heads is found meaningfully (p<0.01) higher for non-borrower households (98.1%) than borrower houses (73.8%) and in respect of husbands/wives. There is also an important difference (p<0.001) between borrowers (23.7%) and of non-borrowers' (1.8%) households. The respondents by gender show that 76.8% are male and 23.2% are female and there are significant differences among borrowers and non-borrowers of this ratio.

The respondents regard to male is knowingly (p<0.01) higher for non-borrower households (90.3%) than borrower families (70.6%) and in respect of female there is also significant difference (p<0.001) between borrowers (29.4%) and of non-borrowers' (9.7%) households. There are no substantial modifications in respect of oldness, marital status and educational status between borrowers and non-borrowers. The respondents regard to off-farm activities showed that non-borrowers (17.7%) is pointedly (p<0.01) higher than borrower (11.1%) households, in respect of service/business it is found that non- borrowers (24.6%) is expressively (p<0.01) higher than borrower (16.2%) households and in respect of household work borrowers (24.9%) is ominously (p<0.01) higher than non- borrower (5.7%) households. The income earner in respect of no work borrowers (24.5%) is suggestively (p<0.01) advanced than non- borrower (12.6%) families. The difference in respect of disabled status between borrowers and non-borrowers is immaterial.

*4.1.2 Socio-demographic Profile of Households' Population*

Appendix–2 depicts that there are a total of 11628 people in the households in which 5950 (51.17%) male and 5678 (48.83%) female but the national male to female ratio is 100.2: 100 (BBS, 2020). The ratio of male in the age group of 51-60, 60 and above, and also in terms of average are significantly (p<0.001) higher than females. The matrimonial position of the inhabitants of 16 years or above revealed that the lion part (69.5%) of the population is married and the percentage of females is significantly (p=<0.001) greater than male. The proportion of unmarried people was found suggestively (p=<0.001) lower for womanly populace than manly which indirectly indicates that womanly populace is receiving early marriage than male. It is surprising also that the percentage of widows of females is pointedly (p=<0.001) greater than male.

The population above 6 years in regard to education showed that in all levels of education the percentage of male is higher than females which evidenced gender perception against girl children. The parents encourage their son's education more than their daughter's with the expectation that in future son(s) will support them in their old age. The practice of premature marriage of their daughter is also an example of gender perception and may also contribute to increasing female illiteracy. The occupation of the population aged in-between 16 years and 60 years has been categorized into seven groups and in all categories except student, the percentage of male is meaningfully (p=<0.001) higher than female.

About 70.7% women are engaged in household activities (Kazal *et. al,* 2017). In respect of income earners of the household members' age above 15 showed that there is a total 7384 population in which 3856 male and 3528 female. In regard to full time and part time workers, the percentage of

male is expressively (p=<0.001) higher than female but in terms of no work, the percentage of females is knowingly (p=<0.001) higher than male.

*4.1.3 Composition of Households*

Data on households' composition in table-1 in respect of micro-credits status showed that the male-female ratio was 100:104 for the borrower group while 100:107 for the non-borrower group. The study revealed that the family size of borrowers' is expressively (p<0.05) higher than non-borrowers. The overall dependency ratio of borrowers' is knowingly (p<0.01) higher for borrowers than non-borrowers' families.

**Table 1**

*Household Composition by Micro-credits Receiving Status*

| Characteristics | Borrower (N = 8172) | Non-borrower (N = 3451) | Z-statistic | P-value | Overall (N = 11623) |
|---|---|---|---|---|---|
| Home arrangement (%) | | | | | |
| Sex ratio (male per 100 female) | 104 | 107 | | | 105 |
| Woman - controlled household (in %) | 2.6 | 3.5 | -2.656 | 0.012 | 2.8 |
| Unemployment rate (Age 15-60) | 2.1 | 2.8 | -1.816 | 0.077 | 2.3 |
| Total household (Age 15-60 years) | 5023 | 2180 | | | 7203 |
| Dependency Ratio (%) | | | | | |
| Kid (0–14) reliance ratio | 54.35 | 50.86 | 3.446 | 0.001 | 53.19 |
| Old (60+) dependence ratio | 6.94 | 5.63 | 2.608 | 0.013 | 6.55 |
| Dependency ratio | 61.29 | 56.49 | 4.824 | <0.001 | 59.74 |
| Family size (Mean ± SD) | 5.09 ± 1.49 | 4.71 ± 1.52 | 5.644 | <0.001 | 4.97 ± 1.51 |

*Note:* HH=Households; SD=Standard Deviation.

Source: Author's construction

## 4.2 State of Housing Conditions and Facilities of Housing

The analysis of housing conditions of households plays an important role in determining the economic conditions of a group or person. The rural households are mostly dependent on land for their livelihoods and it is considered as a permanent asset of a household. The analysis of housing conditions may have several implications in addition to assessing the economic ability. For example, families without good hygiene amenities must have a risk of incidence of diseases like diarrhea, dysentery and typhoid. The housing condition and related facilities of the study is portrayed in appendix-3 in terms of borrowing status and types (formal and in formal).

The data on ownership of housing showed that in over-all 94.6% of respondents own a house and there are no significant differences in terms of borrowing status. There are different sizes of house in terms of room but there are no significant differences among the borrowing status and types. In over-all 61.5% HHs own separate kitchen from sleeping room and there is significant difference (p= <0.001) between informal and formal borrowers in respect owning the separate kitchen. The lion part of (86.2%) main house is made of tin shed roof with different kinds of fences and the analysis exposed that the formal borrowers own more (5.8%) straw roof and bamboo muddy wall than informal borrowers (1.1%) with significant difference (p=<0.001) and the owners of *pucca* building of borrowers is ominously (p=<0.001) higher (4.5%) than non-borrowers (1.4%) and it is also is higher of informal borrowers ( 3.6%) than that of formal (0.5%) meaningfully (p=<0.001).

Data on sources of cooking fuel showed that the usages of gas by borrowers is higher than non-borrowers suggestively (p=<0.001) and usages of wood/kerosene by formal borrowers is higher than informal borrowers expressively (p=<0.001) but the usages of cow dung by informal borrowers is higher than formal borrowers knowingly (p=<0.001). The over-all source of drinking water showed that on average nine-in-ten (94%) uses tube-well. The data on electricity coverage in the village and in the houses showed that 86.5% of surveyed villages are connected to electricity and 80.8% surveyed houses connected to electricity. The data on toilet ownership reported that most households (91.6%) own them and more than one half (54%) use *katcha and* open toilets. The percentage of *pucca* toilets

with water supply is significantly (p=<.001) higher for non-borrowers than borrowers while the percentage of open-toilet is significantly (p=<.001) higher for borrowers than non-borrowers.

## 4.3 Possession of Assets by Households

The possession of assets by study households has been divided into (i) landholdings (ii) productive assets and (iii) durable assets (appendix-4). These are discussed below:

### 4.3.1 Landholdings of Households

The landholdings pattern of the households with reference to borrowing status and type and the data is presented in terms of home-stated land, cultivable own land, cultivable leased/crop sharing land and pond land. Several studies categorized the landholding size considering its merit in production and income. Households with less than 50 decimal are commonly considered as 'Functionally Landless Households', households with fifty to two hundreds decimal are considered as 'Marginal Households' and households with up to six hundreds decimal are considered as 'Middle Homes' (Hossain & Keus, 2004). In addition, homes with only estate land are considered as absolute landless (Hossain *et al*, 2019). In this study homes possessing landholdings sized 15 decimals or less are considered as absolute landless. The findings showed that 8.5% of the surveyed households had no homestead land, 79.2% owned homestead land between 1 to 15 decimals, and only 12.3% households owned homestead land more than 15 decimals.

Among the surveyed households, over two-thirds have no agricultural land at all and about 7% owned agricultural land between 1 to 15 decimals, about 8% owned between 16 to 50 decimals and only about 17% owned over 50 decimals. In Bangladesh, agricultural land can either be leased-in (cultivated without ownership) or leased-out (owned but not cultivated). It is found that about 27% of the households had taken some sort of land through leased-in, mainly as sharecropper. The size of the pond land is estimated at 8.65 decimals for the owning households. The overall analysis of landholding indicates that about two-thirds of the surveyed households are functionally landless.

### 4.3.2 Possession of Productive Assets

A list of 10 items of productive assets was given to the respondents as in table-8 and the in over-all top five are livestock (981) following cultivating equipment (975), fishing net (463), family business (192) and sewing machine (124). The ownership of others productive assets is not notable as a few households have owned those assets (appendix-5).

### 4.3.3 Possession of Durable Assets

A list of total 20 items of durable assets was given to the respondents as given in (Appendix 6). The data on top ten items in overall is chauki (93.8%), following bed (93.2%), cookeries (91.5%), cutleries 91.5%, mobile phone 89.9%, table/chair 80.4%, electric fan 69.7%, alna 59.4% almariah 35.2% and shelf 28.8%. The findings indicate that in most of the cases possession of durable goods was significantly higher in the formal micro-credits receiving households than that of informal micro-credits receiving households but the differences are significant.

## 4.4 Comparison between the National and Rural Level Main Household

In order to find the socio-economic situation of the *Haor* people we compared the survey data with the total national level and rural national level data in respect of some important and available socio-economic indicators as given in appendix–6. The analysis showed that the learning amount of the total, male and female of the survey area are significantly lower than that of national as well as rural rate. In respect of housing structure katcha with tin shed and pucca plus semi-pucca are lower in the survey area significantly than the total and rural national level picture but jhupri (Mud-made) housing structure is similar to national and rural picture.

Regarding drinking water sources in respect of tap and others are significantly lower in the survey area than national and rural level while there is no significant difference in respect of tube-well. The toilet facilities in respect of *Pucca* and *katcha* of the survey area are significantly lower than national and rural picture but without toilets the data has no significant difference from national picture. The coverage of electricity in the survey area is significantly lower than the national and rural picture. The

landholdings patterns in respect of marginal, moderate and high are significantly lower than the national.

### 4.5 Knowledge and Perception of Respondents on Micro-credits Benefits

The respondents were asked to provide their knowledge on micro-credits in terms of different aspects as shown in appendix–7. The analysis revealed that about 95% of respondents have the knowledge of micro-credits benefits and about 86% have tried to get micro-credits. Among the credit-receiving households 55.1% have tried to get credits from non-government sources (MFI/NGOs/Insurance) and 16% have tried to get credits from local money lenders in their first attempt. In addition, 4.1% have tried to get credits from government sources and 2.4% from non-interest bearing sources. About 8% of credit-receiving households have mentioned that they tried to get credits from more than one source.

The findings indicate that 8.6% have succeeded to get a loan at their second attempt after failing in the first attempt and most of them received loan from local moneylenders. The data on respondents where/whom they communicated to get micro-credits revealed that a little more than one-third has reported that they went to UP office, followed by relatives/neighbors/friends (14.7%), government officers (4.8%), NGOs (3.3%). It is to be mentioned that about 4% of the respondents were demanded to provide money as bribe for getting micro-credits benefits. Six-in-ten of the total respondents believed that micro-credits benefits would help them to come out of poverty.

### 4.6 Analysis of Attitude of Borrowers towards Micro-credits

The sixteen dimensions of the attitude of borrowers towards micro-credit benefits are given in table-3. In total the top five positive attitudes are-micro-credits: (i) enhance for food security (54.3%); (ii) help in better access to healthcare (53.8%); (iii) help in better financial situation (50.7%); (iv) of local are easier to get than MFIs (48.7%); and (v) help to run the business (45.2%). In total top five disagreed (negative) attitudes are-micro-credits: (i) of local are low costlier than MFIs (73.6); (ii) financiers are welcoming than MFIs (58.4%); (iii) of local in terms conditions are easier than MFIs (57.9); (iv) duration is insufficient (56.4%); and (v) does not help in savings (56.1). Principal Component Analysis (PCA) with rotation explaining 57.38 % of total disparity by the mined factors with 0.747) reduced sixteen dimensions into four factors based on Eigen value (1.00 and above) as seen in the rubble plot in figure–1.
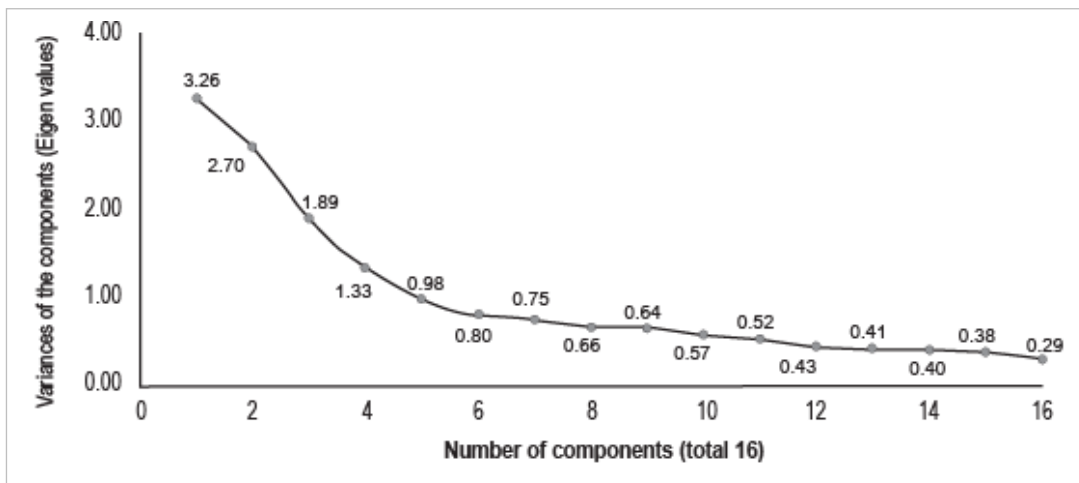


**Figure 1**

*The Insolence of Debtors on Credits Programs*
Source: Author's construction

The first factor is associated with income and savings, second factor is related to terms and conditions of credit, third factor is related to cost credits and the fourth factor is associated with food and health safety. The variations explained by each factor and dimensions are given in table–2.

**Table 2**

*Major Dimensional Factors of Attitude of Borrowers towards Micro-credits*

| SL# | Aspects of attitude | Alternated Influence Loads (Varimax) | | | | Communalities |
|---|---|---|---|---|---|---|
| | | F1 | F2 | F3 | F4 | |
| 01. | Reasonable interest rate | | | 0.694 | | 0.574 |
| 02. | Sufficient amount of credit | | | 0.760 | | 0.633 |
| 03. | Enough length of credit | | | 0.809 | | 0.658 |
| 04. | Relax conditions of credit | 0.446 | | | | 0.375 |
| 05. | Use of micro-credit enhance food security | | | | 0.716 | 0.535 |
| 06. | Income is positively increased by using credit | 0.654 | | | | 0.564 |
| 07. | Saving is augmented by micro-credit | 0.734 | | | | 0.567 |
| 08. | Micro-credit improve in access to education | | | | 0.621 | 0.564 |
| 09. | Micro-credit advance to healthcare | | | | 0.804 | 0.675 |
| 10. | Micro-credit upgrade family's financial situation | 0.661 | | | | 0.495 |
| 11. | Micro-credit helps in running the business | 0.657 | | | | 0.464 |
| 12. | Micro-credit boosts employment opportunities | 0.682 | | | | 0.481 |
| 13. | Informal loans are relaxed than MFIs | | 0.637 | | | 0.493 |
| 14. | Informal lenders are approachable than MFIs | | 0.857 | | | 0.768 |
| 15. | Informal credits are cheaper than MFIs | | 0.792 | | | 0.667 |
| 16. | Environments of native credits are relaxed than MFIs | | 0.808 | | | 0.668 |
| Percentage of total dissimilarity clarified | | 20.38 | 16.86 | 11.84 | 8.29 | |
| Total | | | | | | 57.38 |
| Kaiser-Meyer-Olkin | | | | | | 0.747 |
| Bartlett's test of | | Chi-square = 7023.422; df = 120 & P-value < 0.001 | | | | |

*Note:* F1 to F4 indicates four extracted factors; df = degrees of freedom; MFIs = Micro-finance Institutions.
Source: Author's construction

## 4.7 Reasons of not Getting Micro-credits from Targeted Source by Eligible Non-borrowers

The respondents of the eligible non-borrower households were asked to put their views on the reasons for exclusion from the targeted micro-credits programs. The literature suggests several reasons are responsible for exclusion from the targeted micro-credits programs. Total sixteen possible causes are listed as in table–4 which is responsible for not getting micro-credits from targeted organizations by eligible non-borrowers. The respondents were asked to put their perception on a five-point Likert scale (starting from strongly disagree=1 to strongly agree=5) on each of the pre-assigned reasons for not getting micro-credits from the targeted schemes. The percentage in each of the agreement levels indicates that a significant number of respondents did not make any comments regarding the entire reasons.

The study has employed factor analysis using PCA to identify the major dimensional reasons (to reduce a large number of variables into fewer numbers of factors) for exclusion from the expected

micro-credits programs. The summarized results of factor analysis are shown in table-15. The scree plot (Figure-2) explored that four factors are mainly responsible for not getting the micro-credits from the expected credits programs/schemes. Thus, the factor analysis extracted four factors as the reasons for not being included in the micro-credit programs with a cumulative percentage of variance 64% by the 15 variables and the KMO value as 0.735. The test statistics including chi-square value of Bartlett's test of sphericity, KMO value indicates that the factor analysis is an appropriate technique to explore the major dimensions of the underlying variables. Based on the maximum variation of the factors, the study identified four main factors for not being included in micro-credits programs.
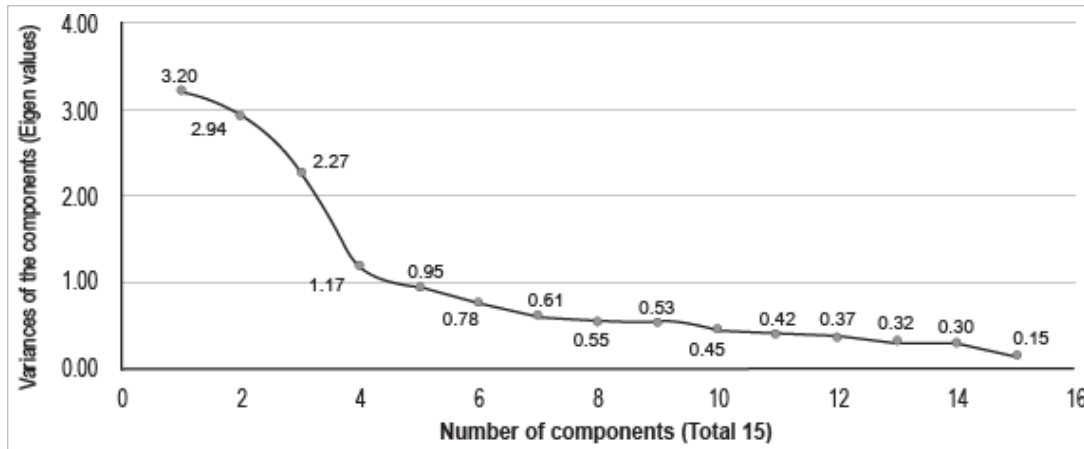


**Figure 2**
*Choice of the Number of Factors for Reasons of excluded from Micro-credits Program*
Source: Author's construction

The first factor is related to credit misappropriation and biasness, the second factor is related to non-cooperation of local authority, third factor is regarding bureaucracy and budget limitation and fourth factor is associated with ignorance and corruption. The variation explained by the factors and their dimensions is given in table–3.

**Table 3**

*Dimensions for Excluding from the Micro-credit Benefits*

| SL. | Reasons | Rotated Factor Loadings (Varimax Rotation) | | | | Communalities |
|---|---|---|---|---|---|---|
| | | F1 | F2 | F3 | F4 | |
| a. | Official complexity | | | 0.611 | | 0.525 |
| b. | Budgetary limitation | | | 0.759 | | 0.597 |
| c. | Inducement or access fee | | | | 0.559 | 0.599 |
| d. | No political exposure | | | 0.623 | | 0.680 |
| e. | Lack of idea about micro-credit program | | | | 0.833 | 0.704 |
| f. | Favoritism | | | 0.599 | | 0.608 |
| g. | Lack of Co-Operation of public personnel | | 0.727 | | | 0.567 |
| h. | Non-cooperation from local lenders | | 0.818 | | | 0.673 |
| i. | Non-availability of NID | | | | 0.700 | 0.517 |
| j. | Lack of interacting | | 0.775 | | | 0.652 |
| k. | Long distance of lenders from the village | | 0.635 | | | 0.468 |

| | | | | | | |
|---|---|---|---|---|---|---|
| l. | Insufficient micro-credits in the area | 0.620 | | | | 0.591 |
| m. | Lacking of collateral | 0.862 | | | | 0.794 |
| n. | Dishonesty of credits | 0.896 | | | | 0.844 |
| o. | Biasness | 0.863 | | | | 0.755 |
| Percentage of Variation Explained | | 21.30 | 19.61 | 15.13 | 7.80 | |
| Total Variation explain by the extracted factors | | | | | | 63.84 |
| KMO | | | | | | 0.735 |
| Bartlett's Test of Sphericity | | Chi-Square =3261.82; df =105 & P-value <0.001 | | | | |
| Extraction Method | | Principal Component Analysis | | | | |

Source: Author's construction

## 5. Findings from KII and IDIs

The KIIs and IDIs opined that (i) micro-credit is available in each and every corner of the *Haor* region. However, the sources of micro-credits, in terms of official and casual, vary in different locations. In the early days, only informal sources (like *Mahajan's* loan) of micro-credits were available in *Haor* region. However, the pattern has shifted as several government and non-government organizations have come forward with micro-credit facilities in that region. Now-a-days formal sources of micro-credits are dominating over informal sources. Most of the formal sources are mainly for SMEs purposes. A loan to meet the family consumption expenditure is rare from formal sources. The *Haor* people still depend on informal sources of micro-credits for covering the emergency situation like treatment of household members, covering the cost of food items during severe food shortages. The key informants/participants viewed that the existing micro-credit system of formal sources is not client friendly to the credit receivers.

On the other hand, (i) the necessary documents along with the provision of collateral and the loan repayment system are regarded as the main hindrances for a user-friendly micro-credit system from the formal sources. (ii) Most of the people of *Haor* regions are well known about the benefits of micro-credits and majority of them try to get such benefits. The lion parts of borrowers get benefits from non-government sources and informal sources and for getting loans they communicate to the office of union porishod and relatives. Fewer borrowers are harassed by some of the middle-men. (iii) The attitudes towards formal and informal micro-credits are discovered by the participants that the loan is expensive, amount, payment structure and duration of loan is insufficient. (iv) Many micro-credit programs are unknown to many borrowers. Favoritism in granting credit, dishonesty in credit allocation, lack of access fee or inducement and official problems are the main grounds of not receiving credits from recognized sources. The high charges, social status, non-availability of sanctuary, connection, flinging, non-cooperation of local associates and inexpensive curb are the main causes of not getting micro-credits from improper sources.

## 6. Recommendations and Conclusion

From the analyses and discussions, it may be concluded that, in general, the micro-credits from informal sources should be highly discouraged. A distinguished social safety-net program can be introduced for the *Haor* people. Especially, during the exclusive food shortages periods special assistance should be introduced. Term of the loans should be five years. Size of the loan should be 500,000 Tk. The installment payment should not be more than once per month. The interest rate should not be more than 5%. The micro-credits from the formal sources should be encouraged. For the households whose members acquire the capability to start any economic activity through skill-development programs, they should get priority for loan sanction. The zero-interest micro-credit system can be introduced for the extremely vulnerable households. Skill-development training programs can be strengthened covering different investment areas for the adult members of credit-receiving households.

For geographic location and demographic characteristics, the Haor people suffer a significant part of each year. Then they are workless and pass leisure time. As a result, they face extreme financial

crises. For diverse complexities, they have limited access to formal loans. So, most of them rely on the micro-credit programs of NGOs. Other victims go to the local money lenders who have extreme influence on poor people. The borrowers can not pay loans with huge interest totally before being in trouble next year. They can not break this cycle. To improve the situation, government institutions have to come forward. Not only providing loans, rather making them skilled and giving capital support is strongly recommended.

**Acknowledgement**

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**Appendixes**
**Appendix 1**
*Socio-Demographic Profile of the Households*

| Characteristics | Borrower (N = 1607) | Non-borrower (N = 733) | Z-statistic | P-value | Both (N = 2340) |
|---|---|---|---|---|---|
| Relation with household head | | | | | |
| Head | 73.8 | 98.1 | -14.015 | <0.001 | 81.4 |
| Husband/wife | 23.7 | 1.8 | 13.130 | <0.001 | 16.8 |
| Son/daughter | 1.0 | 0.0 | 2.717 | 0.010 | 0.7 |
| Father/mother | 1.2 | 0.1 | 2.680 | 0.011 | 0.9 |
| Others | 0.3 | 0.0 | 1.484 | 0.133 | 0.1 |
| Sex of respondent | | | | | |
| Male | 70.6 | 90.3 | -10.467 | <0.001 | 76.8 |
| Female | 29.4 | 9.7 | 10.467 | <0.001 | 23.2 |
| Age of respondent | | | | | |
| 16-30 | 17.9 | 14.6 | 1.977 | 0.056 | 16.8 |
| 31-50 | 61.9 | 62.5 | -0.277 | 0.384 | 62.1 |
| 51-60 | 13.9 | 14.7 | -0.515 | 0.349 | 14.2 |
| Above 60 | 6.3 | 8.2 | -1.682 | 0.097 | 6.9 |
| Mean ± SD (in years) | 42.47 ± 11.38 | 43.57 ± 11.60 | -2.140 | 0.040 | 42.81 ± 11.46 |
| Marital status | | | | | |
| Married | 92.7 | 91.1 | 1.339 | 0.163 | 92.2 |
| Unmarried | 2.4 | 2.9 | -0.711 | 0.310 | 2.6 |
| Widow | 4.7 | 5.7 | -1.028 | 0.235 | 5.0 |
| Separated/Divorced | 0.1 | 0.3 | -1.114 | 0.215 | 0.2 |
| Educational status | | | | | |
| No education | 27.7 | 24.3 | 1.726 | 0.090 | 26.6 |
| 1-5 years of schooling | 53.9 | 52.3 | 0.720 | 0.308 | 53.4 |
| 6-9 years of schooling | 12.4 | 13.6 | -0.807 | 0.288 | 12.8 |
| SSC / HSC | 5.6 | 8.7 | -2.807 | 0.008 | 6.6 |
| Graduate and above | 0.4 | 1.1 | -2.002 | 0.054 | 0.6 |
| Mean ± SD (in years) | 3.76 ± 3.13 | 4.19 ± 3.42 | -2.896 | 0.006 | 3.89 ± 3.23 |
| Occupation | | | | | |
| Farming | 19.7 | 19.8 | -0.056 | 0.398 | 19.7 |
| Day laborer | 22.5 | 23.3 | -0.428 | 0.364 | 22.7 |
| Off-farm activities | 11.1 | 17.7 | -4.379 | <0.001 | 13.2 |
| Service/business | 16.2 | 24.6 | -4.821 | <0.001 | 18.8 |
| Student | 0.2 | 0.0 | 1.212 | 0.191 | 0.2 |
| Household work | 24.9 | 5.7 | 11.006 | <0.001 | 18.9 |
| Others | 5.4 | 8.9 | -3.186 | 0.002 | 6.5 |
| Income earner | | | | | |
| Full time | 47.6 | 54.7 | -3.186 | 0.002 | 49.8 |
| Part time | 27.9 | 32.7 | -2.364 | 0.024 | 29.4 |
| No work | 24.5 | 12.6 | 6.581 | <0.001 | 20.7 |
| Disability status | | | | | |
| Yes | 2.9 | 4.4 | -1.865 | 0.070 | 3.3 |
| No | 97.1 | 95.6 | 1.865 | 0.070 | 96.7 |

*Note*: SSC = Secondary School Certificate; HSC = Higher Secondary Certificate; SD = Standard Deviation

**Appendix 2**

*Socio-Demographic Profile of the Households' Population*

| Characteristics | Male (%) (N = 5950) | Female (%) (N = 5678) | Z-statistic | P-value | Both (%) (N = 11628) |
|---|---|---|---|---|---|
| Age group | | | | | |
| 0-15 | 35.2 | 37.9 | -3.023 | 0.004 | 36.5 |
| 16-30 | 26.7 | 28.3 | -1.932 | 0.062 | 27.5 |
| 31-50 | 25.5 | 25.3 | 0.248 | 0.387 | 25.4 |
| 51-60 | 6.8 | 4.9 | 4.356 | <0.001 | 5.9 |
| Above 60 | 5.7 | 3.7 | 5.082 | <0.001 | 4.7 |
| Mean ± SD | 27.52 ± 18.92 | 25.38 ± 17.50 | 6.335 | <0.001 | 26.47 ± 18.27 |
| Marital status (Age above 15 years) | | | | | |
| Married | 66.4 | 73.0 | -6.156 | <0.001 | 69.5 |
| Unmarried | 31.7 | 18.4 | 13.124 | <0.001 | 25.4 |
| Widow | 1.8 | 8.1 | -12.637 | <0.001 | 4.8 |
| Separated/divorced | 0.1 | 0.5 | -3.187 | 0.002 | 0.3 |
| Total (n) | 3856 | 3528 | | | 7384 |
| Educational status (Age above 6 years) | | | | | |
| No education | 17.3 | 21.1 | -4.904 | <0.001 | 19.1 |
| 1-5 years education | 49.8 | 48.8 | 1.015 | 0.238 | 49.3 |
| 6-9 years education | 19.2 | 18.5 | 0.908 | 0.264 | 18.9 |
| SSC / HSC | 11.4 | 10.1 | 2.129 | 0.041 | 10.8 |
| Above HSC | 2.3 | 1.5 | 2.965 | 0.005 | 1.9 |
| Mean ± SD | 4.91 ± 3.67 | 4.50 ± 3.56 | 5.760 | <0.001 | 4.71 ± 3.62 |
| Total (n) | 5328 | 4992 | | | 10320 |
| Occupation (Age 16-60 years) | | | | | |
| Farming | 17.0 | 0.3 | 24.245 | <0.001 | 8.9 |
| Day laborer | 24.7 | 1.7 | 27.783 | <0.001 | 13.6 |
| Off-farm activities | 15.8 | 0.6 | 22.618 | <0.001 | 8.4 |
| Service/business | 23.0 | 3.8 | 23.088 | <0.001 | 13.7 |
| Student | 10.9 | 11.2 | -0.395 | 0.369 | 11.0 |
| Household work | 0.5 | 70.7 | -60.976 | <0.001 | 34.6 |
| Others | 8.3 | 11.6 | -4.565 | <0.001 | 9.9 |
| Total (n) | 3515 | 3319 | | | 6834 |
| Income earner (Age above 15 years) | | | | | |
| Full time | 45.6 | 8.6 | 35.401 | <0.001 | 27.9 |
| Part time | 28.7 | 14.3 | 14.965 | <0.001 | 21.8 |
| No work | 25.4 | 76.5 | -43.867 | <0.001 | 49.8 |
| Otherwise | 0.4 | 0.6 | -1.222 | 0.189 | 0.5 |
| Total (n) | 3856 | 3528 | | | 7384 |
| Disability status | | | | | |
| Yes | 4.0 | 4.7 | -1.851 | 0.072 | 4.4 |
| No | 96.0 | 95.3 | | | 95.6 |

*Note:* SD=Standard Deviation; SSC=Secondary School Certificate; HSC=Higher Secondary School Certificate

## Appendix 3

*State of Housing and Related Facilities*

| Household characteristics | Targeted variables | Borrowing status (%) | | P-value | Household type by loan (%) | | P-value | Overall (2340) |
|---|---|---|---|---|---|---|---|---|
| | | Non-borrower (733) | Borrower (1607) | | Formal (1158) | Informal (449) | | |
| House ownership | Yes | 94.1 | 94.8 | 0.314 | 94.5 | 95.5 | 0.288 | 94.6 |
| | No | 5.9 | 5.2 | 0.314 | 5.5 | 4.5 | 0.288 | 5.4 |
| Number of Rooms | One rooms | 22.6 | 18.2 | 0.018 | 17.0 | 21.4 | 0.049 | 19.6 |
| | Two rooms | 40.5 | 43.1 | 0.199 | 44.0 | 41.0 | 0.220 | 42.3 |
| | Three rooms | 27.3 | 28.3 | 0.352 | 28.5 | 27.6 | 0.374 | 27.9 |
| | Four or more rooms | 9.5 | 10.4 | 0.319 | 10.5 | 10.0 | 0.382 | 10.1 |
| Mean person per room | | 2.38 | 2.52 | 0.011 | 2.48 | 2.63 | 0.057 | 2.48 |
| Separate Kitchen | Yes | 59.5 | 62.4 | 0.163 | 56.7 | 76.8 | <0.001 | 61.5 |
| | No | 40.5 | 37.6 | 0.163 | 43.3 | 23.2 | <0.001 | 38.5 |
| Type of main house | Straw roof & Bamboo/muddy wall | 3.8 | 4.5 | 0.295 | 5.8 | 1.1 | <0.001 | 4.3 |
| | Tin shed roof & Tin/ muddy wall | 84.3 | 87.1 | 0.076 | 86.3 | 89.1 | 0.129 | 86.2 |
| | Tin shed building | 7.1 | 7.0 | 0.397 | 7.3 | 6.2 | 0.295 | 7.1 |
| | *Pucca* building | 4.5 | 1.4 | <0.001 | 0.5 | 3.6 | <0.001 | 2.4 |
| | Others | 0.3 | 0.1 | 0.215 | 0.1 | 0.0 | 0.319 | 0.1 |
| Source of cooking fuel | Wood/kerosene | 30.3 | 30.1 | 0.397 | 36.0 | 14.7 | <0.001 | 30.1 |
| | Gas | 7.8 | 3.8 | <0.001 | 3.5 | 4.5 | 0.256 | 5.0 |
| | Straw/husk/jute stick | 39.0 | 45.7 | 0.004 | 42.9 | 53.0 | 0.001 | 43.6 |
| | Cow dung | 22.8 | 20.2 | 0.143 | 17.4 | 27.4 | <0.001 | 21.0 |
| | Others | 0.1 | 0.2 | 0.344 | 0.2 | 0.4 | 0.310 | 0.2 |
| Source of drinking water | Supply water | 0.4 | 1.3 | 0.053 | 1.5 | 0.9 | 0.256 | 1.0 |
| | Tube-well | 95.8 | 93.2 | 0.019 | 92.0 | 96.2 | 0.004 | 94.0 |
| | Others | 3.8 | 5.5 | 0.085 | 6.6 | 2.9 | 0.006 | 5.0 |
| Electricity coverage in the village | Yes | 85.4 | 86.9 | 0.246 | 85.5 | 90.6 | 0.010 | 86.5 |
| | No | 14.6 | 13.1 | 0.246 | 14.5 | 9.4 | 0.010 | 13.5 |
| Electricity coverage in the house | Yes | 80.8 | 80.7 | 0.398 | 80.8 | 80.4 | 0.392 | 80.8 |
| | No | 19.2 | 19.3 | 0.398 | 19.2 | 19.6 | 0.392 | 19.2 |
| Ownership of Toilet | Yes | 91.1 | 91.8 | 0.340 | 92.1 | 91.3 | 0.347 | 91.6 |
| | No | 8.9 | 8.2 | 0.340 | 7.9 | 8.7 | 0.347 | 8.4 |
| Type of Sanitation | *Pucca* toilet (water seal) | 20.5 | 12.2 | <0.001 | 10.5 | 16.5 | 0.002 | 14.8 |
| | *Pucca* toilet | 25.9 | 29.2 | 0.103 | 33.3 | 18.7 | <0.001 | 28.2 |
| | *Katcha* toilet | 52.5 | 54.7 | 0.244 | 52.0 | 61.7 | 0.001 | 54.0 |
| | Open field/others | 1.1 | 3.9 | <0.001 | 4.1 | 3.1 | 0.257 | 3.0 |

*Note:* Formal source: Govt. bank or Govt. co-operatives, and Nongovernment (MFI/NGO/Insurance).

Informal source: Local Money Lender (Mohajan/Private samitte) & Non-interest Loan (Relatives/Land Owner)

**Appendix 4**

*Landholdings Pattern of the Study Households*

| Types of land | Classification and statistics | Micro-credits type | | | Household type | | | Overall (2340) |
|---|---|---|---|---|---|---|---|---|
| | | Non-borrower (733) | Borrower (1607) | P-value | Formal (1158) | Informal (449) | P-value | |
| Homestead Land | No land (%) | 5.9 | 9.6 | 0.005 | 11.8 | 4.0 | <0.001 | 8.5 |
| | 1 to 15 decimals (%) | 81.2 | 78.3 | 0.110 | 77.0 | 81.7 | 0.049 | 79.2 |
| | 16-50 decimals (%) | 9.8 | 9.3 | 0.371 | 8.8 | 10.7 | 0.200 | 9.5 |
| | 50+ decimals (%) | 3.1 | 2.7 | 0.345 | 2.3 | 3.6 | 0.139 | 2.8 |
| | Mean (in decimal) | 10.58 | 10.83 | 0.385 | 10.96 | 10.52 | 0.362 | 10.75 |
| | SD (in decimal) | 21.96 | 19.99 | | 21.31 | 16.48 | | 20.64 |
| | Median (in decimal) | 5.00 | 5.00 | | 5.00 | 5.00 | | 5.00 |
| | IQR (in decimal) | 7.00 | 8.00 | | 7.00 | 9.00 | | 7.00 |
| Cultivable own land | Landless (%) | 66.0 | 68.8 | 0.161 | 68.8 | 68.6 | 0.398 | 67.9 |
| | 1 to 15 decimals (%) | 8.2 | 6.0 | 0.057 | 6.5 | 4.9 | 0.193 | 6.7 |
| | 16-50 decimals (%) | 8.0 | 8.2 | 0.394 | 8.3 | 8.0 | 0.391 | 8.2 |
| | 50+ decimals (%) | 17.7 | 17.0 | 0.366 | 16.4 | 18.5 | 0.241 | 17.2 |
| | Mean (in decimal) | 105.85 | 96.60 | 0.148 | 102.80 | 80.74 | <0.001 | 99.67 |
| | SD (in decimal) | 155.49 | 127.41 | | 139.72 | 86.86 | | 137.33 |
| | Median (in decimal) | 56.00 | 60.00 | | 60.00 | 60.00 | | 60.0 |
| | IQR (in decimal) | 103.00 | 100.00 | | 100.00 | 65.00 | | 100.00 |
| Cultivable leased-in or sharecropped | No land (%) | 80.8 | 70.1 | <0.001 | 71.0 | 67.7 | 0.172 | 73.4 |
| | 1 to 15 decimals (%) | 4.1 | 3.9 | 0.389 | 4.7 | 1.8 | 0.010 | 3.9 |
| | 16-50 decimals (%) | 3.4 | 7.3 | <0.001 | 8.8 | 3.6 | 0.001 | 6.1 |
| | 50+ decimals (%) | 11.7 | 18.7 | <0.001 | 15.5 | 26.9 | <0.001 | 16.5 |
| | Mean (in decimal) | 98.53 | 103.88 | 0.188 | 88.16 | 140.29 | <0.001 | 102.66 |
| | SD (in decimal) | 100.23 | 92.76 | | 85.03 | 99.75 | | 94.45 |
| | Median (in decimal) | 66.00 | 90.00 | | 60.00 | 120.00 | | 90.00 |
| | IQR (in decimal) | 121.00 | 120.00 | | 95.00 | 120.00 | | 120.00 |
| Pond land | Don't have (%) | 92.4 | 94.5 | 0.058 | 95.2 | 92.7 | 0.057 | 93.8 |
| | 1 to 15 decimals (%) | 6.8 | 4.4 | 0.021 | 3.7 | 6.2 | 0.036 | 5.2 |
| | 16-50 decimals (%) | 0.8 | 1.1 | 0.318 | 1.0 | 1.1 | 0.393 | 1.0 |
| | Mean (in decimal) | 6.83 | 9.79 | <0.001 | 11.19 | 7.42 | <0.001 | 8.65 |
| | SD (in decimal) | 7.32 | 11.11 | | 12.69 | 7.31 | | 9.89 |
| | Median (in decimal) | 5.00 | 5.00 | | 5.00 | 5.00 | | 5.00 |
| | IQR (in decimal) | 7.30 | 7.00 | | 11.80 | 7.00 | | 7.00 |
| Total land | Don't have (%) | 4.6 | 5.6 | 0.241 | 7.3 | 1.3 | <0.001 | 5.3 |
| | 1 to 15 decimals (%) | 49.2 | 40.5 | <0.001 | 40.1 | 41.6 | 0.343 | 43.2 |
| | 16-50 decimals (%) | 17.5 | 18.6 | 0.325 | 19.9 | 15.1 | 0.034 | 18.2 |
| | 50+ decimals (%) | 28.6 | 35.3 | 0.002 | 32.7 | 41.9 | 0.001 | 33.2 |
| | Mean (in decimal) | 68.58 | 75.84 | 0.178 | 73.14 | 82.40 | 0.135 | 73.55 |
| | SD (in decimal) | 134.09 | 114.46 | | 115.17 | 112.58 | | 121.01 |
| | Median (in decimal) | 15.00 | 25.00 | | 25.00 | 27.00 | | 21.00 |
| | IQR (in decimal) | 61.00 | 95.50 | | 87.00 | 115.00 | | 88.00 |

*Note:* SD=Standard Deviation; IQR= Inter Quartile Range

**Appendix 5**

*Productive Assets Possessed by Surveyed Households*

| Name of assets | Borrower (N = 1607) | | Non-borrower (N = 733) | | P-value | Overall (N = 2340) | |
|---|---|---|---|---|---|---|---|
| | HHs | Mean ± SD | HHs | Mean ± SD | | HHs | Mean ± SD |
| Cultivating equipment | 664 | 3.27 ± 2.27 | 311 | 3.05 ± 2.05 | 0.146 | 975 | 3.20 ± 2.20 |
| Livestock | 694 | 2.39 ± 1.51 | 287 | 2.73 ± 1.82 | 0.003 | 981 | 2.49 ± 1.61 |
| Rickshaw/van | 038 | 1.32 ± 0.66 | 015 | 1.40 ± 1.06 | 0.741 | 053 | 1.34 ± 0.78 |
| Auto rickshaw | 020 | 1.10 ± 0.45 | 016 | 1.00 ± 0.00 | 0.382 | 036 | 1.06 ± 0.33 |
| Sprayer | 029 | 1.17 ± 0.38 | 014 | 1.29 ± 0.61 | 0.433 | 043 | 1.21 ± 0.47 |
| Fishing net | 336 | 1.62 ± 0.94 | 127 | 1.74 ± 1.03 | 0.233 | 463 | 1.65 ± 0.96 |
| Bee box | 014 | 1.00 ± 0.00 | 002 | 1.50 ± 0.71 | 0.004 | 016 | 1.06 ± 0.25 |
| Sewing machine | 089 | 1.07 ± 0.25 | 035 | 1.06 ± 0.24 | 0.840 | 124 | 1.06 ± 0.25 |
| Motor (engine) | 041 | 1.17 ± 0.50 | 017 | 1.06 ± 0.24 | 0.392 | 058 | 1.14 ± 0.44 |
| Family business | 135 | 59377.78 | 057 | 104000.00 | 0.023 | 192 | 72625.00 |
| Others | 024 | 4.71 ± 8.09 | 020 | 2.30 ± 2.70 | 0.210 | 044 | 3.61 ± 6.30 |

*Note:* HHs = Households; SD = Standard Deviation

**Appendix 6**

*Possession of Durable Assets by the Study Households*

| Name of household assets | Micro-credits type (%) | | | Household type (%) | | | |
|---|---|---|---|---|---|---|---|
| | Non-borrower (733) | Borrower (1607) | P-value | Formal (1158) | Informal (449) | P-value | Overall (2340) |
| Radio | 2.9 | 1.4 | 0.052 | 1.6 | 0.9 | 0.225 | 1.9 |
| Television | 18.8 | 14.9 | 0.064 | 18.2 | 6.5 | <0.001 | 16.2 |
| Mobile phone | 85.8 | 91.7 | 0.001 | 91.5 | 92.2 | 0.360 | 89.9 |
| Electric fan | 71.2 | 69.1 | 0.285 | 73.4 | 57.9 | <0.001 | 69.7 |
| Almirah | 37.8 | 34.0 | 0.143 | 37.3 | 25.4 | <0.001 | 35.2 |
| Cookeries | 96.3 | 89.4 | <0.001 | 86.4 | 96.9 | <0.001 | 91.5 |
| Cutleries | 96.3 | 89.4 | <0.001 | 86.3 | 97.3 | <0.001 | 91.5 |
| Table/chair | 78.9 | 81.1 | 0.242 | 82.1 | 78.6 | 0.109 | 80.4 |
| Bed | 92.6 | 93.5 | 0.324 | 94.0 | 92.0 | 0.139 | 93.2 |
| *Chauki* | 94.5 | 93.5 | 0.302 | 92.7 | 95.8 | 0.030 | 93.8 |
| Drawing room furniture | 6.0 | 6.2 | 0.394 | 5.0 | 9.4 | 0.002 | 6.2 |
| Bicycle | 10.6 | 7.0 | 0.023 | 6.9 | 7.1 | 0.395 | 8.1 |
| Boat | 11.6 | 16.2 | 0.027 | 16.8 | 14.9 | 0.260 | 14.8 |
| Shallow tube-well | 19.9 | 20.9 | 0.361 | 20.9 | 20.9 | 0.399 | 20.6 |
| Deep tube-well | 0.5 | 1.6 | 0.086 | 1.1 | 2.7 | 0.026 | 1.2 |
| Watch | 25.5 | 29.9 | 0.086 | 31.1 | 26.7 | 0.089 | 28.5 |
| Shelf | 29.6 | 28.4 | 0.356 | 27.9 | 29.6 | 0.317 | 28.8 |
| *Alna* | 58.3 | 59.9 | 0.336 | 59.1 | 61.9 | 0.235 | 59.4 |
| Motorcycle | 0.0 | 0.4 | 0.162 | 0.5 | 0.0 | 0.129 | 0.3 |
| Others | 4.9 | 5.4 | 0.368 | 6.5 | 2.4 | 0.002 | 5.2 |

*Note:* Formal source: Govt. bank or Govt. co-operatives, and Nongovernment (MFI/NGO/Insurance).

Informal source: Local Money Lender (Mohajan/Private samitte) & Non-interest Loan (Relatives/Land Owner)

**Appendix 7**

*Comparison Between the National and Rural Level Main Household Indicators with their Significance Test*

| Indicators | National estimates | | Rural estimates | | Household survey |
|---|---|---|---|---|---|
| | % | Z-statistic | % | Z-statistic | % |
| Literacy rate | | | | | |
|   Both literacy rate | 65.6*** | 73.07 | 63.3*** | 67.28 | 32.0*** |
|   Male literacy rate | 67.8*** | 54.97 | 65.5*** | 50.64 | 32.9*** |
|   Female literacy rate | 63.4*** | 50.07 | 61.2*** | 46.34 | 30.1*** |
| Housing condition | | | | | |
|   Jhopri | 4.7 | 0.67 | 5.32* | 1.89 | 4.4 |
|   *Katcha* (Tin) | 84.3*** | -11.81 | 89.4*** | -5.98 | 93.3*** |
|   *Semi-pucca* | 11.1*** | 13.29 | 5.3*** | 6.15 | 2.4*** |
| Drinking water | | | | | |
|   Tap | 12.2*** | 16.47 | 2.1*** | 3.65 | 1.0*** |
|   Tub-well | 85.2*** | -11.84 | 94.9* | 1.90 | 94.0 |
|   Others | 2.8*** | -6.18 | 2.9*** | -5.71 | 5.0*** |
| Toilet facility | | | | | |
|   *Pucca* | 61.4*** | 17.76 | 53.3*** | 9.63 | 43.0*** |
|   *Katcha* | 35.4*** | -18.25 | 42.9*** | -10.45 | 54.0*** |
|   No toilet | 2.9 | -0.28 | 3.8** | 1.97 | 3.0 |
| Electricity connection | 75.9*** | -11.78 | 78.8*** | -8.88 | 86.5*** |
| Land holdings | | | | | |
|   Landless | 4.9 | -0.87 | | | 5.3 |
|   Marginal | 36.0*** | -7.06 | | | 43.2*** |
|   Moderate | 41.3*** | 22.24 | | | 18.2*** |
|   High | 17.3*** | -19.50 | | | 33.2*** |

*Note:* *** indicates that the difference is significant at 1% level, ** for 5%, and * for 10% level. The equality of two proportion test is used between national level estimates (HIES-2016) and author's survey estimates, as well as rural level estimates (HIES-2016) and author's survey estimates.

**Appendix 8**

*Knowledge and Perception on Micro-credits of Respondents*

| Statement of knowledge and/or perception | Number ($N = 2340$) | Percentage of total | Total in percentage |
|---|---|---|---|
| Knowledge about micro-credits benefit | | | |
| Yes | 2212 | 94.5 | 100 |
| No | 128 | 5.5 | |
| Trying for getting micro-credits benefit | | | |
| Yes | 2008 | 85.8 | 100 |
| No | 332 | 14.2 | |
| First attempt for getting micro-credits benefit with type | | | |
| Government organizations | 96 | 4.1 | |
| Nongovernment organizations | 1289 | 55.1 | |
| Local money lender | 374 | 16.0 | 85.8 |
| Non-interest loan | 56 | 2.4 | |
| More than one sources | 193 | 8.2 | |

| | | | |
|---|---|---|---|
| Second attempt for getting Micro-credits benefit with type | | | |
| Government institutions | 21 | 0.9 | |
| Nongovernment organizations | 38 | 1.6 | |
| Local money lender | 128 | 5.5 | 8.6 |
| Non-interest loan | 11 | 0.5 | |
| More than one sources | 3 | 0.1 | |
| Communication for getting Micro-credits benefit | | | |
| UP chairman | 12 | 0.5 | |
| UP member | 20 | 0.9 | |
| UP office | 804 | 34.4 | 58.60 |
| Government officer | 112 | 4.8 | |
| Relatives/neighbors/friends | 343 | 14.7 | |
| NGO | 78 | 3.3 | |
| Ask for money for giving Micro-credits benefit | | | |
| Yes | 91 | 3.9 | 59.00 |
| No | 1290 | 55.1 | |
| Micro-credits help to remove poverty | | | |
| Yes | 1413 | 60.4 | 66.10 |
| No | 134 | 5.7 | |

*Note:* MFI=Microfinance Institution; NGO=Nongovernment Organization; UP=Union Parishad

### Appendix 9

*Distribution of the Attitude of Borrowers on Micro-credits*

| Statements of attitudes | Formal sources (N = 1158) | | | Informal sources (N = 449) | | | Both sources (N = 2340) | |
|---|---|---|---|---|---|---|---|---|
| | Disagree | Neutral | Agree | Disagree | Neutral | Agree | Disagree | Agree |
| The price is rational | 56.9 | 12.1 | 31.0 | 88.4 | 4.2 | 7.3 | 65.7 | 24.4 |
| Amount of credits is sufficient | 46.5 | 14.1 | 39.4 | 57.2 | 4.7 | 38.1 | 49.5 | 39.0 |
| Duration of credits is sufficient | 55.5 | 15.0 | 29.4 | 58.8 | 6.7 | 34.5 | 56.4 | 30.9 |
| Settings are not rigid | 41.4 | 33.4 | 25.2 | 63.9 | 12.7 | 23.4 | 47.7 | 24.7 |
| Food safety increased | 13.9 | 32.5 | 53.6 | 31.8 | 12.0 | 56.1 | 18.9 | 54.3 |
| Income has augmented | 30.3 | 25.7 | 44.0 | 48.3 | 14.0 | 37.6 | 35.3 | 42.2 |
| Savings has amplified | 49.9 | 22.9 | 27.2 | 71.9 | 13.1 | 14.9 | 56.1 | 23.8 |
| Better access to education | 25.5 | 40.2 | 34.4 | 38.3 | 26.7 | 35.0 | 29.1 | 34.5 |
| Better access to health care | 21.8 | 27.4 | 50.9 | 26.3 | 12.5 | 61.2 | 23.0 | 53.8 |
| Micro-finance is helping you in better financial situation of your family | 24.7 | 25.3 | 50.0 | 33.2 | 14.5 | 52.3 | 27.1 | 50.7 |
| Help run the business | 21.3 | 35.1 | 43.6 | 28.7 | 21.8 | 49.4 | 23.4 | 45.2 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Employment opportunities have been increased | 27.5 | 26.9 | 45.6 | 47.7 | 16.3 | 36.1 | 33.1 | 42.9 |
| Local loans are easier than formals | 46.6 | 15.6 | 37.7 | 18.9 | 4.2 | 76.8 | 38.9 | 48.7 |
| Local lenders are more friendly than formals | 63.0 | 16.6 | 20.5 | 46.8 | 5.6 | 47.7 | 58.4 | 28.1 |
| Cost of local loans below to MFIs | 74.9 | 16.8 | 8.4 | 70.4 | 6.0 | 23.6 | 73.6 | 12.6 |
| Situations of local loans are easier than MFIs | 59.3 | 17.8 | 22.9 | 54.1 | 8.9 | 37.0 | 57.9 | 26.8 |

*Note:* MFIs = Micro-finance institutions.

**Appendix 10**

*Reasons of not Getting Micro-credits by Eligible Borrowers' of Haor Regions*

| Name of the reasons | Perception of non- loanee homes (%) | | | | | |
|---|---|---|---|---|---|---|
| | Household (N = 733) | Powerfully disagree | Disagree | No comment | Agree | Powerfully agree |
| Administrative problem | 579 | 2.3 | 23.6 | 26.9 | 12.6 | 13.6 |
| Restraint of budget | 577 | 11.7 | 21.8 | 25.9 | 11.6 | 7.6 |
| Fail to give inducement or entry fee | 575 | 12.7 | 37.8 | 17.3 | 6.7 | 4.0 |
| No partisan contact | 577 | 10.6 | 18.4 | 24.0 | 16.9 | 8.7 |
| Illiteracy about the program | 578 | 19.4 | 31.9 | 7.4 | 15.3 | 4.9 |
| Nepotism | 561 | 9.0 | 15.1 | 25.5 | 15.7 | 11.2 |
| Non-cooperation from public delegate | 576 | 2.5 | 26.3 | 13.1 | 25.9 | 10.8 |
| Non-cooperation from local lenders | 571 | 2.0 | 18.7 | 17.3 | 28.6 | 11.2 |
| Non-availability of NID | 573 | 39.4 | 25.4 | 9.4 | 2.7 | 1.2 |
| Absence of networking | 574 | 9.4 | 11.3 | 19.2 | 29.2 | 9.1 |
| Detachment from the institution | 569 | 9.0 | 35.6 | 6.8 | 21.6 | 4.6 |
| Unavailability -credits in the area | 442 | 25.5 | 28.2 | 3.7 | 1.1 | 1.8 |
| Unavailability of security | 388 | 2.6 | 19.6 | 11.9 | 13.8 | 5.0 |
| Misuse of credits | 384 | 2.3 | 14.3 | 12.0 | 17.7 | 6.0 |
| Biasness | 348 | 1.5 | 19.2 | 22.8 | 2.0 | 1.9 |
| Others | 207 | 1.1 | 1.9 | 16.4 | 2.0 | 4.9 |

*Note:* NID = National Identity Card.