

Income and Its Variability against Poverty: A Study on Char Women in Northern Bangladesh

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Abstract

The main focus of the study is to assess the income variability of char women through participation in the CLP programme in Bangladesh. To improve the status and empowerment of women is a central progress in global development; perhaps more importantly, the achievement of equitable treatment makes it crucial to represent women. The purpose of the present study is to determine whether the project of the Chars Livelihoods Programme leads to economically developed women in char society. Actually, the char area is apart from the mainland, and people suffer greatly from natural calamities in Bangladesh. All of these burdens fall on the women in a family. So, the study was conducted on char women in the riverine area of northwest Bangladesh. For taking an empowerment approach within a framework, CLP women beneficiaries and non-beneficiary women were considered for this study. In addition, secondary data were used to show the initiatives of the Chars Livelihoods Programme in those areas. However, the research findings showed that the empowerment status of women who are engaged in CLP activities increased compared to non-CLP women. The research findings also showed that, after the introduction of CLP, 60.8% of respondents became involved in IGA's practice. The findings also showed that CLP had a great impact on women's income. About 72.5% of the CLP women were in the medium income category, while non-CLP women were in the low category (70%). About 45% of respondents took credit from CLP. Most of the respondents (96.7%) of CLP beneficiaries received high to medium training. The analytical results of the findings offer strong support for the relationship of women's empowerment with household income, women's personal income, access to credit, training received, extent of participation in IGAs, and access to resources provided through CLP, which explained 60.9% of the total variance of women's empowerment. This study

highlights the significance of training received (29.1% contribution) to CLP women's empowerment, compared to 13.7% for non-CLP women. The above-mentioned findings indicate that the programme activities had a positive and significant influence on women's empowerment. The study also recommends that women build up their power against violence. However, the study findings will be valuable for extension workers, policymakers, and international donors in designing policies and programmes to improve women's present condition in char lands. The findings and recommendations provide valuable insights to develop organizations for involving more women to expand women's rights in char land.

Keywords

IGAs Practice, Income, Poverty, Char Livelihood Program, Empowerment, Bangladesh

1. Introduction

Bangladesh has an area of 1,47,570 sq-km and a population of 150 million (BBS, 2019). In Bangladesh, approximately 20.5% of the population continues to live below the poverty line (BBS, 2019). Almost 1 in 4 Bangladeshis (24.5%) of the population lives in poverty and 12.5% of the population lives in extreme poverty (World Bank, 2017). Paul & Islam (2015) mentioned that char land is a zone of multiple vulnerabilities. Moreover, it is also noted that around 80% of the char land inhabitants are actually ultra-poor (Islam & Samsuddoha, 2017). In the northern areas of riverine chars in Bangladesh, along with the Old Brahmaputra and the Teesta rivers, the major problems of the char landers are frequent shift and relocation, landlessness, acute poverty, epidemic diseases, and lawlessness—above all, these issues are further aggravated by severe natural disasters. All these factors affect the livelihood and wellbeing of the people of char dwellers. All of those chars and islands are not easily accessible, and women are beset with many problems and much suffering. Sarker and Arifin (2017) reported that the overall status of the char rural women is not satisfactory. They generally maintain a lower standard of living. They have relatively little participation in the decision-making process of their family affairs, which actually indicates the poor status of empowerment of the char women. According to Nadia (2020), a significant portion (41.7%) of women are victims of physical or sexual violence from their life partners and endure physical, emotional, and psychological wounds. In rural areas, the rate of women's lifetime partner violence was highest at 74.8%, compared to 54.4% in urban areas. Although women constitute almost half of the world population, in Bangladesh, although women constitute 49.47 percent of the total population, their social status has continued to remain quite low, particularly in rural areas (World Bank, 2021). According to The World Women report (2015), women face many challenges, especially in farm management; female-headed households are

between half and two-thirds the number of male-headed households. Like men, women take on the responsibility of human capital formation in the family and, hence, in building the nation and its destiny; but the status of women in our society is far below the expected level. Without developing women, the development process will become a farce. Swami Vivekananda realized that “There is no chance for the welfare of the world unless the condition of women is improved. It is not possible for a bird to fly on one wing”. We, therefore, should not think of true and total development while leaving women aside. For the betterment of the condition of women, it is necessary to empower them. However, in the new global economy, women’s empowerment has become a central issue for countries to be able to achieve development goals such as economic growth, poverty reduction, health, education, and welfare (Golla et al., 2011). In many settings, women bear particular physical insecurity, including sexual violence, when carrying out daily tasks linked to their livelihoods.

Women are poor not for their lack of ability to participate in the production process but for the lack of opportunity to participate in the production process (Papita, 2014). So, this urgently needs the creation of an environment in which the distribution of power and resources, the opportunity to engage in productive work, and opportunities to access education, medical care, and public services can move in favor of women. According to Stromquist (2015), individual and collective agencies are crucial in the development of women’s empowerment, which is associated with ability and choices.

Though Bangladesh has taken several initiatives to decrease the poverty percentage for developing the country, many issues hinder it. Involvement in income-generating activities can empower rural women to enjoy their ability to reform their lives. If women in rural areas are involved in income-generating activities, they can help their family members. It is observed that the women who are involved with income-generating activities and contributing to household income have better access to the family decision-making process compared to jobless char women. According to Rahman et al. (2012), the higher contribution of women to their family economy through IGAs results in higher control of decision-making, resulting in increased empowerment status. It is also observed that educated women have relatively better access to social and economic matters than illiterate women. Many rural women have the confidence to do something, but they often do not know how to act on it because most rural women lack the education and basic training. So when rural women wish to do something by themselves, they face numerous problems, such as lack of capital, resources, small business ideas, knowledge about the marketing process, and cooperation from their family members and society. Again, the traditional beliefs, attitudes, and practices of the society hinder women’s empowerment in rural areas as well as in chars. So it is essential to develop skills, technology-based education, and capacities of the char women to ensure economic and social sustainability of the char women. According to Sikira et al. (2019), economic empowerment approaches and interventions

usually focus on income-generating activities, which allow women to independently acquire their income. So, the economic empowerment of the char women is the prerequisite for ensuring sustainable development and pro-poor growth of the char dwellers (World Bank, 2011).

Chars Livelihoods Programmes provide an environment in which char people acquire the techniques to develop themselves out of poverty. CLP also takes some initiatives for women. In this way, women become learners, decision makers, self-established, and aware of their own life situations. By being involved in CLP activities, char women could gain more knowledge compared to other women who cannot get the support of CLP. Chars Livelihoods Programme has worked for char women by creating different income-generating activities. The research work will help to demonstrate the present improved condition of char livelihoods and help to take steps for the future sustainability of char lands in the river channel of Bangladesh. The scope of this exercise aims to generate a holistic picture of empowerment, not just what the programme was designed to achieve. Overall, the findings of this research work will be helpful to the extension personnel and policymakers to formulate new policies for increasing char women's empowerment in all sectors.

2. Problem Statement

Basically, floodplain topography and the tropical monsoon climate make the northern region of Bangladesh vulnerable to various natural calamities such as floods, riverbank erosion, drought, and cold waves, all of which occur more frequently and intensely than in other regions of the country (Paul & Routray, 2010; Paul et al., 2013). Amidst these compelling conditions, the local economy shows little diversification and is heavily dependent on agriculture, which yields only one or sometimes two annual harvests, in contrast with three crops per year in more fertile and benign parts of the country (Paul & Routray, 2010). In this setting, local employment remains limited from mid-September to mid-December. Besides, the landless and poorest people survive on agricultural wage labour; their opportunities and ensuing incomes drop in this period, and they are trapped in "monga" (Paul et al., 2013), a cyclical phenomenon of poverty and hunger, which is also termed seasonal poverty. Again, it was also noticeable that most of the roads in the char areas were earthen, and during the monsoon, they faced difficulties traveling on the muddy roads. Only boats are used to communicate with the char from the Sadar Upazila. The public transport system was very poor, and it was impossible to use personal vehicles because of the poor economic conditions. Environmental hazards such as excessive rain and floods, as well as social insecurity like theft and destruction of crops, increased the risk for agricultural products, which made women reluctant to conduct IGAs. In those cases, women play a major role in providing livelihood support to sustain families. They engage themselves in different IGA activities, because the burden of survival and livelihood often falls on women, particularly those living vulnerable lives. But what about their empowerment status in the fragile environment?

Improving the status and empowerment of women is central to progress in global development; perhaps more importantly, for the achievement of equitable treatment, it is crucial to represent women. The purpose of the present study is to determine how the project of the Chars Livelihoods Programme leads to the development of empowering women in a society.

3. Objectives of the Study

The main objective of this study was to assess the empowerment of char women through participation in the CLP programme.

The following specific objectives were considered for this study:

- To assess the extent of participation of the char women in different income-generating activities introduced by CLP;
- To measure women's empowerment status through participation in IGAs programmes introduced by the Chars Livelihoods Programme;
- To measure women's contribution of personal income to their household;
- To identify the factors associated with women's empowerment.

4. Research Methodology

4.1. Population and Sampling Technique of the Study

In order to obtain the desired sample, a multistage random sampling procedure was employed to form the groups from the villages. At first, two districts were selected purposively from the northern region of Bangladesh, because the first phase of the Chars Livelihoods Programme (CLP) worked with Gaibandha, Kurigram, Bogra, Sirajganj, and Jamalpur districts in the northern region of the country. Among the five districts, the percentage of people below the poverty line was higher in Kurigram, Gaibandha, and Jamalpur districts. It is reported that the hardcore poverty (HCR upper) of Gaibandha district was 46.7%, and it was 70.8% in the case of Kurigram district (*Poverty Map, 2016*). It was also reported that among the seven upazilas of Gaibandha, the highest poverty was in Sundarganj upazila and it was 47.6%. Similarly, among the upazilas of Kurigram district, poverty was highest in Chilmari upazila and it was 73.5%. Considering this poverty scenario, the two upazilas, namely Sundarganj and Chilmari, were selected from the two selected districts. At a later stage, two unions were selected purposively after considering research cost, population covered, time frame, and availability of transportation from each of the selected upazilas of Gaibandha and Kurigram districts. The unions were Horipur and Kanchibari from Sundarganj upazila, and Chilmari and Raniganj from Chilmari upazila. Then one village from each union was randomly selected. The selection of the respondents was the last stage. At this stage, a list of CLP women beneficiaries and non-beneficiary women was considered as the population.

To distribute the population fairly and equally in all selected areas, the researcher followed a sub-sampling procedure for data collection. It is the procedure of data collection by reducing the data size in two or more stages at successive

levels of observation. Based on the statistical view, a sub-sample is a sample of a sample. At first, from the 1440 population, the researcher randomly selected 12% of the sample as a representative of the population. Thus, the sample size for this study was 240. Finally, 60 respondents were selected randomly from each village. A reserve list for 12 respondents was also made from the selected areas to make up for the absence of any respondent.

4.2. Research Design

The research design is intended to provide an appropriate framework for a study. This study employed a quantitative research approach. The design of the study is a post-test with control group design. In this research, the researcher selects two groups: one is the control group and the other is the experimental group. These two groups are expected to be comparable as far as possible in every respect. The experimental group receives the intervention, while the control group does not. The design helps to understand the effect of a programme clearly and helps to properly analyze the results. It is the process of identifying the change properly among the participants of the two groups after the intervention of a programme.

4.3. Data Collection Instrument

Depending on the research, it is very important to construct an instrument for collecting data. It depends on the research plan and research participants. In this study, the researcher selected a structured questionnaire, according to the research objectives, to collect data directly.

An interview schedule was divided into two sections. Section-A deals with respondents' socio-economic characteristics of the study, which were treated as the independent variables of the study as well. This section contains fourteen (14) items, namely: age, marital status, personal education, household size, farm size, household income, women's personal education, association with CLP, cooperation of CLP personnel, access to credit, training received, access to resources, extent of participation in IGAs introduced by CLP, and problems faced by rural women in working with CLP.

Section-B investigated the dependent variables of the study. To measure women's empowerment, the researcher selected some statements with items according to the studies by Lombardini (2017) and Lombardini (2018). There were three levels of change in empowerment with fourteen items for measuring women's empowerment. The questionnaire was constructed in English, but the Bangla version of the questionnaire was used for data collection considering the respondents' literacy level.

4.4. Data Collection Procedure

For the collection of primary data, personal interviews with the char women were conducted. However, before preparing the interview schedule and selecting issues associated with empowerment status and participation in IGAs, four Focus Group

Discussions (FGDs) were conducted with the char women from the selected vil- lages. Additionally, Key Informant Interviews (KII) were conducted with DAE and CLP officials, taking the same issues into consideration. The pre-testing of the interview schedule was carried out with 12 respondents under actual field condi- tions from the target population. As per the list taken from CLP and union pari- shad, the researcher contacted randomly selected women with the assistance of SAAOs and CLP field workers from the concerned areas. In this study, the re- searcher adopted face and content validity by measuring the content validity of the instruments. To measure external and internal consistency, stability, and equiv- alence, the researcher determined the reliability of the instruments. In this study, the researcher conducted a test-retest procedure for measuring the reliability of the research instruments, which compared two tests to determine how reliable they were.

4.5. Women’s Empowerment

Women’s empowerment is put into operation on the basis of three-dimensional changes (i.e., personal changes, relational changes, and environmental changes) (Oxfam GB Framework, 2017). Each of the dimensions contains a range of indi- cators. These indicators are intended to represent the characteristics of the women in the socio-economic context under analysis.

The three dimensions of women’s empowerment as stated by Lombardini (2017) are listed below:

- 1) Women’s personal change;
- 2) Relational change and;
- 3) Environmental change.

Each of the dimensions consists of the following indicators.

Women’s Empowerment Index

Personal Change (6)	Relational Change (6)	Environmental Change (2)
<ul style="list-style-type: none"> • Self-confidence • Knowledge and awareness on women rights • Opinion and attitude on women’s economic role • Non acceptance of GBV • Personal autonomy • Access of savings 	<ul style="list-style-type: none"> • Group participation & Influencing a community • Ability to make decision in political sphere • Control over household assets • Participation and ability in decision making • Contribution in household income • Experience of GBV 	<ul style="list-style-type: none"> • Safety of movement • Social norms and stereotypes of women’s economic role

To measure an indicator, a sufficient number of items were incorporated into the questionnaire, and respondents were asked to give their responses to each item. The responses of a respondent were recorded as dummy (1 for agreement

and 0 for disagreement). Under the three dimensions, there were a total of 14 indicators, and finally, a total of 70 items were taken for all of the 14 indicators. Finally, the women's empowerment index was prepared by combining the summations of all the scores for all of the 70 items. Thus, the women's empowerment index of a respondent ranged between 0 and 70, where 0 indicates no empowerment and 70 indicates the highest level of empowerment. This procedure was followed for both CLP women and non-CLP women.

5. Results and Discussion

The analysis of the study expressed that more than half (65.1%) of the respondents had a medium extent of participation in different IGAs, while 14.2% had a great extent of participation. Only 12.1% of them had a low extent of participation in IGAs. However, 8.3% of the respondent women had no participation in IGAs. The above-mentioned data indicate that the majority of the respondents (79.3%) had a medium to great extent of participation in IGAs. Similar findings were reported by Hasan (2015). Alvarez and Lopez (2013) have noted that "without the active participation of women in IGAs, sustainable development and efforts for environmental protection cannot succeed".

Table 1 revealed that more than half (60.8%) of the respondents of CLP women had medium participation in income-generating activities. Most of the respondents (88.3%) of CLP beneficiaries had medium to high participation in IGAs. In the case of non-CLP women, the highest percentage of respondents also had medium to low participation (83.3%) in different activities. The result of the paired t-test also indicates that there is a significant difference between the two groups on the basis of their extent of participation in IGAs.

The Sixth Five Year Plan (2011-2015) of the Government of Bangladesh, which is the national level mid-term development plan, is committed to transforming Bangladesh into a middle-income country by 2021 (also known as Vision 2021). According to this five-year plan, it has given top priority to involving women in political and economic activities as a cross-cutting issue with women's empowerment.

5.1. Women's Participation in Various Income-Generating Activities

Participation of rural women in economic activities is crucial for improving their economic empowerment. Keeping this reality in mind, the researcher assessed the extent of participation of the char women in various IGAs. Different GOs and NGOs are working in char areas to involve women in different IGAs. Data related to women's participation in IGAs is presented in **Table 1**.

In Bangladesh, agricultural practices are treated as the major IGAs practices in rural areas. The findings of the study show that women in char areas participate in both agricultural and non-agricultural work. **Table 1** shows that their participation in post-harvest operations is higher than in pre-harvest activities (Haque,

2010). This may be because women spend most of their time doing household work, so they prefer to do work when the crops are harvested. **Table 1** also shows that CLP women's participation in crop fields is higher in both pre-harvest and post-harvest operations than that of non-CLP women.

Table 1. Summary of women's participation in various IGAs practices.

Extent of IGAs	CLP women (n ₁ = 120)					Non-CLP women (n ₂ = 120)				
	F	O	R	N	IS	F	O	R	N	IS
1) Pre-harvest operation in crop field	66 (55.0)	20 (16.67)	2 (1.67)	32 (26.66)	240	43 (35.83)	19 (15.83)	18 (15.0)	40 (33.33)	185
2) Post-harvest operation in crop field	88 (73.33)	6 (5.0)	4 (3.3)	22 (18.33)	280	72 (60.0)	10 (8.33)	0	38 (31.67)	236
3) Homesteads gardening	69 (57.5)	14 (11.66)	24 (20.0)	13 (10.83)	259	58 (48.33)	16 (13.33)	22 (18.33)	26 (21.66)	228
4) Poultry and livestock rearing	73 (60.83)	26 (21.66)	9 (7.5)	12 (10.0)	280	33 (27.5)	24 (20.0)	27 (22.5)	36 (30.0)	174
5) Goat rearing	56 (46.67)	14 (11.67)	12 (10.0)	38 (31.67)	208	42 (29.16)	2 (1.67)	26 (21.67)	50 (41.67)	156
6) Small business	0	0	2 (1.67)	118 (98.33)	2	0	0	0	120 (100)	0
7) Wage labor	2 (1.67)	66 (55.0)	6 (5.0)	46 (38.33)	144	52 (4.16)	14 (11.66)	16 (13.33)	38 (31.67)	200
8) Handloom activities	0	0	2 (1.67)	118 (98.33)	2	0	0	6 (5.0)	114 (95.0)	6

Note: Here, F = Frequently, O = Occasionally, R = Rarely, N = No, and IS = Index Score; numbers in parentheses indicate percentages.

Though both groups participated in homestead gardening, CLP women's participation in homestead gardening is relatively higher than that of non-CLP women. According to the study by [Al-Amin et al. \(2011\)](#), the majority of the char women were involved in homestead vegetable gardening. This is because most houses in char areas have some bare areas around the yard. Rural women use this area to grow different types of vegetables for their family's consumption. Sometimes, they sell vegetables and fruits to meet their family's needs.

However, CLP women are more active in poultry and livestock rearing than non-CLP women. Similar findings were reported by [Shameem \(2018\)](#). Both groups participate in goat rearing. Goats are easy to raise in char grazing areas. They eat the green grasses of dry land as their food. Findings show that very few of the CLP women are involved in small businesses, because on the one hand, they lack cap-

ital. On the other hand, it is difficult to carry goods across the river. However, non-CLP women were never engaged in small business.

Findings also show that both groups of women in char participate in wage labour, but participation in wage labour among non-CLP women is higher than that among CLP women. This is because most of the char families are poor. They always suffer from a food crisis. To meet their family demands, most of them are involved in wage labour by extending their working hours. However, nowadays CLP women in char are showing more interest in agricultural work. This is because sometimes they feel pay disparity with males.

Like agricultural activities, rural women's participation in non-agricultural activities is increasing day by day. However, the findings of the study reveal that very few CLP women and non-CLP women show interest in hand-loom activities.

Data contained in **Table 1** also indicates that poultry and livestock rearing with post-harvest operations in the crop field is the primary source of income practiced by CLP women in char. This is because almost every household in the char area has some birds as pets. Again, the Chars Livelihoods Programme had a project to supply poultry and livestock to poor women for rearing as a source of income. The second-ranked IGA practice is homestead gardening, which is followed by pre-harvest operations in the crop field, also one of the sources of income for CLP women. In contrast, most non-CLP women are involved in post-harvest operations in the crop field, which is the highest-ranked income source, followed by homestead gardening. Again, wage labour is ranked third as a source of income practiced by non-CLP women. Non-CLP women are also involved in pre-harvest operations in the crop field, which is ranked as the fourth income source in char. (Figure 1)

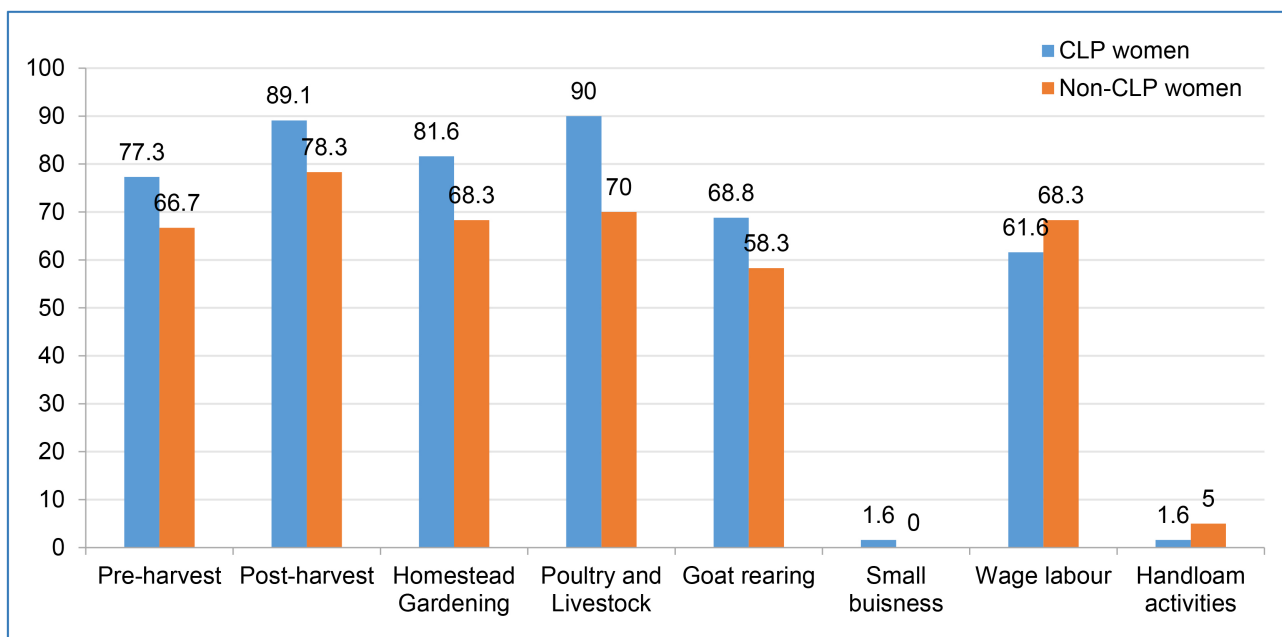


Figure 1. Differences between CLP and non-CLP women in relation to their extent of participation in IGAs.

However, the participation percentage in IGAs of CLP women was higher than that of non-CLP women in every source of income in the char area. This is due to the fact that CLP women received various skill development training from CLP, which increased their income as well as their interest in participating in IGA practices.

5.2. Present Economic Condition of Women in Their Families of Char Areas in Bangladesh

Women in the rural areas mostly earn some amount of money through participation in various IGAs. It was found that char women in the study areas also participate in various IGAs like crop production (including post-harvest activities), homestead gardening, goat and poultry rearing, etc. These sorts of participation in IGAs have a direct contribution to earning income of the women. Data related to the personal income of the char women through participation in IGAs is shown in **Table 2**.

Table 2. Women's personal income from participation in various IGAs.

Income-generating activities	Average income (000 BDT)	
	CLP women (n ₁ = 120)	Non-CLP women (n ₂ = 120)
<i>IGA-wise income scenario</i>		
1) Crops (pre-harvest and post-harvest operations)	11.9	8.4
2) Poultry and livestock rearing	9.2	3.35
3) Homestead gardening	3.43	3.50
4) Goat rearing	1.92	1.43
5) Small business	0.16	0
6) Wage labour	1.54	2.06
7) Handloom activities	0.17	0.45
All average	26.21	19.56
t-value	1.903 (0.099)	

Data contained in **Table 2** reveals that the average income of CLP women is 26.21 thousand takas, while the average income of non-CLP women is 19.56 thousand takas. The average income of CLP women was found to be higher compared to non-CLP women, which was statistically significant with a t-value of 1.903. **Table 2** also shows that the major income of the char women comes from pre-harvest and post-harvest operations in the crop field (20.3 thousand taka). However, the average income of the CLP women was found to be higher (11.9 thousand taka) compared to that of non-CLP women (8.4 thousand taka). The next highest share

of income for the CLP women came from poultry and livestock rearing (9.2 thousand taka). This is because they attended several training programmes offered by CLP to manage poultry and livestock farming by the char women. In addition, CLP women also received a significant amount of credit from CLP to buy poultry birds and cattle. Moreover, they also enjoyed 18+ (eighteen) months' stipend facilities for rearing livestock. All these technical and financial supports contributed to improving the income of the CLP women through participation in livestock and poultry farming. Accordingly, homestead gardening and goat rearing activities contributed next to livestock and poultry rearing in the personal income of the respondents' women.

Table 2 also shows that CLP women earned the smallest amount (0.16 thousand taka) from small businesses, while the income from the same small business was nil for the non-CLP women. Actually, the micro-credit programme of CLP has a positive influence on increasing the personal income of the CLP women compared to non-CLP women.

5.3. Women's Contribution to Household Income

Women's extent of participation in IGAs has an influence on contributing to the household income of the women. The relationship between women's personal income and their contribution to household income is shown in **Figure 2**, which indicates that women's empowerment to some extent depends on their contribution to family income.

The majority of the respondents (99.1%) among the CLP women participated in various IGAs, and the majority of them (88.3%) contributed to their household income. On the contrary, only 84.1% of the non-CLP women took part in IGAs, and only 30% of them contributed to their household income.

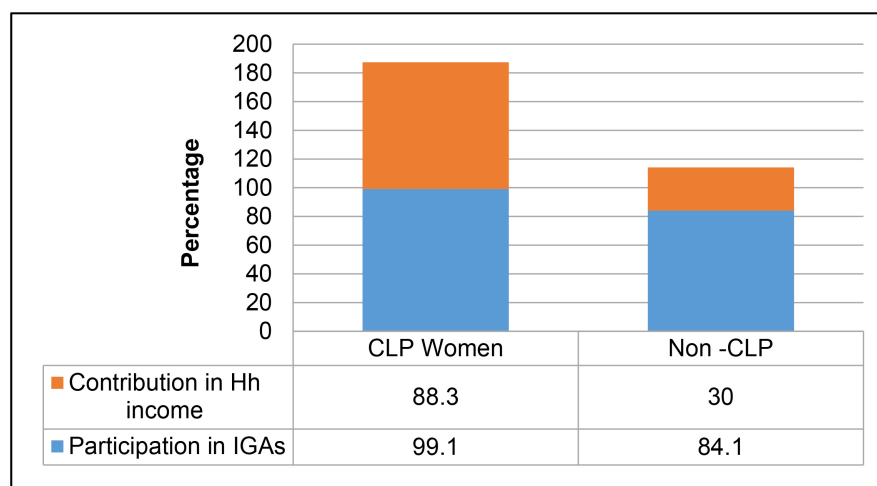


Figure 2. Percentage of the respondents contributing to their household income.

The findings of the study also noted that the women who engaged in IGAs could contribute to their household income through participation in crop production,

poultry and livestock management, and homestead gardening. These findings of the study are supported by a study of Roy & Haque (2017), which estimated that the women's contribution to household income in rural areas was estimated at about 43.52% of total income through participation in crop production, post-harvest activities, poultry rearing, management of livestock, and fisheries.

5.4. Contribution of Income to Change Women's Status

In Bangladeshi culture, women participate in the decision-making process jointly with their family members. Most of the women cannot take part in the family decision-making process. Based on their ability to participate in the family decision-making process scores of the respondents were classified into four categories: no ability (0), low ability (1 - 3), medium ability (4 - 6), and high ability (above 6). The distribution of the respondents according to their ability in the family decision-making process is shown in Table 3. Data contained in Table 3 expresses that more than one-third (38.3%) of the respondents had medium ability to take part in the family decision-making process and 35.5% of the respondents had poor ability to take part in the family decision-making process. Only 25% of respondents had a better ability to take part in the family decision-making process. The above-mentioned data indicate that most of the respondents (74.8%) had medium to poor ability to take part in the family decision-making process in char. Similar findings were found by Lassi et al. (2021).

Table 3. Distribution of the respondent women based on their ability to participate in family decision-making process.

Categories	CLP Women (n ₁ = 120)			Non-CLP Women (n ₁ = 120)			All women (n = 240)		
	No.	%	Mean ± SD	No.	%	Mean ± SD	No.	%	Mean ± SD
No ability (0)	2	1.7		1	0.8		3	1.3	
Poor ability (1 - 3)	20	16.7	3.25 ± 0.79	65	54.2	2.49 ± 0.61	85	35.5	4.4 ± 2.39
Medium ability (4-6)	44	36.7		48	40		92	38.3	
Better ability (>6)	54	45		6	5		60	25	

Table 3 also represents the categories and distribution of CLP women and non-CLP women according to their ability to take part in the family decision-making process. In the case of CLP women, the highest proportion (81.7%) of the respondents had high to medium ability to take part in the family decision-making process. And 16.7% of respondents had a low ability to take part in the family decision-making process. Only 1.7% of women had no ability to take part in the family decision-making process.

On the other hand, the highest proportion, 94.2%, of the respondents of non-CLP women had low to medium ability to take part in the family decision-making process. Only 5% of women had high ability to take part in the family decision-

making process. 0.8% of women had no ability to take part in the family decision-making process.

Table 3 estimates that the ability of CLP women is higher than that of non-CLP women to take part in the family decision-making process. This was possible because some facilitating factors enabled CLP women to participate in the family decision-making process. The factors are the level of education, women's awareness, and participation in IGAs, which contribute to women's participation in the family decision-making process (Debnath, 2019).

He also suggested that income is one of the important factors in increasing the social status as well as the family status of a woman. For better understanding, the relationship between women's personal income and their decision-making process is shown through crosstab analysis. **Table 4** reveals that participants with low income are more likely to have less decision-making ability. When income increases, women's decision-making ability also increases. **Table 4** also shows that most of the respondents who have medium and high incomes have better ability to take part in the family decision-making process. So, it can be said that women's personal income influences women to take part in family decisions.

Table 4. Crosstab between the personal income of the women and their ability to take part in the family decision-making process.

Personal income	Decision-making ability				Total
	No ability (0)	Poor ability (1-3)	Moderate ability (4-6)	Better ability (>6)	
No income (0)	18	7	2	0	27
Low income (up to 5K)	45	76	60	5	186
Medium income (6 - 0K)	0	2	4	11	17
High income (>10K)	0	2	2	6	10
Total	63	87	68	22	240

In the char, most women are engaged in IGAs practice. Some of them contribute to their family income and can also take part in the family decision-making process. **Table 5** shows the differences between CLP women and non-CLP women in participation and ability in the family decision-making process on the basis of the following issues. Data contained in **Table 5** shows that the highest proportion (83.3%) of the CLP women take part in making decisions regarding the selling of livestock. In contrast, most of the non-CLP women participate in deciding how much of the crops harvested should be kept for household consumption. **Table 5** also clearly exhibits that CLP women's participation in family decisions is greater than that of non-CLP women in all the above decision-making issues. Similar findings were found by Islam (2018) in their respective study.

This is because the core participants of the Chars Livelihoods Programme were

women (Pritchard et al., 2015). Thus, microcredit provided them with loans and also helped them learn how to invest the loans (World Bank, 2013). Sometimes, they invested the loans to purchase livestock. Again, the CLP project also gave them the facilities to rear livestock (Siddiki et al., 2014). Therefore, their spouse asks for their decision in case of borrowing loans, how she invests money, or about purchasing and selling livestock which she buys for IGAs. On the other hand, as she contributes to her family income, decisions on crop and food consumption for her household also depend on her opinion as women were members of CLP, the concerned CLP personnel usually communicated with the women to build their awareness about children's education and also about their rights in society. Thus, it is easy for CLP women to take part in making decisions about children's education and handling properties in a family.

Table 5. Women's participation and ability in the family decision-making process.

Statements	CLP Women (n ₁ = 120)		Non-CLP women (n ₂ = 120)		All Women (n = 240)	
	No.	%	No.	%	No.	%
1) How to invest money	73	60.8	27	22.5	100	41.7
2) Purchasing of livestock	95	79.2	37	30.8	132	55
3) Selling of livestock	100	83.3	63	52.5	163	67.9
4) How much of the crops harvested should be kept for consumption in the household?	89	74.2	66	55	155	64.6
5) Household work and care of a person	92	76.7	60	50	152	63.3
6) What food to buy and consume	75	62.5	45	37.5	120	48
7) Decision about loan to borrow	67	55.8	30	25	97	40.4
8) Education and marriage of children	58	51.7	19	15.8	77	31.3
9) Decision about the transfer of property	17	14.2	5	4.2	22	9.2
10) Staying with parents together at the same home for a long time	29	24.2	10	8.3	40	16.6

5.5. Women's Empowerment in Char Areas

Women's empowerment scores of the respondents ranged from 0 to 70, where the observed range was 0 - 60, with a mean of 30.3 and a standard deviation of 10.79. Based on their empowerment scores, the respondents were classified into three categories: low empowerment (0 - 25), medium empowerment (26 - 50), and high empowerment (above 50). The distribution of the respondents according to their empowerment is shown in **Table 6**.

Table 6. Empowerment categories of the respondents' women. Possible score: 0–70; Observed score: 0–60.

Categories	All women (n = 240)		CLP beneficiaries (n ₁ = 120)			Non-CLP women (n ₂ = 120)		
	No.	%	No.	%	Mean ± SD	No.	%	Mean ± SD
Low empowerment (0–25)	74	30.8	7	5.8		67	55.8	
Medium empowerment (26–50)	159	63.3	106	88.3	37 ± 8.7	53	44.2	23.6 ± 8.4
High empowerment (>50)	7	2.9	7	5.8		0	0	

Data contained in **Table 6** expressed that more than half (63.3%) of the respondents had medium empowerment, while one-third (30.2%) of the respondents had low empowerment. Only 2.9% of respondents had high empowerment. The above-mentioned data indicate that most of the respondents (94.1%) had medium to low empowerment in char. **Paul et al. (2016)** also found similar findings in their respective study. **Table 6** presents the categories and distribution of CLP women and non-CLP women according to their extent of empowerment. In the case of CLP women, the highest proportion, 88.3%, had medium empowerment. Only 5.8% of women had low and high empowerment, respectively.

Table 6 also indicates that the highest proportion of the respondents, 55.8%, for Non-CLP women had low empowerment. However, 44.2% of women had medium empowerment. Among them, none had high empowerment.

These estimates suggest that most of the women who were involved in the programme had medium empowerment (88.3%), compared with non-CLP women who scored on average 55.8% and had low empowerment. Similar findings were found by **Sarker et al. (2017)** in their respective studies.

Table 7 presents the categories and distribution in the three levels of change of women's empowerment. In the case of the personal level of change of CLP women, more than half (62.5%) of the respondents had a medium personal level of change, while one-third (31.7%) had a high personal level of change and 5.8% had a low personal level of change. For non-CLP women, less than half (49.2%) of the respondents had a medium personal level of change, while a similar proportion (47.5%) had a high personal level of change and 3.3% had a low personal level of change. These estimates suggest that most women who were involved in the programme had a medium to high personal level of change (94.2%), compared with CLP non-beneficiary women, who, on average, scored 96.7% as having a low to medium personal level of change.

Table 7 also presents the categories and distribution in the relational level of change of women empowerment. In the case of CLP women, the majority (87.5%) of the respondents had a medium relational level of change, while 12.5% had a low relational level of change, and no respondents had a high relational level of change. For non-CLP women, the majority (85%) of the respondents had a low relational level of change, while only 15% had a medium relational level of change,

and no respondents had a high relational level of change. These estimates suggest that most women who were involved in the programme had a medium to low relational level of change, compared with non-CLP women who, on average, had a low to medium relational level of change.

Table 7. Distribution of the respondents according to level of change.

Level of change	Categories	CLP women (n ₁ = 120)				Non-CLP women (n ₂ =120)			
		No.	%	Mean	SD	No.	%	Mean	SD
Personal Level of Change	Low (1 - 9)	7	5.8			59	49.2		
	Medium (10–19)	75	62.5	2.22	0.55	57	47.5	1.54	0.56
	High (>19)	38	31.7			4	3.3		
Relational Level of Change	Low (1 - 9)	15	12.5			102	85		
	Medium (10–19)	105	87.5	1.87	0.332	18	15	1.5	0.35
	High (>19)	0	0			0	0		
Environmental Level of Change	Low (1 - 5)	19	15.8			56	46.7		
	Medium (6 - 10)	88	73.3	1.87	0.33	59	49.2	1.57	0.57
	High (>10)	13	10.8			5	4.2		

In the case of the environmental level of change of CLP women, the majority (73.3%) of the respondents had a medium environmental level of change, while 15.8% had a low environmental level of change and 10.8% of respondents had a high environmental level of change. For non-CLP women, less than half of the respondents (49.2%) had a medium environmental level of change, while 46.7% had a low environmental level of change and only 4.2% of respondents had a high environmental level of change. These estimates suggest that most women who were involved in the programme had a medium to low environmental level of change (89.1%), compared with non-CLP women, 95.9% of whom also had a medium to low environmental level of change. However, most of the CLP women were in the medium category for environmental change, whereas the percentage of non-CLP women was approximately the same in the low and medium categories.

Figure 3 represents how the scores of the three levels of change disaggregate within CLP women and non-CLP women. The results of regression analysis indicate that 99.9% (Adjusted R² = 0.9993) of the variance of overall empowerment of CLP women could be explained by the three dimensions of empowerment, which were improved with the activities of the Chars Livelihoods Programme. The estimated regression analysis shows a linear relationship function that is:

$$Y = -4.3x + 20.917$$

On the other hand, 87.02% (Adjusted $R^2 = 0.8702$) of the variance of overall empowerment of non-CLP women could be explained by the three dimensions of empowerment. The estimated regression analysis shows a linear relationship function that is:

$$Y = -4.59x + 18.217$$

This is due to the participation of CLP women in all activities of the Chars Livelihoods Programme. The findings of the study are supported by a study of [Sharma and Saha \(2015\)](#), which also reported that participation of women in the employment area is a significant determinant in social upgradation, which impacts women's level of independence, living standards, and welfare of women.

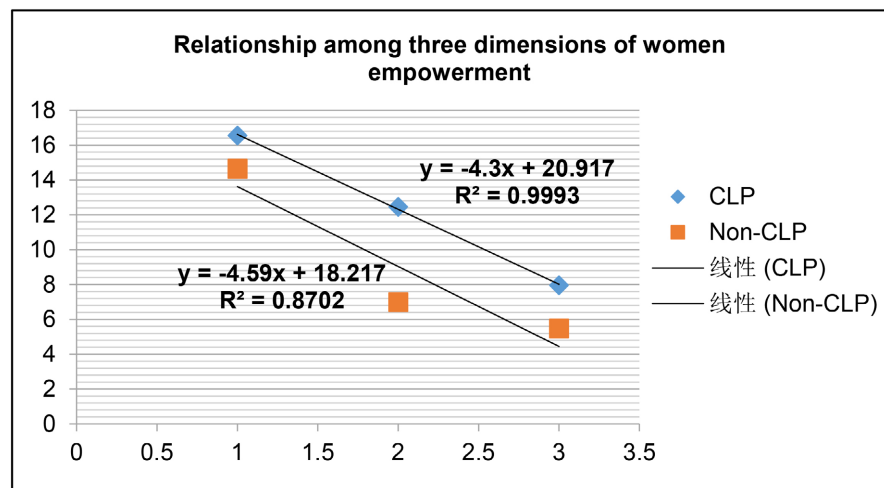


Figure 3. Relationship among the three dimensions of empowerment of CLP-women and non-CLP women.

5.6. Comparative Scenario of Women's Empowerment in Two Districts

It is clear that without the active involvement of women in income-generating activities, it is hardly possible to achieve the goal of eradicating gender-based poverty and to enhance women's empowerment. The Chars Livelihoods Programme is considered an important tool for empowering Char women with the view of enabling them to take part in economic activities. Therefore, this section of the study demonstrates the effectiveness of CLP programs between Gaibandha and Kurigram districts regarding the empowerment status of the char women ([Figure 4](#)).

Findings of the study reveal that the empowerment status of extremely poor women in these study areas improves slowly over time with participation in the CLP program. However, the magnitude of improvement is not yet satisfactory. The majority of the respondents are found to remain in the "medium extent of empowerment". Again, the results of the study also show that there is a significant difference in the empowerment status of the women from CLP and non-CLP in the two selected districts. In the case of non-CLP women, the extent of empowerment for both districts was low.

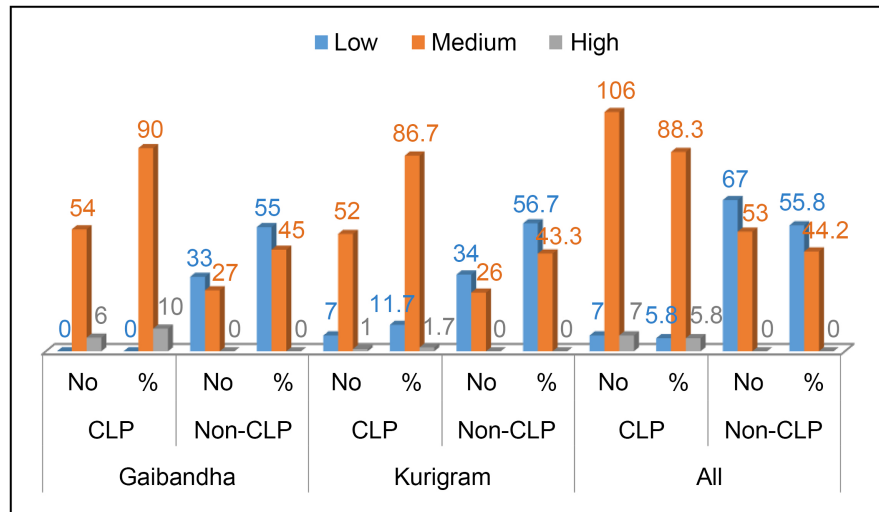


Figure 4. Graphical representation of women’s empowerment in Gaibandha and Kurigram districts.

It is evident from **Figure 4** that the majority of the respondents (90%) who are involved in the CLP programme had medium empowerment status in Gaibandha district. Only 10% had high empowerment. More than one-half (55%) of non-CLP women had low empowerment, and the rest 45% of women had medium empowerment.

Again, most of the respondents, about 86.7% of the respondents who are involved in the CLP programme, had medium empowerment status in Kurigram district. Only 11.7% of respondents had low and 1.7% of respondents had high empowerment. Here, also, more than half of the respondents of non-CLP women had low empowerment and the rest 43.3% of women had medium empowerment.

However, **Figure 4** reveals that, between the two districts, the empowerment status of the char women from Gaibandha district was relatively better compared to that of the Kurigram district.

5.7. Factors Contributing to Women’s Empowerment

Table 8 shows that the values of multiple determination coefficients for all fourteen independent variables of CLP women jointly explained 0.609% of variations. It indicates that 60% of the change in the dependent variable is due to the independent variables. Out of 14 independent variables, only six variables, namely household income, women’s personal income, access to credit, training received, extent of participation in IGAs, and access to resources, simultaneously explain 55.7% of the total variance of women’s empowerment. They have a positive and significant relationship with empowerment. Thus, it can be said that the analytical results provide strong support for the relationship between women’s empowerment of CLP women with household income, women’s personal income, access to credit, training received, and extent of participation in IGAs and access to resources.

Out of 14 independent variables, 12 variables were included in the regression of the non-CLP women group with their empowerment. This is because non-CLP women were not associated with char livelihood activities and did not receive any support from CLP personnel. Both unstandardized and standardized regression coefficient values were computed (shown in **Table 8**). It was evident from the results of the study that the values of the multiple determination coefficients R^2 for all twelve independent variables jointly explained 0.376% of the variations. This indicates that the 37.6% change in the dependent variable is due to the independent variables. The adjusted R^2 value of 0.302 indicates that only significant variables explained 30.2% of the total variance in women's empowerment. In this analysis, it was observed that out of the 12 independent variables, only 4 variables, namely, farm size, household income, access to credit, and training received, have a positive and significant relationship with empowerment. Only household size has a significantly negative relationship with women's empowerment.

Table 8. Comparison of R^2 value of CLP-group and non-CLP group.

Names of the variables	Model 1					Model 2				
	R^2	Adjusted R^2	F-value	t-value	Sig.	R^2	Adjusted R^2	F-value	t-value	Sig.
Age of respondents				0.526	0.600				1.773	0.516
Marital status				-0.522	0.603				0.652	0.689
Personal education				0.252	0.802				-0.401	0.889
Household size				-1.192	0.236				0.140	0.006
Farm size				-0.382	0.703				-2.814	0.005
Household income				2.741	0.007				2.881	0.001
Women's personal income				2.336	0.021				3.273	0.188
Association to CLP	0.679	0.557	11.55	0.748	0.456	0.376	0.302	5.607	1.325	0.014
Cooperation to CLP				0.521	0.604				2.498	0.131
Access to credit				2.607	0.010				1.524	0.043
Access to resource				2.155	0.033				2.048	0.245
Training received				2.873	0.005				1.170	0.268
Extent of participation				1.598	0.113				-0.113	0.516
Problems faced by the char women				-0.397	0.693				1.773	0.689
				$p = 0.000$						

From **Table 8**, it can be assumed that the independent variables of this study have adequate power for the explanation. **Table 8** also implies that the combined contribution of all the independent variables predicts the empowerment of CLP women significantly. Therefore, the regression model of this study explains a significant percentage of the total variation that occurs in the empowerment of CLP participants.

5.8. Contribution of the Variables to Women's Empowerment

Results of the study also showed that among the significant variables, training received has the highest contribution (29.1%) to change in women's empowerment. Next to women's personal income (13.6%) had the 2nd highest contribution, followed by extent of participation in IGAs (6.3%), household income (4.9%), and access to credit (2.6%).

The above-mentioned regression analysis (**Table 9**) shows a regression model for women's empowerment that is:

$$25.361 + 0.721X_{12} + 0.002X_7 + 0.487X_{13} + 7.15X_6 + 9.34X_{11}.$$

Table 9. Changes in the multiple R² for the entry of a variable into the stepwise multiple regression analysis models.

Model	Combination of variables	Coefficient of determination	Adjusted R ²	Increased in R ²	F-value	Sig.
X ₁₂	0.545	0.297	0.291	29.1	49.609	0.000
X ₁₂ + X ₇	0.661	0.436	0.427	13.6	45.282	0.000
X ₁₃ + X ₇ + X ₁₂	0.709	0.503	0.490	6.3	39.153	0.000
X ₆ + X ₁₃ + X ₇ + X ₁₂	0.745	0.554	0.539	4.9	35.781	0.000
X ₁₁ + X ₆ + X ₁₃ + X ₇ + X ₁₂	0.763	0.583	0.565	2.6	31.861	0.000

It is evident from the model that training, women's personal income, extent of participation in IGAs, household income, and access to credit were found to have a positive contribution to women's empowerment, and only the household size was found to have a negative contribution.

5.9. Discussion of Findings

The findings of the multiple linear regression analysis indicated that training, personal income, extent of participation, household income, and access to credit were significant at the 1% level of significance and showed a positive trend. If a one-unit change occurs in training of the respondents, the probability of empowerment increase is 29.1; for personal income, 13.6; for extent of participation, 6.3; for household income, 4.9; and for access to credit, 2.6.

Training on different events was found to have a significant contribution to women's empowerment. A person who receives training is able to solve anything.

To adopt a new practice in char, women should gain knowledge about it. Women with knowledge are likely to be able to make quick and appropriate decisions in a household crisis. Thus, possessing higher skills and knowledge by an individual is a crucial factor for the decision-making process in various aspects of household activities. It means that increasing training builds women's level of empowerment. [Kumar et al. \(2021\)](#) and [Didana \(2019\)](#) found similar findings in their respective studies.

The study found that women's personal income makes a significant contribution to women's empowerment. Women who add to all of the family income, as compared to half or less, tend to have higher decision-making power among their families and are more authorized to freely spend the money, and the current results are similar to the results obtained by [Kabeer \(2012\)](#). Financial freedom to work and earn a good income is the foremost criterion of empowerment ([Forhat, 2020](#)). Only when women add a larger amount of money to their family income do they become able to attain the position of decision-making at the family level, access to resources, a voice against violence, and empowerment. [Wei et al. \(2021\)](#) found similar findings in their respective studies.

Increasing women's income is the right way to empower women ([Islam & Mainuddin, 2015](#)) in the patriarchal society of Char Bangladesh. Economic empowerment through income-generating activities, on the other hand, reduces the poverty of the women themselves ([Islam, 2011](#)). [Kanak et al. \(2018\)](#) and [Rahman et al. \(2012\)](#) found similar findings in their respective studies. Similar findings were found by [Haque et al. \(2019\)](#) in their respective study.

The study found that household income has a significant contribution to women's empowerment. People with high family income tend to have higher family status. Women with high family income empower themselves. The correlation matrix showed a significant positive relationship between household income and women's empowerment. [Sohail \(2014\)](#) found similar findings in their respective studies.

In the study, it was found that access to credit has a significant contribution to women's empowerment. A person can take credit when he is in trouble. The landless char women have fewer opportunities to get credit due to having no valuable assets for security and the small number of credit institutions available in char areas. Their social networks are poor due to their remoteness. Access to technology for better livelihoods also requires money. If women have the opportunity to take credit and use it for a family crisis, their status in the family can be improved. On the other hand, she can use it for creating income-generating activities. [Le and Raven \(2015\)](#) revealed that microcredit helped many women in their businesses. Most of the microcredit organizations target women as they have limited access to credit and limited access to employment opportunities. Thus, women are low credit risks and more likely to share their credit benefits with their families, especially children. According to [Rahman et al. \(2012\)](#), micro-credit programmes tend to focus on promoting changes at the individual level. Microcredit helped to in-

fluence women's economic empowerment. *Debnath, Rahman et al. (2019)* have shown similar findings in their respective studies.

6. Conclusion

CLP women's participation in income-generating activities is satisfactory in char areas. The findings of the study showed that the extent of participation of the women in IGAs was substantially higher. In general, their participation was relatively high in vegetable cultivation, poultry, cattle, and goat rearing. The results also confirmed that the average annual family income of the CLP women who engage in IGAs was higher (26.21 thousand Tk.) compared to non-CLP women (19.56 thousand Tk.). It is also reported that the majority (88.3%) of the CLP women contributed to household income from their personal earnings through participating in various IGAs, while only 30% of the non-CLP women contributed to household income. Findings also revealed that involvement of CLP women in IGAs introduced by the Chars Livelihoods Programme increases their personal income and ultimately they can contribute to their household income compared to non-CLP women. The impact of IGAs on the income of char rural women and their livelihood outcomes is the success of livelihood strategies, such as more income, increased well-being, and reduced vulnerability. The result of crosstab analysis suggested that women's personal income can influence the women's decision-making process. CLP women have significant participation in family decision-making processes, especially in the case of selling and purchasing livestock, investing money, decisions on the consumption of crops, and decisions about household work. So it can be concluded that CLP plays a vital role in ensuring women's participation in the family decision-making process.

Findings also suggested that the empowerment status of women in Gaibandha district is better than in Kurigram district. The paired t-test revealed that the average difference in the women empowerment index was statistically significant, confirming an overall positive impact of the chars' livelihoods programme on women's empowerment.

The study explored some important factors, namely household income, women's personal income, access to credit, training received, extent of participation in IGAs, and access to resources, which explain the status of empowerment of the CLP women. However, these were found to be the influential factors explaining the status of women's empowerment in the case of non-CLP women. However, training received, women's personal income, extent of participation in IGAs, household income, and access to credit—all these factors need to be taken into consideration to enhance the empowerment status of the char women. Thus, the study suggested that the Chars Livelihoods Programme has a positive impact on women's empowerment.

The result of the study also showed that 94.6% of respondents in char areas faced medium to high level problems in char areas. It is clear from the findings that both CLP women and non-CLP women in char areas were faced with the

same types of problems.

7. Recommendations

Creating an environment for the participation of women in IGAs through enabling provisions for sufficient credit at low interest rates at the time of their requirement may play a positive role in improving the personal income of char women. Providing enough agricultural inputs (seeds, fertilizer, pesticides, vaccines) and nonagricultural inputs in a timely manner through regular governmental programs may assist the char women in the smooth running of their IGAs in a remote setting. In addition, more initiatives are needed to encourage char women's participation in IGAs through national economic and social policies. Rural women in the study areas had poor educational backgrounds, and they had difficulties in understanding the concepts behind new technologies and methods of education programs. Some important opinions of key informants about the strategy to overcome the obstacles regarding the livelihood of rural women are to: strengthen government programs for rural women, improve the infrastructure (roads, electricity, markets, educational institutes like schools, colleges), increase rural women's income wages and provide them training on GBV, imparting skills. Policy makers of relevant government agencies, donors, and other charity foundations need to take steps against the problems that are the threats to women's empowerment as well as charity improvement.

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Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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