Effect of Financial Entrepreneurship and Literacy Program on Women Empowerment: A Case Study in Khulna District

Md. Babul Islam, Md. Nuralam Hossain*, Md. Kamrul Islam, Abdur Rakib Nayeem, Mst. Nasrin Akter

Abstract—Women empowerment is a self-motivated, vibrant, and dynamic process and is closely related to women's literacy and entrepreneurship. This study explores the effect of financial literacy and entrepreneurship on women empowerment. However, the households and women who are living around Sundarban protected areas are disadvantaged and had no or limited literacy and financial management skills. This FELP training could help them make maximum use of resources and opportunities for enhancing their livelihoods. The study is composed of both qualitative and quantitative research approaches. The primary data were collected through a semi-structured questionnaire survey by the FELP beneficiaries. The study was conducted around one year after an accomplished FELP program to ascertain the degree of effectiveness of the program. We analyzed data using statistical software; Stata, and MS Excel. The findings revealed that 74% of the respondent of FELP beneficiaries was role-played positive attitude with their family, and 90.83% of women can update their business book, able to keep record daily income-expenditure. 81.67% of FELP beneficiaries get involve in various income generating activities outside at home contributing to their family. The Two-sample t-test shows a significant difference in empowerment score between the FELP and Non-FELP group (t = 6.06, p<0.000), which means the FELP beneficiaries were more likely to ensure the women empowerment. The regression results show that financial literacy significantly positively affects women's empowerment. Further, this interaction variable is different from zero, meaning that higher scores of women empowerment who were also the FELP beneficiary. The paper calls for women empowerment employing adequate financial literacy and entrepreneurship by studying the relationship between women empowerment and financial literacy inclusion.

Keywords — Financial Literacy, Women Empowerment, Financial Entrepreneurship, Khulna District

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1   INTRODUCTION

Southeast Asia has suffered immensely from climate change-related disasters. With the high density of population, the small islands and low-lying coastal areas are susceptible to storm surges, cyclones, waves, and rising sea level, and as a result, have limited capacity to adapt [1]. It is predicted that climate change has serious environmental, economic, and social effects on South Asia. Here, local farmers whose livelihoods largely depend on the use of natural resources are likely to withstand its adverse impacts [2]. According to predictions of global circulations models (GCM), global climate change will cause an average temperature increase in Bangladesh of $1°C$ to $1.4°C$ by 2030 and 2050 [3]. Meanwhile, Bangladesh is one of the most disaster-prone countries in the world due to its geographical settings [4, 5]. The south-western part of Bangladesh is extremely vulnerable to climate change because of riverbank erosion, recurring floods, cyclone, salinity intrusion, and tidal surge [6]. These natural calamities upset people's lives and adversely affect the entire ecosystem,

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including human beings, their shelters, or the resources essential for their livelihoods [7, 8]. The Khulna is a south-western coastal district of Bangladesh that is frequently hit by catastrophic natural hazards that damage the ecosystem and livelihoods. It locates the Dacope and Koyra on the south side of the district where Bay of Bengal and Sundarban ended the border; the geographical location makes it more vulnerable [9]. The world's largest Sundarban reserve forest (SRF) lies adjacent to the Upazilas [10]. The peoples of both Upazila, relatively poor and vulnerable, dependent on the Sundarban resources for their livelihood where still (60% to 70%) of the people live below the poverty line. The major income generating sources are fish collection, honey and crab collection, Nipa palm collection (Banglapedia, 2015). However, 70% of households and women within them living around Sundarban protected areas were disadvantaged and had no or limited literacy [11].

Women empowerment is important for developing countries because women are an important part of the society and their participation in economic and social activities, and their status and decision making in social activities, are relevant. The total population of Bangladesh is 148 million, among which 50 percent are female [12]. The poverty level of this country is 31.5% at the national level, 35.2% in the rural area, and 21.2% in the urban area [13]. Women in Bangladesh are deprived, particularly in rural areas where half of the population of Bangladesh is women. So without empowering women, keeping them out of mainstream development process and income-generating activities development would remain elusive [14]. Overpopulation pressure has resulted in rapid depletion and degradation of natural resources and biodiversity, threatening the survival of the livelihood of many rural people. From different sources, increasing anthropogenic pressure is causing gradual resource reduction from

depending on communities [15]. It is required to halt the destruction of the forest resources to providing alternative livelihoods to the dependent peoples.

One of the key objectives of the Climate Resilient Ecosystems and Livelihood (CREL) project funded by USAID is to provide alternative livelihood to the forest resource dependent peoples through diversified livelihood intervention. Among the intervention training, demonstration plots, financial and literacy program, savings and loan group functioning, handicrafts, backward and forward linkage of marketing channel are remarkable. The financial and entrepreneurship literacy program (FELP) of the CREL project is exclusively designed for disadvantaged women of the forest-dependent households (HHs) with a view to the empowerment of women and inclusion of development process. The FELP, a Non-formal education approach, with participatory learning sessions guided by women facilitators recruited locally and provided with intensive training. They attended the FELP, for two hours each day for six days a week in a 7-month course [11]. However, 70% of livelihood training beneficiaries were women. As many of the households and women within them living around protected areas were disadvantaged and had no or very limited literacy and financial management skills that could help them make maximum use of training and opportunities for enhancing their livelihoods [11]. According to literacy definition by UNESCO, which is being followed in the Sustainable Development Goal 4 (SDG4), literacy means smoothly reading, writing, and counting documents. So from the perspective of Bangladesh, it is vital to overcome to reduce poverty, income generation, and women empowerment.

The program teaches participants how to keep records, calculate costs, interest, and profits; how to manage a budget, revolving credit and savings funds; the value of the credit for capital investment; how to access microcredit; and how to calculate principal and interest. Besides, the training covers different natural resource management (NRM) and climate change-related topics, including the value of biodiversity and ecosystems, the importance of gender equality and women's economic empowerment, and climate change resilient livelihoods and adaptation practices. These involve proper nourishment, good health condition, and shelter access to women [16]. Women empowerment is the key process of internal change [17] and the ability to make the right decision on the family and society and take ownership of their lives through the spreading of their choice [18]. Therefore, the major purpose of the study is to explore the effect of financial literacy and entrepreneurship training program on women empowerment.

2 MATERIALS AND METHODS

2.1 Location of the study area
The study was carried out in two different Upazilas (Dacope and Koyra) of Khulna district of the southwest region of Bangladesh. It is bordered by Jessore District to the north, on the northeast by Narail District, to the east by Bagerhat District, on the south by the Bay of Bengal, and on the west by Satkhira District [19]. Koyra Upazila is located at 22°31 N and 89°26' E (Fig. 1), with a total area of 1775.40 sq. km. including 951.66 sq.km forest areas [20]. Dacope Upazila is located at

22°40 N and 89°35 E (Fig. 1), with a total area of 991.56 sq. km. including 494.69 sq. km. reserve forest area. The average literacy rate of Koyra Upazila is (50.40%) among the women (45.20%) and man (55.80%); Dacope Upazila, the average literacy rate is (46.66%), among them male (53.89%) and female (38.98%), [9]. The main occupation of the respondent is agriculture, agricultural laborer; fishing and the rest of the population are involved in business and services. The peoples of both Upazila, particularly poor, are dependent on the Sundarban for their livelihood, where still (60 to 70%) people are live below the poverty line. The world heritage Sundarban is adjacent to both Upazilas and people collect Non-timber forest products such as Golpata, fires wood, honey from Sundarban. The Shibsha River flows along the two Upazilas. Others such as the Shakbaria, Koyra, and Kapotahhya flow adjacent of Koyra Upazila. The fishermen engage in fishing within the rivers of Sundarban. Women usually collect fish fry from the rivers for their livelihoods. Therefore, we considered these two Upazials to provide a general overview of the effect of financial literacy and entrepreneurship program to the Sundarbans resource user household's members on women empowerment.
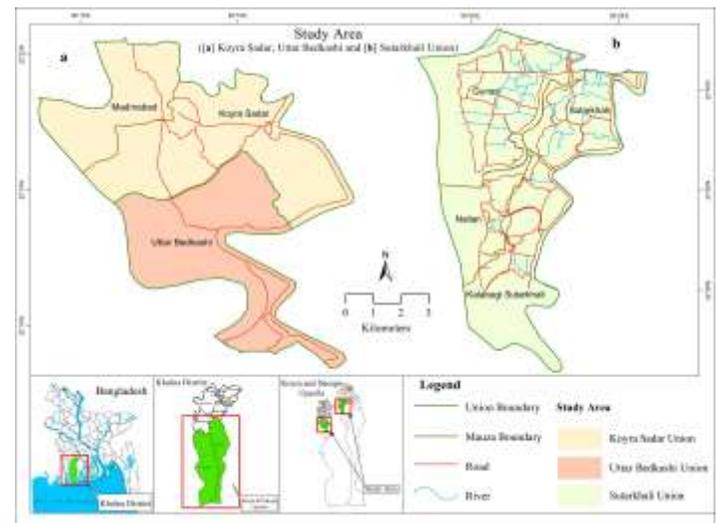

Figure1: The geographical location of the study area

2.2 Sampling technique
For this study, we followed the random sampling technique to draw samples. Two unions (Uttar Bedkasi and Koyra Sadar) of Koyra and one union (Sutarkhali) of Dacope Upazila were chosen purposively because transportation was more convenient. Financial entrepreneurship and learning center were selected randomly from both Upazilas under Khulna district. FELP beneficiaries and Non FELP beneficiaries from each learner were also selected randomly. The total sample size was 120 respondents. These included 60 samples from FELP beneficiaries and 60 samples from Non-FELP beneficiaries. Respondents were randomly selected from the study areas.
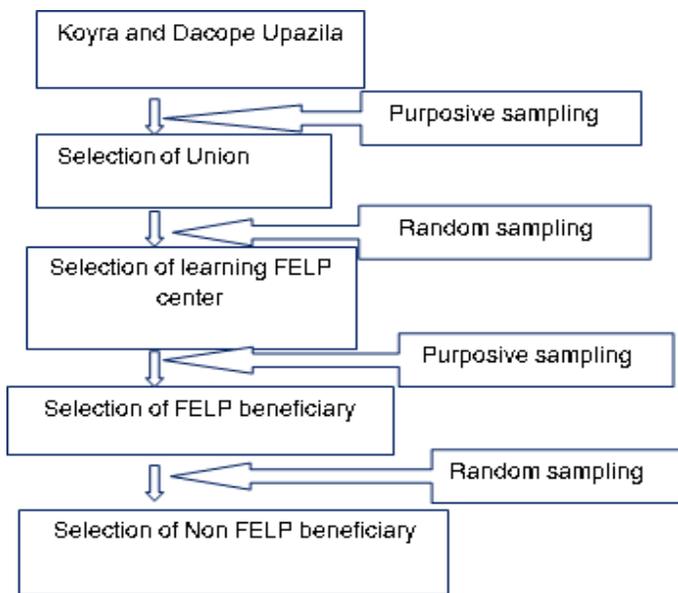
Figure 2: Flowchart of sampling

2.3   Data collection technique

The semi-structured questionnaire was used for the collection of data. At the initial stage, a draft questionnaire was tested in the field before the finalization of the questionnaire. The questionnaire was finalized based on field observation. Data was collected by external data enumerators, and the enumerators were trained on the questionnaire before data collection. The researcher also checked the data random basis to ensure the quality of data.

2.4 Data analysis technique

Parveen and Chaudhury (2009) [21] count three indicators income, saving, and assets for measuring asset indicators, they consider very high income, high income, medium income, low income, and very low income. Regarding saving, the focus on very high saving, high saving, medium saving, low saving, and very low saving. For assets, they consider very high asset, high asset, medium asset, low asset, and very low asset ranging from five to one. Calculating the Cumulative Economic Empowerment Index (CEEI) was done by summing up the income saving and asset categories of the respondents. The CEEI score varies from 1 to 15 where 1 indicates a very low level of empowerment and 15 indicates a very high level of empowerment [22]. The construction index frames are used for measuring women empowerment in Oman [23]. It constructs three indices, such as the Economic Decision Making Index, Household Decision Making Index, and Freedom of Movement Index. According to the Women Empowerment Index (WMI) = 1/3 (Economic Decision Making Index) + 1/3 (Household Decision Making Index) + 1/3 (Freedom of Movement Index). This study has framed the construction index in another way. The Index for the current studies is as follows:

Three factors like women's decision making role, women going outside for work, and participation in the social organization have been counted to figure out the empowerment of the women in this study. Scores of these variables are obtained using a 0-5 rating Likert scale. Where '0' 'no increase' '1' 'very poor', '2' 'poor', '3' average, '4' 'good' or 'higher' and '5' for 'very good' or 'very high'.

The following index has been used for measuring the women empowerment:
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WE_i = Empowerment of ith Women

X_i = Actual summed value decision making role in the household, women' going outside for work, and participation in the social organization of ith Women.

$Max(X_i)$ = Maximum summed value decision making role in the household, women' going outside for work, and participation in the social organization of ith Women.

$Min(X_i)$ = Minimum summed value decision making role in the household, women' going outside for work, and participation in the social organization of ith Women.

The performance of the women empowerment has been expressed as the minimum and maximum value between 0 and 1 following the construction method of the HDI, (UNDP, 2005) [24].

$$WE_i = \frac{X_i - Min(X_i)}{Max(X_i) - Min(X_i)} \ldots \ldots \ldots \ldots \ldots \ldots \ldots . (1)$$

According to this index, the value of index 0 is deprived of development, and value 1 is showing full development.

2.5 Analysis of data

The collected data were analyzed using Stata and MS Excel while statistical treatments such as percentages, range, mean and standard deviation were used to interpret data. Besides, we applied the test of significance for the difference between means to compare the features of rural areas. The study categorizes the variables into five categories such as demographic, social, economic, microfinance, and non-economic factors.

3   RESULTS AND DISCUSSION

3.1   Socio-Economic characteristics
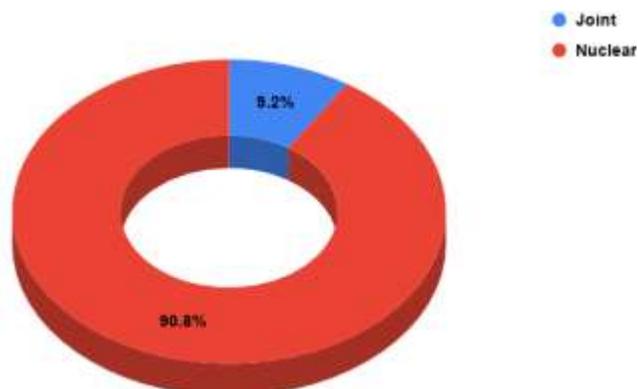### 3.1.1 Family structure

Figure 3: Family Structure

The Fig.3 shows that 90.8% respondent belongs to a nuclear family and 9.2% belongs to a joint family. Family structure is a vital socio-demographic indicator that measured [25] family stress, previous research has reported that in joint family homes are more likely belongs to more family members than nuclear family and they have experienced poverty and its associated stressors. Moreover, women from nuclear families

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get more time for their academic and schooling activates [26].
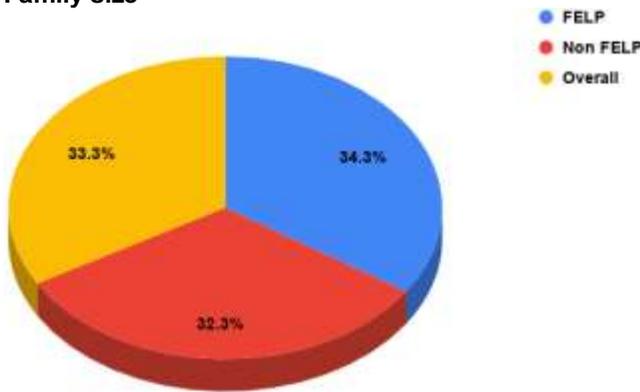.

3.1.2 Family size

Figure 4: Family size

The FELP beneficiaries are disadvantaged, illiterate, and belongs to resource user women family, so it's rational the family size is usually large than Non-FELP beneficiaries. FELP beneficiaries are mostly poorer than Non-FELP beneficiaries. Family size is considered one of the essential characteristics to be measured to know how much earnings of family's is used for consumption. It has manifested that average family consumption dependent on the average family size [27]. According to Fig. 4 average family size of FELP is 34.3% whereas Non-FELP beneficiaries are a little substandard than FELP beneficiaries, which is 32.3%. For both family sizes, the overall average family size is 33.3%.

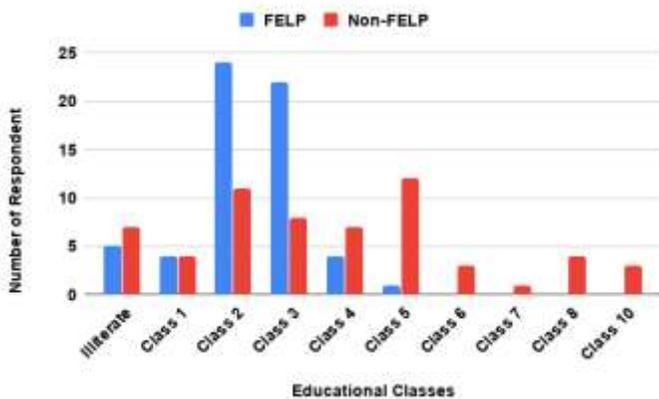### 3.1.3 Educational status of the respondent

Figure 5: Educational status of the respondent

Fig. 5 displayed that 24 participants of FELP stakeholders completed maximum class-2 out of 60 FELP beneficiaries which account for the highest numbers. 1 learner of FELP finished 5 schooling and 12 learners of Non-FELP beneficiaries accomplished class-5. The average 3 participants of Non-FELP beneficiaries concluded their class-6 to class-10. The FELP beneficiaries come from marginalized resource user family those who couldn't read and write; could understand the only symbol and write their name signature.

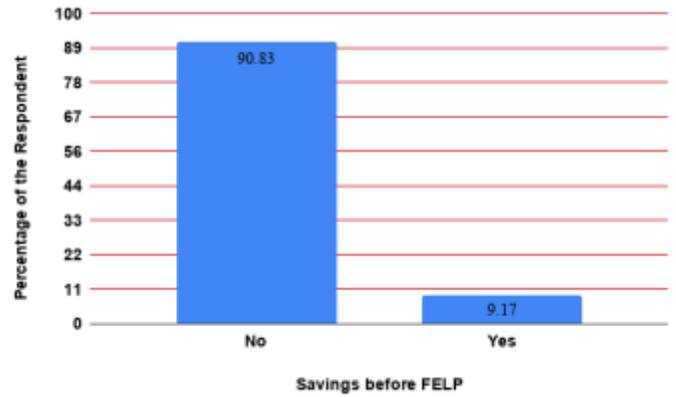### 3.1.4 Saving status before FELP inclusion

Figure 6: Saving status before FELP

Fig. 6 exhibits that 90.83% respondent of FELP beneficiaries had fewer savings before getting involved with the financial entrepreneurship literacy inclusion program. This is because of their poverty status and lack of opportunity. Even the knowledge regarding savings was unknown among the beneficiaries. 9.17% of participants of FELP beneficiaries were practiced savings activities. But it was essential for the target people. Due to poverty, underprivileged, and lack of primary knowledge, poor people were out of savings activities. For this reason, microfinance institutions did not include their micro finance initiative (IFM) activities.

3.1.5 Savings Status after Including FELP

Table 1. Savings after FELP

Financial inclusion	FELP beneficiary (%)	Highest savings (BDT) /year	Mean savings(BDT)
Savings Status	100 %	17500	5161

According to Table 1, after completing FELP, all beneficiaries were engaged in different savings and loan programs, such as savings group, SLG, GO, and NGO's microfinance institution, polli savings bank (it is a government lead microfinance institution) village samity, etc. After one year, the highest savings amount was 17500 BDT and the average savings amount was 5161 BDT
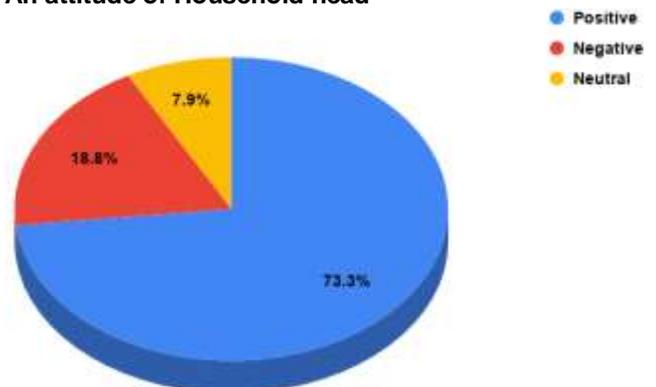
3.1.6 An attitude of Household head

Figure 7: Attitude of household head

Based on Fig. 7, the 73.3% respondent of FELP beneficiaries were role-played positive attitude with their family. The FELP beneficiaries can teach their children after they accomplished the literacy learning program. Besides, they can keep daily records of business and contribute to the family by their earnings. 18.8% respondent shows a negative attitude because of social and family restriction. Although the FELP beneficiaries belong to poor people and conservative society, they achieve reading, writing, accounting, small business holders, and gathered gender information from the literacy program

3.1.7 Maintain financial record

Table 2. Financial Record Maintain

Financial Literacy Inclusion	Frequency	Yes (%)	No (%)
Income-Expenditure book update	120	90.83 %	9.17 %
Understanding about small enterprise	120	52.50 %	47.50 %

The study (Table 2) reveals that 90.83% of women can update their business book, able to keep record daily income-expenditure after completing the FELP program. In comparison, 9.17% of women cannot update their income-generating book. 52.50% of women are aware of small businesses, whereas 47.50% of beneficiaries don't have business development understanding.

3.1.8 Outside working status

Table 3. Outside work from home

Working mobility outside of the home	Frequency	Percentage
Yes	98	81.67
No	22	18.33

Table 3. Shows that 81.67% of women of FELP beneficiaries get involve in various income-related activities outside the home to contribute to their family wellbeing. 18.33% of participants are not used to outside for work. It associates this kind of with the agenda of women's empowerment.

3.1.9 Problems regarding occupation and women empowerment
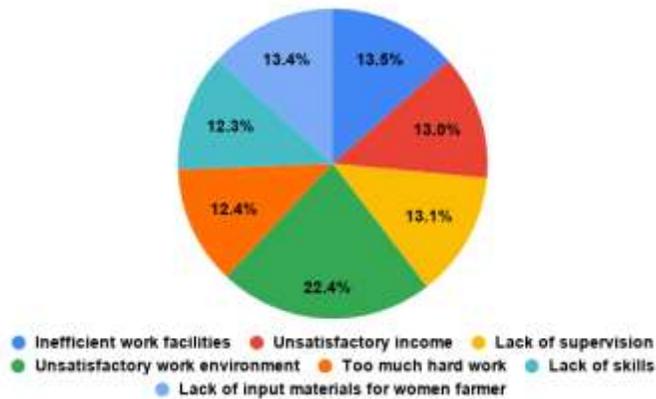

Figure 8: Problem regarding occupation and women empowerment

Fig. 8 depicts that 22.42% of respondents opined that women

face problems at their working place due to an unsatisfactory work environment. Further, 13.45%, 13.36%, and 13.12% of respondents confirmed that because of inefficient work facility, lack of input material for women farmers, and lack of supervision, women are faces at the workplace. Lacks of skills, too much work pressure were responsible for raising problems in their occupation, which is admitted by 12.26% and 12.36% of respondents.

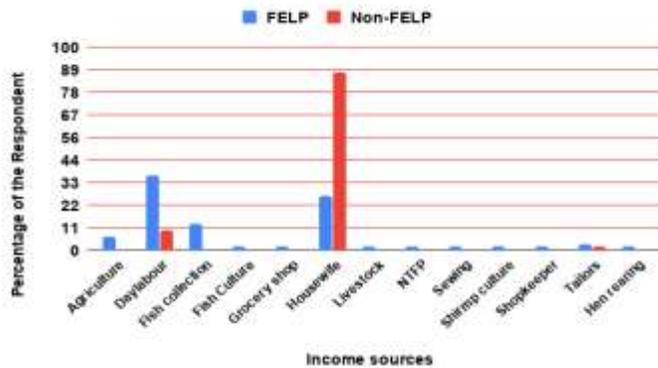### 3.1.10 Source of income and women empowerment

Figure 9: Categories of Income sources and women empowerment

Fig. 9 shows that 88% of women from Non-FELP are housewife, and they don't have any formal income sources, whereas 27% of women from FELP beneficiaries are a housewife. The women who accomplished the literacy learning program they involved with any livelihood, income profession. 37% of women of FELP beneficiaries are day labor, while 10% of participants of Non-FELP are day labor. 13% of the participant from FELP involved with fish collection occupations followed by 7% and 3% of agriculture and tailor. The percentage of beneficiaries from fish culture, grocery shop, livestock, non-timber forest product (NTFP) collection, sewing, shrimp culture, shopkeeper, and hen rearing occupation remains at the same, which is 2. On the contrary, no beneficiaries were found from the Non-FELP group; those who depend on fish culture, grocery shop, livestock, non-timber forest product (NTFP) collection, sewing, shrimp culture, shopkeeper, and hen rearing for their regular income. The result is consistent with Ghosh et al.,(2020) [28].

3.1.11 Monthly income & expenditure of household (HHs) and women empowerment
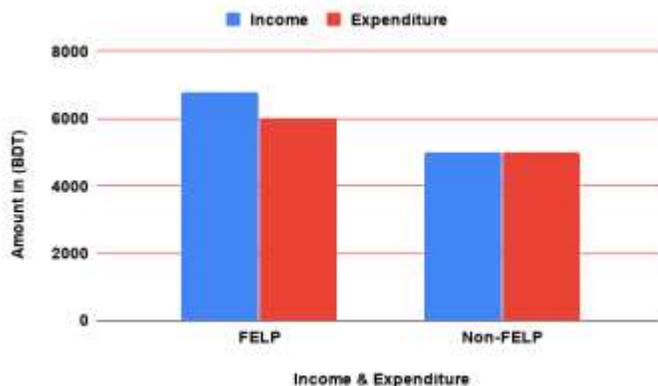
Figure 10: Average monthly household income & Expenditure
Fig.10 revealed that the average monthly household (HHs) income of FELP beneficiaries is 6772 BDT, while the non-FELP beneficiaries' income is 5000 BDT. The FELP beneficiaries have contributed to their family income by receiving different skill development training of livelihoods. The average monthly expenditure capacity of FELP households is over 6000 BDT, where the Non-FELP household's expenditure is below 5000 BDT. We assume that those who were involved in the FELP program, their expenditure ability is better than the Non-FELP group. The FELP beneficiaries who accomplished literacy learning programs can contribute their family by income, and it's a vital indicator of women empowerment [14].

3.2 Comparison between FELP and Non-FELP Group

Table 4. Two-sample t-tests with equal variances [29]

Two-sample t-test with equal variances					
					[95% Conf.
Group	Obs	Mean	Std. Err.	Std. Dev.	Interval]
					8.372719
0	60	8.430995	.0291233	.2255879	8.48927
					8.63528
1	60	8.704276	.0344811	.2670894	8.773273
combined	120	8.567635	.0257273		8.516693
.2818286					8.618578
diff		-.2732815	.0451344		-0.5465631
diff = mean(0) - mean(1)					t = -6.0548
					of freedom =
Ho: diff = 0			degrees		118
Ha: diff < 0		Ha: diff != 0			Ha: diff > 0
					Pr(T > t) =
Pr(T < t) = 0.0000		Pr(T > t) = 0.0000			1.0000

The Two-sample t-test with equal variances between FELP and Non-FELP group was applied, and test results are shown in Table 4. The test statistic shows a significant difference in empowerment score between the FELP and Non-FELP group (t = 6.06, p<0.000), which means the FELP beneficiaries were more likely to ensure the women empowerment. The mean coefficient of financial literacy was found significantly other than zero, so the financial literacy program has a direct impact on women empowerment. Interestingly, no entrepreneurship was found different from zero, meaning no effect of women empowerment [29].

3.3 Factors influencing women empowerment

Table 5. Factors influencing women empowerment

Variables	(2) Women Empowerment	(3) Expenditure
Interaction variable (women empowerment score * FELP beneficiary)		0.0501***(0.0122)
Respondents Education		-0.0163(0.0196)
Family Size		0.110***(0.0153)
Respondent Age		-0.00607*(0.00296)
Financial Literacy	0.588***(0.0343)	
Entrepreneurship Average	-1.056(0.648)	
Constant	2.195***(0.263)	8.283***(0.101)
Observations	120	120
R-squared	0.720	0.460

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 5 summarizes the estimated regression results of factors that influence women empowerment. Some variables appear as expected, signs of women empowerment, and some not statistically significant. The regression results for estimating women empowerment are shown in column 2 and expenditure in column 3, respectively. According to the analysis, the first model in column 2 shows that financial literacy significantly positively affects women's empowerment. Column 3 shows that the interaction between variable and respondent age is considerably affecting the expenditure of the households. As the interaction of variables between women empowerment score and FELP-beneficiary, the corresponding coefficient shows that households possessing is higher empowerment scores who are likely to have a higher level of expenditure. We introduced an interaction variable in this case that presents an interaction between women empowerment and FELP beneficiary. We found this interaction variable different from zero, meaning that higher scores of women empowerment who were also the FELP beneficiary. A high amount of expenditure is likely to be the proxy for a high level of income. So we can infer that FLEP beneficiaries possess a higher empowerment score that affects the living standards of the sampled households.

4   CONCLUSIONS

Women empowerment is a vital issue for a developing country like Bangladesh; their participation in economic activities, decision making in social activities remains negligible, particularly in rural areas. From the above discussion and analysis, most of the respondent's age group was in 25-45 years. Among them, education varied 0 up to 10 schooling years, while very few of them had completed over 10 years of schooling. The FELP women had wide range of income source than Non- FELP beneficiaries. 90.83% of women can update their business book, able to keep record daily income-

expenditure after completing the FELP program. FELP learners had a maximum of 2 years schooling, and these numbers had the highest of 24%. The Two-sample t-test shows a significant difference in empowerment score between the FELP and Non-FELP group (t = 6.06, p<0.000), which means the FELP beneficiaries were more likely to ensure the women empowerment. The estimated regression results show that financial literacy significantly positively affects women's empowerment. The average household income, expenditure, and savings of the FELP beneficiaries are higher than Non-FELP beneficiaries per month. Among the five dimensions of empowerment, beneficiaries scored better ownership of assets and access to credit. In these two indicators, both beneficiaries and non-beneficiaries scores were very near. However, this program has a tremendous impact on women's involvement in the productive decision, access to productive capital, access to savings, literacy inclusion, taking part in the household decision, control over income, and a small scale entrepreneur creation among the few beneficiaries. Thus this program will ultimately reduce poverty and expand the standard of living of these disadvantaged and deprived women.

COMPLETING INTEREST

The authors declared no potential conflicts of interest concerning the research, authorship, and publication of this article.

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