CHAPTER 16

Role of Microfinance in the Reduction of Rural Poverty in West Bengal

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Introduction

Across the globe nearly each economic system has to stand the poverty. Poverty is the state of affairs wherein low-earnings human beings cannot meet the simple desires of lifestyles. This circumstance results in many fold problems like reduced fitness facilities, excessive illiteracy rate, reduced first-class of lifestyles and plenty of extra. Poverty discount is one of the maximum critical additives of Sustainable improvement goal (SDG) of United Nation (UN). Financing micro-marketers for task advent in addition to earnings producing sports indicates a few achievements in lots of growing international locations like India.

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Again, extra than half of the globe's working-age adults (approximately 2.5 billion) nevertheless do now no longer have get admission to monetary offerings of regulated monetary institutions (Fouillet et al., 2013). Therefore, some of working-age adults round the sector rely upon casual moneylenders for loans to begin or hold a micro-organization. Globally, there are extra than 3100 microfinance institutions (MFIs) presenting loans to over one hundred million customers to boost them out of poverty (Cull et al., 2007; Epstein & Yuthas, 2011; Hartarska & Nadolnyak, 2007). Microcredit emphasizes the supply of credit score offerings to low-earnings customers, generally withinside the shape of small loans for micro-organization and earnings producing sports. Use of the term 'microcredit' is frequently related to an insufficient quantity of the cost of financial savings for the terrible. In maximum cases, the supply of financial savings offerings in 'microcredit' schemes sincerely includes the gathering of obligatory deposit quantities which are designed simplest to collateralize the ones loans. Additional voluntary financial savings might also additionally gather however the customers have constrained get admission to their enforced financial savings. These financial savings come to be the principal supply of capital withinside the monetary institutions. Microfinance is a key poverty discount method that has unfold unexpectedly and broadly over the past 20 years, presently working in extra than 60 international locations (Bateman, 2010). According to many researchers and coverage makers, microfinance encourages entrepreneurship, will increase earnings producing pastime for this reason decreasing poverty, empowers the terrible (mainly ladies in growing international locations), will increase get admission to fitness and education and builds social capital among terrible and prone communities (Khandker, 2005; Westover, 2008).

The self-assist organization (SHG) technique is a brand new paradigm into the sphere of rural improvement which important targets are to growth the well being of the terrible human beings, offer get admission to assets and credit score, growth self-confidence, shallowness and growth their creditability in all factors of lives (Matiki, 2008). Self-assist organization is a voluntary and self-controlled organization of ladies, belonging to comparable socio-financial characteristics, who come collectively to sell financial savings among themselves (Das Gupta, 2001). The poverty relief intervention of the SHG is withinside the shape of task financial programs to offer employment, giving micro finance offerings to the terrible in order to get themselves familiar with capabilities and occupational diversification. This new initiative turned into taken up via way of means of

Swarnajayanti Gram Swarozgar Yojana, functional in 1999, to arrange the terrible into self-assist organization.

This chapter focuses on how the microfinance specifically SHGs can be an effective tool for eradicating the evil of poverty. The purpose of this paper is to explore microfinance in more depth, describing examples of how SHGs has worked successfully for specific individuals, and discuss both the benefits and limitations of the microfinance approach to reduce poverty. This paper is arranged as- in the next section the area of the study, data base, methodology and analytical tool of the study has been discussed, then the profile of the study area, followed by impact of assessment of SHGs in the above mentioned directions through the probit regression model and finally the conclusion.

Data Source and Methodology

The objective of this study is to empirically examine the influence of activities under SHGs on poverty based on mainly primary data survey. This study has logically established that poverty depends on household size, landholding, average level of education of a household, per capita income, social security and average age of the family member of the household. All the factors also influence in participation in SHG which determine the probability of get rid of poverty. The data has been collected in 2018–2019 keeping in mind the above factors on the basis of Stratified Random Sampling in the first step to select the district on the basis of the development index of districts in West Bengal (Das, 2011). Two districts of West Bengal are purposely chosen from the developed districts and two districts are chosen from less developed districts on the basis of development index. This study has taken into account in terms of Monthly Per Capita consumption Expenditure (MPCE).

The status of poverty of participating households in SHG is examined with the help of probit model. The model also identifies the determinant of SHG, i.e., the factors which induce to participate SHG. Besides, the model represents a sigmoid curve. It corresponds to the Cumulative Distribution Function (CDF) of a standard normal distribution. Here, P_i is considered as standard normal CDF, which is assessed as a linear function of independent variable(s). Hence, the Probit model is stated as-

$$\begin{aligned} P_i &= P(Y_i = 1) \\ &= F(a + bX_i) \end{aligned}$$

Here, $F(a + bX_i)$ is the CDF of the standard normal distribution so that

$$P_i = F(a + bX_i) = \int_{-\infty}^{a+bX_i} f(Z)dz$$

Where

Z is the standard normal variable and $f(Z)$ is the density faction of $Z \sim N(0, 1)$.

In Probit model, the log-likelihood function is-

$$\ln L = \sum_{i=1}^{n_1} Y_i ln P_i + \sum_{i=n_1+1}^{n} (1 - Y_i)\ln(1 - P_i)$$

$$= \sum_{i=1}^{n_1} Y_i ln F(a + bX_i) + \sum_{i=n_1+1}^{n} (1 - Y_i)\ln[1 - F(a + bX_i)]$$

Maximizing $ln\ L$ with respect to a and b and solving, we get the estimates of the two unknown parameters.

It has been made known that $LR \sim \chi^2$ with degrees of freedom $k =$ number of independent variables in the model. Thus, the decision rule is: If $LR^* \sim \chi^2 > \chi^2_k$, reject the null hypothesis which means all the coefficients of the estimated model are simultaneously equal to zero, and infer that there is overall significance of the regression.

Profile of the Blocks

A block has been selected randomly from each district. Hooghly and Howrah are selected as developed districts. On the other hand, Twenty Four Parganas (South) and Birbhum are selected as underdeveloped districts. The blocks named Goghat II and Amta-I are selected randomly from Hooghly and Howrah, respectively. The blocks Mandir Bazar and Labpur are selected randomly from Twenty Four Parganas (South) and Birbhum, respectively. So, this is a purposively stratified random sampling.

50 households have been selected from each of the blocks. Panel a of Table 16.1 describes the distribution of households according to principal activity. The table shows that more or less 50% households are engaged in agricultural activity as principal status except in Amta-I.

Table 16.1 Percentage distribution of sample households (HH) with principal status activity (Panel a) and percentage distribution of population by age group (Panel b)

Panel a					*Panel b*				
Main Occupation of HHs	*Mandir Bazar*	*Labpur*	*Goghat II*	*Amta-I*	*Age Group*	*Mandir Bazar*	*Labpur*	*Goghat II*	*Amta-I*
	HH	HH	HH	HH	0–5	4.6	5.8	6.7	5
Agricultural Activity	49.15	52.08	60.29	32.2	6–14	9.2	8.5	11.7	11.8
Taloring	11.86	10.3	7.42	25.4	15–29	27.6	23.9	35.1	24.1
Jori Work	10.17	9.98	11.38	18.6	30–45	29	37.8	26.3	31.8
Animal Husbandry	0.85	2.6	1.49	1.7	46–60	18.6	18.7	11.7	20.8
Food Processing	1.27	1.5	1.49	3.4	Above 60	11	5.3	8.5	6.5
Other Non-farm Activity	2.12	2	2.99	5.1	Total	100	100	100	100
Regular Employed	1.69	1.8	4.48	5.2					
Migrated Worker	22.88	19.74	10.46	8.4					
Total	100 (50)	100 (50)	100 (50)	100 (50)					

Source Authors' Field Survey, 2018–2019

Among the SHGs tailoring and jori works get priority. 1 to 3% of the households are engaged in animal husbandry and food processing activity. The animal husbandry practices basically include dairy, piggery firming, goatery, poultry, duckery, veterinary, etc. The other non-farm activities ensure cobbler, mason, barber, carpenter, and respiring taking the loan from SHGs.

The majority of the population belongs to low castes in most of the blocks. But Labpur is exceptional. Only 37.54% of the population belongs to low castes in the village. The panel b of Table 16.1 shows the percentage distribution of population by age group among sample households across blocks. About 15% population is below 14 years while 75% population is between 15 and 60 years, and only 11% population is above 60 years in Mandir Bazar. The dependency ratio is lower in Labpur. The percentages of population below 14 years are 18 and 16 in Goghat II and Amta-I, respectively. The working population for in Goghat II and Amta-I are 74% and 76%.

Data revels from panel a of the Table 16.2 that majority of households belongs to Rs. 50,000 to Rs. 75,000 classes across villages. But in case of Goghat II block 18% of households belong to less than 50,000 income level which is highest among the villages. Amta-I is relatively better than other agriculturally developed block. The data supports the evidence that the earnings from non-agricultural sector are relatively better than agricultural. Only 5% of households are below 50,000 income level.

From the panel b of the Table 16.2, it can be shown that land is evenly distributed to Goghat II. Only 12% households are land less and 63% households are marginal land holder. The percentage households having no land are 39, 16, and 48 in Mandir Bazar, Labpur, and Amta-I, respectively. From the above table, it is clear that about 50% households come from marginal land holder. Labpur is gifted of cultivable land on the ground that 32% and 3% of household are belong to small and medium farmer. But in Mandir Bazar small land holders are 11% and only 2% households belong to medium farmer.

More or less 30% workers are engaged in non-farm agricultural activity and near about 50% are engaged in agricultural activity in most of the blocks. Both the workers associated with farm and non-farm activities are involved in SHGs to finance their activity and marketing their product. So, the enhancement in SHGs with better finance facilities may augment their income and improve their standard of living.

Table 16.2 Percentage distribution of households by income group (Panel a) and landholding (Panel b)

Panel a					*Panel b*				
Household income (Rs.)	*Mandir Bazar*	*Labpur*	*Goghat II*	*Amta-I*	*Landholding (acres)*	*Mandir Bazar*	*Labpur*	*Goghat II*	*Amta-I*
<50,000	11	9.5	18	5					
50,000–75,000	53	45	29	52	No land	39	16	12	48
75,000–100,000	22	34	25	17	0–2.5	48	49	63	46
100,000–125,000	9	7	7	12	2.5–5.0	11	32	24	5
125,000–150,000	2.8	1	10	7	5–10	2	3	1	1
150,000–175,000	0.7	1.5	9	3	10+	0	0	0	0
175,000–200,000	0.5	0.75	1	2	Total	100	100	100	100
225,000+	1	1.25	2	2					

Source Authors' Field Survey, 2018–2019

Impact of SHGs on Status of Poverty

Discussion on poverty examined that malnutrition can lead to a vicious cycle of poverty. Low quality food intake leads to low level of nutrition and it turns to low productivity which causes to low wages and low level of income. This leads to low level nutrition again and completes the cycle. If somehow, they can break the critical level of income through capitalization, marketing, advertising, and giving advice via SHGs, they will get rid of vicious cycle of poverty. Now, we have analyzed the consumption pattern of sample households across study blocks.

The Table 16.3 on consumption expenditure of sample households from Mandir Bazar shows that households spend the highest percent of their expenditure on food items (21.3%) followed by Labpur (17.5%). On the other hand in Goghat II, households spend 10.7% of their expenditure on food items. The highest percentage is spent on non-food item by households 26.8%, 27.7%, 33.6%, and 37.76% in Mandir Bazar, Labpur, Goghat II, and Amta-I, respectively, followed by other labor households. The highest percentage of expenditure on health and education are incurred by households in Goghat II.

Table 16.3 Percentage distribution of consumption of commodities and services

Item of consumption	*Mandir Bazar*	*Labpur*	*Goghat II*	*Amta-I*
Food grains	21.3	17.5	10.7	15.34
Vegetable, milk/animal products, and Fruits	35.1	35.8	34.5	29.86
Grocery	13.6	21.4	18.6	16.55
Intoxicant	3.3	1.7	2.6	0.49
Subtotal food	73.2	76.3	66.4	62.24
Total fuel	0.3	0.7	2.8	0.92
Clothing and footwear	13.7	9.4	10.9	9.81
Consumer durables	2	0	1.6	5.95
Health and education	4.7	5.8	8.2	4.56
Electricity	1.9	2.3	2	2.79
Other exp	2.4	4.4	6.2	10.63
Transport	1.8	1.1	1.9	3.12
Grand total	100	100	100	100

Source Field Survey, 2018–2019 and authors' calculation

MPCE has been used as a proxy indicator to measure the impact of SHGs on poverty levels of a household. The impact is likely to be positive if the increase in income has transferred into an increase in expenditure, particularly on food and essential items, of the household. We have tried to establish this in the Table 16.4 in a first-hand approach with any econometric analysis, and then we have seen the result with the help of Probit model.

On the basis of our primary survey, we have calculated the MPCE of the sample households and distributed them as the percentile classes. For Mandir Bazar, the 5th percentile of the MPCE distribution was estimated as Rs. 912 and the 10th percentile as Rs. 962. The MPCE of corresponding class for Goghat II are Rs. 1388 and Rs. 1482, respectively. But the MPCE of Labpur and Amta-I are relatively higher for the first two classes. Using consumer price index for agriculture labor of 2011–2012 and 2018–2019, we have estimated rural BPL line for West Bengal Rs. 1238. We can see that 60% of the population belongs to BPL in Mandir Bazar. The percentages of BPL households for other studied

Table 16.4 Fractiles of the distributions of sample households participating in SHGs according to MPCE

Fractile class of MPCE	*Mandir Bazar*		*Labpur*		*Goghat II*		*Amta-I*	
	*MPCE**	*% of HH***	*MPCE**	*% of HH***	*MPCE**	*% of HH***	*MPCE**	*% of HH***
0–5%	912	1	1579	2	1388	0	1457	5
5–10%	962	14	1632	10	1482	8	1677	9
10–20%	1016	21	1657	24	1535	17	1736	38
20–30%	1077	31	1680	35	1619	28	1936	43
30–40%	1135	37	1710	41	1743	35	2113	37
40–50%	1169	43	1740	48	1877	50	2168	49
50–60%	1212	47	1949	50	1979	52	2219	55
60–70%	1281	52	2128	52	2139	46	2274	52
70–80%	1417	52	2272	48	2386	49	2400	46
80–90%	1534	30	2508	25	2675	34	2888	27
90–95%	1675	19	2979	27	3052	21	3519	19
95–100%	1885	8	3173	11	3446	17	4625	8
All classes	1265	34	1601	37	1564	41	1805	44

*Average MPCE of the Class, **Percentage of HH Participating SHGs within the group
Source Field Survey, 2018–2019 and authors' calculation

blocks are 10%, 30%, and 5% in Labpur, Goghat II, and Amta-I, respectively. From the Table 16.4, it is clear that MPCE increases with increase in participation of SHGs for all studied blocks.

Results and Discussion

Status of poverty of a family (SPH) is binomial and we've assigned the values 1 and zero for under poverty and others, respectively. Any boom in family size (HHS) is anticipated to lower the provision of sources in according to capita feel and could lessen the extent of consumption. Studies in addition to be had records have showed that the creation of social safety scheme gives greater profits for households. Therefore, it's far anticipated to have a fantastic effect on consumption. In view of this, the variable social safety scheme (SPS) is blanketed to narrate with popularity of poverty analysis. The family belongs to which caste (HHC) is likewise a vital issue in figuring out the extent of ownership of sources in a financial system and the same old of dwelling relies upon of the class of social strata like caste. Consumption is a feature of profits. So, we've taken into consideration according to capita profits (PCI) as a determinant of poverty. Education is the human capita which increase the manufacturing talent of someone and complements the same old of dwelling. So according to head degree of education (PLE) of a family is an impotent variable for analysis. Per capita land holding (PCL) can set off employment possibilities through agricultural manufacturing of a family. To seize the poverty, we've taken into consideration PCL of a family. The SHGs offer economic backup for manufacturing and potential constructing achieving marginal regions to marginal people. This facilitates them to reinforce their profits. So, participation in SHGs is taken in attention for our analysis. The notations and specifications of status of poverty and its determinants are presented in Table 16.5.

Now let us analyze the data by Probit regression model.

Estimation states that PCI, SPS, PCL, and PLE have negatively related with Poverty of the households and all are statistically significant. But households' size (HHS) is significantly and positively related to poverty (Table 16.6). The household's size is positively related with poverty and statistically significant means that the probability of poverty increases with increasing household's size. But the result is quite different for caste categories. HHC positively related with poverty implies that other households are better than SC/ST categories. But this is not statistically significant.

Table 16.5 Notation, Mean, and SD of the Variables used in Probit Regression Model to estimate the effect SHGs

Notation of variable	*Specification of variable*	*Mean*	*Standard Deviation*	*Minimum*	*Maximum*
Dependent variable					
SPH	Poverty (Poor = 1, Other = 0)	0.255	0.43	0.0	1.0
Independent variable					
HHS	Household size	3.93	1.23	1.0	9.0
HHC	Households belongs to the caste (SC/ST = 1, Other = 0)	0.69	0.46	0.0	1.0
PCI	Per capita income of households	2318.93	2191.52	960	18,476
SHP	SHGs participation (yes = 1, No = 0)	0.555	0.49	0.0	1.0
PLE	Per head level of education	6.27	3.73	0.0	28
PCL	Per capita landholding in decimal	19.61	22.15	0.0	124
SPS	Social protection scheme	1815.63	3897	0	20,592

Source Authors' calculation

Table 16.6 Probit estimation of SHGs over sample households on poverty

	Coefficient	*Std. Err*	*z*	*P > z*	
Constant	5.532816	1.916449	2.89***	0.004	Number of obs. = 200 LR
HHS	0.5711934	0.2620083	2.18**	0.029	$\chi^2(6) = 194.95$
HHC	0.6098128	0.7154359	0.85	0.394	Prob. > $\chi^2 = 0.0000$
PCI	−0.0034472	0.0012879	−2.68***	0.007	Log likelihood = −16.07780
SPS	−0.0007031	0.0003585	−1.96*	0.050	Pseudo $R^2 = 0.8584$
PCL	−0.040286	0.0235341	−1.71*	0.087	
PLE	−0.3829342	0.1394478	−2.75***	0.006	
SHP	−2.592624	0.5766914	−4.50***	0.000	

Note *, ** and *** implies significant at 10%, 5%, and 1% level of significance, respectively
Source Authors' calculation

The empirical results relating to the effect of participation in SHGs (SHP) over poverty has been estimated by Probit regression model. The result indicates that in Poverty is significantly influenced by the participation in SHGs. Household's level of education and per capita land holding are also negatively related with poverty and statistically significant. This empirical result has established that education and resource will reduce the level of poverty.

Conclusion

Poverty is the situation in which low-income people cannot meet the basic needs of life. The SHGs may be trained to prepare several products that can be possible to produce within the village, so that they can earn higher incomes with value addition. This paper examined the impact of SHGs as measured by the changes in the livelihood and the level of poverty. This study shows that SHGs are successful in augmenting the welfare of rural households. The formation of SHGs smoothens the financial availability. It provides training to its member and creates marketing facilities to the members. Thus, an income earning environment is created through introduction of SHGs. Generally, poverty is a consequence of lack of income opportunity and means of earning. SHG motivates its member creating income earning resources and helps to make a structural transformation in occupation.

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