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IMPACT OF MICROFINANCE ON INCOME AND INCOME INEQUALITY- A CASE STUDY AMONG THE WOMEN IN BIRBHUM DISTRICT OF WEST BENGAL

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ABSTRACT

Women constitute half of the total population of the human society. Without empowering them no society can go long way. Realizing this, the constitution makers of India had enclosed the principle of gender equality in its preamble, fundamental rights, fundamental duties and directive principle. Various laws have been enacted and enforced to check the discrimination against women. Economic, social, political and structural reform programs have been initiated by the Government with the objective of welfare of its people. Unfortunately little has been achieved towards the empowerment of women. The fact is that without having the access to income, employment, education, health and social and political participation proper empowerment of this section of the society is not possible. The Microfinance program has however been recognized as an effective tool to empower economically the rural women folk. The earning is the most important direct outcome of Microfinance participation unlike acquiring empowerment. Participation in the program helps women to inculcate their saving habit. It gives access to the formal credit to them. All these have direct impact on their economic condition. This study explores the impact of Microfinance program on the income of the program participants. The study also focuses how participation helps in reducing inequality in income of the participants.

KEYWORDS: Microfinance, Income, Inequality, Empowerment.

1. INTRODUCTION :

Microfinance is the provision of the various kind of financial services e.g. savings, loans, insurance and money transfer etc. to the poor people who are generally denied by the formal banking system of a country. The banks are not interested in providing tiny loans to the poor as these types of loans involves high transaction cost to the bank and at the same time bank has the orthodox belief that poor are not bankable or they are not credit worthy. Microfinance in this scenario is a remarkable successful tool in providing credit to rural people. Microfinance can be segregated in two types -1) individual banking and 2) group based microfinance. SHG is the second type of microfinance activity. Generally, ten to twenty rural poor people especially women from same economic strata come forward to organize a group. Formal banking system serves them directly and in some cases through the NGOs and NBFCs in India. The present form of SHG had originated in the mind of Prof. Md. Yunus of Chittagong University of Bangladesh. Later some NGOs in South India tried to organize SHGs during the mid-eighties. Probably first SHG was formed by Mysore Resettlement and Development Agency (MYRADA) in 1985. By 1986-87 MYRADA was able to organize nearly three hundred SHGs. The MYRADA then approached NABARD to conduct an action research project to investigate the possibility of SHG in India. Accordingly, NABARD conducted a series of study independently along with MYRADA in southern region of India. During the same period NABARD with Asian and Pacific Regional Agricultural Credit Agency (APRACA) Conducted elaborate study to investigate the

saving potential of the poor, their repayment ethics and dynamics of group approach. The result of the study and action research project was encouraging to them. In 1991-92 NABARD launched a pilot project for SHG-Bank Linkage in consultation with RBI, Commercial Banks and NGOs. Five Hundred SHG in this pilot project were formed. Commercial Banks and subsequently RRBs and Cooperatives were asked by RBI to extend the financial support to the SHGs. From 500 groups in 1992 to 76.97 lakh saving linked SHG with Rs. 11059.84 crore in March 2015, show a tremendous growth in number of groups. Out of total saving linked SHGs 86.41% are women SHGs with 83.77% share of total savings. Up to March 2015 there has been 16.26 lakh credits linked SHGs in India with Rs. 27582.31 crore loan amounts. Women SHGs comprise 89.05% of total credit linked SHGs with 83.53% of total loan amount. There has been a steady increase in the amount of loan outstanding to the credit linked SHGs. The clients of SHGs are benefitted in numerous ways. Now they have access to resources income and employment. There are some intangible benefits also. From various research studies and anecdotal evidences, it is observed that microfinance has influence in their decision making, participation, familial relation etc. participation in SHGs also have impact on economic, social, political and cultural sphere of their life.

2. REVIEW OF LITERATURE

Impact of Microfinance on the lives of the rural poor is very widely discussed research topic in research and academic circle. There are enormous research papers in this topic. Now going through very few relevant papers among them it can be seen that Microfinance helps rural poor to increase their income but the enhancement in income as suggested in some studies is not sufficient to reduce their poverty level and to meet their all the basic needs. Pitt and Khandker (1998) found that credit has greater impact on poor woman than a male borrower. Credit leads a woman to increase her household consumption expenditure to eighteen percent whereas for a male borrower the increment is only eleven percent. Anand (2004) found that participation of women in SHGs make a change in their living standards "through regular savings, improved level of family earnings, expanded assets, better socio-political access thereby reducing vulnerability and poverty contributing to a wide range of development goals." Kabeer and Nojonen (2004) found among the members of the PRADAN's SHG Microfinance of Jharkhand that membership had significant impact in reducing overall poverty level but the basic need satisfaction of the people of the surveyed area was very little. Adhikary (2010) observed in Burdwan district of West Bengal that SHG member households have been able to increase their average monthly expenditures on food and nutrition, fuel and energy, health care and education. The novelty of the study is that before the measurement of the impact of SHG membership on household expenditure it was confirmed that no endogeneity is associated with the SHG membership variable. Kundu (2010) found that borrowers under NGO earned more than the SHG members under SGSY. However, access to health and education to their children is still out of their range. Hossain (2012) in Bangladesh found that the income of the BRAC Microfinance members has increased but the increase in the income is not sufficient to meet their basic need. Similarly, Kaliranjan and Singh (2012) in Uttarakhand found that SHGs have failed to reduce the poverty of the respondents who lie below the poverty line. They also seen that performance of NGO supported SHGs are far better than SHGs under SGSY regarding the well-being of the members. According to the authors the SGSY program is poorly linked to the poor people and there is lack of initiative on the part of Government and concerned authorities to encourage the poor to work in groups. Sahu and Das (2006) in Gajapati district of Orissa, Dhanya and Shivakumar (2010) in Kerala, Dhabamani (2011) in Sattur district of Karnataka, Monomania and Pravakaran (2011) in Tamilnadu and Das (2012) in Assam, found that income of the women SHG members increases significantly after joining SHG. Shirazi (2002) found that impact of Microfinance on poverty is marginal. Bhusal (2010), Premaratne et al. (2012) also derived similar type result.

There is enormity of research papers on the impact of SHGs. The results obtained from those are mixed. However, majority of the papers have shown that SHG participation has significant impact on the earning of its members. There are other some research papers also which explore the impact of SHG membership on the economic conditions of its members not enough. There is dearth of research papers which reflect on the impact of membership in SHG in reducing income inequality.

3. OBJECTIVE AND HYPOTHESIS

The first objective of the study is to explore the impact of SHG membership on the level of income of the respondents. If it is found that there is an increase in income of the members due to their participation we further investigate whether enhanced income were able to reduce inequality in income among the SHG members. If SHG membership accelerates income and reduces inequality in income distribution in income, it can be said that rural people will aspire to join SHG. In order to ascertain the objective following hypotheses have been developed. It is to be noted that testing hypothesis 3 & 4 meant for income distributional position of the respondents. Said two tests would continue if it is found that SHG membership has the significant impact on income.

HYPOTHESIS-1

Null hypothesis (H_0): There is no significant difference between the average income of the SHG members and non-SHG members.

Alternative hypothesis (H_1): Average income of the SHG members is significantly higher than the non-SHG members.

HYPOTHESIS-2

Null hypothesis (H_0): There is no significant difference between the current average income of the SHG members and average income two years back.

Alternative hypothesis (H_1): Current average income of the SHG members is significantly higher than the average income of two years back.

HYPOTHESIS-3

Null hypothesis (H_0): Income of the SHG members and non-members are equally distributed.

Alternative hypothesis (H_1): Income of the SHG members are more equally distributed than the non-SHG members.

HYPOTHESIS-4

Null hypothesis (H_0): There is no significant difference between the income distribution of current year and year before previous.

Alternative hypothesis (H_1): There is improvement in income distribution of the members over time.

4. ECONOMETRIC MODEL, DATA AND METHODOLOGY

As mentioned in the previous section, in order to examine the impact of SHG membership status on earning of the rural women of Birbhum district, following Model is proposed:

4.1. Model: Linear Model for the earning of the women.

Earning = f (SHG membership status, individual/household characteristics, community characteristics, random disturbance term)

The specified model is:

$$ERNGY = b_0 + b_1 SHGMS + b_2 DURSHGM + b_3 AGE + b_4 EDULVL + b_5 FARMING + b_6 NFSE + b_7 WEMP + b_8 SSTS + b_9 TRNG + b_{10} ACTFC + b_{11} AGRILAND + b_{12} CASTE + b_{13} REG + ERRORTERM$$

Where the variables are defined as follows:

Earning (ERNG): It is total monthly income of a woman measured in rupees.

SHG membership Status (SHGMS): SHGMS = 1, if a woman holds SHG membership and SHGMS = 0, if she does not hold membership.

Duration of SHG membership (DURSHGM): The duration of SHG membership is the period of time a woman acts as a SHG member. It is counted by years.

Age (AGE): Age is simply physical age of a woman counted by years.

Level of Education (EDULVL): It is the formal education that a woman acquires by attending school, college and university etc. It is ordered variable. Scores have been provided in following manner. Illiterate=0, Completed Primary Level=1, Completed Upper-Primary Level=2, Completed Secondary Level=3 Completed Higher Secondary

Level=4, Graduate=5.

Occupational Status: Occupational status is the economic activity in which women under study are involved to earn their livelihood. To segregate the impact of different occupation, women are divided into four categories namely farming, nonfarm self-employment (e.g. handicraft and artisan, poultry farming, petty business, livestock rearing and fattening, fishery, nursery, bee-keeping, tailoring and weaving etc.), wage employment (e.g. daily labor, maid serving, rice husking) and unemployment or home maker. These variable is taken as categorical variable indicating whether a woman belong to specific occupation. Specifically, FARMING = 1, if a woman involved in farming and 0 otherwise. NFSE = 1, if a woman involved nonfarm self-employment and 0 otherwise. WEMP=1, if a woman involved in wage earning and 0 otherwise.

Social Status (SSTS): Social Status is qualitative variable indicating whether a woman holds leadership status in any organization or not. SSTS = 1, if a woman is leader in the group and 0 otherwise.

Training (TRNG): Training enhances the productive capacity of a person leading to increase in income. TRNG = 1, if a woman has training which helps in enhancement her productive skill and 0 otherwise.

Accessibility to Formal Credit (ACTFCRDT): ACTORDT = 1, if a woman has access to formal credit and 0, otherwise. It is a binary variable.

Household's Agricultural Landholding (AGRILAND): The agricultural land holding of the family will be measured by the unit bigha (1 bigha=0.4 acre).

Caste: Caste of a woman in this is considered as categorical variable. GEN = 1, if a woman belongs to General Caste and 0 otherwise.

Religion (HINDU): HINDU = 1, if a woman belongs to Hindu religion and 0 otherwise.

4.2. Data and Methodology.

The survey has been conducted in the Birbhum district of West Bengal in the month of January and February of 2016. Two Blocks out of nineteen namely Dubrajpur Block and Rajnagar Block has been selected purposively for the study. Since there is no heterogeneity in the population distribution in the said Blocks, one Grampanchayat from each Block has been selected randomly. These two Grampanchayats are TantiparaGrampanchayat from Rajnagar Block and GohaliaraGrampanchayat from Dubrajpur Block. Four villages from each Grampanchayat have been selected randomly. These villages are Tantipara, Laujore, Khairadihi and Parasia under TantiparaGrampanchayat and Gohaliara, Bakreswar, Dedaha and Krishnapur under GohaliaraGrampanchayat. The incomes of the SHG members have been compared with the non-SHG members. At the same time comparison has been made between current year income and two years back income of the SHG members. A suitable questionnaire has been designed to interview respondents in the sample villages. Five hundred respondents have been interviewed. Among them three hundred and six are SHG members and one hundred ninety-six are non SHG members. Independent sample t test, paired t test has been used to test the hypothesis1 & 2 respectively and Gini coefficient and Lorenz curve technique has been used to test the income distribution of the respondents. Statistical software SPSS has been used to estimate the t test values. Gini coefficients have been estimated by using trapezoidal rule by MS Excel.

5. Empirical Results and Discussion

Table 1: Personal Profile of the Sample Women

SL. No.	Personal Information	No. of Respondents	Percentage	Mean
1	Age in Years			38.4
	(a) Below 25	35	7.0	
	(b) 26 – 40	271	54.2	
	(c) 41 – 60	188	37.6	
	(d) Above 60	06	1.2	
2	Religion			
	(a) Hindu	466	93.2	
	(b) Non-Hindu	34	6.8	
3	Caste			
	(a) General	66	13.2	
	(b) SC	184	36.8	
	(c) ST	92	18.4	
	(d) OBC	158	31.6	
4	Marital Status			
	(a) Married	456	91.2	
	(b) Widow	37	07.4	
	(c) Unmarried	02	0.4	
	(d) Separated	05	01.0	
5	Education			1.28
	(a) Illiterate	70	14.0	
	(b) Primary	283	56.6	
	(c) Upper Primary	91	18.2	
	(d) Secondary	47	9.4	
	(e) Higher Secondary	9	1.8	
6	Family Type			
	(a) Nuclear	334	66.8	
	(b) Non-Nuclear	166	33.2	
7	Occupational Status			
	(a) Unemployed	120	24.0	
	(b) Agriculture	32	6.4	
	(c) NFSE	99	19.8	
	(d) Wage Employment	249	49.8	
8	Respondents' Income			Rs.1741/-
	(a) Less than Rs.1000/-	119	23.8	
	(b) Rs.1001/- to Rs.2000/-	211	42.2	
	(c) Rs. 2001/- to Rs.3000/-	156	31.2	
	(d) Above Rs.3000/-	14	2.8	

Source: Field Survey.

Table 1 depicts the personal profile of the respondents. 7% respondents are under age 25. 54.2% respondents belong to the age group 26 – 40 years and 37.6% respondents belong to the age group 41 – 60 years. All the respondents except very few belong to the productive age group. The average age of the respondents is 38.44 years. 93.2% respondents by religion are Hindu. Among the respondents 13.2% belong to General caste. 36.8% belong to SC category. 18.4% belong to ST category and 31.6% belong to OBC category. It is to be noted that all the Muslim respondents are included in OBC category. 91.2% respondents are married women. 7.4% respondents are widow and 1% respondents are separated. Only two women are unmarried. 14% respondents

have no formal education. 56.6% respondents attend only primary level of education. 18.2% respondents have upper primary level of education. 9.4% respondents have passed matriculation examination and 1.8% respondents have passed higher secondary examination. No one respondents have attend higher level of education. 66.8% respondents belong to nuclear family whereas 33.2% belongs to large family. 24% respondents are unemployed. They have no income. 49.8% of surveyed women engaged in wage employment. 19.8% respondents are self-employed in non-farm activities. Only 6.4% of the total respondents engaged in agricultural activities. The average income of respondents are Rs. 1741/-. 42.2% respondents earn within Rs. 1001/- to Rs. 2000/- 23.8% respondents earn less than Rs. 1000/-. 31.2% respondents earn higher than Rs. 2000/- but less than Rs. 3000/-. Only 2.8% respondents earn more than Rs. 3000/-.

Table 2 depicts the percentage distribution of categorical variables. 61.2 percent of respondents belong to SHGs where as 38.8 percent of respondents had no association of any kind of groups. 61.8 percent of respondents had no access to formal credit. 14 percent of surveyed population is illiterate. 19.4 percent of respondents are house wife and they did not have any kind of sources of income. 80.6 percent of women respondents engaged mainly three kinds of occupation namely farming, non-farm self-employment and wage employment. 32.4 percent of respondents had training to increase their productive capacity. 18 percent of sample women are either group leader or assistant leader. 93.2 percent of sample women belong to Hinduism. 13.6 percent of the sample women belong to General Category.

Table 2: Percentage Distribution of Categorical Variables in the Sample

Categorical Variables	% of Sample Observations having Values	
	0	1
SHG MEMBERSHIP (SHGMS)(1=Yes)	38.8	61.2
ACCESS TO FORMAL CREDIT (ACTFCRDT)(1=Yes)	61.8	38.2
LITERACY (LIT) (1= PRIMARY OR ABOVE)	14	86
EMPLOYMENT (EMPL) (1=Yes)	19.4	80.6
TRAINING (TRNG) (1=Yes)	67.6	32.4
SOCIAL STATUS (SSTS) (1=Leader or Asstt. Leader)	82	18
RELIGION (REG) (1= Hindu)	6.8	93.2
CASTE (GEN) (1= General Caste)	86.4	13.6

Source: Field Survey.

Table 3: Descriptive Statistics of Quantitative Variables in the Sample

Variables	N	Minimum	Maximum	Mean	Std. Dev.
Monthly Income (Rs)	500	0.00	4000.00	1741.03	964.4
Duration of Membership (DURSHGM) (Year)	306	2	15	5.801	3.756
Age (Year)	500	21	71	38.44	8.718
Land Holding (AGRILAND) (Bigha)	500	0	14	1.182	2.04
Existence of SHG Program in Village (ESHGV) (Year)	500	6	14	10.428	3.353

Source: Field Survey.

Table 3 depicts the descriptive statistics of the quantitative variables. The average income of the sample women is Rs. 1741.03/-. Their ages vary from 21 years to 71 years. The average age of the respondents is 38.44 years with standard deviation 8.718 that is most of the respondents belong to the productive age group. There are

306 sample women who are the members of SHGs. Duration of membership in SHGs of them varies from 2 to 15 years. Average duration of membership is 5.8 years. The average land holding of the respondents' households is 1.182 bigha. The average year of experience of microfinance program for all villages is 10.428 years.

5.1. Testing Hypothesis 1

From the table 4 it can be seen that average income of the SHG members Rs. 2183/- whereas the average income of the non-SHG members I Rs. 970/-. The standard deviation of income of non-SHG members is higher than the SHG members i.e. income of the non-SHG members are more widespread than the SHG members.

	SHGMS	N	Mean	Std. Deviation	Std. Error Mean
CURRENT YEAR EARNING	SHG MEMBERS	306	2182.88	649.133	37.108
	NON-SHG MEMBERS	194	1044.10	970.148	69.653

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
CURRENT YEAR EARNING	Equal variances assumed	59.560	.000	15.7	498	.00	1138.7	72.42	996.476	1281.08
	Equal variances not assumed			14.4	302.6	.00	1138.7	78.92	983.475	1294.08

Table 5 shows the independent t test result required for testing hypothesis-1. The F value of Levene's Test for equality of variance is highly significant which means that equal variance of income need not to be assumed. So, if equal variance is not assumed, it can be seen that the value of t statistic is 14.429 and it is significant at 1% level of significance. The null hypothesis therefore can be rejected and it can be concluded that average income of the SHG members is significantly higher than the non-SHG members.

5.2. Testing Hypothesis 2

Table 6 depicts that average income of the SHG members in the current year is Rs. 2183/- whereas average income of the members two year back is Rs 1956/- .However, the standard deviation of income in the current year is higher than the income of two years back. Table 7 depict that the correlation between current income and two years back income is significantly high. Table 8 depicts that paired t statistic is 26.213 and it is significant at 1% level of significance. It therefore can be concluded that income of the SHG members has been increased compared to the previous specified period.

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Y _t	2182.88	306	649.133	37.108
	Y _{t-2}	1956.14	306	602.737	34.456

		N	Correlation	Sig.
Pair 1	Y _t &Y _{t-2}	306	.973	.000

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	$Y_1 - Y_{1-2}$	226.732	151.303	8.649	209.712	243.752	26.213	305	.000

5.3. Linear Model of Earning

The findings of linear regression model are depicted in table 9. The table reveals that SHG members have the higher income than the non-SHG members. The result is significant at 1 percent level of significance. The duration of experience in SHG program had also significant impact on their earning and the result is significant at 5 percent level of significance. The table depicts that with the increase in age the income of the respondents also increases significantly (at 5 percent level of significance). They get more experienced with their age and this reflects in their increasing level of income. The level of education has positive impact on income but the result is not statistically significant. 14 percent of sample women are illiterate, 56.6 percent of sample women have only primary level of education, 18.2 percent of sample women have completed their upper primary level. Most of the sample women had the elementary level of formal education. This type of educational attainment is not conducive to increase their productive capacity. The table reveals that occupational status of women has highly significant impact on their income. It is to be noted that women engaged in farming had higher income than non-farm self-employed person and wage employee. Access to formal credit has significant impact on income. The result is significant at 1 percent level. The land holdings of the respondent’s household had no significant impact on income. The average size of land holding of the households is 1.182 bigha. The product produced in these tiny pieces of land is only for self-consumption. So, there is no profit from cultivation. The estimates of the equation show that though formal education has no significant of income, productive capacity building training has highly significant impact (1percent level of significance) on income. The women who are the group leaders enjoy higher social status and they have the higher level of income compared to other women. The result is statistically significant at 5 percent level. Both the community characteristics e.g. religion and caste has no significant impact on income.

Table 8: Regression Estimates of Earning

Dependent Variable: Earning (Monthly Income (Rs))				
Method: Least Squares				
Sample: 1 500				
Included observation: 500				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-41.35976	204.2610	-0.202485	0.8396
SHGMS	489.0800	95.49398	5.121579	0.0000*
DURSHGM	25.87474	10.71989	2.413715	0.0162**
AGE	8.181565	3.594987	2.275826	0.0233**
EDULVL	54.08165	39.70781	1.361990	0.1783
ROCFARMING	1158.916	138.8357	8.347390	0.0000*
ROCNFSE	771.1447	103.8240	7.427423	0.0000*
ROCWEMP	796.4765	84.89469	9.381935	0.0000*
ACTFCRDT	192.1120	73.9.568	2.599422	0.0096*
AGRILAND	22.83342	15.32765	1.489688	0.1370
TRNG	295.7697	80.21412	3.687252	0.0003*

SSTS	200.2570	87.70797	2.283224	0.0228**
REG	149.0328	123.8024	1.203796	0.2293
CASTE	77.02687	56.32904	1.367445	0.1721
R-squared	0.524511	Mean dependent var	1741.031	
Adjusted R-squared	0.511792	S.D. dependent var	964.4337	
S.E. of regression	673.8678	Akaike info criterion	15.89155	
Sum squared resid.	2.21E+08	Schwarz criterion	41.23893	
Log likelihood	-3958.886	F-statistic	41.23893	
Durbin-Watson stat	1.298452	Prob(F-statistic)	0.000000	

Source: Author's own calculation based on primary data * significant at 1 % level ** significant at 5 % level ***significant at 10 % level.

5.4. Estimation of Income Inequality

Testing Hypothesis 3 & 4

In order to test the hypothesis 3 & 4 Lorenz curve and Gini Coefficient technique has been used. Lorenz curve is generally used to show the inequality in income distribution. It is a graphical representation of cumulative proportion of income with respect to cumulative proportion of population. In the horizontal axis, cumulative proportion of population is measured and in vertical axis cumulative proportion of income. The straight line passing through the origin is the line of equality which shows if there is same income for each person. The curved line shows actual income distribution of the population is known as Lorenz curve. The difference between line of perfect equality and Lorenz curve is the degree of inequality of income distribution.

Gini coefficient is the ratio of area between the line of perfect equality and Lorenz curve. The value of Gini coefficient lies between 0 and 1. Higher value of the coefficient shows more unequal income distribution whereas the value of the coefficient approaches to zero indicate more equal distribution.

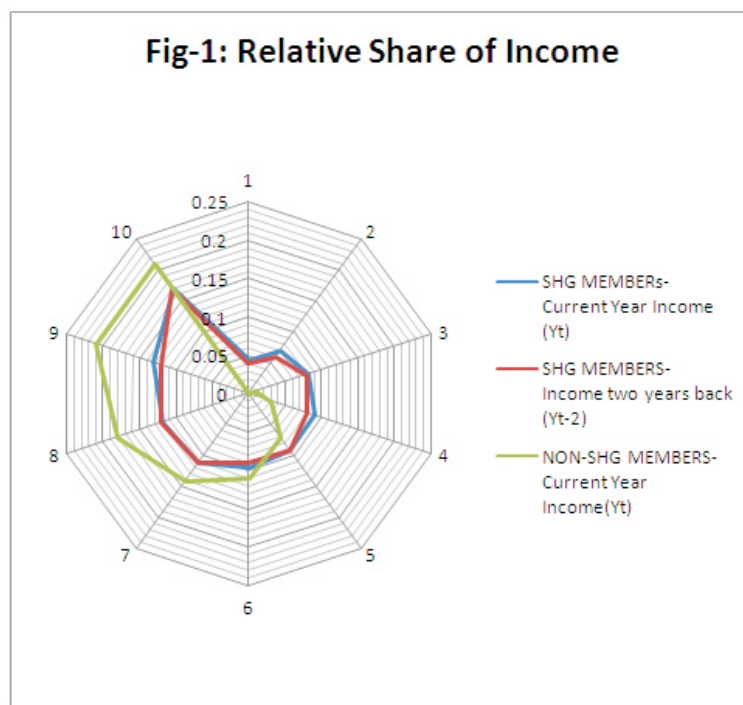
The table 9 depicts the income distribution among the respondents in the two blocks of birbhum district. The share of income here compared among the three groups. The groups are current income of the SHG members, income of the year before previous of the SHG members and current income of the non-SHG members. The bottom ten percent of the SHG members equal percentage share that is four percent in the period Y_t and Y_{t-2} whereas non SHG members share almost zero percent. This because of a significant number of non-participants is home maker and they earn no money. The second deciles of SHG members share 7% and 6% in the period Y_t and Y_{t-2} respectively. The third deciles of them share same percentage that 8% in both the period. The fourth, fifth and sixth deciles of the participants in the current year have equal share that is 9%. Except fifth deciles the percentage of incomes are higher compared to the period Y_{t-2} . The eighth and ninth deciles of the SHG members also have equal share of income in both the period. The top ten percent of the SHG members have slightly lower share of income in the current year compared to the period Y_{t-2} .

Table 9: Income Distribution

Deciles	Share of Income			Cumulative Share of Respondents	Cumulative share of Income		
	SHG Members		Non-SHG Members Period Y_{t-2}		SHG Members		Non-SHG Members Period Y_{t-2}
	Period Y_t	Period Y_{t-2}			Period Y_t	Period Y_{t-2}	
First	0.04	0.04	0.0005	0.1	0.04	0.04	0.0005
Second	0.07	0.06	0.0005	0.2	0.11	0.10	0.001
Third	0.08	0.08	0.011	0.3	0.19	0.18	0.012
Fourth	0.09	0.08	0.033	0.4	0.28	0.26	0.045
Fifth	0.09	0.11	0.075	0.5	0.37	0.37	0.12
Sixth	0.09	0.09	0.12	0.6	0.46	0.46	0.24
Seventh	0.12	0.11	0.15	0.7	0.58	0.57	0.39
Eighth	0.12	0.12	0.18	0.8	0.70	0.69	0.57
Ninth	0.13	0.13	0.22	0.9	0.83	0.82	0.79
Tenth	0.17	0.18	0.21	1	1	1	1
Gini Coff.	0.188	0.202	0.47				

Source: Author’s own calculation based on primary data.

Now comparing the income distribution between SHG and non- SHG members it can be seen that the share of income in all deciles are higher for the SHG members. The radar diagram depicts how the relative share of income of each decile is going to change of all the groups.

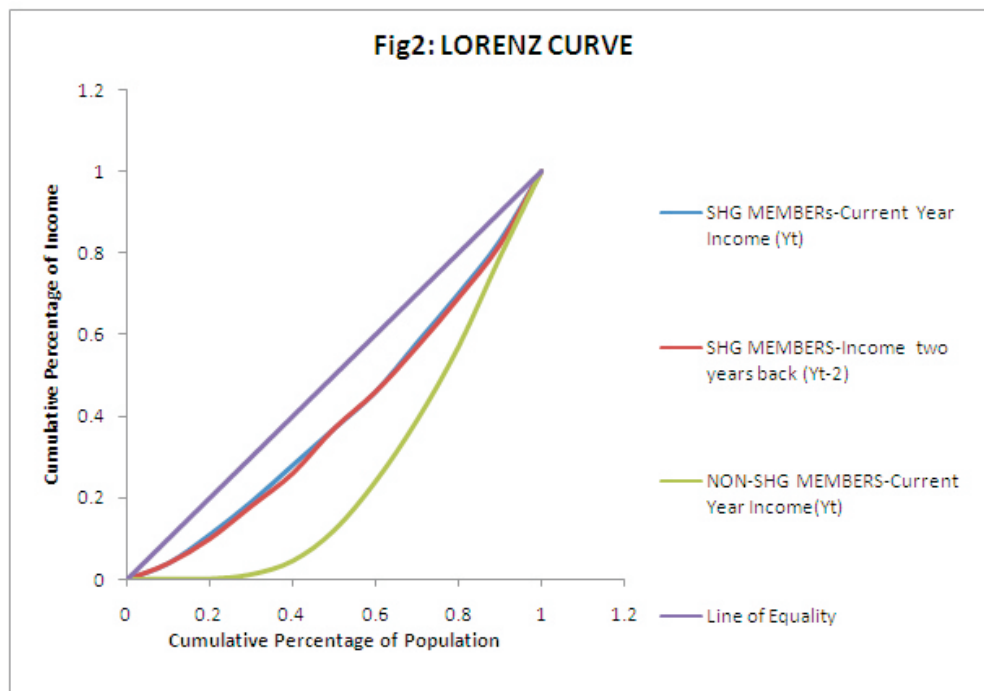


From the figure, it is evident that the change in income share over the period is insignificant but positive for the SHG members. The distribution is more equal for the SHG members compared to non-SHG members.

The Gini coefficient of SHG members in current year is slightly lower than the coefficient of the period Y_{t-2} . This suggests that within two years the inequality in income distribution is marginally reduced among the SHG

members. The Gini coefficient also suggests that the income distribution of the non-SHG members is more unequal compared to SHG members.

Now transforming the income share of the three groups in a cumulative manner and plotting them in a graph, the Lorenz curves can be drawn for the said groups. The above income distribution is plotted graphically in the figure 2.



6. CONCLUSION

This empirical study has measured the impact of SHG membership on the earning of the women. The findings of the study show that average income of the SHG members is higher than the non-SHG members and their income increases over time. The distribution of income is more equal for the SHG members compared to non-members, and there is improvement in income distribution of the SHG members over time. It can therefore be concluded that SHG-based microfinance should be implemented more intensively and extensively in the Birbhum district to improve the financial and economic position and to avoid the problem of social exclusion of the disadvantaged section of the society.

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