



ISSN: 0976-3031

Available Online at <http://www.recentscientific.com>

CODEN: IJRSFP (USA)

*International Journal of Recent Scientific Research*  
Vol. 8, Issue, 9, pp. 19905-19913, September, 2017

**International Journal of  
Recent Scientific  
Research**

DOI: 10.24327/IJRSR

## Research Article

### IMPACT OF SHG MEMBERSHIP ON THE EARNING OF RURAL WOMEN A CASE STUDY OF BIRBHUM DISTRICT IN WEST BENGAL

**Maniklal Adhikary and Sumanta Kumar Das**

Department of Economics, Burdwan University, West Bengal 713104

DOI: <http://dx.doi.org/10.24327/ijrsr.2017.0809.0785>

#### ARTICLE INFO

##### Article History:

Received 9<sup>th</sup> June, 2017  
Received in revised form 14<sup>th</sup>  
July, 2017  
Accepted 08<sup>th</sup> August, 2017  
Published online 28<sup>th</sup> September, 2017

##### Key Words:

Microfinance, SHG, Income, Women  
Earning

#### ABSTRACT

The study explores the impact of SHG membership along with some other socio-economic and demographic variables on the earning of women members. Earning is the most important direct outcome of the SHG participation unlike acquiring empowerment. Participation in SHG helps women to inculcate their regular savings. It gives direct access to formal credit to them. All this has direct impact on their economic condition. The study is based on two blocks of the Birbhum District of West Bengal. The major finding of the study reveals that women SHG members have a higher level of income compared to that of non-SHG members. Apart from the SHG membership duration of SHG participation, employment, capacity building training, agricultural land holding of households have significant impact on the women's earning. It is also found that the holding SHG membership has reduced income inequality amongst women in the district of Birbhum over time.

**Copyright © Maniklal Adhikary and Sumanta Kumar Das, 2017**, this is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution and reproduction in any medium, provided the original work is properly cited.

#### INTRODUCTION

The practice of small groups of urban and rural people for various purposes, like to form savings and credit organizations have always been common in India. So no definite date can be regarded as a starting date of the formulation of SHGs. However the present form of SHGs is actually the brainchild of Prof. MdYunus, the founder of Grameen Bank of Bangladesh. In 1976 he started a women's group on the basis of the principle of thrift and savings among them. Visualizing this success story in Bangladesh and elsewhere, the Non-Governmental Organizations in India are involved in organizing SHGs and they act as an agent between the Bank and the poor. So in the early stage NGOs like MYRADA, PRADAN, MALAR etc played a pivotal role in innovating and implementing the SHG model. In the 1980s the planners and policy makers realized the importance of promoting these groups. Their effort with Banks and development organizations helped to spread the movement across the country. In 1990s SHG came to exist not only as a financial intermediation but also as a common interest group. In 1991-92 NABARD launched a pilot project for SHG-Bank Linkage in consultation with RBI, Commercial Banks and NGOs. Five Hundred SHGs in this pilot project were formed. Commercial Banks and subsequently RRBs and Cooperatives were asked by the RBI to extend 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. It provides them the access to resources, income and employment. Participation in SHGs helps them to reduce their poverty and vulnerability and improve the economic condition. Our endeavour in this study is therefore to reinvestigate further the impact of SHG membership on the earning of rural women.

#### REVIEW OF LITERATURES

Impact of microfinance on the economic condition of the rural poor has become a matter of great concern in the academic and policy circle since the successful functioning of the Grameen Bank in Bangladesh. Enormity of research papers can be witnessed in this topic. The results obtained from these papers are various and mixed. Most of the researches reported that there has been an increase in the income of the women participants. Watching successful micro entrepreneurs is not uncommon. Receiving regular loans from Microfinance

\*Corresponding author: **Maniklal Adhikary**

Department of Economics, Burdwan University, West Bengal 713104

Institutions help them to improve their economic situation. Microfinance activity helps them to reduce the vulnerability of their family. Pitt and Khandker (1998) found that credit has a greater impact on a poor woman than a male borrower. Credit leads a woman to increase her household consumption expenditure up to eighteen percent whereas for a male borrower the increment is only eleven percent. Kabeer and Noponen (2004) in Bangladesh, Murthy et. al. (2005) in Andhra Pradesh under SAPAP SHG Program, Todd (2001) in Andhra Pradesh among the SHARE members found that there has been an overall reduction in poverty and vulnerability. Mayoux (2005) has pointed out the fact that the effect of Microfinance on vulnerability is not traced by the scholars and this impact is not less important than the actual increase in income. 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. However evidences which constitute a significant portion of literatures, show that the increase in income of women participants is very small, marginal, or even negative. Shirazi (2012) found that the net effect of Microfinance on income of the borrowers is only about 1.87 percent. This increase is marginal and insignificant. Reduction in poverty in the period under study is about three percent. He noticed an interesting result that, during this period the income of the poor non borrower has grown at 17.7 percent rate while the income of the borrowers has grown at 9.74 percent rate. Deininger and Liu (2009) in their study in Andhra Pradesh found that the impact of SHG on the participants' income and asset formation is insignificant compared to non participants. Anand (2004) noticed that there is a positive correlation between microcredit and income but not a significant one. Bhardwaj and Gebrehiwot (2012) studied three types of SHG Models: SHG formed and financed by Banks, SHG formed by NGOs but financed through Banks, and SHG financed by Banks using NGOs as financial intermediaries. Among them, only in type III SHG, the increase in income and asset formation is significant. Dhanya and Sivakumar (2010) in their study in Kerala pointed to marginal economic benefit. Jain and Jain (2012) found that the period of membership is unable to influence the increase in income of the SHG members. Nirmala (2006) found that post credit annual family income was Rs 22,850 which is significantly higher than the pre credit income of Rs 17,580.77. The increment is not sufficient in reducing poverty, as the poverty line stipulated by DRDA was annually Rs 24,000. Kaliranjana and Singh (2012), Shiraji (2012), Thakur and Tiwari (2005) observed that Microfinance through SHGs has failed to reduce poverty among the borrowers.

### **Objectives of the Study**

The first objective of the study is to estimate the impact of SHG membership status along with some selected socio-economic and demographic characteristics on the earning of the sample women. Earning is the most crucial factor of empowerment. Earning gives economic freedom to an individual. Employment, education, training, social status, type of occupation, etc. also have an impact on the earning of the individual. These types of socio economic demographic

variables along with SHG member status are therefore taken as independent variables.

The second objective is to explore whether the SHG membership status helps the rural women in reducing inequality in their income over time compared to non-SHG members.

### **Econometric Models and Methodology**

As mentioned in the previous section, in order to examine the impact of SHG membership status on women empowerment of the rural women of Birbhum district, following Models are proposed:

#### **Model 1: Semi-Logarithmic Model for Earning**

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

The specified model is as follows.

$$\ln(ERNSHGM) = \alpha_0 + \alpha_1 SHGMSTATUS + \alpha_2 DURMSHG + \alpha_3 \ln(AGE) + \alpha_4 EDUCATION + \alpha_5 ROCAGRI + \alpha_6 ROCNFSE + \alpha_7 TRAINING + \alpha_8 ACFCREDIT + \alpha_9 SOSTATUS + \alpha_{10} AGRILAND + \alpha_{11} RELIGION + \alpha_{12} CASTE$$

where the variables are defined as follows.

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

SHG membership Status (SHGMSTATUS): SHGMSTATUS = 1, if a woman hold SHG membership and SHGMSTATUS = 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 (EDUCATION): It is the formal education that a woman acquires by attending school, college and university etc. It is counted by the number of years a woman has been involved in formal education.

Occupational Status: Occupational status is the economic activity in which the women under study are involved to earn their livelihood. To segregate the impact of different occupations, women are divided into four categories, namely farming, non-farm self employment (e.g. handicraft and artisan, poultry farming, petty business, livestock rearing and fattening, fishery, nursery, bee-keeping, tailoring and weaving etc.) and wage employment (e.g. daily labor, maid serving, rice husking). These variables are taken as categorical variables indicating whether a woman belongs to a specific occupation. Specifically, ROCAGRI = 1, if a woman is involved in agricultural activities and 0 otherwise. ROCNFSE = 1, if a woman is involved in non-farm self-employment and 0 otherwise. Wage employment is the contrast dummy for categorical variables indicating whether a woman belongs to a specific occupation. Training (TRAINING): Training enhances the productive capacity of a person leading to increase in income. TRAINING = 1, if a woman has training which helps in enhancement of her productive skills and 0 otherwise.

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

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

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

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

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

### Model-2: Extended Semi-log Model of Earning

In this section we are going to reconsider Model 1 and renamed as Model 2 with a slight change in the set of explanatory variables. For example, in model 1 which was the semi-log model of women's earning we have replaced the education by a number of categorical variables. Education refers to the formal education that a woman acquires by attending school, college and university etc. It is generally counted by years a woman involved in formal education. We have considered five different categories education as follows. The first category of education level is below primary level that also includes the women who are illiterate. Primary, upper primary, secondary, higher secondary and graduation are the other categories education level. In our sample in the district of Birbhum we did not have any woman who is a graduate. The Higher Secondary level of education has been considered as the contrast variables. We have considered land holding pattern of the respondents' families as an important qualitative variable which indicate whether the land size of the household impact woman's earning or not. We have considered five different categories of land holding which are no land holding families, marginal land holding families (below one bigha), low middle land holding families (between 1 to 4 bighas), middle land holding families (between 4 to 10 bighas) and large land holding families (above 10 bighas). Large land holding families has been considered as the contrast variable.

Unlike the model 1, we have considered SC, ST and OBC caste to measure the impact of caste status on earning in contrast with General caste.

### Model-2: Extended Semi Logarithmic Linear Model for Earning of the Sample Women

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

The specified model is:

$$\ln(ERNSHGM) = \alpha_0 + \alpha_1 SHGMSTATUS + \alpha_2 DURMSHG + \alpha_3 \ln(AGE) + \alpha_4 BELOW\_PRIMARY + \alpha_{4b} PRIMARY + \alpha_{4c} UPPER\_PRIMARY + \alpha_{4d} SECONDARY + \alpha_{4e} ROCAGRI + \alpha_{4f} ROCNFSE + \alpha_5 TRAINING + \alpha_6 ACFCREDIT + \alpha_7 SOSTATUS + \alpha_{8a} NOLANDFAM + \alpha_{8b} MRGLNDFAM + \alpha_{8c} LMDLNDFAM + \alpha_{8d} MDLNDFAM + \alpha_{9a} RELIGION + \alpha_{9b} SC + \alpha_{9c} ST + \alpha_{9d} OBC$$

Descriptions of all the independent and dependent variables are in this model are already given in the previous models. Here we

mention them only. These are the SHG membership status (SHGMSTATUS, Yes=1), duration of SHG membership (DURMSHG), age of the respondents (AGE), below primary level of education (BELOW\_PRIMARY, Yes=1), primary level of education (PRIMARY, Yes=1), upper primary level (UPPER\_PRIMARY, Yes=1), secondary level of education (SECONDARY, Yes=1), respondent's occupation of agriculture (ROCAGRI, Yes=1), respondent's occupation of non-farm self employment (ROCNFSE, Yes=1), training (TRAINING, Yes=1) access to formal credit (ACFCREDIT, Yes=1) and social status (SOSTATUS, Yes=1), family having no land (NOLANDFAM, Yes=1), family having marginal land (MRGLNDFAM, Yes=1), lower medium land holding family (LMDLNDFAM, Yes=1), medium land holding families (MDMLNDFAM, Yes=1).

The community characteristics which may affect the earning are defined in previous models. We just here mention them. These are religion (RELIGION, Hindu=1), Schedule Caste (SC, Yes=1), Schedule Tribe (ST, Yes=1) and Other Backward Caste (OBC, Yes=1).

### Hypotheses

#### Hypotheses relating to the Model-1

The set of hypotheses that will be tested may be mentioned as follows.

**Hypothesis 1:** Self Help Group membership (SHGMS) is expected to increase the financial earning of the women SHG members.

**Hypothesis 2:** Duration of SHG membership (DURSHGM) is likely to vary directly with the financial earning of the rural women SHG member.

**Hypothesis3:** AGE of the SHG rural women members may increase their financial earning.

**Hypothesis 4:** Education level (EDULVL) of rural women SHG members is likely to affect their financial earning directly.

**Hypothesis 5:** If a rural women SHG Member is involved in agricultural activities (ROCAGRI), their financial earning is likely to be less than that of a rural women SHG Member involved in non-agricultural activities.

**Hypothesis 6:** If a rural women SHG Member is involved in non-farm self employment (ROCNFSE), their financial earning is likely to be less than that of a rural women SHG Member involved in non-agricultural activities.

**Hypothesis 7:** Accessibility to Formal Credit (ACTOFCRDT) is expected to increase the financial earning of rural women SHG members.

**Hypothesis 8:** Training (TRNG) leads to enhance financial earning of the rural women SHG members.

**Hypothesis 9:** Household's Agricultural Landholding (AGRILAND) is expected to increase the financial earning of the rural women SHG members in contrast to financial earning households of women SHG members without agricultural landholding.

**Hypothesis 10:** Social Status of a rural woman who holds leadership in any organization (SSTS) works in favour of increasing the financial earning of the rural women SHG member.

**Hypothesis 11:** Rural woman SHG member from a Hindu(RELIGN) family earns more than that of arural woman SHG member from a Muslim family.

**Hypothesis 12:** Rural woman SHG member from a general (GEN) caste family earns more than that of arural woman SHG member from a non-general caste family.

**Hypotheses relating to the Model-2**

Hypotheses on explanatory variables SHG membership status, duration of SHG membership, age, respondents' occupations, access to credit, training and social participation are same as the Model-1. Others hypotheses are given as follows.

**Hypothesis 1A:** Women having below primary and primary level of education earn less than the higher level of educated women. Since they have very insufficient level of elementary education it would not help them to increase their income.

**Hypothesis 1B:** Educations up to upper primary level and secondary level of the respondents have the significant positive impact on their earning. It is expected that required level of basic education help them to generate their livelihood and increasing income.

**Hypothesis 2A:** Women belong to the families having no agricultural land or having marginal land holdings earn less than the women belong to higher land holder families. No or marginal land holding in the rural areas indicate that they belong to poor and needy families. They have no scope to earn from the agriculture activities like others who have large amount of land.

**Hypothesis 2B:** Women belong to lower medium and medium land holding families have the positive and significant earning compared to others.

**Hypothesis 3:** Women who come under the SC, ST and OBC category earn less than the women belong to General class category. The probability of earning is expected to be lower for them compared to the General category women as they are the socially oppressed class.

**Data Collection**

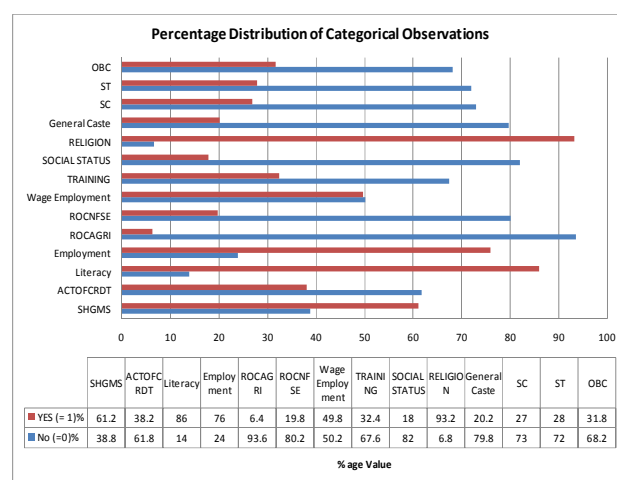
The study has been conducted in Birbhum district of West Bengal. The district is considered one of the backward districts of the state. The district comprises of 19 blocks. Out of these 19, two blocks, namely Rajnagar and Dubrajpur have been selected purposively. In the second stage one Grampanchyat from each Block has been selected at random. These two Grampanchyats are TantiparaGrampanchyat from Rajnagar Block and Gohaliara Grampanchyat from Dubrajpur Block, and finally in the third stage two villages from each Grampanchyats have been selected depending on local conditions. These villages are Tantipara and Khayradihi from Tantipara Grampanchyat and Gohaliara and Ekabbarpur from Gohaliara Grampanchyat. A suitable questionnaire was designed to collect primary data.

**EMPIRICAL RESULTS AND DISCUSSION**

Figure 1 depicts the percentage distribution of categorical variables. We note that 61.2 percent of respondents belong to SHGs where as 38.8 percent of respondents had no association to any kind of groups. Out of our sample observations, 61.8 percent of respondents had no access to formal credit. In the

sample 14 percent is illiterate and 24 percent of respondents are housewives and they did not have any kind of sources of income.

In respect of occupation, 6.4, 19.8 and 49.8 percent of the sample women are engaged in agriculture, non-farm self-employment, and wage employment respectively and 80.6 percent of women respondents are engaged in mainly three kinds of occupations, namely farming, non-farm self employment and wage employment. It has been found that 32.4 percent of respondents had training to increase their productive capacity. In the sample collected in the district of Birbhum, 18 percent of sample women are either group leaders or assistant leaders. So far religion is concerned, 93.2 percent of sample women belong to Hinduism. In respect of caste, 20.2 percent of the sample women belong to General Category and 27.0, 28.0, and 31.8 percent to SC, ST and OBC categories respectively.



**Figure 1** Percentage Distribution of Categorical Variables in the Sample  
Source: Field Survey 2016.

Table 1 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 members of SHGs. Their duration of membership in SHGs 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.

**Table 1** 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 (ESHGV) (Year)	500	6	14	10.428	3.353

Source: Field Survey 2016.

**Empirical Estimation of the Econometric Model**

Refer to the Table-2 where the empirical estimation of the econometric model has been presented. The coefficient of the dummy variable SHG membership status is 1.79 and it is statistically significant at 1 percent level. It implies that the SHG members earn  $\{ \exp(1.79) - 1 \} \times 100 = 492.9\%$ , more than the non-SHG members. Participation in SHGs therefore helps women to earn more than others. Participation opens up the avenue of resources to them. They use the loans collectively to develop any enterprise, or individually for production and consumption purposes. The participation therefore results in a higher level of income for the SHG members.

The coefficient of duration of SHG membership is negative. This implies that with the increase in the number of years of participation in SHGs, the earning of the members decreases; but the result is statistically insignificant. Though the SHG membership has significant influence on their earning, long term participation in the group is not found to have significant impact on their earning. The insignificance of the variable duration of SHG membership is quite shocking to us as it is one of the prime variables of the model. However we could give a reasonable explanation for this. In the field we have found that many of the borrowers have used the loans to meet their various consumption needs and not for any productive purposes, and that is why the impact of long term participation in SHGs could not be found significant in this sample.

after some point of time it decreases. This may be reflected in the insignificance of the explanatory variable age. The coefficient of level of education is negative and statistically insignificant. The majority of sample women, that is 59.1 percent, have only attained a primary level of education and 13.5 percent are illiterate. Only 6.2 percent and 1.7 percent have passed matriculation and higher secondary respectively. This minimum level of formal education is not sufficient to affect their productive efficiency. Further, they belong to poor and needy families; they had no scope to cultivate their knowledge which they acquire from the formal educational system of the state. So, the impact of their minimum level of education has decayed over time.

The women who are engaged in agricultural activities earn higher income than the wage employees. The coefficient of occupation agriculture is 1.06 which is statistically significant at 1 percent. This means that the incomes of women in cultivation are on average Rs.  $\{ \exp(1.01) - 1 \} \times 100 = 174.56\%$  higher than the wage earners. Similarly the women who engage in non-farm self employment have a level of income of Rs.  $\{ \exp(0.56) - 1 \} \times 100 = 71.6\%$ , higher on an average than the wage earners. The coefficient of non-farm self employment is statistically significant at 1 percent level. We therefore conclude that women engaged in agriculture and self-employment have a higher level of income than other employment categories.

**Table 2** Semi-Logarithmic Model of Earning

Source	SS	df	MS	Number of obs = 500		
Model	631.470117	12	52.6225097	F( 12, 487) = 22.38		
Residual	1145.29547	487	2.35173607	Prob > F = 0.0000		
Total	1776.76558	499	3.56065247	R-squared = 0.3554		
				Adj R-squared = 0.3395		
				Root MSE = 1.5335		
lnERNSHGM	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
SHGMSTATUS	1.790359	.2030611	8.82	0.000	1.391375	2.189343
DURMSHG	-.0110343	.0246871	-0.45	0.655	-.0595406	.037472
lnAge	.3522289	.3050721	1.15	0.249	-.247191	.9516488
EDUCATION	-.0898955	.0899937	-1.00	0.318	-.2667195	.0869284
ROCAGRI	.996514	.2921166	3.41	0.001	.4225496	1.570478
ROCNFSE	.5560507	.1903959	2.92	0.004	.1819519	.9301496
ACFCREDIT	.4325679	.1678849	2.58	0.010	.1026998	.762436
SOSPART	-.2834125	.0984944	-2.88	0.004	-.4769391	-.089886
TRAINING	.4316972	.1799477	2.40	0.017	.0781276	.7852669
AGRILAND	.1039813	.0348392	2.98	0.003	.0355275	.172435
RELIGION	-.3612556	.2825675	-1.28	0.202	-.9164576	.1939464
CASTE	-.2544732	.2108289	-1.21	0.228	-.6687197	.1597733
_cons	4.599673	1.157729	3.97	0.000	2.324912	6.874434

The coefficient of age is positive. This means that with the increase in age, the earnings of the surveyed women also increase; but the result is statistically insignificant. The average age of the respondents is 38 years which indicates that most of the women are middle aged. We know that with the increase in age, initially supply of labour of any individual increases but

The coefficient of access to formal credit is positive and statistically significant at 5 percent level, which means that the women who have access to formal credit have a higher level of income than the women who do not have access to formal credit. Women who have access to formal credit earn  $\{ \exp(0.43) - 1 \} \times 100 = 52.2\%$  higher than those who do not

have access to formal credit. Access to the informal sector for resources lead them to a debt trap. Access to formal financial sector through the SHGs helps them to get cheap, adequate and timely credit for their economic and financial purposes. The access to formal credit therefore leads them to generate a higher level of income.

The explanatory variable social status is statistically significant at 10 percent level. This indicates that group leaders have  $\{1 - \exp(-0.28)\} \times 100 = 26.6\%$  of the income of the others. A possible reason for this could be that the involvement of group leaders in various kinds of social and political activities hampers their productive capacity.

The impact of training on the earning of these women is statistically significant. The value of the coefficient is 0.51 and it is statistically significant at 1 percent level. This implies that the women who have had training earn on an average of Rs.  $\{\exp(0.51) - 1\} \times 100 = 61.6\%$ , more than the women who have not had any training. These types of training help women to acquire better skills and technical knowledge. Training also helps them to continue their entrepreneurial and/or other activities in a better and much more profitable way.

The coefficient of agricultural land holding of the respondents' households is statistically significant at 1 percent level. This implies that with a one unit increase in the land holding of the respondents' household, the income of the respondent increases by Rs.  $\{\exp(0.10) - 1\} \times 100 = 10.5\%$ .

The coefficient of religion is negative which implies that women other than Hindu religion earn more than Hindu women but the result is statistically insignificant. So, we conclude that religion has no impact on earnings.

The coefficient of explanatory variable General caste is negative, indicating that women from SC, ST and OBC categories earn more than the General caste women but the result is statistically insignificant. That is, the caste structure of the society is not biased toward general caste.

Same as the Model 1, it can be seen from this extended version that the coefficients of SHG membership status and respondents' occupation agriculture and non-farm self employment bear the same direction and are statistically significant. Similarly the coefficient of change in age is insignificant in both the model.

However the contradictory results can be seen for the variables duration of SHG membership status, access to formal credit and social status. The coefficient of duration of SHG membership is positive and statistically significant at 5 percent level indicating that with the increase in participation earning of the respondents increases. Longer association with the SHGs increases the accessibility to formal credit. It helps the borrowers to get larger amount of loans. It also reduces their dependence on the informal sector for getting loan and helps them to generate larger amount of saving in their account.

**Table 3** Semi-logarithmic Model for earning (Model-2)

. regress lnERNSHGM SHGMSTATUS DURMSHG lnAge		BELOW_PRIMARY PRIMARY UPPER_PRIMARY SECONDARY		ROCAGRI	
ROCNFSE ACFCREDIT SOSTATUS TRAINING NOLANDFAM MRGLNDFAM		LMDLNDFAM MDLNDFAM RELIGION SC ST OBC			
Source	SS	df	MS	Number of obs = 500	
Model	740.353812	20	37.0176906	F( 20, 479) = 17.11	
Residual	1036.411177	479	2.1636989	Prob > F = 0.0000	
				R-squared = 0.4167	
				Adj R-squared = 0.3923	
Total	1776.76558	499	3.56065247	Root MSE = 1.471	
lnERNSHGM	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
SHGMSTATUS	1.105835	.2243653	4.93	0.000	.6649729 1.546697
DURMSHG	.0500644	.0257513	1.94	0.052	-.000535 .1006638
lnAge	.0377995	.2977846	0.13	0.899	-.5473261 .6229251
BELOW_PRIMARY	-.0750183	.5791059	-0.13	0.897	-1.21292 1.062884
PRIMARY	-.1383856	.5459417	-0.25	0.800	-1.211122 .934351
UPPER_PRIMARY	-.2500399	.5421734	-0.46	0.645	-1.315372 .8152923
SECONDARY	-.0658465	.5749971	-0.11	0.909	-1.195675 1.063982
ROCAGRI	.6290498	.2885365	2.18	0.030	.0620961 1.196004
ROCNFSE	.6911398	.1896253	3.64	0.000	.3185396 1.06374
ACFCREDIT	.2442925	.1654571	1.48	0.140	-.0808189 .5694039
SOSTATUS	-.4587271	.1926477	-2.38	0.018	-.8372661 -.080188
TRAINING	1.085702	.196551	5.52	0.000	.6994937 1.471911
NOLANDFAM	-.883759	.5137776	-1.72	0.086	-1.893296 .1257775
MRGLNDFAM	-.4909526	.5825351	-0.84	0.400	-1.635593 .6536874
LMDLNDFAM	-.4486868	.5230176	-0.86	0.391	-1.476379 .5790057
MDLNDFAM	-.0671213	.6185666	-0.11	0.914	-1.282561 1.148318
RELIGION	-.7007015	.2878263	-2.43	0.015	-1.26626 -.1351434
SC	.2540948	.2410302	1.05	0.292	-.2195124 .727702
ST	1.348832	.2592029	5.20	0.000	.8395167 1.858147
OBC	-.2368847	.2288036	-1.04	0.301	-.6864675 .2126981
_cons	6.411842	1.369675	4.68	0.000	3.720528 9.103155

They become more experienced in operating the group. She now knows how to continue their economic activity in better way. As a group they grow as a self dependent and confident enough to tackle all the odds come against them. All these changes affect their earning.

The coefficient of access to formal credit in this model is positive but statistically insignificant. That is access to formal credit has no significant impact on increase in income. The possible cause behind the result that a considerable number of borrowers did not invest the loan for income generating purpose rather they used the loan amount to meet their consumption needs in their family.

The coefficient of social status is negative and statistically significant at 5 percent level implying that those who have higher social position have the  $\{1 - \exp(-0.46)\} \times 100 = 36.9\%$  lower increase in earnings compared to the women who do not enjoy higher social status. The women who are either group leader or assistant group leader are considered as the women with higher social status and their representation in total sample is very small. Further higher social position in terms of group leadership does not guarantee that it will definitely increase their income. There are other important considerations also such as entrepreneurial ability, ability undertake risk and productive investment of borrowed funds etc. Social position is therefore conducive to their empowerment but not always for their enhanced earning abilities.

In this extended model of earnings we have used dummies for the level of education as explanatory variables. These are the same as the dummies considered in the extended model of women empowerment status that is Model 1. The sign of all the dummies are negative and statistically insignificant implying that the education level up to secondary education has no significant impact on the earning. It is to be noted that level of education in the Model 1 which is an ordinal variable is also a statistically insignificant variable. The logic behind this result is same as the logic given in Model 1 for the non significance of the variable level of education.

Let us consider the dummies for the agricultural land holding. It is found that the coefficients of the dummies for families having marginal land, lower medium land and family having medium land are negative and statistically insignificant. However coefficient of dummy no land family is negative and statistically significant at 10 percent level. The no land families have  $\{1 - \exp(-0.88)\} \times 100 = 58.5\%$  lower increase in income compared to the families having large agricultural holding.

We have considered three dummies for the caste status which are SC, ST and OBC. The coefficient of OBC is negative and statistically insignificant. The coefficients of SC and ST are positive but here variable SC is statistically is not significant whereas the coefficient of ST is statistically significant at 1 percent level implying that women belong to ST have the higher increase in income than the unreserved caste women. Since the objective of the Government is to uplift socially disadvantage classes they are benefited more than upper classes.

**Table 4** Marginal Coefficients of Dummy variables in Model-1 & Model-2 for the semi-log models of earning

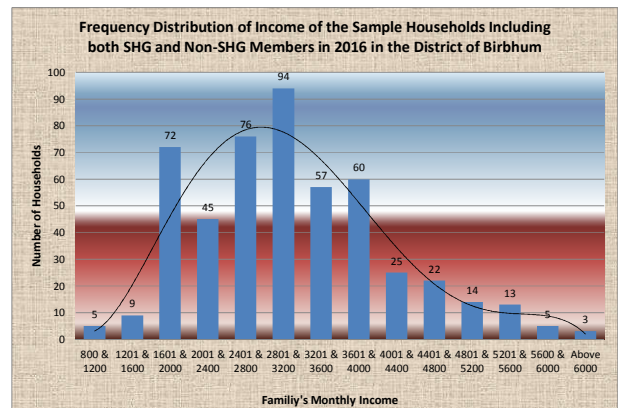
Variables	[ $\{\exp(\text{Coefficient of Dummy variable})-1\} \times 100$ ]	
	Model-1	Model-2
Constant	-	-
Individual and Household characteristics		
SHGMSTATUS (Yes=1)	492.9*	203.4*
Level of Education		
Below_Primary level (Yes=1)	-	-7.2
Primary level (Yes=1)	-	-12.8
Upper_Primary level (Yes=1)	-	-22.1
Secondary level (Yes=1)	-	-6.3
ROCAGRI (Agriculture=1)	174.56*	186.76
ROCNFSE (Non-farm self employment=1)	71.6*	99.37*
Access to formal credit (Yes=1)	52.2**	27.1
Social status (Yes=1)	26.6	-36.87**
Training (Yes=1)	61.6*	194.46*
Agricultural land holding		
No land family (Yes=1)	-	-58.5***
Marginal land family (Yes=1)	-	-38.7
Lower medium land family (Yes=1)	-	-36.2
Medium land family (Yes=1)	-	-6.5
Religion (Hindu=1)	-27.38	50.34**
Caste (General=1)	22.89	-
SC (Yes=1)	-	28.4
ST (Yes=1)	-	281.9*
OBC (Yes=1)	-	-21.3

Author's own calculation based on formula of Halvorsen & Palmquist (1980).

Note: \* stands for significance at 1% level; \*\* stands for significance at 5% level; \*\*\* stands for significance at 10% level.

**Income Distribution Prior and Posterior to SHG Membership**

In this section we explore the income distribution pattern of the sample women in the two blocks of the district under study. We have used Lorenz curve and Gini coefficient technique to observe the inequality level in the income distribution of the respondents. We have compared the Gini coefficients of incomes between the respondents of the SHG and non-SHG members and among the three groups of women SHG members corresponding to the year 2016 (current year of our data collection), 2015 and 2010. These Gini coefficients of the SHG members have been contrasted with the Gini coefficient of the non-SHG members in the year 2016. This exercise will help us to know among the non-SHG members and SHG members the degree of inequality associated with their income.



**Figure 2** Family Income and Women's Earnings amongst the Sample Households (Including both SHG and Non-SHG Women Members) in 2016

First we look into the frequency distribution of household income and women's Earnings amongst the Sample Households in 2016. We include both the SHG and non-SHG members for this. We therefore purposively have divided the household earning including both the SHG members and non-SHG members into fourteen income groups – each group having the same income range of Rs 400. Figure 2 shows number of households for each income groups. It can be seen that 81 percent of households belong within 1601 & 2000 to 3601 & 4000 income groups. The income group 2801 & 3200 is seen with the highest frequency that is 94 or in other words 19 percent households belong to this group. Similarly the income groups 1601 & 2000, 2001 & 2400, 2401 & 2800, 3201 & 3600 and 3601 & 4000 comprises 14.4, 9, 15.2, 11.4 and 12 percent of total households respectively. Other income groups include smaller number of households.

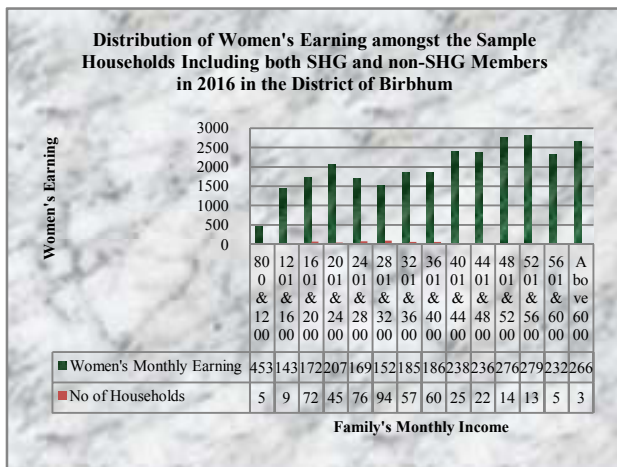


Figure 3 Distribution of Women's Earning amongst the Sample Households in 2016

The figure 3 depicts distribution of women's earning amongst the sample households including both the SHG and non-SHG members in the district for the year 2016. The figure shows that contribution of female members in the household income increases over the income groups. This means for each and every income group women has the significant contribution in family income.

Refer to Table 5 which shows the percentage share of income for the SHG members in the year 2016, 2015 and 2010 and that for the non-SHG members in the year 2016.

Table 5 Distribution of Income

Deciles	Percentage Share of Income			
	SHG Members			Non-SHG Members
	Period (2016)	Period (2015)	Period (2010)	Period (2016)
First	3.01	3.83	2.63	0.00
Second	4.65	6.30	3.51	0.00
Third	7.00	7.86	4.39	0.70
Fourth	8.91	8.77	5.26	3.10
Fifth	8.93	8.27	5.26	5.73
Sixth	11.29	11.07	11.40	11.00
Seventh	11.27	11.04	14.91	14.02
Eighth	12.33	12.52	16.67	17.77
Ninth	13.35	11.67	17.54	21.10
Tenth	19.26	18.67	18.42	26.58

Source: Authors' own calculation based on primary data

This percentage share of income has been considered for the deciles of income. Bottom ten percent of the SHG members have only 3 percent (but less than 4%) share of income which is slightly higher than their share of income in 2010. Similarly in the deciles position second, third, fourth, and fifth, SHG members have the higher share of income compared to their previous year (2010) positions. On the contrary SHG members have the smaller share of income in 2016 in the sixth, seventh, eighth and ninth deciles position compared to their previous year (2010) share of income. The situation is reverse in 2010 and 2016 for the SHG members.

Refer to the figure 4 which present the Lorenz curves for SHG and non-SHG members in the years 2016 and for the SHG members in 2010. We note that the Lorenz curves for the SHG members are farther from the egalitarian line as we move back from the year 2016. The Lorenz curve for 2016 is closely adjacent; but that for the year 2010 is farthest for the SHG members. If we look at the Lorenz curve for the non-SHG members in the year 2016, it takes the position far below the line of perfect equality and also lies below the Lorenz curve 2016 for the SHG members. However it lies marginally above the Lorenz curve 2010 for the SHG members. Since with the distance of the Lorenz curves from the egalitarian the degree of inequality increases, it is obvious the income inequality declines due to participation in the SHG and also the degree of inequality varies inversely with the duration of SHG membership. The degree of inequality can be directly assessed from the Gini coefficients.

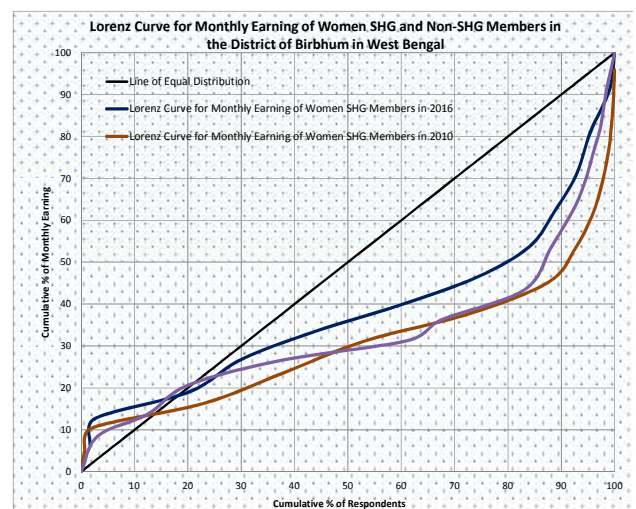


Figure 4 Lorenz curve for earning of women SHG and non-SHG members

Refer to figure 5 where we have calculated the Gini coefficients for each income group (ten groups) of SHG members of the year 2016 and 2010 and also of the non-SHG members of the year 2016. We note that for each income group except the first one the Gini coefficients of the SHG members are declining over the time. Further, if we compare between the Gini coefficients of the SHG members and that of the non-SHG members for the year 2016, the former is much smaller than that of the latter. Hence, there is no doubt that the microfinance has reduced income inequality amongst women in the district of Birbhum in West Bengal over time.



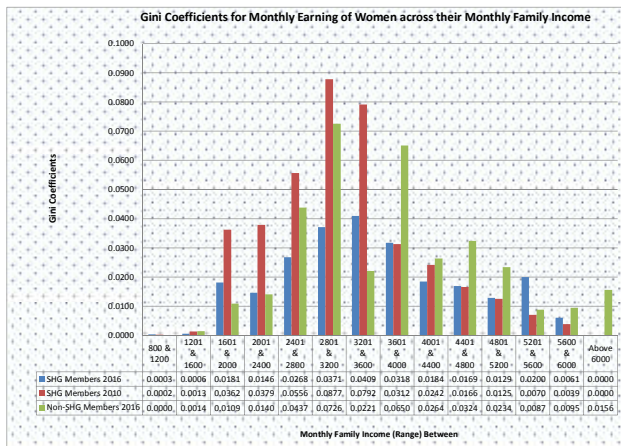


Figure 5 Gini coefficients for earning of women across their family income

## CONCLUSION

This empirical study has measured the impact of SHG membership along with other demographic and socio economic characteristics on the earning and income distributional pattern of the rural women in Birbhum. We have found that women belonging to SHGs earn more than non-SHG members. We explore that employment, productive training and access to formal credit have an important role in enhancing the earning ability of the individuals. SHG membership also helps to reduce the inequality in income distribution of the SHG members. The Government, service providers and local administration should therefore take steps towards more employment generation, diversification of employment opportunities. Care should be taken to provide sufficient loans with cheap interest to the SHG members who have plans to invest the loan amount in some income generating activity. Capacity building training also helps the beneficiaries in increasing their productive capacity. The local administration and service providers should take care to extend capacity building training to make SHG programs more successful.

## References

Adhikary, M. L. (2010). Self-Help Group Movement- An Engine of Rural Development: A Case Study in the District of Burdwan, [www.cdeds.org/ws2010/WS2010\\_PAPERS/MANIKLAL%20ADHIKARY.pdf](http://www.cdeds.org/ws2010/WS2010_PAPERS/MANIKLAL%20ADHIKARY.pdf). (Accessed on 22.09.2014)

Anand, J.S. (2004), 'Addressing Poverty Through Self-Help Groups: A Case Study', [www.img.kerala.gov.in/docs/papers/jsal.pdf](http://www.img.kerala.gov.in/docs/papers/jsal.pdf)

Bhardwaj, R.K. and K. Gebrehiwot (2012): 'Microfinance and Women Empowerment: An Impact study of Self Help Groups (SHGs)-An Empirical study in the rural India with special reference to the state of Uttrakhand', Ninth AIMS International Conference on Management. Jan 1-4, 2012.

Deininger, K. and Y. Liu (2009): 'Economic and Social Impacts of Self Help Groups in India', <http://econ.worldbank.org>

Dhanya, M.B. and P. Sivakumar (2010) Women Empowerment and Microfinance: Case Study from Kerala. [http://mpa.ub.uni-muenchen.de/25337/1/MPRA\\_paper\\_25337.pdf](http://mpa.ub.uni-muenchen.de/25337/1/MPRA_paper_25337.pdf)

Kabeer, N. and H. Noponen (2004): 'Social and Economic Impacts of PRADAN's Self-Help Group Microfinance and Livelihoods Promotion Programme: Analysis from Jharkhand, India', Imp-Act Working Paper No. 11, IDS, Brighton. [www.ids.ac.uk/impact/publications/working\\_papers.html](http://www.ids.ac.uk/impact/publications/working_papers.html).

Kaliranjan, K. & Singh, K. (2012). Self Help Group-Banking-Poverty Reduction Nexus: A Case Study of Uttrakhand State, India, ASARC Working Paper, 2012/2.

Mayoux, L. (2005): 'Women's Empowerment Through Sustainable Micro-Finance: Rethinking 'Best Practices''. Discussion Draft, [www.genfinance.net](http://www.genfinance.net)

Murthy, R.K., K. Raju and A. Kamath (2005): 'Towards Women's Empowerment and Poverty Reduction, Lessons from the Participatory Impact Assessment of South Asian Poverty Alleviation Programme in Andhra Pradesh, India', mimeo.

Nirmala, V. (2006): 'Achieving Gender Equality Through Capability Development: Efficacy of Shgs In Rural Pondicherry Region, India', [www.pondiuni.edu.in/sites/default/files/downloads/economics.pdf](http://www.pondiuni.edu.in/sites/default/files/downloads/economics.pdf)

Pitt, M. M. & Khandker, S. R. (1998). The Impact of Group-Based Credit Programs on Poor Households in Bangladesh: Does the Gender of Participants Matter?, *Journal of Political Economy*, 1998, Vol. 106, no.5.

Shirazi, N.S. (2012): 'Targeting And Socio-Economic Impact Of Microfinance: A Case Study of Pakistan', web source: [www.irti.org/English/Research/Documents/IES/032.pdf](http://www.irti.org/English/Research/Documents/IES/032.pdf).

Thakur, S.G. and A.M. Tiwari (2005): 'Whether shg-based micro-credit programmes can remove poverty? A case study of shg-based programmes in patan district of gujrat', [www.wiego.org/.../papers/Tiwari\\_Can\\_SHGs\\_remove\\_poverty.doc](http://www.wiego.org/.../papers/Tiwari_Can_SHGs_remove_poverty.doc)

Todd, H. (2001): 'Paths Out of Poverty: The Impacts of SHARE Microfin Ltd in Andhra Pradesh', Imp-Act Report.

### How to cite this article:

Impact of Shg Membership on The Earning of Rural Women A Case Study of Birbhum District In West Bengal.2017, Impact of Shg Membership on The Earning of Rural Women A Case Study of Birbhum District In West Bengal. *Int J Recent Sci Res.* 8(9), pp. 19905-19913. DOI: <http://dx.doi.org/10.24327/ijrsr.2017.0809.0785>

\*\*\*\*\*