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Research Paper



AN EMPIRICAL ANALYSIS OF WOMEN'S CONTRIBUTION TO FAMILY INCOME IN ASSAM

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= ABSTRACT =

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bout 1.21 billion people lives in India and nearly 48.46 percent of them are women as on 2011 A (Census of India, 2011). Nearly 77 per cent of the total women population live in rural areas and 66 percent of them are engaged in agriculture related activities as a main occupation (Mula and Sarkar, 2013; Manikonda, 2014). It is to be noted that women play key role by performing most of the responsibilities and duties in their family and outside yet rural women are economically dependent and vulnerable, educationally backward as well as politically and socially disadvantaged in India. Women still continued to be discriminated, exploited and exposed to inequalities at various levels and in different forms although in its fundamental rights of Indian Constitution has provisions for equality, social justice and protection of women (Reji, 2013). The Government of India has taken several measures to address gender inequality and discrimination by incorporating gender perspectives in policies, strategies and programmes as reflected in national policies and institutional frameworks. This is because of the realisation that the targeted goals could no longer be achieved with development strategies that neglect the need for participation and contribution of women to the society. Furthermore, most of the women are downtrodden and the individual effort of the poor is too inadequate to improve their fate. This necessitates for organizing them in a group for providing collateral free loans, i.e., microcredit by which they get the benefit of collective perception, collective decision making and collective implementation of programmes for common benefit (Karmakar, 1999). As a result, self-help groups (SHGs) have been formed to finance this segment of the poor and create opportunities for income generating activities in order to uplift social and economic status of women in India.

KEYWORDS: women, decision making, free loans, equality, social justice

INTRODUCTION

In April 1999, the Government of India initiated after restructuring Integrated Rural Development Programme(IRDP) launched a holistic programme called Swarnjayanti Gram Swarojgar Yojana (SGSY) for organising rural poor into SHG (Self Help Groups) and promoting self-employment. The SGSY is now remodelled to form NRLM (National Rural Livelihood Mission) and is one of the world's largest initiatives to improve the livelihood of poor. The programme covers all aspects of self-employment such as organization of the poor into SHGs, training, credit, their capacity building, selection of key activities, planning of activity clusters, infrastructure and marketing support, technology, and enabling the rural poor to take decisions on all issues concerning poverty eradication (Banerjee, 2009).

As a consequence of the benefit accessed from microcredit programme, the rural women are participating in various income generating activities such as crop production, livestock rearing like poultry, duckery, piggery, handloom

and weaving and other activities like pickles and juice, handicraft, etc. (Kachari, et al., 2011; Bora, 2012). This income earning opportunity helps the rural women to contribute to their family income and achieve a level of economic independence and freedom. They can also contribute to improve housing condition and accumulate assets needed for their families.

The various empirical studies on SHG programmes suggested that microfinance had positive impact on the income, consumption and nutritional status and empowerment of women beneficiaries (Montgomery, et al., 1996; Pitt and Khandekar, 1998; Nguyen, et al, 2007; Imai, et al., 2010; Sivachithappa, 2013). While some other studies have reported that a proportion of micro-clients had become worse off after accessing microloans, benefitted relatively better off among the poor and found negligible evidence of the programme impact on the members ((Hulme and Mosley, 1996; Coleman, 1999; Swain, and Floro, 2010; Coleman, 2006). But, the study by Sinha, et al. (2008) concluded that SHG-bank linkage

microfinance programme had significantly improved the access to financial services of the rural poor and had considerable positive impact on the socio-economic conditions and the reduction of poverty of SHG members and their households. The programme had also reportedly empowered women members substantially and contributed to increased self-confidence and positive behavioural changes in the post-SHG period as compared to the pre-SHG period. A study by NABARD (2002) across 11 states of India covered 560 SHG member households from 223 SHGs, showed many positive results on the impact of participation of rural poor in the SHGs. It indicates that there have been perceptible and wholesome changes in the living standards of SHG members in terms of ownership of assets, increase in savings, borrowing capacities, income generating activities and income levels. APMAS (2009) in collaboration with NABARD found that SHG programme in Assam had resulted in significant social and economic benefits and over 80 percent of the groups experienced increased saving habits and income, credit availability and increased access to formal credit. Ahmed, et al. (2011) provided the evidence that the participating microcredit programmes of Grameen Bank in Bangladesh improved their socio-economic status and income generating activities of women and have found that 'with credit' rural women who contributed much higher (19 percent) to family income than that of 'without credit' rural women (10 percent). A study by Jasmine (2008) revealed that the SHG members' earnings contributed significantly to family income. Bansal (2010) found that microfinance programme diversified the economic activities in rural areas and SHG members were engaged in economic activities which increased income of individual and household. The study also revealed that microfinance programmes empowered women economically, socially, politically and psychologically (Mula and Sarkar, 2013). Thus, overall, self-help group microfinance programme has significant positive impact on income and economic security on the socio-economic lives of rural women.

The present study shows a case study of how SHG participation of rural women contributes to family income in two districts of Assam, viz., Baksa and Udalguri districts. The paper also discusses the socio-economic variables such as age, education, marital status, family size, distribution of earning members and children and compares sources of income generation between treatment (SHG member) and control (non-member) group rural women.

METARIALS AND METHODS

This study used sample survey method to derive information from the field. The primary data are collected with the help of direct face-to-face interview method. The objective is to analyse the impact of SHG joining on determinants of socio-economic status of the members through collection of primary data from the state of Assam. To reflect the objectives of the study, the data were collected from the sample rural women respondents of Baksa and Udalguri districts comprising of SHGs members and non-members.

In this study, the impact of SHG joining on members were analysed by comparing the Treatment Group (SHG participants) with Control Group (non-members). Treatment group members are microfinance beneficiaries from the microfinance programme prior to two years of the survey and Control respondents are new entrants of SHGs taken to remove biases in estimating programme impact as per AIMS Guidelines (Barnes and Sebastan, 2000).

A multistage sample design was adopted for selecting the sample respondents. In the first stage, two blocks from each of the districts were randomly selected to conduct the survey. In Baksa district, there are eight development blocks, viz., Baska, Jalah, Tamulpur, Goreswar, Nagrijuli, Barama, Dhamdhama, and Gobardhana in the district. Out of these, Baska and Jalah development blocks were selected. In Udalguri district, there are six development blocks, viz., Bhergaon, Khairabari, Kalaigaon, Mazbat, Rowta Chariali and Udalguri. Out of these, Udalguri and Bhergaon development blocks were randomly selected. In the second stage, 15 SHGs from each of the block were randomly selected to make a total of 60 SHGs spread over 35 villages in the study area. In the last stage, a total of 150 SHG members which form the Treatment Group were selected by taking 2 to 3 members from each SHGs by applying judgement sampling technique for conducting interview. Likewise, a total of 180 respondents were selected from the new entrants of SHGs to form the Control Group using the similar technique. The data were collected by the researcher himself by the using a pre-tested interview schedule in the month from May 2013 to October 2013.

After survey of the study, the collected data were properly coded directly on questionnaires, tabulated, analysed and interpreted in accordance with the objectives of the study by using appropriate statistical technique. Descriptive statistics such as means, percentages and frequency distributions are were used to analysis primary data for this study. The study also conducted a multiple regression analysis for determining factors which are affecting the 'Treatment Group' and 'Control Group' respondent's contribution to the total family income. This study utilized computer software like Microsoft-excel and SPSS (Statistical Package for Social Science) to analyse the data.

The multiple regression model used in this study is as follows:

Where,

Y = Dependent variable (Amount of total family income in Rs. added together from all sources-son, daughter, husband, father, mother, etc.)

₀ = Constant term

= Coefficient of independent variables,

E = stochastic disturbance term,

i = 1, 2, 3,.....n.

 X_i = Independent variables which are as follows:

X = Age of the respondents (in years),

 X_2 = Marital status (in scores 1-3; for married respondent the score is 1, for unmarried 2 and for widow/divorcee 3),

 X_3 = Education (in scores from 0 to 5: for illiterate respondent, the educational score is 0; for respondent passing 1-5 class, the score is 1, for

respondent passing 6-9 class, the score is 2, for respondent passing HSLC the score is 3; for respondent passing HSC the score is 4; for respondent passing Graduate and above, the score is 5),

X₄= Family size which refers to the total number of household members.

 X_5 = Number of income earning members in the family,

 X_6 = Main Occupation of the household head is agriculture (farmer), then the score 1 and 0 for others.

 X_7 = Husband's monthly income is worked out by taking into account income main occupation as well as other subsidiary occupation per year divided by the total month of the year.

X₈=Respondent's monthly income is worked out by taking into account income from income generating activities of self-help group and other subsidiary occupation per year divided by the total month of the year.

RESULTS AND DISCUSSION

Socio-Economic Characteristics of the Respondents

The information on socio-economic characteristics of the rural women of the Treatment and Control Group members like age, marital status, educational attainment, family size, number of earners, total children are analysed under the following heads.

Age of the Respondents

Table 1 shows the age distribution of the treated and nontreated women respondents.

Table-1: Age of the Respondents

	Control Group		Treat	tment Group
Age Category(Years)	Count	Percentage	Count	Percentage
18-25	7	3.9	4	2.2
26-35	40	22.2	39	26.0
36-45	74	41.1	71	47.3
46-55	48	26.7	31	20.7
56 & Above	11	6.1	5	3.3
Total	180	100	150	100

Source: Field Survey, 2013

A perusal of the table reveals that majority of the treatment group women belonged to the age group of 36-45 years (43.9 percent), followed by age group of 26-35 years (23.3 percent) and 46-55 years (23.9 percent). It was seen that a higher portion of non-participant respondents belong to higher age category of 46-55 years (26.7 percent) than that of participant group which is 20.7 percent. There were no respondents below 18 years from both the treatment group and control group. The mean age of the participants (treatment group) and non-participants (Control Group) were 40.21 and 41.38 years respectively.

Marital Status

The table 2 indicates that the most of the surveyed women respondents were married and the proportion of widow or divorce women and unmarried girls is very low. The table 4.3 shows that the proportion of married women in the treatment group is 87.3 percent which is nearly 90.5 percent of the control groups. The proportion of widows is 2.8 percent for control group and 11.3 percent is treatment group. Only 1.3 percent of the treatment group and 6.7 percent of the control group are unmarried. Preponderance of married women in SHGs may establish their urge and need for employment to support their family.

Table-2: Marital Status of the Respondents

	Con	Control Group		Treatment Group	
Marital Status	Count	Percentage	Count	Percentage	
Married	163	90.5	131	87.3	
Unmarried	1	6.7	2	1.3	
Widow	5	2.8	17	11.3	
Total	180	100	150	100	

Source: Field Survey, 2013

Educational Qualification

Education level tends to determine where one works and is an important yardstick to assess the poverty status. To examine educational status, educational level is divided into four categories. They are- No schooling (Illiterate), primary level education (class I-V), High school level (VI-

IX), HSLC (X) and HSC (XII) & Above. Table 3 revealed that the majority, i.e., over sixty percent respondents of both the groups had obtained some form of education and about forty percent were reported to be having no formal education. The proportion of the respondents with no formal education

at 45.6 percent of the control group was larger than the treatment group which is 32.7 percent. The percentage of formal educations from primary to matric level for the treatment clients accounted for about 64 percent which was much higher than of about 50 percent of the control group

(non-participants) within that level of education. However, the percentage of women respondents with educational attainment of HSC level for the treatment group at 3.3 percent was slightly smaller than the control group (4.4 percent).

Table-3: Educational Attainment of the Respondents

	Con	Control Group		tment Group
Education Level	Count	Percentage	Count	Percentage
Illiterate	82	45.6	49	32.7
Primary (I-V)	49	27.2	50	33.3
Secondary (IV-IX)	23	12.8	25	16.7
HSLC (X)	18	10.0	21	14.0
HSC (XII)	8	4.4	5	3.3
Total	180	100	150	100

Source: Field Survey, 2013

Family Size

Family size is an impact factor for income and consumption determination. The household size (members) of the respondents ranges from a minimum 2 members to a maximum of 18 members. The table 4 revealed that majority (59.7%) of the households had members 2-4 in the family, followed by 5-7 members (31.8 percent) and 5.8 percent 8-10 members. In between the two groups, over 69 percent of

the households in the treatment group had 2-4 members in the family as compared to about 52 percent of the control group. Conversely, a greater proportion (38.3 percent) of the household in the control groups had 5-7 members in the family as compared to 24 percent in the treatment group. The mean household size of treatment group was 4.57 while that of control group was 5.05(Table 4).

Table-4: Family Size of the Respondents

Tubic III	diffing bize of the re	coponacinto		
Con	trol Group T		eatment Group	
Count	Percentage	Count	Percentage	
93	51.7	104	69.3	
69	38.3	36	24.0	
11	6.1	8	5.3	
7	3.9	2	1.3	
180	100	150	100	
-	5.05		4.57	
	Count 93 69 11 7	Control Group Count Percentage 93 51.7 69 38.3 11 6.1 7 3.9 180 100	Count Percentage Count 93 51.7 104 69 38.3 36 11 6.1 8 7 3.9 2 180 100 150	

Source: Field Survey, 2013

Number of Children in the Family

The distribution of children among the groups showed that the average size of the number of children was 1.4 for both the groups of households. About 67 percent of the households have one or two children in the family. There was little difference in the number of children between the

two groups of households. The number of households with 3-4 number of children was more in treatment group (11.1 percent) than that of the treatment group (8 percent only). The family having 5 & Above number of children was 2.2 percent of the control group as compared to 2 percent of the treatment group (Table 5).

Table-5: Number of Children in the Family

	Con	itrol Group	Treatment Group		
Children	Count	Percentage	Count	Percentage	
NIL	41		22.8	29	19.3
1-2	115	63.9	106 70.	70.7	
3-4	20	11.1	12	8.0	
5 & Above	4	2.2	3	2.0	
Total	180	100	150	100	

Source: Field Survey, 2013

Number of Earning Members

Table 6 summarises the number of income earners in the family. About 97.3 percent households of the treatment group have income earners ranging from one to two numbers which was greater than that of control households (89.4 percent). But the households with three and more income

earners were greater in the control group compared to the participant households. On an average, there was 1.60 number of income earners in the family in both the treatment and control group. (Table 6).

Table-6: Number of Earning Members

	Contro	l Group	Tre	atment Group
Number of Earners	Count	Percentage	Count	Percentage
1-2	161	89.4	461	97.3
3-4	13	7.2	3	2.0
5 & Above	6	3.3	1	0.7
Total	180	100	150	100

Source: Field Survey, 2013

Agricultural Lands (bigha1)

Household's agricultural landholding is measured as a total size of land occupied by the household for cultivation. The landholding status is shown in Table 7 below. A perusal of the table 7 revealed that treatment households owned, on average, about 4.27 bighas of land and the control group households owned 4.21 bighas. The proportion of

households over both groups holding no agricultural land is about 15 percent. A greater number of households (32.8 percent) in the treatment group have land between 1-3 bighas than that of households (25 percent) in the control group. However, households with more than five bighas of land are higher in control group compared to treatment group households.

Notes: 1 The unit of measurement of agricultural land is bigha (1 bigha = 0.4 acre)

Table-7: Agricultural Landholdings (bigha)

	Cor	ntrol Group	Treatr	nent Group
Agriculture Land	Count	Percentage	Count	Percentage
Nil	25	13.9	25	16.7
1-3.0	45	25.0	45	30.0
3.1-5.0	47	26.1	43	28.7
5.1-10.0	46	25.6	32	21.3
10.1 & Above	17	9.4	5	3.3
Total	180	100	150	100

Source: Field Survey, 2013

Income Contribution to Monthly family Income by Respondents

Income is one of the most important indicators to measure the socio-economic status of the individuals. The standard of living of an individual or family largely depends on the income level and the earning opportunities. Involvement of women in income generating activities is of late, recognized as a crucial factor for family survival, especially in subsistence family. Table 8 revealed that the monthly average income

accounted for ₹ 717.86 of the 'Treated' rural women was much higher than that of the 'Control Group' rural women which was ₹164.30 per month. This indicated that about 13.59 percent of household income was contributed by the 'treated' group women as compared to 4 percent by the nontreated women of their average total family incomes, respectively (Fig-1 and Fig-2).

Table 8: Income Contribution by Women Respondents to their family Income

Income Source	Treatmen	t Group	Control Group		
income source	Average (₹)	Percentage	Average (₹)	Percentage	
Respondent	717.86	13.59	164.30	4.0	
Husband	3971.23	75.21	3628.24	88.49	
Other Family Members	591.33	11.20	307.77	7.51	
Total Family Income	5280.44	100	4100.31	100	

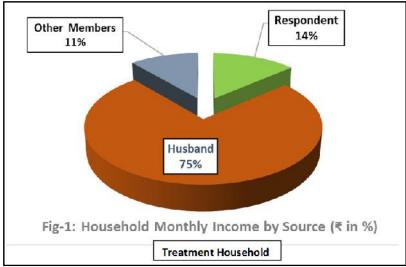
Source: Researcher's own calculation based on primary data

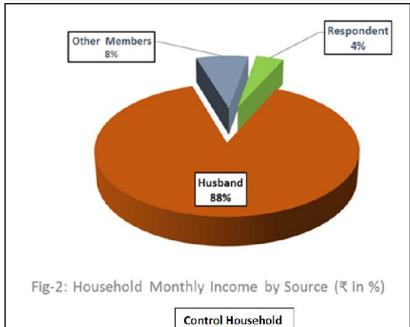
The calculated result of the study showed that monthly average income of the 'treated' women was much higher (i.e., 77.11 percent) than that of the 'controlled women. So, most of the women attributed this change to their perceived contribution as earner in the household income. It can be presumed that the incremental income of the 'treated' rural women due to the outcome of the SHG activities initiated by the government sponsored microfinance programme (SGSY) which helped the group members to carry out income

generating activities with the provision of microcredit, noncredit services such as training and skill development and awareness campaign. The table 8 and Fig-1 and Fig-2 showed that the monthly average incomes contributed by husbands from 'treatment group' women was about 75 percent as compared to 88 percent by the husband of non-treated group. Similarly, others members of the family (e.g., son daughter, brother, etc.) also contributed to family income was 11 percent in treated groups as compared to 8 percent in control group.

On the other hand, the monthly average income of the treatment group household accounted at ₹ 5280.44 was much higher that of the control household which ₹4100.31

was.





Since, the contribution of women SHG members belonged to 'treatment group' is higher than that of the women member of non-treated (control) group, we concentrate to use multiple regression analysis only for the treated rural women (SHG members).

Determinants of SHG members' contribution to the total family income

The extent to which respondent's contribution to the total monthly family income increased is likely to depend on a number of variables such as, age of respondent, status of marriage, level of education, total family members, number of earning members in the family, household's main occupation, monthly income of husband and monthly income of respondents. These variables derived from the extensive literature survey are considered relevant from theoretical point of view are included as explanatory variables. The estimated results of the multiple regression analysis on women SHG members' contribution to the family income are presented in the following tables.

The model summary table 9 reports the strength of the relationship between the model and the dependent variable. R indicates correlation between the observed and predicted value of the dependent variable. Larger value of R indicates stronger relationship and also indicates that model fit the data well. R square is the proportion of variation in the dependent variable explained by regression model. Higher value of R Square (more than 0.700) indicates that model having good predictive ability. The result of regression analysis based on eight explanatory variables indicates positive relationship (R = 0.974) and statistically significant relationship (P 0.000 < 0.05) with dependent variable (i.e., total household monthly income). The independent variables accounted for 94.9 percent ($R^2 = 0.949$) of variance in dependent variable (Table 9).

	Table-9: Model Summary								
Model R R Square Adjusted R Square Std. Error of the Estima									
	1	.974a	.949	.947	1318.49535				

a. Predictors: (Constant), X1, X2, X3, X4, X5, X6, X7, X8

The ANOVA Table tests the acceptability of the model from a statistical perspective. The regression row displays information about the variation accounted for by the model. The residual row displays information about the variation that is not accounted for by the model. The regression

and residual sum of squares is not equal which indicates that about approximately 95 percent of the variation in predictors is explained by the model. The significance value of the F-statistic is less than 0.05, which means that the variation explained by the model is not due to chance (Table 10).

Table 10: ANOVAb

	Model	Sum of Squares	df	Mean Square	F	Sig.
	Regression	4.599E9	8	5.749E8	330.701	.000a
1	Residual	2.451E8	141	1738429.996		
	Total	4.844E9	149			

a. Predictors: (Constant), X_1 , X_2 , X_3 , X_4 , X_5 , X_6 , X_7 , X_8

b. Dependent Variable: Total Family Income

The linear relation of the model is highly significant as the p-value for the F is less than .0001. Most of the estimated coefficients are statistically significant at the 0.01, 0.05 and 0.10 level. To identify the occurance of multicolinearity, the correlation matrix of the explanatory

variables is studied. The results of this multiple regression analysis show the best in the sense of involving no multicollinearity, that is ensuring no two independent variables has a correlation in excess of 0.75. This means that the independent variables are not too highly related to each other.

Table-11: Coefficientsa

	Model		dardized icients	Standardized Coefficients	t	Sig.
		В	Std. Error	Beta		
	(Constant)	-344.961	754.894		457	.648
	Age (X ₁)	-25.588	14.656	035	-1.746***	.083
	Marital Status (X ₂)	140.386	219.581	.013	.639	.524
	Education Level (X ₃)	-30.639	30.092	020	-1.018	.310
1	Family Size (X ₄)	575.560	71.183	.186	8.086*	.000
	Number of Earner (X ₅)	40.456	163.375	.006	.248	.805
	Main Occupation (X ₆)	-537.227	219.990	047	-2.442**	.016
	Husband's income (X ₇)	.979	.020	.984	48.065*	.000
	Respondent's Income (X ₈)	.892	.174	.102	5.118*	.000
	a. Dependent Variable: Tot	ne				

*Significant at 1 percent level, ** Significant at 5 percent level,

The variable age of the respondent (X_1) is considered in this model as an important determinant of respondent's monthly family income. The sign of its coefficient is found to be negative and statistically significant at 10 percent level of significance. The negative coefficient of X_1 indicates that the chances of contributing on family income decreases with increase in age. In other words, the young aged women respondents are more likely to contribute to family income than the higher aged people. This also implies that relatively young women (36-45 years) are more likely to be the member of informal SHGs and the older aged women.

The variable marriage is not statistically significant and the positive value of its coefficient indicates that married women are more likely to contribute to family income by becoming members of SHG. Similarly, level of education of the respondents does not any significant effect on the respondent's family income.

The variable of family size (X_4) is found to be positively and statistically significant at 1 percent level of significance. The positive coefficient of X_4 indicates that a larger family size will have positive significant influence on the respondent's role in household income. It means that an

^{***} Significant at 10 percent level

additional unit of this variable could increase the total family income by 0.186 percent.

The variable, household's main occupation (agricultural farmer) as a determinant is statistically significant at 5 percent level and negatively affected to the respondent's monthly income. This implies that women belonging to the households that mainly depend on cultivation of agriculture contributes less to the household income. However, the independent variable, number of earners in the family is not statistically significant and therefore does not influence family income. The monthly income of the husband (X_2) , on the other hand, has a statistically significant and positive effect on the family's monthly income. This finding indicates that if the respondent's husband monthly incomes increases, the family income also increases. Similarly, the variables monthly income of the respondent (X_s) is found to be a significant determinant of the total monthly income of the household. The sign of its coefficient is found to be positive and highly significant at 1 percent level.

These results are consistent with the findings provided by Jasmine (2008) and Ahmed, et al. (2011). Jasmine (2008) provided the evidence that women SHG beneficiary's earnings and their spouse's earning significantly increased the total family with an addition of 0.1293 and 0.1314 percent respectively. Ahmed, et al. (2011) revealed that husband's income and women respondent of 'with credit' income are crucial determinants of the total family income.

From the table 10, it can be observed that the most significant factor impacting women's contribution to total family income is husband's income (X_7) with largest Beta coefficient (Beta = 0.984) and other significant factors with highest predictive ability which are followed by X_7 are Family Size (X_4) (Beta = 0.186), women respondent's income (X_8) (Beta = 0.102), main occupation of household (X_6) (Beta = -0.047) and Age (X_1) (Beta = -0.035) respectively.

CONCLUSION

The study shows that group-based microfinance programme has a significant impact on income generation and sources of the socioeconomic livelihoods of rural women in the study area. The microcredit provision of the SGSY scheme increases income of the rural poor women and helps them to spend more for the development of their lives and families. The study revealed that the proportion of the 'treated' women who contributed to family income is much higher (14 percent) than that of 'control group' women (4 percent). The study also reveals that the monthly family income of 'treated' respondents was, on average, ₹ 5280.44 as compared to the 'untreated' families, on average,₹ 4100.31. The findings of the study suggest that the rural women, after joining the SHG based microfinance programme were inspired and guided more to undertake various income generating activities and sources. It is seen that SHG programme provides opportunities of self-employment that generate income which help to improve rural women family income as well as their livelihood. Thus, it can be concluded that participation of women in SHG programme help the rural poor women to be economically independent and financially solvent in their society.

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