



## Income Inequalities of SHG Households: An Empirical Analysis

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Paper No.: 249

Received: 17 June 2015

Accepted: 17 August 2015

### Abstract

The prevalence of disparities in the living standard across households is the outcome of income inequality. Inequality can be defined as a deviation from equality where any individual unit is receiving less than his proportionate share of aggregate income. This state is referred to as relative deprivation, whereas absolute deprivation is equated with poverty, wherein one is not getting sufficient enough to survive. Households are not only poor; they also suffer from vast inequality in incomes, in assets and in access to essential services as well as pervasive insecurity. Theoretically and empirically, the effectiveness of self-help groups has mentioned in earlier literature, access to economic opportunities is proxies by SHG membership. Self-help groups play today a major role in poverty alleviation in rural areas. The impact of SHGs on individual members, family, community life, changes in skills, knowledge, attitudes, successful outcomes, and the development of human and social capital. With this background this research paper examines the effectiveness of women SHGs in the promotion of the development of social and human capital through micro enterprise development to work towards reducing income variations of SHG households. The results indicate that the OSHG households make significant improvement in their incomes and less inequality in income distribution compared to NSHG households and concludes that self-help groups have impact on income distribution.

**Keywords:** Income inequalities, SHG, NSHG, human capital, social capital

Households are not only poor; they also suffer from vast inequality in incomes, in assets and in access to essential services as well as pervasive insecurity (World Bank, 2000). The distributional consequences of economic growth are one of the main policy issues in developing country like India. Inequality can have many dimensions. Specifically, economists are concerned with the monetarily measurable dimension related to individual or household incomes. Here income inequality refers to the inequality of the distribution of individuals, households or some per capita measure of income (Heshmati, 2006). There are some serious problems with the quality and reliability of data on household incomes in the NCAER surveys, particularly the 1993 survey. Nevertheless, these studies give us a rough order of magnitude of income inequality at the national level. In addition, smaller surveys indicate extremely high levels of income inequality (Swaminathan and Rawal, 2011). The few available studies of income inequality indicate that levels of inequality are quite high in rural India. Indeed, there are only a handful of studies that actually look at income

inequality in rural India, most of which draw upon multi-state sample surveys conducted by the National Council of Applied Economic Research (Swaminathan and Rawal, 2011).

Theoretically and empirically, the effectiveness of self-help groups has mentioned in earlier literature, access to economic opportunities is proxies by SHG membership. The SHG system is developed in 1992 to provide microcredit to the poor and uses the extensive rural financial sector of India and new techniques as group lending (Garikipati, 2008). SHGs play a major role in transforming rural economy and help the rural poor to improve their life standard and fulfil their credit needs. SHGs are new innovation in the field of rural economic development, to finance the rural people and also to satisfy their credit needs. This in turn will help to transform the rural economy by way of improving the economic status (Arunkumar, 2005). The Self-Help Group (SHG) – Bank linkage programme, implemented by the National Bank for Agriculture and Rural Development (NABARD) since 1992, has become the

dominant model of micro-finance in India in terms of both number of borrowers and bank loans disbursed and outstanding. The SHG-Bank linkage programme (SBLP), which was initiated in 1992 as a pilot project for promoting 500 SHGs, experienced significant growth over time in terms of coverage and amount of credit to poor people in rural areas (Ghosh, 2012). The group saving of self-help groups serves a wide range of objectives other than immediate investment as a tool in poverty alleviation.

A principle motivation for inequality measurement is normative, to guide policy. Thus, if it can be shown that inequality has been increasing, many would argue that there is an immediate need for doing something about it. Self-help groups play today a major role in poverty alleviation in rural areas. A growing number of poor people (mostly women) in various parts of India are members of SHGs and actively engage in savings and credit, as well as in other activities like income generation, natural resources management, literacy, child care and nutrition, etc. The in savings and credit focus in the SHG is the most prominent element and offers a chance to create some control over resources. The impact of SHGs on individual members, family, and community life, changes in skills, knowledge, and attitudes, successful outcomes, and the development of human and social capital. This research study examines the effectiveness of women SHGs in promotion of the development of social and human capital through micro enterprise development to work towards reducing income variations of SHG household.

## Database and Methodology

In this study, multi stage sampling technique is used in the selection of units. Accordingly, at the first stage, Visakhapatnam district is selected purposively. The second stage of sampling is the selection of Mandal. Chodavaram mandal is selected keeping in view that it should satisfy the two criteria viz., (i) cover the maximum number of rural poor households and (ii) cover the maximum number of Self-Help Group (SHG) households. The Third stage of sampling is the selection of villages. The Fourth stage of sampling involved the selection of households. In all, 400 SHG households were selected for the study. While 200 are members of old Self Help Groups (OSHG) and 200 are members of New Self Help Groups (NSHG). For OSHG, the SHGs who have completed more than 5 years membership are taken and for NSHG, the SHGs having a membership of less than 5 years were considered. These two groups of households have been chosen keeping in view the

probability proportion to their actual number in the total SHG households in the study area i.e., 10 per cent of the households.

The most widely used index of inequality is the Gini Coefficient. Among the other measures of inequality are the range, variance, squared coefficient of variation, variance of log incomes, absolute and relative mean deviations. The Gini Coefficient, squared coefficient of variation measures are popular (Anand, 1997). In analyzing the data, different statistical techniques are used. To judge the income variation among the households, Co-efficient of Quartile Deviation, Co-efficient of Variation and Gini Coefficient are calculated. The significance of difference between average incomes of OSHG and NSHG households is tested with the help of Z-test and F-distribution measures the ratio of the variance between groups to the variance within groups.

## Results and Discussion

The income of the household generally indicates the economic status of the household. In rural areas, households are engaged in diversified occupations for their livelihood. Therefore, in arriving at the total annual income, income from wage, income from livestock, income from household enterprises-like horticulture, basket making, fruit vending and finally income from agriculture are considered. To overcome the problem of recall, the wage-income from casual labour and income obtained from household enterprises for seven days preceding the date of survey has been taken as the basis and similarly 30 days income from the livestock. The annual income from agriculture as declared by the sample households has been taken, as there are no problems of credit in this regard. The details of the distribution of the households by income groups and average annual income and average per capita income of the sample households by source are presented in Tables-1 and 2.

It could be observed from Table -1 that 65 percent of the OSHG households and 69.5 percent of the NSHG households are in the income range of below ₹ 75,000 per year indicating that the microfinance has marginal impact on their income levels. The distribution of income by source as indicated in Table-2 shows that income from household industry (24.8 percent) and income from wage (30.2 percent) are the major sources in OSHG households and income from wage (30 percent) and salaried income (25.4 percent) in NSHG households. The per capita income of the OSHG and NSHG households is estimated separately and is presented in Table-2. It may be observed from the Table that the average per

capita income of the OSHG households is relatively higher than that of the NSHG.

**Table 1: Distribution of households by annual household income groups**

Total Income Group	OSHG	NSHG	All
Below 25,000	8.0	12.0	10.0
25,000 - 50000	29.25	30.25	29.75
50,000 - 75,000	27.75	27.25	27.5
75,000 - 1,00,000	26.0	22.0	24.0
Above 1,00,000	9.0	8.5	8.7
<b>Total</b>	100.0 (200)	100.0 (200)	100.0 (400)

**Note:** Figures in brackets are number of households

**Source:** Field Survey

**Table 2: Average annual household income of the sample households by source**

Source	OSHG	NSHG	All
Crop income	1.7	5.6	3.6
Wage income	30.2	30.0	30.1
Livestock/rearing of cattle	1.4	2.5	1.9
Household industry	24.8	11.2	18.2
Trade	12.5	19.1	15.7
Salaried income	22.7	25.4	24.0
Profession	3.2	3.1	3.2
Others	3.5	3.1	3.3
Total Average income	100.0 (99123)	100.0 (93929)	100.0 (96526)
Per Capita Income (annual)	28443	26875	27658
Per Capita Income (per month)	2370	2240	2305

**Note:** Figures in brackets are number of households

**Source:** Field Survey

The distribution of income by source (Table-2) shows that in case of the OSHG households, household

industry and trade are the major sources of income accounting from around 40 percent followed by income from other sources. But in case of NSHG households wage income is the major source of income accounting for 30 percent followed by household industry and trade (around 30 percent). The per capita income of the households is estimated separately for the OSHG and NSHG households. It can be seen from Table-2 that the per capita income of the OSHG household is relatively higher than that of the NSHG households.

An attempt is made to examine the income variations and the pattern of income distribution among the two groups of households in order to assess the significance of the variations. The pattern of income distribution among the sample households is studied by using the quartile deviation method. Co-efficient of variation is calculated to examine the degree of variation around the mean in the incomes and is also used to compare variations between two groups of households. Co-efficient of Quartile Deviation is calculated and the results of the analysis are presented in Table-3.

It can be observed from the Table-3 that the household income of the first and third quartiles ranged from ₹ 78000 to ₹ 108000 for OSHG households. Whereas in case of NSHG households the range is from ₹ 70190 to ₹ 108000. To know the extent of income variation between the OSHG and NSHG households, the Co-efficient of Quartile Deviation and the Co-efficient of Variation are calculated. The Co-efficient of Quartile Deviation of OSHG households (16.13) is lower than that of NSHG households (21.22). The value of Co-efficient of Variation for OSHG households is 47.88 as against 43.80 for NSHG households. It implies that the NSHG households are homogeneously distributed than OSHG households. The same analysis is carried out for per capita income of these two categories of households. The differences in the values of Co-efficient of Quartile Deviation (25.96 and 23.90 for OSHG and NSHG

**Table 3: Income distributions by category of households**

Sl. No.	Item	Household Income			Per capita Income		
		OSHG	NSHG	All	OSHG	NSHG	All
1	Mean Income $\bar{x}$ (₹ in 000's)	99.12	93.93	96.53	30.74	28.02	29.38
2	Value of upper quartile ( $Q_3$ ) (₹ in 000's)	108.00	108.00	108.00	36.75	26.25	26.59
3	Value of lower quartile ( $Q_1$ ) (₹ in 000's)	78.00	70.19	72.00	21.60	20.00	21.00
4	Difference between upper and lower quartiles ( $Q_3 - Q_1$ ) (₹ in 000's)	30.00	37.81	36.00	15.15	12.56	15.00
5	Co-efficient of Quartile deviation in % form	16.13	21.22	20.00	25.96	23.90	26.32
6	Standard Deviation	47.46	41.14	44.43	14.07	10.61	12.52
7	Co-efficient of variation (in %)	47.88	43.80	46.03	45.76	37.85	42.60
8	Gini coefficient	0.202	0.227	0.216	0.225	0.206	0.218

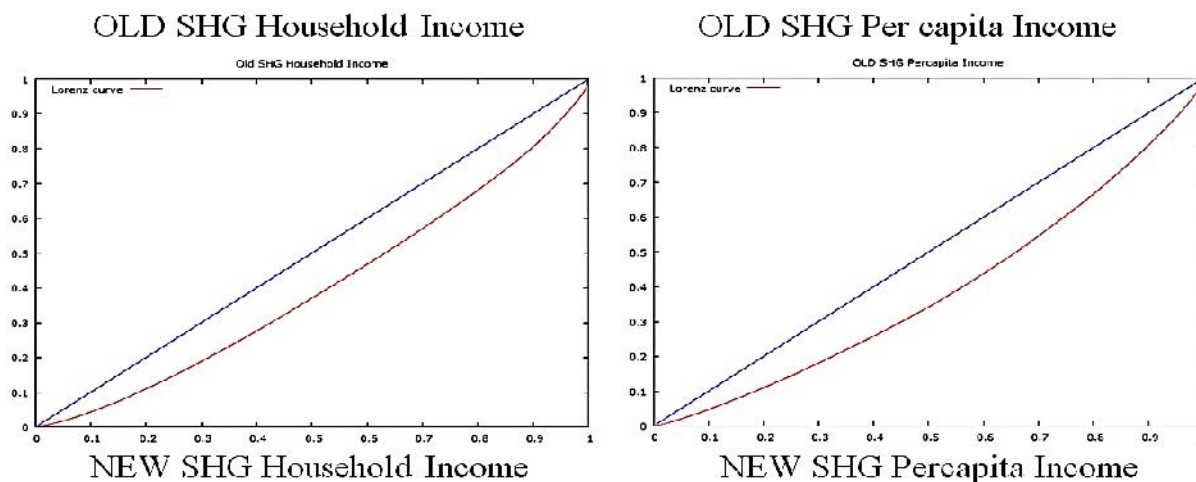
**Source:** Field Survey

**Table 4: Significance of difference between mean income of OSHG and NSHG**

Statistic	Household Income			Per capita Income		
	Critical value	Calculated value	p-value	Critical value	Calculated value	p-value
F-Statistic	3.865	1.368	0.243	3.865	4.773**	0.029
Z-Statistic	1.645	1.170	0.121	1.645	2.185**	0.014

\*\*Significant at 5 percent level

Source: Field Survey



**Fig. 1: Graphical presentation of income variations**

respectively) and Co-efficient of Variation (45.76 and 37.85 for OSHG and NSHG households respectively) contrast more in terms of per capita income. The value of Gini Coefficient of Variation of household income for OSHG households is 0.202 as against 0.227 for NSHG households. It implies that the OSHG households are homogeneously distributed than NSHG households. The same analysis is carried out for per capita income of these two categories of households shows NSHG households are homogeneously distributed than OSHG households.

The significance of the differences between the mean household income and mean per capita income of two groups was tested with the help of Z-test. It is hypothesized that there are no differences in household income and per capita income between the OSHG and NSHG households. Before testing the significance of the differences in between means the differences between standard deviations were also tested with F-test statistics (Freund, 1984) was used for testing the equality of two populations.

The values of F-statistic are presented in Table-4. Since, the value of F-statistic is less than the Table value, we accept from the null hypothesis that there are no differences between the standard deviations of the two household groups with respect to household income as well as per capita income and the Z values are significant

at 5 percent level. It implies that the differences in household income and per capita income between OSHG and NSHG households are statistically significant. Therefore, we reject the null hypothesis. It shows that the mean household income as well as per capita income of OSHG are higher than those of NSHG households. It can be inferred from the above analysis that households who participated in the groups for longer time are able to make significant improvements in their incomes compared to the households who do not have group help.

## Conclusion

It could be observed that 65 percent of the OSHG households and 69.5 percent of the NSHG households are in the income range of below ₹ 75,000 indicating that the self-help groups has marginal impact on income levels. The average per capita income of the OSHG households is relatively higher than that of the NSHG households showing inequalities of income and the major sources of income also differ between OSHG households and NSHG households. The inequality measures indicate that the inequalities are high in household income and less in per capita income of NSHG households. For OSHG households inequalities are low in household income and high in per capita income. Statistical result reveals that the mean

differences and variance in per capita income between OSHG and NSHG households are statistically significant. It can be inferred that OSHG households make significant improvements in their incomes and less inequalities in income distribution compared to NSHG households. We can conclude that self-help groups have impact on income distribution.

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