

Study on impact of income inequality on poverty levels

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ABSTRACT

Inequality in income distribution and poverty are not, of course, unrelated. A transfer of income from a person in the top income group to one in the middle income range must, *ceteris paribus*, reduce inequality. But it may leave the perception of poverty quite unaffected. Hence, it is important to recognize that inequality and poverty are associated with each other and the role of inequality in the prevalence of poverty cannot be neglected. This paper is an attempt to study the impact of income inequality on poverty levels in varying irrigation environs of Coimbatore district. Inequality in income distribution was studied using Gini-coefficient and Lorenz curve. The levels of poverty in the study region was worked out using Head Count Measure. The result from the study show that the Gini co-efficient for income distribution among agricultural labourers was 0.1 and 0.2 in irrigated and dry blocks respectively and the poverty levels shown by Head count ratio was 60 per cent among the sample respondent in irrigated block and 80 per cent of those in dry blocks. This paper concludes that poverty level increases with inequality in income distribution and is a major factor responsible for poverty in the study region.

Key words : Inequality, Poverty, Income, Poverty line, Lorenz curve and Gini coefficient.

INTRODUCTION

People must not be allowed to become so poor that they afford or are hurtful to society. It is not so much the misery and plight of the poor but the discomfort and cost of the community which is crucial to this view of poverty. We have a problem of poverty to the extent that low income creates problems for those who are not poor.

Inequality and poverty are not of course, unrelated. A transfer of income from a person in the top income group to one in the middle income range must, *Ceteris paribus*, reduce inequality; but it may leave the perception of poverty quite unaffected. Similarly, a general decline in income that keeps the chosen measure of inequality unchanged, may infect lead to a sharp increase in starvation, malnutrition and obvious hardship, i.e., in sum poverty; it will be right to claim that poverty is unchanged. It's of course, an important matter to recognize that inequality and poverty are associated with each other, and the role of inequality in the prevalence of poverty cannot be neglected.

Datt and Ravillion made a study of poverty line in India for the period 1951-52 using National Sample Survey data. The poverty line was based on the nutritional norms of per capita daily intake of 2400 calories in rural areas and 2000 calories for urban areas. The study revealed that between 1951-52 and 1991-92, the national head count index of poverty declined from 53.00 per cent to 38.00 per cent. Rural poverty during this period declined from 55.00 per cent to 39.00 per cent, but urban poverty declined from 43.00 to 33.00 per cent.

Gautham and Krishnaiah (1993) examined the wage

employment of rural labour and variation in wage earnings by labour class in Andhra Pradesh. The results revealed that the wage employment was 165 days in farming and 60 days on non-farm activities. The total farm earning of male was three times that of children and three and half times that of female labour. Wage employment was high in irrigated villages as compared to the unirrigated villages.

Thus this paper is an attempt to study the trends in income distribution and its effect on poverty, in two different irrigation environments.

MATERIALS AND METHODS

The study region selected constitutes an irrigated area and a dry area with an assumption that the distribution of income or inequality and poverty level may vary between these two regions. The sample respondents selected were agricultural labourers. The data collected included the employment pattern, income, food consumption pattern and amount spent on food items.

Sampling procedure :

The hypothetical assumption of the study is that the levels of poverty among the rural households may vary between irrigated and dry tract, the respondents in the rural setting beings categorized as agriculturists, agricultural labourers and other workers. Based on the above assumption, purposive sampling method was used in the study. Of the twenty-nine district in Tamil Nadu, Coimbatore district was purposively selected since it has both irrigated and dry tract within the vicinity. In the second

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stage of selection, Pollachi taluk was selected purposively since it is benefited by the Parambikulam –Aliyar irrigation project. Palladam taluk was selected for dry treat since it is purely a rainfed tract. Anaimalai block of Pollachi taluk and Sulur block of Palladam taluk were purposively selected taking into consideration, the variation in irrigation in both blocks.

Analytical tools used :

Gini coefficient was used to measure the income distribution among the sample respondents and Head Count Ratio was used to estimate the poverty level.

i) Gini coefficient

Income distribution and inequality in household income was studied by working out the Gini coefficient. The inequality measure naturally arising out of the Lovenz curve would be its divergence from the ideal situation of perfect equality represented by the Egalitarian line. The divergence can be measured by using this Gini coefficient.

$$G = 1 - \frac{\Sigma(B - A)(C + D)}{100^2}$$

where,

- A = Cumulative percentage of income/expenditure corresponding to the previous observations.
- B = Cumulative percentage of income/expenditure corresponding to the present observations.
- C = Cumulative percentage of income corresponding to the previous observations and
- D = Cumulative percentage of income corresponding to the present observations.

(or)

$$G = 1 + 1/n - \{2/(n^2Z)\} \sum_{i=1}^n (n+1-i) Y_i$$

Where,

n = population size

- Σ = mean income
- Y_i = income of the i^{th} person
- Z = Y_i/n

ii) Head count ratio (H) :

The most commonly used measure of poverty is the Head Count Ratio, which measures the percentage of population that fall below the poverty line. The poverty line was measured by calculating the minimum requirement of consumption per individual for the two regions separately. If the individual is below this minimum requirement, he is considered as a poor and he is said to be below the poverty line.

$$H = q/n$$

Where,

- H = Head Count Ratio
- q = Number of people below the poverty line
- n = Sample size

The poverty line thus derived for irrigated block was Rs. 4872.75 per annum per capita and that of dry block was Rs. 5047.95 per annum per capita.

RESULTS AND DISCUSSION

The distribution of income among the sample respondents of each block was studied by Gini coefficient and Lorenz curve. The Gini coefficient, that is the proportion of area under the diagonal and the Lorenz curve is shown in Tables 1 and 2.

The Egalitarian line in each case represent that zero per cent of the population would receive zero per cent of income while 100 per cent of the population would receive 100 percent of income and so the line would run from one corner (0, 0) of the unit square to the opposite corner (1, 1). The curve lies below the diagonal and its slope increasingly raises, as one would move to higher and higher

Table 1 : Income distribution among agricultural labourers in irrigated block.

Frequency distribution (Rs. In ,000s)	Mid values	No. of persons	Total Income	Cumulated frequency Of families	Cumulative income	Percentage of cumulated frequency	Percentage of cumulated
0-5	2.5	-	-	-	-	-	-
5-10	7.5	1	7.50	1	7.50	5.00	2.45
10-15	12.5	1	125.00	11	132.50	55.00	43.44
15-20	17.5	7	122.50	18	255.00	90.00	83.60
20-25	22.5	1	22.50	19	277.50	95.00	90.98
25-30	27.5	1	27.50	20	305.00	100.00	100.00

Table 2 : Income distribution among agricultural labourers in dry block.

Frequency distribution (Rs. In ,000s)	Mid values	No. of persons	Total Income	Cumulated frequency Of families	Cumulative income	Percentage of cumulated frequency	Percentage of cumulated
0-5	2.5	-	-	-	-	-	-
5-10	7.5	-	-	-	-	-	-
10-15	12.5	5	62.5	5	62.5	25.00	14.88
15-20	17.5	4	70.0	9	132.5	45.00	31.55
20-25	22.5	6	135.0	15	267.5	75.00	63.69
25-30	27.5	3	82.5	18	350.0	90.00	83.33
30-35	32.5	1	32.5	19	382.5	95.00	91.07
35-40	37.5	1	37.5	20	420.0	100.00	100.00

Table 3 : Head Count Ratio.

Blocks	Head Count Ratio (in percentage)
Irrigated	60.00
Dry	80.00

levels of income. The tangent to the curve being parallel to the Egalitarian line. This inequality arising out of Lorenz curve that is a divergence from the ideal situation of perfect equality was compared by the Gini coefficient. The coefficient calculated for the sample respondents in irrigated and dry blocks were 0.1 and 0.2 respectively indicating that the inequality among the sample respondents in the dry block is marginally high as compared to their counterparts in irrigated block.

The levels of poverty calculated by using the Head Count Ratio, is shown in Table 3. The results revealed that 60 per cent and 80 per cent of the sample households

of irrigated and dry blocks respectively were below poverty line based on the calorie norms of 2400 cal per day.

It is seen from the analysis that higher the inequality in distribution of income, higher is the level of poverty. Hence, inequality is one common and major factor that influences poverty. Its therefore advisable that any poverty measure or research or poverty level should have as its component, the major factor responsible for the same i.e., the inequality in distribution of income.

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Received : May, 2006; Accepted : January, 2007