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Shifts in rural employment: Causes and impact

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Abstract

The present study has been undertaken in four blocks from the two districts namely Madurai and Erode of Tamil Nadu to analyze the structural changes in rural employment, factors for the diversification to non-farm employment, income inequality and standard of living among rural households and to suggest the policies for changes in rural employment. The significance of the study for the selected factor variables was analyzed through econometric models such as Chow Test, Logit Model, Dummy Variable Model and Standard of Living Function with the tests of significance. Further Gini Coefficient and Garrett Ranking techniques were used to cover the objectives of the study. The significance of F value of Chow Test indicated there are shifts in rural occupation amidst farmer and labor households. Proximity to city and the age of the respondents significantly influence for the shifts. The most important factor influenced the non-farm households were; there is no continuous income from agriculture (89.10 per cent). There is skewness (Gini ratio = 0.258) in the distribution of income among households of farm and the households shifted to non-farm. A close examination of dummy variable model incorporating income variable of the respondents disclosed, gross income of farm households are significantly higher than even the non-farm households with an average increase of 35 per cent. However, there is a sharp rise of (74 per cent) non-farm income than the net income of farm income. Hence, it explicitly shows the input costs are much higher and the return to inputs is in much lower phase. The rural households also pointed out one of the important reason for shifting over to non-agricultural sector is expensive input cost (higher Garrett score). The coefficient of the variable after non-farm consumption expenditure in the farm household was positive and significant at five per cent level with a value of 0.035, indicating that with every increase at the consumption expenditure from non-farm sources would increase the standard of living of household significantly. Dependency ratio positively significant at one per cent level with a value of 34.034, indicating that increase at the proportion of earners to the size of household from the existing mean level would significantly increase the standard of living of farm households. Measures to invest more public and private investment on rural and cottage industries and artisan works and also initiating rural based non-farm government employment programmes are needed to reduce the competition for employment opportunities for the rural households.

Keywords: Structural changes, Income inequality, consumption expenditure

Introduction

The rural economy of India like most of the developing economies is also characterised by a huge volume of surplus labour in the form of disguised as well as open unemployment. It is obvious that the increasing pressure of population on land has led not only to the tremendous fall in the land-man ratio but also to the fall in the productivity of labour in agriculture. From the quantitative manifestation of our development experience, it is found that while the proportion of the total population dependent on agriculture has fallen marginally from 75 per cent in the early 1950s to around 67 per cent in 2007, i.e. by 11 percentage points, the relative contribution of agriculture to our GDP has come down tremendously from well above 55 per cent in the early 1950s to only 23.5 per cent, i.e. the same has declined by well above 55 percentage points during the period. Obviously then, there has been a tremendous fall in the productivity per unit of labour. Further, the ratio of productivity per unit of non-agricultural workers with that for agricultural workers, which was well around two in the early 1950s, has now become well above four. This is amply indicative of the plight of the people dependent on agricultural operations. Further, along with the increased marginalisation of farm as an outcome of various land reform measures. But surprisingly there has been a significant acceleration in the growth rate of GDP and per capita income during the post-liberalisation period. However the impact of growth on employment has been found to be declining (Bhalla, 1997). The use of frontier technologies in the manufacturing sectors as a fallout of the globalisation of technology and the stagnant or declining state of industrialization in some states,

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there has been a tremendous fall in the employment opportunities in the secondary sector. This also seems to have led to a tremendous expansion in the informal non-farm activities, both in rural and urban as well as semi-urban areas, especially since the advent of liberalisation, during the last two and a half decades. It seems that such a process goes against the conventional theoretical perceptions about the process of development (Fisher, 1933; Clark, 1940), and also the process of rural-urban migration as is explained by the classical Lewis (1954) and Harris-Todaro (1970) types of models. Moreover, the liberalisation of the agricultural sector which mainly aimed at: (i) the reduction and eventual elimination of restrictions on both internal and external trade in agricultural products, (ii) reduction and eventual elimination of input subsidies, and (iii) the protection of intellectual property rights regime for seeds and plant varieties, might have produced a noticeable impact on the occupational structure in rural India. The changes in rural employment bring about changes in social economy. Agriculture contribution to GDP had been declined over the years. The reason behind this maybe shift in agriculture to non-agriculture, loss in production and low market price. The study focused on the issue of changes in employment, the factors and the reason behind such changes in employment, the impact of changes in terms of standard of living of households and its implications on agriculture.

Objectives

1. To discern the changes in rural employment from the past to present.
2. To identify the factors and linkages for the cause of diversification in rural employment.
3. To analyze its impact in terms of standard of living among rural households.
4. To capture its overall implications for agriculture

Materials and Methods

Four blocks from the two districts namely Madurai and Erode of Tamil Nadu were selected randomly for the study. One contiguous to urban centre and another located interior from each district was selected. Two villages from each block altogether eight villages were selected randomly. The study envisage vertical, horizontal shifts in occupation including rural turn (rural to rural) and urban turn (rural to urban). The sample size is fixed at 120 to represent the households from farming, non-farming and marginal workers of agriculture. The primary data on socio-economic variables such as family details, employment, education, income and other related factors like distance to working spot and the prevailing constraints and the reasons before and after situations were collected from the respondents. The secondary information on the shifts in rural employment has been collected from the census reports for various years. The primary and the secondary data were tabulated for analysis. The significance of the study for the selected factor variables was analyzed through econometric models such as Chow Test, Logit Model, Dummy Variable Model and Standard of Living Function with the tests of significance. Further Gini Coefficient and Garrett Ranking techniques were used to cover the objectives of the study.

Results and Discussion

Structural changes in rural employment

Time series data from 1981-2011 was used to compute chow test for Tamil Nadu. The results of the Chow test for farmers

and agricultural labors to study the shifts in employment is presented in Table.1

Table 1: Chow test for farmers and agricultural labors in Tamil Nadu

S. No	Particulars	Tamil Nadu	
		Farmers	Agricultural labours
1.	RSS _R	551.838	601.209
2.	RSS _{UR}	222.743	59.205
3.	F calculated	42.846*	265.493*

*Significant at five per cent level

The significance of F test indicated there are shifts in rural occupation amidst farmer and labor households.

Factors influencing non-farm work participation

Logit model was used to determine the factors influencing non-farm work participation among respondents and the results are furnished in Table.2.

Table 2: Factors influencing non-farm work participation among respondents

S. No	Variables	Coefficient	p value	Level of significance
1.	Proximity to city (If1,0, otherwise)	0.341	0.046	*
2.	Age in years	-0.078	0.019	*
3.	Level of Education	-0.213	0.383	NS
4.	Household size in numbers	-0.015	0.955	NS
5.	Income from non-farm sources	0.000	0.477	NS
6.	Constant	5.038	0.026	
	Likelihood Ratio	22.20	0.000	**

*Significant at five per cent level **Significant at one per cent level

Proximity to city and the age of the respondents significantly influence for the shifts. The block vicinity to urban centre influences the non-farm participation. The negative coefficient of age in years indicates that decrease in age of the respondents increases the level of participation in non-farm activities by 0.078 per cent. The Likelihood Ratio is significant at one per cent level suggest as a logically all the variables are significantly influencing the dependent variable. The non-farm households were asked for the factors from what the preference toward shifts. The factors were ranked based on its level of influence. Garrett ranking for the factors influencing the non-farm households is given in Table.3.

Table 3: Garrett ranking for the factors influencing the non-farm households

Factors	Score	Ranking
No continuous income	89.10	I
Higher input cost	84.45	II
Lack of rainfall	74.60	III
Wage difference	68.25	IV
Wild animal problem	64.40	V
Less production and low market price	59.27	VI
Indebtedness problem	52.68	VII
Non accessibility to market	45.25	VIII
Sold the land to educate children	39.20	IX
Labour shortage	30.65	X

The most important factor influenced the non-farm households was, there is no continuous income from

agriculture (89.10 per cent) followed by higher input cost in agriculture (84.45 per cent), lack of rain (74.60 per cent), non-accessibility to market (68.25 per cent) followed by wild animal problem (64.40 per cent), less production and low market price (59.27 per cent), indebtedness problem (52.68 per cent) followed by acquisition of education (45.25 per cent) then some people sold the land to educate their children (39.20 per cent) and labour shortage (30.65 per cent).

Income inequality

Equality is a virtue claim. Though one can't do away with it in a developing economy has to be restricted within a range of

income distribution. Hence, a study on income inequality becomes paramount importance. The income inequality of sample respondents is studied with the help of Gini ratio and further Lorentz curve analysis. (Table.4 & 5 and Fig.1 & 2)

The analysis were carried for labour households in aloneness with farm and non-farm households to gauge the effect of structural changes. The results conclusively showed that there is skewness s (Gini ratio = 0.258) in the distribution of income among households of farm and the households shifted to non-farm. Labour households showed a phasing equality with the Gini coefficient 0.103.

Table 4: Inequality in the distribution of annual income of labour households

S. No	Income groups (in lakhs)	No. of HHs	Cumulative frequency	Cumulative percentage of households	Total income (in lakhs)	Cumulative frequency	Cumulative percentage of total income
1.	Below 1.0	1	1	2.5	0.900	0.900	1.559
2.	1.0-1.20	7	8	20	8.310	9.210	15.955
3.	1.20-1.40	13	21	52.5	16.330	25.540	44.244
4.	1.40-1.60	10	31	77.5	15.180	40.720	70.541
5.	Above 1.60	9	40	100	17.005	57.725	100
Total		40			57.725		

Gini ratio = 0.103

The Lorentz curve was drawn for the inequality in the distribution of total income based on total household annual income. The Lorentz curve indicated the existence of low degree of inequality to moderate in households, as the vertical

line distance between the Lorentz curves and the line of equality was very low in labour households to dispersion in the farm and non-farm households.

Table 5: Inequality in the distribution of annual income of farm and non-farm households

S. No	Income groups (in lakhs)	Number of House holds	Cumulative frequency	Cumulative percentage of households	Total income (in lakhs)	Cumulative frequency	Cumulative percentage of total income
1.	Below 2.0	13	13	16.25	21.685	21.685	6.483
2.	2.0-4.0	29	42	52.5	84.867	106.552	31.853
3.	4.0-6.0	27	69	86.25	139.940	246.492	73.688
4.	6.0-8.0	6	75	93.75	41.315	287.807	86.039
5.	Above 8.0	5	80	100	46.700	334.507	100
Total		80			334.507		

Gini ratio = 0.258

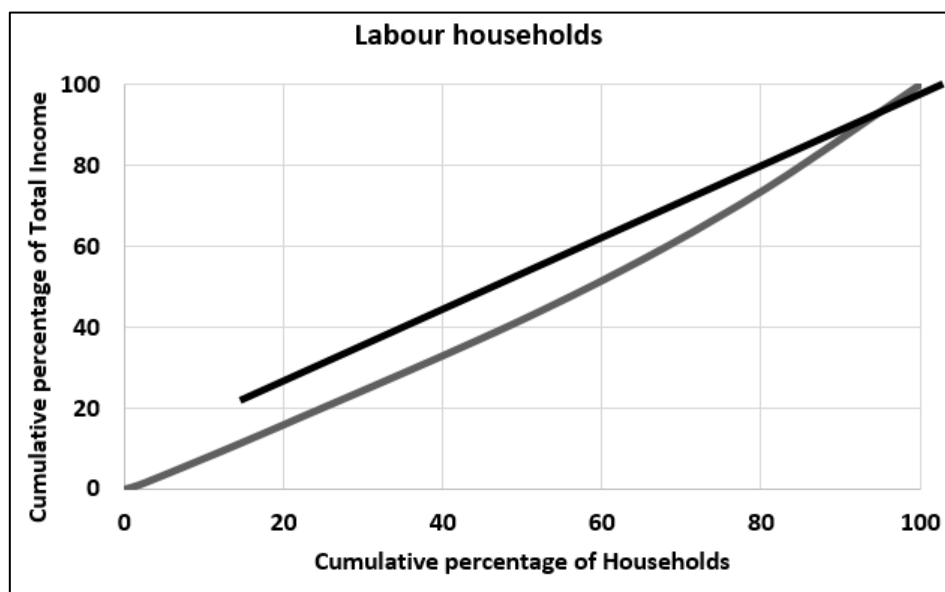


Fig 1: The Lorentz curve of labour households

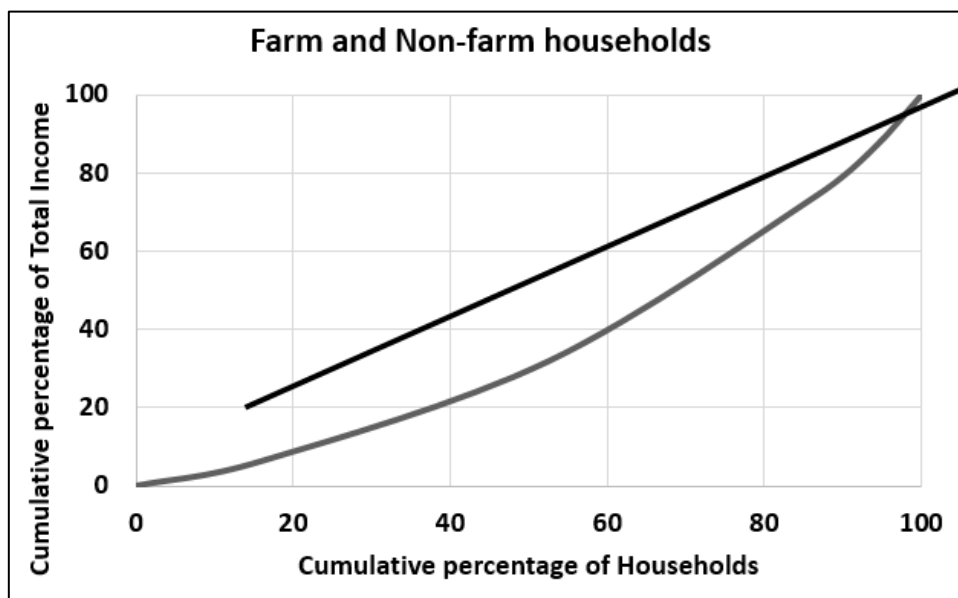


Fig 2: Lorentz curve for farm and non-farm households

Income function using dummy variable

In order to appraise the income difference among the respondents statistically significant, the income function using

dummy variables for the groups is studied with gross and net income of farm households as bench mark and the results are furnished in Tables 6&7.

Table 6: Dummy variable model for groups (for gross income of farmer HH)

S. No	Variables	Coefficient	p value	Level of significance
1.	Intercept	414025	0.000	**
2.	Non-farm households income = 1, 0, otherwise	-148200	0.000	**
3.	Agricultural labours income =1, 0, otherwise	-279300	0.000	**

**Significant at one per cent level

It is observed from the table that the mean gross income is significant at one per cent level with a value of Rs.414025. The negative coefficients of other variables indicate that the income of other households were lesser than the income of farm households. The coefficient of non-farm households indicates that their income is significant at one per cent level with a value of Rs.148200 (35 per cent) lesser than the income of farm households. The coefficient of labour households indicates that their income is significant at one per cent level with a value of Rs.279300 (67.45 per cent) lesser than the income of farm households.

Table 7: Dummy variable model for groups (for net income of farmer HH)

S. No	Variables	Coefficient	p value	Level of significance
1.	Intercept	304811.1	0.000	**
2.	Non-farm households income = 1, 0, otherwise	226838.9	0.000	**
3.	Agricultural labours income =1, 0, otherwise	-170499	0.000	**

**Significant at one per cent level

It is observed from the table that the mean net income is highly significant at one per cent level with a value of Rs.304811.1. The negative coefficients of labour households indicate that the income of labour households were lesser than the income of farm households. The positive coefficients of non-farm households indicate that the income of non-farm households were greater than the income of farm households. The coefficient of non-farm households indicates that their income is highly significant at one per cent level with a value

of Rs.226838.9 (74 per cent) greater than the income of farm households. The coefficient of labour households indicated that their income is highly significant at one per cent level with a value of Rs.170499 (56 per cent) lesser than the income of farm households. The above analysis reveals, gross income of farm households are significantly higher than even the non-farm households with an average increase of 35 per cent. However, there is a sharp rise of (74 per cent) non-farm income than the net income of farm income. Hence, it explicitly shows the input costs are much higher and the return to inputs is in much lower phase. The rural households also pointed out one of the important reason for shifting over to non-agricultural sector is expensive input cost (higher Garrett score).

Standard of living function

The pattern of consumption at any household depends on the level of income. The standard of living of the rural households could be assessed by looking into the pattern of consumption expenditure and the level of income. The Quality of Life Index or Standard of Living Index was constructed by using the three indices such as Index of Consumption Expenditure (ICE), Index of Quality of Residence (IQR) and Index of Basic Facilities (IBF) consisting of a total of seven indicators and a maximum score of 18. The Quality of Life Index or Standard of Living Index was obtained by working out the ratio between the individual household score to the maximum score and then converting it into percentage. Standard of Living Function was constructed by taking the standard of living index as the dependent variable. The factors influencing the level of living of the

rural households such as before non-farm consumption expenditure, after non-farm consumption expenditure and dependency ratio were taken as independent variables.

Dependency ratio is the ratio of earning members to family members of household. The estimated standard of living function for the respondent households is furnished in Table.8

Table 8: Estimated Standard of Living Function for rural households

S. No	Variables	Coefficient	p value	Level of significance
1.	Intercept	115.703	0.000	**
2.	Dependency ratio	34.034	0.017	*
3.	Before non-farm consumption expenditure at Rupees	0.038	0.182	NS
4.	After non-farm Consumption expenditure at Rupees	0.035	0.046	*

*Significant at five per cent level ** Significant at one per cent level

The highly significant intercept value indirectly suggest that, even with less or in the absence of income, the households want to enjoy a higher standard of living either through formal or informal borrowings. The coefficient of the variable after non-farm consumption expenditure in the farm household was positive and significant at five per cent level with a value of 0.035, indicating that with every increase at the consumption expenditure from non-farm sources would increase the standard of living of household significantly. Dependency ratio positively significant at one per cent level with a value of 34.034, indicating that increase at the proportion of earners to the size of household from the existing mean level would significantly increase the standard of living of farm households.

Conclusion

The study concluded that effects of nonfarm activity on rural population are positive. The growth of real per capita non-agricultural output had a significant impact in reducing rural poverty. The non-farm activities were influenced by socio-economic factors. Rising non-agricultural incomes can also increase inequality as a consequence of differential access between as the less and better endowed. The movement of workers outside the agriculture sector was influenced by factors like the pattern of economic growth, inter-ssectoral differences in the wage rate and worker productivity, government programmes and education. Measures to invest more public and private investment on rural and cottage industries and artisan works and also initiating rural based non-farm government employment programmes are needed to reduce the competition for employment opportunities for the rural households. This may improve the employment level and wage raise and any surplus gain will be spent on farms and thus raising the existing farm income.

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