

**An Application of alternative approaches to the  
Measurement of Poverty in Tamil Nadu  
1960 - 1978**

**BY**

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## TABLE OF CONTENTS

<u>Chapter</u>	<u>Page No.</u>
List of Tables	
List of Appendices	
I. Introduction .. ..	1
II. Review of Literature .. ..	7
A. Concept of poverty .. ..	7
B. Poverty in India .. ..	8
C. Levels of Consumption in the Rural and Urban Areas .. ..	10
D. Studies done earlier .. ..	14
III. Methodology .. ..	34
A. Materials .. ..	34
B. Methods .. ..	34
IV. Results and Discussion .. ..	41
A. High lights of the consumer Expenditure data of Tamil Nadu .. ..	41
B. Estimates of Poverty and Levels of Living and the current needs criterion	47
C. Estimates of Poverty - Criteria of per Capita consumer expenditure and per Capita food expenditure .. ..	66
D. Relative Superiority of the criteria used for estimating poverty .. ..	69
V. Summary and Conclusion .. ..	74
Bibliography .. ..	82
Appendices .. ..	85

LIST OF TABLES

<u>Table</u>	<u>Page No.</u>
I. Estimates of Level of Consumption in the Rural and Urban India Monthly Per Capita House Hold Consumption Expenditure (in 1960-61 prices)	11
II. Share of Total Private Consumption Expenditure in Rural and Urban India in 1977-78 per cent	13
III. Monthly Per Capita Consumer Expenditure on food and Non-Food Groups in Tamil Nadu: Rural, Urban and State (1960-61 to 1977-78) (in Rupees)	40
IV. Percentage distribution of Per Capita consumer Expenditure on Food and Non-Food Groups in Rural, Urban and State of Tamil Nadu as percentage Total Consumer Expenditure (1960-61 to 1977-78) (in Rupees)	43
V. Itemwise distribution of Monthly Per Capita Consumer Expenditure in Rural and Urban Tamil Nadu 1970-71 to 1977-78. (in Rupees)	45
VI. The Percentage Break-up of Consumer expenditure itemwise Across the Expenditure Classes in Rural Tamil Nadu in 1977-78 (in Rupees)	48
VII. Strata Associated with Changing Composition of Consumption in Rural Tamil Nadu in 1977-78 (in Rupees)	50
VIII. Percentage Distribution of Rural Population in Tamil Nadu using the Current Needs criterion 1960-61 to 1977-78.	53
IX. The Percentage Break-up of Consumer Expenditure Itemwise Across the Expenditure Classes in Urban Tamil Nadu in 1977-78 (in Rupees)	55
X. Strata Associated with Changing Composition of Consumption in Urban Tamil Nadu in 1977-78.	57
XI. Percentage Distribution of Rural Population in Tamil Nadu using the Current Needs Criterion	59

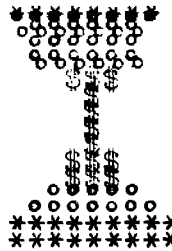
LIST OF TABLES (CONTD.)

<u>Table</u>	<u>Page No.</u>
XII. The Percentage Break-up of consumer Expenditure Itemwise Across the Expenditure Classes in the State of Tamil Nadu 1977-78 (in Rupees)	61
XIII. Strata Associated with Changing Composition of Consumption 1977-78 in the State of Tamil Nadu.	63
XIV. Percentage Distribution of Population in the State of Tamil Nadu using the Current Needs Criterion	65
XV. Percentage of Poor Population in Tamil Nadu: Rural, Urban and State (1970-78) under the criterion of percapita Food Expenditure. (in Rupees)	68
XVI. Percentage of Poor Population in Tamil Nadu: Rural, Urban and State (1970-78) under the Criterion of Per Capita Consumer Expenditure	68a
XVII. Results of 't' test for Evaluating the Criteria used for Estimating Poverty	71

LIST OF APPENDICES

APPENDIX

- I Percentage Distribution Across Expenditure  
Groups in Rural and Urban Tamil Nadu  
1960 - 61 to 1977 - 78.
- II Application of Current Needs Criterion
- III Statistical Analysis.



## Introduction

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## I N T R O D U C T I O N

Poverty in India is an intense and deep rooted problem, It needs an integrated and all out approach with deep understanding of its background. Mass poverty is still the main problem in India with a significant segment of her population continuing to live in conditions of abject poverty and want. And this is much more acute in the rural areas. It is very rightly pointed out that the poverty in India is essentially rural one. The urban poverty is only an out flow of rural poverty (Girdhari, 1983).

Poverty in the modern sense means something more than mere want. It is a mental state of mind with lack of aspirations, according to Pande (1976). This view of poverty finds support from Harrington (1976) who observed that, 'poverty is a culture that perpetuates itself in an endlessly desperate circle'. Dadabhai Naoroji was the first Indian to draw attention towards wide spread poverty in the country.

Poverty is measured normally, in both absolute and relative terms. Absolute poverty is measured in terms of some notion of subsistence considered appropriate to the circumstances of a particular society concerned. Absolute poverty is reflected mainly in the inadequacy of

food intake and the malnourishment and under nourishment on a mass scale. Relative poverty is measured in terms of inequality in income distribution. Here poverty is expressed in terms of assets possessed or consumption expenditure.

The Planning Commission set up a Task Force on Projection of Minimum Needs and Effective Consumption Demand in 1977. This Task Force defined the poverty line as the mid point of the monthly percapita expenditure class having a daily calorie in-take of 2,400 per person in rural areas and 2,100 in urban areas. At 1979-80 prices, the mid points worked out to Rs.76 per month in rural areas and Rs.88 per month in urban areas. In 1977-78, 50.82 percent of the population in the rural India was estimated to be living below the poverty line, where as 38.19 percent of population in the urban areas was living below the poverty line, according to Girdhari (1983). The household consumer expenditure was highly unequally distributed. The top 30 percent and bottom 30 percent of rural population accounted for 52 percent and 15 percent of household expenditure, respectively. It was also estimated that about 28 percent of the rural population was suffering from chronic nutritional inadequacy.

The problem of poverty is a widely researched problem in India ever since the publication of Dandekar

and Rath's seminal work on poverty in India in 1971. Many norms had been suggested for measuring poverty by these researchers. The estimates of poverty had also differed widely from one piece of research to another. The studies on poverty had been invariably based on the National Sample Survey data on household consumer expenditure which was the only official source of data at the national and other disaggregated state levels, though some of them were location-specific based on collection of primary data.

The studies on poverty have invariably used either the calorie norm or the norm of minimum consumption expenditure to define the poverty line. Using the relevant expenditure as the cut-off point, they had estimated the proportion of poor population. As regards the calorie norm, there is disagreement among the nutrition experts as to the extent of caloric requirements required for the health and working efficiency of the adult population in the Indian setting. Sukhatme (1981) considered it as far lower than the minimum requirement of 2,400/2,100 calories which had been accepted for the computation of poverty line by Dandekar and others. Granting that there is agreement about the minimum calorie requirement, several other problems are confronted in converting the nutrition requirement into a relevant food basket, finding out its cost and there upon

computing the minimum expenditure necessary for survival. Then the population had to be converted into adult units, the cost of the food basket had to be calculated choosing the appropriate prices for the relevant period, all these begged assumptions of uniformity in the tastes and preferences across the population. The adoption of the other norm of minimum consumption expenditure also involved value judgments concerning what constitutes the absolute minimum.

Considering the conceptual and practical difficulties involved in the use of these criteria for estimating the percent of poor population below the poverty line, the literature on poverty was explored for other clues on poverty line which were based on the propositions in economics, rather than in nutrition. Rao and Vivekananda (1982) in this regard had considered the feasibility of using the idea of changing composition of consumption following Engel's law of consumption expenditure as the basis of assessing poverty and found it worth quite a trial. They had pointed out that this clue also enabled the stratification of population into different groups, thus identifying the poor as a distinct stratum of the population. A second criterion suggested by them that closely followed the first one was the surplus criterion based on the combined percentage of expenditure on non current items. An attempt has been made in this study to apply the current

needs criterion for the Tamil Nadu data on consumer expenditure.

Oster et al., (1978) had mentioned the use of yet another criterion of poverty in the relative sense used in the United States, namely that any one with less than 50 percent of the median income of the population could be taken as poor. They note that this definition automatically incorporates any change that is registered in the overall standards of living and hence consider it as a highly workable definition. Adopting this definition to the Indian situation, the current study tried to use two more criteria for determining poverty. One was that the population spending less than the overall per capita consumer expenditure of the group could be deemed to be poor. Another was that the population whose percapita food expenditure is less than that of the overall percapita food expenditure could be deemed to be poor. The current study had assessed the dimensions of poverty in Tamil Nadu, also using these two criteria.

The Specific objectives of the study are to

(a) to find out the dimensions of poor in Tamil Nadu 1960-1978; and

(b) to evaluate the relative superiority of these alternative criteria.

It is hoped that the study would throw light on the feasibility of alternative approaches to the measurement of poverty and add to the methodology of the studies on poverty. It is an attempt to draw the attention of the policy makers and others away from the semantic debate surrounding the issue of norms of poverty.

## Review of Literature

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## REVIEW OF LITERATURE

The literature relating to the study is discussed under the following heads:

- A. Concept of Poverty
- B. Poverty in India
- C. Levels of consumption in the Rural and Urban Areas
- D. Studies Done Earlier.

### A. Concept of Poverty:

Jackson (1967) defined poverty as inadequate social functioning, not being gainfully employed, nor able to maintain a household, nor engaged in satisfying personal and social relations.

In the words of Bremer (1983): "The poor are simply those members of the society whose incomes fall below the standard minimum".

Townsend (1983) treated poverty as an economic lag. Individuals and families whose resources over a time fall seriously short of resources commanded by average individual or family in the community in which they live are in poverty.

McNamara (1983) defined poverty as a condition of life, so characterised by malnutrition, illiteracy, disease, high infant mortality and low life expectancy as to be beneath any reasonable definition of human decency.

B. Poverty in India:

Poverty is generally characterised by low level of income, or low level of consumption of either the whole population or part of the population. Poverty in the Indian context has generally been viewed in terms of the minimum level of survival, which again has been formulated in terms of minimum requirement of calorie intake (Dasgupta, 1982).

India has now the experience of over three decades of economic planning and as a result of sustained efforts significant achievements have been made in the spheres of agriculture, industry, education, medical and public health services, communication and transport, banking, insurance and so on. It is beyond doubt that living conditions have improved every where, even in the most backward areas. However, the fact remains that millions of our people are still victims of abject poverty and they are not getting even the basic necessities of life. In fact, the problem of poverty is not only acute in our country but its

magnitude is also gigantic (Bhargava, 1983).

The National Sample Survey (32nd Round) indicated that the number of people below the poverty line in 1977-78 in rural areas was 251.66 million and in urban areas 51.10 million. The average monthly per capita consumption for people below the poverty line (at 1977-78 prices) in rural and urban areas was Rs.44.96 and Rs.53.87 respectively. Thus a considerable proportion of our population lives below the poverty line. The percentage of such people was 48.13 in 1977-78 against 51.49 in 1972-73 (Bhargava, 1983).

It may however be noted that while the percentage of population living below the poverty line has declined marginally, the number of such people in absolute terms increased from 302.76 million in 1977-78 to 316.84 million in 1979-80. Needless to say, a large majority of the poor lives in rural areas. The percentage of population living below the poverty line in rural areas was 50.82 in 1977-78 as against the corresponding percentage of 54.05 in 1972-73 (Bhargava, 1983).

In spite of three decades of planned economic development still 50 percent of our population is living in stark poverty and the hard core of poverty is found in rural areas.

C. Levels of Consumption in Rural and Urban India:

The changes in the levels of living over the period 1960-82 are captured by the changes in the monthly per capita household expenditure at constant prices given by Gupta and Dutta (1984). These are given in Table I.

TABLE I

ESTIMATES OF LEVEL OF CONSUMPTION IN RURAL AND URBAN  
INDIA - MONTHLY PER CAPITA HOUSEHOLD CONSUMPTION  
EXPENDITURE (at 1960 - 61 Prices).

Year	Rural India (in Rs.)	Urban India (in Rs.)
1960-61	21.53	29.61
1961-62	21.79	31.03
1963-64	21.06	32.50
1964-65	23.56	32.11
1965-66	22.87	29.52
1966-67	22.88	30.76
1967-68	24.20	32.47
1968-69	23.71	32.80
1969-70	23.98	34.82
1970-71	23.06	34.50
1972-73	22.56	32.35
1973-74	22.81	30.44
1974-78	22.22	30.02
1979-80	21.57	30.20
1981-82	23.22	31.81
Percentage rise in Per Capita over 1960-61 to 1981-82	.36	.34
Percentage rise in Per Capita over 1979-80 to 1981-82	3.80	2.60

The table shows that through out the period the per capita consumer expenditure in the urban areas had remained higher than the relevant figures for the rural area. Partly it would indicate the qualitative improvement obtaining in the levels of living in the urban areas and partly it would reflect the increased cost of living occasioned for the consumers in the urban areas. In both, the level of living had almost remained stagnant, with per capita consumer expenditure increasing by bare margin of about two rupees in both the cases.

The problem of low per capita consumption expenditure was further compounded by its highly unequal distribution among the various decile groups of the population according to Subramaniam (1982). The share of the decile groups in total private consumption expenditure in 1977-78 is indicated in Table II.

TABLE II

**SHARE OF TOTAL PRIVATE CONSUMPTION EXPENDITURE IN  
RURAL AND URBAN INDIA IN 1977-78 (Percent)**

Decile Group	Rural	Urban
0-10	3.65	3.36
11-20	5.12	4.67
21-30	6.24	5.59
31-40	6.56	6.50
41-50	8.03	7.39
51-60	8.66	8.69
61-70	9.84	9.77
71-80	11.77	12.31
81-90	14.55	14.24
91-100	25.58	27.48
0-100	100.00	100.00

<b>Average monthly per capita consumption below poverty line</b>	44.96	53.84
<b>Average aggregate monthly per capita consumption</b>	75.61	108.73
<b>People below poverty line (million)</b>	251.56	51.10
<b>Total Population (million)</b>	495.2	133.8

The degree of inequality observed in the rural and urban areas was almost uniform with the lowest 10 percent of the population having a share of 3.65 per cent and 3.36 per cent of the total consumption expenditure in rural and urban areas and the top 10 per cent of the population having a share of 25.58 per cent and 27.48 per cent respectively.

D. Studies done Earlier:

1. Disparities in Inter-State Consumer Expenditure ( Bhattu and Vaidyanathan (1974) )

The inter-state consumer expenditure disparities of the rural and urban population of India were studied by Bhattu (1974) and Vaidyanathan (1974). They based their studies on the all India Surveys conducted by the National Council of Applied Economic Research (NCAER) in 1968-69 and the National Sample Survey (NSS) of Indian Statistical Institute.

This study was based on the data from the 13th, 16th, 21st and 28th rounds of the NSS corresponding to 1957-58, 1960-61, 1966-67 and 1973-74 respectively both in urban and rural areas. Accordingly the per capita monthly consumption expenditure in rural areas, rank of consumer expenditure levels in rural areas and in each of the major states were found.

The study based on the average per capita consumer expenditure showed an unsatisfactory trend in rural areas in respect of Uttar Pradesh, Andhra Pradesh, Jammu and Kashmir, Madhya Pradesh, Karnataka, West Bengal and Assam during 1957-58 to 1973-74. Deterioration in relative per capita consumer expenditure was found for Assam and West Bengal for the year 1957-58 to 1973-74 whereas Tamil Nadu did not show signs of improvement or deterioration during the period. Though the level of living was low, improved trend was found for Maharashtra, Bihar, Gujarat and Kerala. In spite of the improved level of living of Kerala in 1973-74, its relative per capita expenditure position was unsatisfactory.

2. Calorie Intakes of Food Comparisions Across States and Classes, Kalirajan (1976):

The study on calorie intakes of food comparison across States and Classes was made by Kalirajan. The main objectives of his study were to establish the relationship between income distribution and calorie distribution and also to enumerate the proportion of calorie deficient consumers in different states. For the purpose of this study, the National Sample Survey Report on Consumer Expenditure on all and some selected items covering the period 1963-64

(18th round) were taken. The norm used in this study was the per capita calorie intake at the mean expenditure. To calculate the per capita calorie intakes at the mean expenditure, the total food had been divided under six main heads namely cereals, cereal substitutes, pulses, milk and milk products, edible oils, meat, fish and eggs and other food items. The finding of this study was that nearly 70 to 85 per cent of calories were obtained from cereals in the rural areas whereas about 65 to 80 per cent of calories were derived from cereals in the urban areas.

3. Poverty and Supply of Wage Goods in Tamil Nadu,  
Ramamurthy (1974):

Ramamurthy in his study on Poverty and Supply of Wage Goods in Tamil Nadu studied the changes in the consumption pattern over time, the distribution of consumption expenditure over major items of consumption and the inequalities in consumption over the period. The time period chosen for the study was the decade 1960-70. This study was based on the National Sample Survey estimate for the state of Tamil Nadu for 1969-70. The main findings of this study were

- a) In 1960-61, the per capita monthly private consumer expenditure of the rural population was Rs.18.57 while that of the urban population was Rs.26.50.
- b) The per capita monthly private consumer expenditure of the rural population of Tamil Nadu in 1969-70 was Rs.32.85 while that of the urban population was Rs.50.66.
- c) There had been an increase of 176 per cent in the per capita monthly private consumer expenditure of the rural population and 191 per cent in the case of urban population.
- d) The per capita monthly consumption expenditure on food continued to increase both in rural and urban areas. In 1960-61, it was Rs.12.88 in the rural areas, it had increased to Rs.25.22 in 1969-70 and from Rs.17.65 in the urban area to Rs.30.98 in 1969-70.
- e) The percentage expenditure on food items increased from 69.36 in 1960-61 to 76.80 in 1969-70 in the rural areas. However the percentage expenditure

on food has decreased from 60.60 in 1960-61 to 61.20 in 1969-70.

- f) The percentage of expenditure on cereals to the total had shown mild fluctuation from year to year. The percentage was as high as 45.96 in 1968-69 and dropped to a comparatively lower 41.96 in 1969-70, while there had been a sustained increase in money expenditure over the years, that is from Rs.7.97 in 1960-61 to Rs.11.68 in 1969-70.
- g) The consumption of milk in Tamil Nadu was low relatively to other States. In rural Tamil Nadu, in 1961-62, 2.72 per cent of the total expenditure was taken up by milk and milk products. Similarly in urban Tamil Nadu, 6.34 per cent of the total expenditure was taken up by milk and milk products.
- h) The consumption of other food items in the rural areas showed a decline from its share of 21.38 per cent in the total consumer expenditure to 17.00 per cent between 1960-61 and 1969-70. In the urban areas too the corresponding figures showed a comparable decline from 28.26 to 17.50 per cent.
- i) The consumption of fuel and light had increased from Rs.1.13 in 1960-61 in the rural areas to Rs.2.18 in 1969-70. In the urban areas of Tamil Nadu

the consumer expenditure on fuel and light had increased from Rs.1.70 in 1960-61 to Rs.3.28 in 1969-70.

- j) The consumer expenditure on cloth in the rural areas had decreased from Rs.1.53 in 1960-61 to Rs.1.38 in 1969-70. In the urban areas, the consumer expenditure on cloth had increased from Rs.1.23 in 1960-61 to Rs.3.48 in 1969-70.
- k) In 1960-61 Rs.3.03 was spent on other miscellaneous non-food items in the rural areas. This expenditure remained stable around Rs.3.00 till 1968-69 and Rs.4.07 in 1969-70. In the urban areas, the consumption expenditure on other non-food items stood at a high level of Rs.12.92 in 1969-70 increased from Rs.5.92 in 1960-61.

4. Under Nutrition and Poverty, Dasgupta (1981):

Das Gupta had undertaken a study on Under Nutrition and Poverty in 1981. This study examined whether meaningful estimates of incidence of under nutrition subject to variations can be obtained or not from consumer expenditure survey data aggregated at different income classes. For the purpose of the study the National Sample Survey Reports of

India had been used. The items taken from the report were average intake of food items and calories of a group of households belonging to similar expenditure. The results of the study were that

- a) when total populations were replaced by corresponding number of consumer units we get the same requirement of calorie per consumer unit for all the population
- b) If average intake of a household in terms of per consumer unit per day were below the average norm, the household as a whole was found undernourished.

5. Poverty in Rural Medak, Reddy and Mitra (1982):

Reddy and Mitra in their study "Poverty in Rural Medak - levels and Determinants" made an attempt to examine the nature of poverty and factors influencing it in the rural areas of Medak district in Andhra Pradesh. This study was based on the ungrouped data of the 32nd round (1977-78) of the National Sample Survey (State Sample) relating to Medak district. The sample size for the district was 288 rural households. They defined poverty line on the

basis of the minimum level of consumption. Persons with expenditure levels below the poverty line were treated as poor or, those who cannot afford to buy their nutritional requirements. To fix the poverty line, two methods were used. The first method based the poverty line on an optimum food basket which was chosen by minimising the food cost subject to the fulfilment of nutritional norms. The poverty line was then arrived by adding to the food cost certain imputed expenditure on non-food articles on the basis of the observed behaviour. The second method estimated the relationship between expenditure and calorie intake and aimed at the minimum expenditure to determine the poverty line corresponding to the calorie intake norm. The calorie intake of each chousehold was derived from the information on quantities of various food items available from National Sample Survey Schedule. The per capita calorie intake was regressed on per capita consumer expenditure using the log-log inverse form of the Engel function.

$$\log C_i = a + b \log E_i + C \left( \frac{1}{E_i} \right) + E_i^1$$

Where  $C_i$  = per capita calorie intake of the  $i$ th household.  
 $E_i$  = per capita total monthly consumer expenditure of the  $i$ th household. This study had also used two variables Total Expenditure of Household and per capita Total Expenditure. The results of this were:

- 1) The poverty lines based on the two calorie norms were estimated to be Rs.4238 corresponding to 2,250 calories per capita per month. According to 2,250 calories norm, the incidence of poverty was abnormally high at 83 percent.
- 2) Secondly the per capita expenditure of the marginal farmers was less than that of landless agricultural labour households.
- 3) The per capita expenditure of medium farmers was lower by 20 per cent than the poverty line.
- 4) In the case of large farmers though their per capita expenditure was 20 per cent higher than the poverty level, 62 per cent of them were poor.

6. The Poor as a Social Stratum, Rao and Vivekananda (1982):

Rao and Vivekananda (1982) in their study on the Poor as a social stratum had identified some economic criteria for studying poverty. They argue that researchers on poverty need not be bogged down in the criteria for identifying the poverty line. The controversy on the minimum calorie requirement diverts the attention from substantive issues to relatively abstruse technical points. The authors point out that following the Engel's law of consumption, NSS data on consumer expenditure could be used to stratify

the population according to the changing composition of consumption and poor could then be identified as a stratum of society distinguishable from the non poor, based on their patterns of living. Another criterion suggested by them is the surplus criterion evolved on the basis of the percentage of expenditure available for meeting non-current needs. They demonstrate the application of these two criteria and show that the estimates of poverty yielded by these criteria are much more realistic than the conventional estimate.

7. Incidence of Undernutrition in Rural India, Sawant(1982):

Sawant (1982) in his study on incidence of under nutrition in rural India studied the consumption pattern and the extent of under nutrition and malnutrition in rural India. The reference period of his study was from 1973 to 1974. For the purpose of this study 28th round of NSS data on consumption, and average calorie intake were taken. The results of the study were:

- 1) At all India level the share of food items in total was about 7 percent in 1973-74. The expenditure on food declined marginally to 65 per cent in 1973-74. In 1967-68 the proportion of expenditure on food

varied from 71.69 per cent in Kerala, to 85 per cent in West Bengal. The range for 1973-74 was between 69.16 in Himachal Pradesh and 80.14 in West Bengal and Gujarat. The highest decline was obtained for Himachal Pradesh i.e. from 79.71 per cent to 69.16 per cent.

The average calorie intake and protein intake in 1971-72 were 2724 calories and 76 grams. The levels of intake varied from a minimum of 2023 in Kerala to a maximum of 3711 in Punjab State. The similar range for proteins was between 50 grams and 129 grams in Kerala and Madhya Pradesh respectively.

8. Determinants of Rural Poverty with Special Reference to Tamil Nadu, Subramaniam (1983):

Subramaniam in his study 'Determinants of rural poverty with special reference to Tamil Nadu' has examined the relative significance of various factors accounting for poverty in rural Tamil Nadu. The study was based on time series data from 1960-61 to 1970-71. On the basis of multiple linear regression model, an attempt was made to find out the influence of inequality in consumption, real wage rate and net domestic product in agriculture per head of rural population, position or

negative, on the level of poverty.

On the basis of the data, a multiple linear regression model of the type

$$Y = a_1x_1 + a_2x_2 + a_3x_3 \text{ where}$$

$Y$  = Sens Index of poverty

$x_1$  = Gini coefficient

$x_2$  = Real wage rate in rupees

$x_3$  = Net domestic product in agriculture per head of rural population in rupees

was fitted on the data.

The inferences of the study were:

- 1) If the inequality in consumption decreased by one per cent and other independent variables remained constant, the poverty would decrease by 62 per cent.
- 2) If the real wage rate increased by one rupee per day, the poverty would decline by .19 per cent when other independent variables remained constant.

9. Balanced Diet, Availability of Food, Cereal Consumption and Poverty, Mondal (1983):

This study is an attempt to examine the extent

to which income distribution and population growth is responsible for the existence of such a large number of undernourished persons. He also made an attempt to quantify the extent of poverty in terms of cereal consumption by people belonging to different expenditure classes. For the purpose of this study the NSS data on the consumption of cereals by different expenditure classes for the two years under study viz., 1960-61 and 1973-74 were used. The study found that in rural India about 6.68 per cent of the total households in the year 1973-74 consumed less cereals than what is prescribed in the balanced diet. The relevant percentage in 1960-61 was 6.38 per cent. The disparity in consumption by the poor and by the rich had increased during the said period in absolute as well as relative terms while the consumption of cereals in the lowest expenditure group in rural India was 196.38 grams per day per person in 1960-61. In 1973-74 the same was 155.0 grams in the lowest expenditure group and 889.67 grams in the highest expenditure group. In other words, whereas in 1960-61 the average rich consumed 3.30 times more than the average poor, in 1973-74 the consumption of the rich went up to 5.53 times of the consumption by the poor.

On the other side, in Urban India in the year 1973-74 about 21.35 per cent of the total households consumed

less cereals than the prescribed one, where as the percentage of such households in 1960-61 was only 15.82. The disparity in terms of cereal consumption had also increased substantially during the period 1960-61 to 1973-74. Whereas the highest class in 1960-61 consumed only 1.50 times more cereals than the lowest expenditure class, the same increased to 4.50 times in 1973-74.

It was also observed that in both the years the average consumption of cereals was much more in rural India than in urban India.

10. Poverty Calculation in the Sixth Plan, Gupta and Dutta (1984):

Gupta and Dutta in their report on Poverty Calculation in the Sixth Plan arrived at the level of per capita expenditure that was needed to satisfy a given calorie requirement per day for the period 1973-74. The basic data used was the consumption expenditure information provided by the National Sample Survey Organisation. The findings of this study were that for the rural sector it had been placed at Rs.40.09 per capita per month corresponding to a requirement of 2400

calories per person per day and Rs.56.64 per month for the urban sector corresponding to a requirement of 2100 calories per day.

11. Inter State Variations in Urban Poverty, Dandekar and Rath (1984):

Dandekar and Rath in their pioneering study had attempted to measure the dimensions of poverty in rural and urban areas and in the different states of the Indian Union separately. In their study, they adopted the calorie intake criteria in order to arrive at poverty lines. The reference period for the analysis was the 10 year period running through 1963-64 to 1973-74. To measure the incidence of poverty of a state for a given year, the poverty line arrived for the year had to be integrated with the consumption expenditure distribution. For this purpose, the consumption expenditure surveys conducted by the National Sample Survey had been taken as the basis. The NSS data permitted two different approaches. The first one was that of applying the all India poverty line for various years NSS consumption distribution relating to urban India. In the second method the poverty line was obtained as a weighted sum of the estimated poverty percentages of individual states, the latter being obtained in relation with the NSS distribution of individual states, and the state specific poverty lines. Dandekar and Rath arrived at the Rs.22.50

per capita per month on the basis of the calorie intake norm. The total calorie equivalent of daily diet of 2250 was the minimum required for maintenance of physical well-being of an average person. Dandekar and Rath scanned the state level consumption pattern of 1960-61 to locate the size class in which a diet with 2250 calories was reached. The mid value of the identified size class had been identified as the poverty line.

The findings of the study showed that during the 10 year period under study, the cost of the minimum consumption basket of the urban areas had gone-up by 130 percentage points from Rs.31.00 per capita per month in 1963-64 to 71.27 per capita per month in 1973-74. This increase, however, had not taken place either unidirectionally or at a uniform pace. While in 1968-69 and 1971-72 the cost had recorded rather marginal declines, the most striking increases had taken place in 1972-73 and 1973-74. Against the marginal 1.50 per cent decline that had been registered between 1970-71 and 1971-72, the cost went up by 13 percentage points in 1971-72 to 1972-73 and by another 18 percentage coins during 1972-73 to 1973-74.

Considering the All India pattern, the poverty

incidence had increased marginally by about 1.37 percentage points. It was also observed that despite the down ward movement recorded since the mid-sixties the 1973-74 level was higher than the level observed for 1963-64.

12. Poverty Indicators, Iyengar and Suryanarayana (1984):

Iyengar and Suryanarayana (1984) had undertaken a study on poverty indicators. They point out that the definitions of poverty line appearing in the recent debates are normative in nature and that therefore there is a need for arriving at an objective definition of poverty line. Defining poverty line as the lowest standard of living below which no household can subsist, they use the concentration curves to estimate the poverty line. Their approach is based on the assumption that the distribution of levels of living of households at and above the poverty line is positively skewed and log normal. They maintain that these assumptions are quite normal for Indian conditions. They had estimated Mean standard of living, mean  $x$ ; Median level of living, median  $x$ ; modal level of living, mode  $x$ ; poverty line, or subsistence level,  $x_0$ ; poverty gap,  $(1 - \bar{Y}_1)$ ; co-efficient of variation,  $c$ ; coefficient of skewness,  $\bar{Y}_3$ ; consumption share of the lower

50 per cent of population and consumption share of the richest one per cent of population, using the National Sample Survey consumer expenditure data for rural and urban India over the period 1961-1974.

The results of their study show that poverty line could be estimated by using appropriate statistical models like the three parameter log normal distribution. The empirical application of this model had shown that over the period 1961-63 to 1973-74 there was a general improvement in aggregate welfare. In both rural and urban sectors of India marked by a rise in average standard of living and a concomitant decline in disparities in the levels of living. However, when adjustments were made for inflation and its differential effects of consumption, it was found that there was a stagnation in the levels of living as well as in their distribution over the period.

13. Measurement of Poverty Profile in Rural India,  
Choudhury (1984):

Choudhury in his study 'Measurement of Poverty Profile in Rural India' examined the extent of poverty in various States in rural India in two time periods

1965-66 to 1970-71. The two important objectives of this study were to estimate poverty and economic disparity. For the purpose of this study, the NSS consumer expenditure data for the 20th round had been used. By using Gini's co-efficient method and Kakawani's poverty Index Method, the results of the study were obtained. They are as follows:

- 1) The combined poverty indices for the States had increased from 0.2295 in 1965-66 to 0.2815 in 1970-71 indicating thereby an increase in relative poverty in 1970-71. In other words, about 23 per cent of the income was required to be transferred from non-poor to the poor to eradicate poverty in the former period, while it amounted to 28 per cent of the income in the latter period.
  
- 2) The poverty indices for the States of Orissa, Kerala, TamilNadu, Andhra, Madhya Pradesh, Rajasthan and West Bengal were above while Haryana, Jammu and Kashmir, Punjab, Assam and Uttar Pradesh had poverty indices below the combined poverty index for All India in the two periods examined.

3) The States of Assam, Haryana, Kerala, Mysore and Punjab improved their relative standing in poverty while Andhra, Bihar, Gujarat, Jammu and Kashmir, Madhya Pradesh, Maharashtra, Orissa, Rajasthan, Tamil Nadu and West Bengal showed relative deterioration in poverty in 1970-71 compared to 1965-66. Inter State disparities in respect of per cent contribution to total poverty showed wide variation as against their per cent share of population.

4) The States of Andhra, Assam, Gujarat, Haryana, Kerala, Maharashtra, Punjab, Rajasthan and Uttar Pradesh, and Karnataka showed improvement in relative position in respect of per cent share of total poverty in 1970-71 compared to 1965-66. On the other hand, the States of Orissa, Tamil Nadu, Madhya Pradesh, Bihar and West Bengal showed deterioration in relative position in respect of per cent share of total poverty.

5) Orissa, Kerala and Tamil Nadu indicated highest incidence of poverty while the least incidence of poverty was reported in Haryana, Jammu and Kashmir and Punjab and Assam in both periods. However, the relative position of Kerala improved in 1970-71, that of Orissa and Tamil Nadu deteriorated further.

## Methodology

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### III METHODOLOGY

The methodology adopted for the study is discussed under the two heads:

**A. Materials**

and

**B. Methods.**

**A. Materials:**

The study was based on the National Sample Survey data on consumer expenditure for the State of Tamil Nadu in its 16th round (1960-61), 17th round (1961-62), 18th round (1963-64), 19th round (1964-65), 25th round (1970-71), 26th round (1971-72), 28th round (1973-74) and 32nd round (1977-78). The reports relating to the 25th round onwards were collected from the District Statistical Office of Coimbatore. Information relating to the previous rounds were taken from the published study of the Madras Institute of Development Studies on Poverty and Supply of Wage Goods in Tamil Nadu by Ramanurthi (1974).

**B. Methods:**

After a critical study of the approaches to the measurement of poverty found in the literature and

studies on poverty, it was decided that the following criteria could be used for estimating the proportion of population below the poverty line;

- 1) current needs criterion;
- 2) mean per capita food expenditure criterion; and
- 3) mean per capita consumer expenditure criterion.

The selection of these criteria were guided by the consideration that they did not involve the use of the calorie norm or the minimum consumption expenditure required to fulfil this calorie norm. In view of the controversy existing among the nutrition experts regarding the extent of minimum calories required for the reference man and woman in the Indian context, the investigator decided against the use of the nutrition norm. In addition, there were computational problems involved in converting the population into its adult equivalents. In the absence of data on age wise/sex wise distribution of population, the adoption of the calorie norm was likely to over estimate the extent of poverty. Further, even if a consensus could be found on the issue of calorie intake and that population could be converted into adult units, there was the question of finding out the cost of the food basket which would give these minimum calories. It subsumes

tastes and preferences of the people whose levels of living we are estimating and also changes in the consumer price indices over the period under consideration. Considering these conceptual and practical difficulties involved in adopting the normative criteria relating to nutrition or minimum expenditure, the investigator decided to use other criteria which were relatively free from the problems mentioned above.

Rao and Vivekananda (1982) had suggested a criterion based on the concept of changing composition for estimating the extent of poverty and also the surplus criterion. The former approach could also be redesignated as the 'current needs approach'. This approach as used in the study involved the following steps:

- 1) an examination of tabular statement on the percentage distribution of per capita consumer expenditure, among broad groups across the expenditure classes;
- 2) identification of those expenditure classes after which the percentage expenditure consistently declined on any consumption item, which was indicative of a change in the style of living of the people in the subsequent expenditure classes;

- 3) grouping of the population into different strata based on the above classification;
- 4) finding out their first five priority items of consumption and the percentage of expenditure devoted to them; and
- 5) a comparison of the styles of living of the different strata to identify the population below the poverty line.

The merit of this current needs approach was that it was based on the very simple proposition in economics viz. Engel's law of consumption expenditure which stipulated that the proportion of expenditure on necessities would decline and the proportion of expenditure on comforts and luxuries would tend to increase as income increases. The cut-off points for the estimation of poverty were identified using this principle as the basis in this approach.

An operational definition of poverty used by the Social Security Administration in the United States is based on the recognition that poverty should be defined explicitly in the relative sense. Hence, it was suggested that any one with less than 50 per cent

of the Median income of the population could be defined as poor (Oster et al., 1978).

It was felt that in the Indian situation where the vast majority of the population lives at subsistence levels and a little higher, any one with less than mean income/expenditure of the population could be considered as poor. Consequently, two more criteria were used in this study for the analysis of poverty; mean consumer expenditure and mean food expenditure. Population which enjoyed less than these mean expenditures was considered to be below the poverty line.

The students 't' test was used to find out whether there was any statistically significant difference between the methods used for estimating poverty.

$$t = \frac{\bar{x}_1 - \bar{x}_2}{S} \sqrt{\frac{n_1 n_2}{n_1 + n_2}}$$
$$S = \sqrt{\frac{\sum (x_1 - \bar{x}_1)^2 + \sum (x_2 - \bar{x}_2)^2}{n_1 + n_2 - 2}}$$

where  $\bar{x}_1$  stands for the mean poverty level estimated by criterion 1;

$\bar{x}_2$  stands for the mean poverty level estimated by criterion 2;

$n_1+n_2$  stands for the number of observations in each group.

S - stands for standard deviation

The results of this study are presented and discussed in the next chapter on Results and Discussion.

## Results and Discussion

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#### IV RESULTS AND DISCUSSION

The results of the study on Alternative Approaches to the Measurement of Poverty in Tamil Nadu (1960-78) are presented and discussed under the following heads:

- A. Highlights of the Consumer Expenditure data of Tamil Nadu;
- B. Estimates of Poverty and Levels of Living and the current needs criterion;
- C. Estimates of Poverty - Criteria of per Capita Consumer Expenditure and per Capita Food Expenditure and
- D. Relative Superiority of the Criteria used for Estimating Poverty.

##### A. Highlights of the Consumer Expenditure Data of Tamil Nadu:

Table III gives details on the per capita consumer expenditure on food and non-food groups in the State of Tamil Nadu as also in the rural and urban areas for the Period 1960 - 61 to 1977 - 78.

TABLE III

## MONTHLY PER CAPITA CONSUMER EXPENDITURE ON FOOD AND NON FOOD GROUPS IN TAMIL NADU: RURAL,

## URBAN AND STATE (1960-61 to 1977-78)

(in Rupees)

Year	Rural			Urban			State		
	Food	Non food	Total	Food	Non food	Total	Food	Non food	Total
1960-61	12.88	5.69	18.57	17.65	8.85	26.50	-	-	-
1961-62	15.09	6.60	21.69	18.73	11.25	29.98	-	-	-
1963-64	15.62	7.77	23.39	18.94	12.53	31.47	-	-	-
1964-65	17.77	6.78	24.55	22.00	12.34	34.34	-	-	-
1970-71	23.30	7.47	30.77	26.68	13.18	39.86	24.37	9.27	33.64
1971-72	26.16	9.07	35.33	30.39	15.69	46.08	27.16	10.65	37.81
1973-74	37.97	15.56	53.53	49.50	22.01	67.51	40.11	17.39	57.50
1977-78	40.33	17.23	57.56	51.93	29.05	80.98	43.85	20.81	64.66

The monthly per capita consumer expenditure in the rural Tamil Nadu had increased from Rs.18.57 in 1960-61 to Rs.57.56 in 1977-78. In the urban areas, the monthly per capita consumer expenditure was Rs.26.50 in 1960-61. It had increased to Rs.80.98. The urban consumer expenditure was consistently higher than the consumer expenditure in rural areas. This difference could be accounted for by the relatively higher money incomes and cost of living in the urban areas and by the lack of monetisation characterising the rural economy.

Taking the State as a whole, on an average an individual lived on an expenditure of Rs.64.66 per month (1977-78), of which the food items accounted for an expenditure of Rs.43.85 and non food items absorbed Rs.20.81. Roughly two thirds of the expenditure was on food.

Table IV shows the percentage break-up of consumer expenditure between food and non-food groups during 1960-61 to 1977-78 in Tamil Nadu.

TABLE IV

PERCENTAGE DISTRIBUTION OF MONTHLY PER CAPITA CONSUMER EXPENDITURE ON FOOD AND NON FOOD GROUPS IN RURAL, URBAN AND STATE OF TAMIL NADU AS PERCENTAGE TOTAL CONSUMER EXPENDITURE (in Rupees)  
(1960-61 to 1977-78)

Year	Rural			Urban			State		
	Food	Non-food	Total	Food	Non-food	Total	Food	Non-food	Total
1960-61	69.36	30.64	100.00	66.60	33.40	100.00	-	-	-
1961-62	69.57	30.43	100.00	62.78	37.52	100.00	-	-	-
1963-64	66.78	33.22	100.00	60.18	39.82	100.00	-	-	-
1964-65	72.38	27.62	100.00	64.06	35.94	100.00	-	-	-
1970-71	75.72	24.28	100.00	66.93	33.07	100.00	72.44	27.56	100.00
1971-72	74.25	25.75	100.00	65.95	34.05	100.00	71.84	28.16	100.00
1973-74	70.93	29.07	100.00	67.40	32.60	100.00	69.75	30.25	100.00
1977-78	76.06	29.94	100.00	64.13	35.87	100.00	67.81	32.19	100.00

The proportion of expenditure devoted to food items in the rural areas was consistently larger than the proportion of consumer expenditure spent on food in the urban areas, indicating that the population in the rural areas was, by and large, still near the subsistence levels of existence. Over the period the proportion of food expenditure had increased from 66.78 per cent in 1963-64 to 76.06 per cent in 1977-78 in the rural areas. This proportion had however only marginally increased in the urban areas from 60.18 per cent to 64.13 per cent during the relevant period. This again shows that the population in the rural areas is constrained and spends a relatively increasing proportion of its expenditure on food.

The item-wise distribution of monthly per capita consumer expenditure in rural and urban Tamil Nadu during the period 1970-71 to 1977-78 is shown in Table V.

TABLE V

ITEMWISE DISTRIBUTION OF MONTHLY PER CAPITA CONSUMER EXPENDITURE IN RURAL AND URBAN TAMIL  
NADU (1970 - 71 to 1977 - 78)  
(in Rupees)

Sl. No.	Item	Monthly consumer expenditure per person in							
		Urban during				Rural during			
		1970-71	1971-72	1973-74	1977-78	1970-71	1971-72	1973-74	1977-78
1.	Cereals	12.00	13.82	19.77	20.67	13.26	15.72	20.71	20.60
2.	Gram	0.03	0.05	0.07	0.12	0.03	0.02	0.03	0.12
3.	Cereal substitutes	0.01	0.07	0.06	0.05	0.09	0.10	0.12	0.16
4.	Pulses	1.45	1.77	2.58	3.16	1.10	1.27	2.08	2.19
5.	Milk & Milk Products	2.77	2.99	3.73	5.42	1.09	1.15	1.64	1.88
6.	Edible oils	2.03	1.98	3.23	3.30	1.35	1.40	2.31	1.98
7.	Meat, fish and egg	1.64	1.96	3.26	3.26	1.36	1.57	2.44	2.19
8.	Vegetables	1.66	1.88	2.56	3.43	1.14	1.29	2.07	2.28
9.	Fruits and Nuts	0.64	0.67	1.70	1.59	0.42	0.45	1.01	0.95
10.	Sugar	0.93	1.14	1.45	1.60	0.52	0.56	0.91	0.96
11.	Salt	0.07	0.07	0.08	0.11	0.08	0.07	0.08	0.13
12.	Spices	1.90	1.78	2.94	3.25	1.70	1.60	2.64	3.02
13.	Beverages	1.55	2.21	4.07	5.97	1.17	0.96	1.93	2.87
14.	<u>A. Food: Total</u>	26.68	30.39	45.50	51.93	23.30	26.16	37.97	40.33
14.	Pan etc.	0.74	0.92	1.66	1.52	0.82	1.17	1.76	1.77
15.	Fuel and light	2.94	3.29	4.42	5.87	2.30	2.43	3.49	4.08
16.	Clothing	1.34	2.43	3.55	4.31	1.38	1.87	3.62	3.17
17.	Foot Wear	0.07	0.06	0.05	0.14	0.05	0.01	0.04	0.05
18.	Miscellaneous Goods and Services	4.48	5.72	8.13	10.60	2.58	3.03	5.88	6.18
19.	Rent	2.36	2.77	3.01	2.89	0.17	0.23	0.18	0.17
20.	Taxes	0.20	0.10	0.04	0.18	0.04	0.29	0.07	0.04
21.	Durable goods	1.05	0.40	1.15	3.54	0.13	0.04	0.52	1.77
	<u>B. Non-food: Total</u>	13.18	15.69	22.01	29.05	7.47	9.07	15.56	17.23
	<u>Total Expenditure</u>	39.86	46.08	67.51	80.98	30.77	35.23	53.53	57.56

A study of the item wise distribution of monthly per capita consumer expenditure in Rural and Urban Tamil Nadu showed that the per capita expenditure on cereals and cereal substitutes were higher in the rural areas than in the urban areas. On items like pulses, vegetables, fruits and nuts, meat, fish and egg, milk and milk products that constituted protective foods in the consumption basket, the population in urban areas was spending more than those in the rural areas. Qualitatively, therefore, one could conclude that the food intake of people in the urban areas was superior to those in the rural areas.

The item of miscellaneous goods and services includes such components as expenditure on health and education, besides a few current items. Considering this expenditure as a proxy for investment in human capital it was found that this expenditure was consistently higher in the urban areas than in the rural areas, indicating that the population in the urban areas were able to set aside more towards their future. Durable goods were also used in a larger measure in the urban areas than in the rural areas.

The details of the distribution of population across the various expenditure classes for the period 1960-61 to 1977-78 is given in appendix I.

ESTIMATES OF POVERTY AND LEVELS OF LIVING - CURRENT  
NEEDS CRITERION:

Rao and Vivekananda (1982) had used the current needs criterion to estimate the proportion of poor population and identify them as a social stratum distinguishable from other strata of the society. The use of this criterion is illustrated with the consumer expenditure data for the year 1977-78.

a. Rural Poor in Tamil Nadu:

The percentage break up of consumer expenditure itemwise across the various expenditure classes in 1977-78 for rural Tamil Nadu is shown in Table VI.

A careful study of the table showed that the percentage expenditure devoted to an individual item like Rice and Wheat increased upto a certain expenditure class (Rs.10 - 20) beyond which the proportion steadily decreased in the subsequent classes. Hence an asterisk was placed against the proportion of expenditure in the terminal class beyond which there was a fall in the percentage of expenditure on the particular item. The decreasing percentage was interpreted as the consumers' decision to shift away from the item. This exercise was repeated for all the individual items in Table VI.

The process of stratification of the population into different groups based on their levels of living was assisted by the asterisks placed in Table VI. All the expenditure classes running upto a certain asterisk was classified as one stratum. The expenditure classes upto the point at which the next asterisk was cited constituted the next stratum and so on. The first five main items of expenditure in descending order of per cent share were indicated for each one of these strata, as given in Table VII.

**STRATA ASSOCIATED WITH CHANGING COMPOSITION**

Expenditure Class	0 - 10	10 - 20	20-30 to
Percentage of Population	0.03	0.66	30.52
Five main items of expenditure in descending order of per cent share	1. Cereals	Cereals	Cereal
	29.57	51.22	49.64
	2. Sugar, Salt & Spices	Fuel & light	Fuel &
	19.73	11.43	9.15
	3. Pan etc.	Sugar, Salt & Spices	Sugar, Salt & Spices
18.97	7.51	8.19	
4. Miscellaneous goods & services	Milk, Vegetables, Fruits & Nuts	Milk, Vegetables, Fruits & Nuts	
7.46	7.19	8.63	
5. Fuel & Light	Miscellaneous goods and Services	Miscellaneous goods and Services	
5.13	5.06	6.54	
<b>Total</b>	<b>80.86</b>	<b>82.41</b>	<b>82.15</b>

LE VII

## EXEMPTION IN RURAL TAMIL NADU IN 1977-78 (in Rupees)

40 - 50	50 - 75	75 - 100	100 - 150 to 200 & above
21.67	29.82	10.29	7.01
Cereals 45.49	Cereals 39.66	Cereals 31.55	Durable goods 21.42
Milk, Vegetables, fruits & nuts 10.19	Milk, Vegetables, fruits & nuts 11.86	Miscellaneous goods and services 13.23	Miscellaneous goods and services 16.02
Miscellaneous goods & services 8.23	Miscellaneous goods & services 10.05	Milk, Vegetables, fruits & nuts 12.88	Cereals 15.5
Fuel & light 8.08	Sugar, Salt & Spices 7.53	Clothing and Foot wear 7.72	Clothing & Foot wear 14.95
Sugar, Salt & Spices 7.92	Fuel & Light 7.30	Sugar, Salt & Spices 6.80	Milk, Vegetables, Fruits and Nuts. 9.48
79.91	76.40	72.18	76.87

The table on the strata associated with changing composition of consumption showed that clear differences in patterns of living were discernible. The first three strata upto the per capita expenditure class Rs.30 - 40) comprising 31.21 per cent of the rural population had a similar composition of consumption expenditure. Around four-fifths (a little more than 80 per cent) of their expenditure was on these first five items. About 50 per cent of the expenditure was taken up by cereals viz., Rice and Wheat. The very first expenditure class was still worse off than the other two with 19 per cent of the expenditure wasted away on pan, tobacco and intoxicants. Hence, the population coming under all these expenditure classes, i.e. the first three strata were classified as the poor population.

Similarly the style of living of the people in the next three expenditure classes were similar in so far as miscellaneous goods and services constituted third or second priority to them and the proportion of their expenditure on cereals was relatively lower than the first group. Hence they were classified as the middle class. They constituted 61.78 per cent of the rural population.

To the population coming under the last strata per capita with expenditure of more than Rs.100/-, the difference in the style of living was very marked. Their priority items of expenditure was durable goods, miscellaneous goods and services, rice and wheat, clothing and foot wear and milk, fruits and vegetables. They clearly constituted the richest group in the rural population.

The application of the current needs criterion on the lines mentioned above was repeated for the remaining sets of data for the rural and urban population of Tamil Nadu as also for the population of the state as a whole. (Vide Appendix II).

Table VIII gives the break up of the rural population of Tamil Nadu using the current needs criterion.

TABLE VIII

PERCENTAGE DISTRIBUTION OF RURAL POPULATION IN TAMIL  
NADU USING THE CURRENT NEEDS CRITERION 1960-61 to  
1977-78.

Year &	Poor	Non Poor		Total
		Middle	Rich	
1960-61	25.24	64.44	10.22	100.00
1961-62	47.22	49.58	3.20	100.00
1963-64	75.57	20.23	4.20	100.00
1964-65	73.91	18.22	7.87	100.00
1970-71	39.69	52.77	7.54	100.00
1971-72	43.05	44.98	11.97	100.00
1973-74	9.49	55.97	34.54	100.00
1977-78	31.21	61.78	7.01	100.00

The proportion of poor population in rural areas had fluctuated from one year to the next. As on 1977-78, 31.21 per cent of the population was reckoned as poor. The extremely high percentage of poor population (over 70 per cent) recorded in the years 1963-64 and 1964-65 could be attributed to the difficult drought and food grains situation in the country as also the Chinese aggression which drained a major portion of the resources away from civilian consumption.

b. Urban Poor in Tamil Nadu:

The percentage distribution of per capita expenditure among individual items across expenditure classes for the urban Tamil Nadu in 1977-78 is shown in Table IX.



The asterisks placed in accordance with the declining percentage of expenditure in each item demarcated the expenditure groups into five broad divisions Rs.10 - 20, 20 - 30, 30 - 40, 40 - 50, 50 - 75, 75 - 100 and above Rs.100/-. The pattern of living of these groups in accordance with their first five priority expenditure items is given in Table X.

•

STRATA ASSOCIATED WITH CHANGING COMPOSITION OF

Expenditure Class	10 - 20	20 - 30
Percentage of Population	0.17	2.04
Five Main items of expenditure in decending order of per cent share		
1. Cereals	51.68	Cereals 51.26
2. Miscellaneous goods and services	11.0	Fuel and light 9.80
3. Fuel and light	9.25	Sugar, Salt and Spices 8.10
4. Sugar, Salt and Spices	6.34	Miscellaneous go and services 7.77
5. Milk, Vegetables Fruits & Nuts	5.24	Milk, Vegetables Fruits & Nuts 7.61
Total	83.51	84.54

CON IN URBAN TAMIL NADU IN 1977 - 78

(in Rupees)

	40 - 50 to	50 - 40
	75 - 100	100 - 150 and above
<hr/>		
	67.95	21.42
Cereals	36.84	18.90
Milk, Vegetables, Fruits and nuts	13.0	16.1
Milk, Vegetables, Fruits and nuts	12.03	15.64
Miscellaneous goods and services	9.0	12.7
Fuel and light	7.80	11.80
Salt and	78.67	75.14
Vegetables, & nuts		
Salt and		
Miscellaneous goods		
Sugar, Salt and Spices		
Durable goods		

The first three groups were brought together (accounting for 10.23 per cent of population) as their five priority items absorbed about 84 per cent of their total expenditure and among them cereals accounted for about 51 per cent of their expenditure.

The population coming under the expenditure classes Rs.40-100 (67.95 per cent) was classified as the middle group. Their cereal consumption took away 37 per cent of the total expenditure. Milk and vegetables were the next priority item with 13 per cent of total expenditure and miscellaneous goods came third with the 12 per cent of expenditure. As for the richest group (21.82 per cent of population) miscellaneous goods and services were the first priority item absorbing 19 per cent, milk and vegetables came next with 16 per cent of expenditure, cereals followed with 15.64 per cent of total expenditure. Clearly therefore this group came at the top in the hierarchy of consumption.

The distribution of urban population into the poor and non-poor groups for the period 1960-61 to 1977-78 is shown in Table XI.

TABLE XI

PERCENTAGE DISTRIBUTION OF RURAL POPULATION IN TAMIL  
NADU USING THE CURRENT NEEDS CRITERION (1960 - 78)

Year	Poor	Non Poor		Total
		Middle	Rich	
1960-61	79.88	15.99	4.63	100.00
1961-62	77.99	14.90	7.11	100.00
1963-64	58.66	25.58	15.75	100.00
1964-65	81.14	13.24	5.62	100.00
1970-71	50.61	17.78	31.61	100.00
1971-72	40.38	37.87	21.85	100.00
1973-74	25.56	20.20	54.24	100.00
1977-78	10.23	67.95	21.82	100.00

Unlike the rural poor population which did not exhibit any significant trend, the urban poor population conformed to a pattern in that the proportion of poor population had steadily fallen from 79.98 per cent in 1960-61 to 10.23 per cent in 1977-78, excluding the war period 1964-65.

c. Poor Population in the State of Tamil Nadu:

The percentage distribution of per capita expenditure among individual items across expenditure classes for the whole of Tamil Nadu 1977-78 is shown in Table XII.

In the very first expenditure class of Rs.0-10, it was found that a relatively larger proportion of the expenditure (17.27 per cent) was on pan, tabacco and intoxicants, which would naturally have deprived the proportion of expenditure available for food and other necessary items. The asterisks placed in accordance with declining percentage of expenditure on individual items reduced the groupings to seven classes as given in Table XIII.

The pattern of living observed in the first four groups was fairly similar and hence the population of these groups was added together and reckoned as poor (24.86 per cent). About sixty four per cent of population coming in the next group Rs.40 - 100 was classified as middle and the rest was classified as the rich group (11.5 per cent).

The distribution of the State population into poor and non-poor groups during the period 1970-78 is given in Table XIV.

TABLE XIV

PERCENTAGE DISTRIBUTION OF POPULATION IN THE  
STATE OF TAMIL NADU USING THE CURRENT NEEDS  
CRITERION 1970 - 78.

Year	Poor	Non Poor		Total
		Middle	Rich	
1970 - 71	50.23	39.21	10.56	100.00
1971 - 72	38.63	47.04	14.33	100.00
1973 - 74	17.43	65.65	16.92	100.00
1977 - 78	24.86	63.65	11.49	100.00

According to these estimates 50 per cent of the state population was considered as poor in 1970-71. In 1977-78 their proportion had been exactly reduced by half namely to 25 per cent.

C. Estimates of Poverty - Per Capita Consumer Expenditure and Per Capita Food Expenditure Criteria:

The definition of the minimum needs of the population used to determine poverty levels undergoes a change from one time to another. This reflects an implicit belief that poverty is at least in part a relative phenomenon, an economic status that changes as the over-all level of living in society changes. Thus as the over-all living standards increase, the poverty line also tends to rise in real terms. Hence, some researchers (Oster et al., 1978) had suggested that poverty definition should be made explicitly relative. One suggestion was that any one with less than 50 per cent of the medium income could be defined as poor. Considering the fact that the over all levels of living in India had not yet reached such high levels, the investigator proposed that any one spending less than the mean expenditure of the population could be considered

as poor. Alternatively as food expenditure determines the health and working efficiency of an individual it was also proposed that any one with a food expenditure less than that of the over all per capita food expenditure could also be deemed to be poor.

Since the original reports of the previous rounds of NSS data were not available, these two criteria were applied to the data from 1970-71 onwards.

The results of this exercise are shown in Tables XV and XVI.

TABLE XV

PERCENTAGE OF POOR POPULATION IN TAMIL NADU: RURAL,  
URBAN AND STATE (1970-78) UNDER THE CRITERION OF PER  
CAPITA FOOD EXPENDITURE

Year	Rural		Urban		State	
	Percapita food ex- penditure (in Rs.)	Per cent of Popula- tion	Percapita food ex- penditure (in Rs.)	Percent of popula- tion	Percapita food ex- penditure (in Rs.)	Per cent of popula- tion
1970-71	23.30	57.87	26.68	50.97	24.37	15.23
1971-72	26.16	43.05	30.39	62.27	27.16	38.63
1973-74	37.97	65.46	45.50	45.76	40.11	59.88
1977-78	40.33	52.88	51.93	59.86	43.85	75.79

TABLE XVI

PERCENTAGE OF POOR POPULATION IN TAMIL NADU: RURAL, URBAN AND STATE  
(1970 - 78) UNDER THE CRITERION OF PER CAPITA CONSUMER EXPENDITURE

Year	Rural		Urban		State	
	Percapita consumer expenditure (in Rs.)	Per cent of poor population	Percapita consumer expenditure (in Rs.)	Percent of poor population	Per capita consumer expenditure (in Rs.)	Per cent of poor population
1970-71	30.77	45.27	39.86	68.39	33.64	65.71
1971-72	35.22	43.05	46.08	62.27	37.81	52.50
1973-74	53.53	65.46	67.51	72.36	57.50	59.88
1977-78	57.56	52.88	80.98	59.86	64.66	75.79

Using the per capita food expenditure criterion it was found that the percentage of poor in Rural Tamil Nadu varied between 43 and 65 per cent during the period. In the urban Tamil Nadu the proportion varied between 46 and 62 per cent. In the State as a whole the range was 37 to 76 per cent.

The use of the per capita consumer expenditure criterion showed that the urban poverty was more chronic than the rural poverty. As on 1977-78 both the criteria yielded the same per centages. In the rural areas 52.88 per cent were found to be poor. In the urban areas 59.86 per cent were found to be in the poor category. In the State as a whole a relatively larger population 75.79 per cent came in the poor category, possibly accounted for by the extreme inequalities in expenditure.

D. Relative Superiority of the Criteria used for Estimating Poverty:

Three alternative criteria - the current needs criterion, the per capita consumer expenditure criterion and per capita food expenditure criterion

had been used in this study to estimate the dimensions of poverty. The investigator wanted to find out whether there was any statistically significant difference among these criteria. The students 't' test used for the purpose on the estimates of rural poverty yielded the results shown in Table XVII.

TABLE XVII

RESULTS OF 't' TEST FOR EVALUATING THE CRITERIA USED  
FOR ESTIMATING POVERTY.

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S.No.	Criteria Compared	't' value
1.	Current needs criterion and per capita food expenditure criterion	8.9666*
2.	Current needs criterion and per capita consumer expen- diture criterion	1.913 <sup>+</sup>
3.	Per capita food expenditure criterion and per capita con- sumer expenditure criterion	0.290 <sup>+</sup>

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Foot Note: \* Significant at 5 per cent level

+ Not significant.

The 't' values that were derived for the three sets of combinations of criteria were not found to be statistically significant in two out of three combinations indicating that the difference if any in the estimates yielded by the criteria was due to chance factors and that it was not due to any statistically significant difference existing among these criteria coming in the last two groups.

Since the difference between the current needs criterion and food expenditure criterion was found to be statistically significant, they were automatically eliminated as viable criteria for measuring poverty. The remaining criterion was the mean per capita consumer expenditure.

The criterion namely the mean per capita consumer expenditure, did not involve any element of arbitrariness. The poverty line could be identified as the mean per capita consumer expenditure of the entire population and the population coming in those expenditure classes recording an expenditure below this norm could readily be classified as poor. Consequently, if this criterion were used for estimating poverty, the semantic debates about what constitutes the minimum

requirement of calorie intake become irrelevant. The problems in arriving at a minimum consumption expenditure norm could also be bypassed. Further, this criterion has an additional advantage in so far as it reflects the changes in the over all standard of living in measuring poverty.

## Summary and Conclusion

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## V SUMMARY AND CONCLUSION

Poverty is an intense and deep-rooted problem. Various approaches had been used from time to time for the purpose of identifying the poor and evaluating the impact of development programmes and specific measures undertaken for the eradication of poverty. Just as poverty happens to be a deep-seated social problem, its measurement also has defied a uniform and acceptable solution. Conventionally poverty has been defined in both absolute and relative terms. In absolute terms, it was measured by some idea of subsistence, reflected in food intake and in relative terms, it was measured in terms of inequality in income distribution. In arriving at a consensus on the criterion for measurement of poverty, the economists and others engaged in research on poverty were bogged down in debates on technical issues, namely, the minimum level of calorie intake or the minimum level of consumption expenditure. They lost sight of the poor as a distinct stratum of society which would be clearly distinguished from the other non poor group and which should constitute the target group in the poverty eradication programmes. Considering the limitations and difficulties in using

the conventional approaches of defining a poverty line in terms of calorie requirement or minimum consumption expenditure, the current study represented an effort to evolve other alternative approaches which were free from these conceptual and practical problems.

The study had evolved and used three alternative approaches to the measurement of poverty:

- a. The current needs approach;
- b. The mean per capita consumer expenditure approach;
- and
- c. The mean per ~~cap~~ capita food expenditure approach.

The essence of the current needs approach lay in using the Engel's law of consumption for distinguishing the different strata of population across the expenditure classes in accordance with their changing patterns of levels of living and then grouping them into poor and non-poor groups accordingly. This current needs approach besides revealing the percent of poor population also yielded considerable insight into the different styles of living of the different groups in the society.

In the mean per capita consumer expenditure approach, the poverty line was identified with the over all per capita consumer expenditure of the population and the proportion of population with a per capita expenditure below this level was categorised as poor. The mean per capita food expenditure approach was much the same as that of the mean per capita consumer expenditure approach, except that the over all per capita food expenditure was taken as the dividing line between poor and the non poor.

These approaches to the measurement of poverty were applied to the National Sample Survey data on consumer expenditure for the State of Tamil Nadu in its 16th, 17th, 18th, 19th, 25th, 26th, 28th and 32nd rounds covering the period of 1960-78. The data for the 1970's were drawn straight from the NSS reports and the data for the 60's were obtained from other published sources of information.

The main findings of this study are summarised under main relevant heads:

A. High lights of the Consumer Expenditure in Tamil Nadu (1960 - 1978):

1. In the State of Tamil Nadu on an average, an individual lived on an expenditure of Rs.64.66 per month (1977-78) of which the food items accounted for an expenditure of Rs.43.85 and non food items absorbed Rs.20.81. Roughly two thirds of the expenditure was on food.

2. The monthly per capita consumer expenditure in the rural Tamil Nadu had increased from Rs.18.57 in 1960-61 to Rs.57.56 in 1977-78. In the urban areas the monthly per capita consumer expenditure was Rs.26.50 in 1960-61. It had increased to Rs.80.98 in 1977-78. The urban consumer expenditure was consistently higher than the consumer expenditure in rural areas.

3. The proportion of expenditure devoted to food items in the rural areas (76.06 per cent in 1977-78) was larger than the corresponding proportion in the urban areas (64.13 per cent in 1977-78) indicating that the population in the rural areas was, by and large, still near the subsistence levels of existence.

4. The monthly per capita consumer expenditure on cereals and cereal substitutes were higher in the rural areas than in the urban area.

5. The per capita expenditure on cereals and cereal substitutes were higher in the rural areas than in the urban areas. On items like pulses, vegetables, fruits and nuts, meat, fish and egg, milk and milk products that constituted protective foods in the consumption basket the population in urban areas was spending more than those in the rural areas. Qualitatively, therefore, one could conclude that the food intake of people in the urban areas was superior to those in the rural areas.

6. The expenditure on miscellaneous goods and services was taken as a proxy for investment in human capital. This expenditure was consistently higher in the urban areas ~~than~~ in the rural areas, indicating that the population in the urban areas were able to set aside more towards their future. Durable goods were also used in a larger measure in the urban areas than in the rural areas.

B. Estimates of Poverty and Levels of Living -

Current Needs Criterion:

7. The proportion of the rural population with a per capita consumer expenditure of less than Rs.40/-

per month (31.2 per cent) was identified as the poor population in 1977-78. The first five priority items absorbed a little more than 80 per cent of expenditure and 50 per cent of their expenditure was on cereals. The very first expenditure class was still worse than the other two with 19 per cent of their expenditure wasted away on pan, tobacco and intoxicants.

8. The ratio of poor population in the rural Tamil Nadu exceeded 70 per cent in 1963-64 and 1964-65, which could be attributed to the difficult drought and food grain situation in the country as also the Chinese aggression which drained a major portion of the resources away from civilian consumption.

9. The proportion of rural poor in 1973-74 was found to be exceptionally low at 9.5 per cent under this criterion. In the mid seventies several employment programmes were launched with the target group as the poor population. This to some extent accounted for the considerable improvement in the levels of the rural population.

10. In the urban areas also the poor stratum was associated with the population having a per capita monthly consumption expenditure of less than Rs.40/-.

They constituted 10.23 per cent of the urban population in 1977-78. Their first five priority items absorbed about 84 per cent of their total expenditure and among them cereals accounted for about 51 per cent of their expenditure.

11. Unlike the rural poor population which did not exhibit any significant trend, the urban poor population <sup>conformed to a pattern in that the proportion of poor population</sup> had steadily fallen from 79.98 per cent in 1960-61 to 10.23 per cent in 1977-78, excluding the war period 1964-65.

12. The estimates of poor population in the State were 50 per cent in 1970-71 and 25 per cent in 1977-78; indicating that the proportion of poor population had been exactly reduced to half during the period.

C. Estimates of Poverty in Tamil Nadu - Per Capita

Consumer Expenditure and Per Capita Food Expenditure

Criteria:

13. Using the per capita food expenditure criterion it was found that the percentage of poor in rural Tamil Nadu varied between 43 and 65 per cent during the period. In the urban Tamil Nadu the proportion varied between 46 and 62 percent. In the state as a whole the range was 37 to 76 per cent.

14. The use of the per capita consumer expenditure criterion showed that the urban poverty was more chronic than the rural poverty. As on 1977-78 both the criteria yielded the same percentages in the rural areas 52.88 per cent were found to be poor. In the urban areas 59.86 per cent were found to be in the poor category. In the state as a whole a relatively larger population 75.79 per cent came in the poor category, possibly accounted for by the extreme inequalities in expenditure.

Conclusion:

The students 't' test<sup>was</sup> used to determine the relative superiority of these approaches to the measurement of poverty. It eliminated the current needs criterion as well as the per capita food expenditure criterion leaving behind the per capita consumer expenditure criterion as a valid measure of poverty. This criterion is free from any element of arbitrariness. It gives a convenient working definition of poverty as being concerned with the economic status of that portion of the population whose per capita consumer expenditure falls below the group average. It set at rest debates about the norms for measuring poverty. It has an additional advantage in that it reflects the changes in the over-all standard of living in measuring poverty.

## Appendices

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7. Percentage break up of consumer expenditure item wise across the expenditure classes in  
Urban Tamil Nadu in 1973-74  
(in Rupees)

Items	15-18	18-21	21-24	24-28	28-34	34-43	43-55	55-75	75 & above	All Class
Meat, fish & egg	-	2.47	2.68	1.46	5.04	5.66*	5.63	5.70	5.25	5.72
Pan etc.	4.43	11.20	5.59	3.67	4.07*	2.45	2.70	2.68	2.82	2.91
Fuel & light	5.85	-	8.74	10.9*	8.51	8.25	7.64	7.88	6.62	7.76
Cereal substitutes	-	-	-	0.04	0.10	0.17*	0.13	0.07	0.07	0.10
Rice and Wheat	69.23	57.28	45.2	51.67	46.24	44.99*	42.69	35.7	24.14	34.71
Edible oil	2.58	4.93	4.0	3.29	5.44*	5.12	4.96	5.59	5.53	5.67
Grams & Pulses	1.54	2.66	4.42	4.25	3.71	4.84*	4.51	4.78	4.12	4.65
Sugar, Salt & Spices	5.54	6.81	9.90	6.88	9.18	<del>10.66</del> 8.35	8.06*	8.49	8.39	7.85
Milk, Vegetables, fruits & nuts	7.57	8.88	7.01	9.88	9.48	10.86	11.43*	12.82	14.39	16.77
Clothing & foot wear	-	-	-	0.75	1.74	0.43	1.88	2.89	10.60	6.32
Miscellaneous goods & services	3.26	5.77	12.46	7.21	7.48	8.93	10.1	13.3	16.07	5.49
Durable goods	-	-	-	-	-	0.05	0.27	0.19	2.00	2.04

















18. Strata associated with changing composition of consumption  
in Urban Tamil Nadu in 1960-61.

(in Rupees)

Expenditure class	upto 34	34 - 43 to 43 - 55	55 - 75
Percentage of population	79.98	15.99	4.03
Five main items of expenditure in decending order of per cent share	1. Cereals 47.99	Cereals 27.70	Cereals 21.3
	2. Other food items 20.04	other food items 25.88	other food items 19.03
	3. Other non food items 14.04	Other non food items 21.09	<del>Other-non</del> Milk & milk products 5.62
	4. Fuel & light 7.04	Clothing 12.50	Clothing 8.48
	5. Pulses 3.05	Fuel & light 4.96	
Total	92.16	92.13	92.53

19. Strata associated with changing composition of consumption  
in Urban Tamil Nadu in 1961 - 62. (in Rupees)

Expenditure class	Upto 11	11-13 to 28-34	34-43 to 43-55	55-75 to 75 & above
Percentage of population	6.10	71.89	14.90	7.11
Five main items of expenditure in decending order of per cent share	1.Cereals	Cereals	cereals	Other non food items
	51.33	41.05	23.15	40.8
	2.Other food items	Other food items	Other food items	Other food items
	20.88	24.48	27.2	24.5
	3.Other non food items	Other non food items	Other non food items	Cereals
	13.45	13.95	25.45	12.06
	4.Fuel & light	Fuel & Light	Clothing	Clothing
	8.98	6.35	6.63	9.37
	5.Pulses	Pulses	Milk & milk products	Milk & milk products
	2.31	4.21	6.97	7.27
Total	96.95	90.04	89.4	94.00

20. Strata associated with changing composition of consumption  
in Urban Tamil Nadu in 1963-64. (in Rupees)

Expenditure class	Upto 15	15-18 to 24-28	28-34 to 34-43	43-55 to 55-75
Percentage of population	14.09	44.58	25.58	15.75
Five main items of expenditure in decending order of per cent share	1. Cereals	Cereals	Other food items	Other food items
	37.88	36.01	42.22	15.85
	2. Other food items	Other food items	Cereals	Miscellaneous goods & services
	26.88	33.1	21.93	15.72
	3. Pulses	Milk & milk products	Milk & milk products	Milk & milk products
7.13	8.82	11.40	6.91	
4. Fuel & light	Miscellaneous goods & services	Miscellaneous goods & services	Clothing	
8.04	8.77	8.01	10.38	
5. Miscellaneous goods & services	Pulses	Clothing		
3.67	4.89	7.46		
Total	83.6	91.59	91.02	78.06

21. Strata associated with changing composition of consumption  
in Urban Tamil Nadu in 1964 - 65. (in Rupees)

Expenditure class	Upto 11	11-13 to 18-21	21-24 to 28-34	34-43	43-55 to 55-75	75 and above
Percentage of population	3.62	29.82	38.13	9.57	13.24	5.62
Five main items of expenditure in descending order of per cent share	1. Cereals	cereals	Cereals	Cereals	Miscellaneous goods & services	Durable goods
	56.1	55.2	45.9	34.4	21.85	21.55
	2. Fuel & light	Fuel & light	Miscellaneous goods & services	Miscellaneous goods & services	Cereals	Beverages & refreshments
	11.7	8.38	8.41	15.8	19.74	18.2
	3. Vegetables fruits & nuts	Vegetables, fruits, & nuts	Fuel & light	Clothing	Clothing	Miscellaneous goods & services
5.10	6.36	7.49	11.2	10.34	11.3	
4. Sugar, salt & spices	Miscellaneous goods & services	Milk & vegetables etc.	Fuel & light	Fuel & light	Cereals	
6.54	5.77	6.18	7.60	4.47	8.85	
5. Miscellaneous goods & services	Pan etc.	Clothing	Sugar, salt & spices	Sugar, salt & spices	Milk & milk products	
5.09	3.58	5.64	5.45	3.23	6.23	
Total	84.53	79.29	73.62	74.45	59.63	66.13

22. Strata associated with changing composition of consumption in  
Urban Tamil Nadu in 1970 - 71. (in Rupees)

Expenditure class	Upto 18	18-21 to 21-24	21-24 to 28-34	34-43	43-55
Percentage of population	7.50	6.25	36.85	17.78	31.61
Five main items of expenditure in descending order of per-cent share	1. Cereals	Cereals	Cereals	Cereals	Cereals
	50.64	52.00	44.45	37.10	21.49
	2. Miscel-laneous goods & services	Miscel-laneous goods & services	Miscell-laneous goods & services	Miscel-laneous goods & services	Miscellaneuous goods and services
	12.05	9.30	10.94	13.84	17.31
	3. Pan etc.	Milk, veg., fruits & nuts	Fuel & light	Miscel-laneous	Miscellaneous
5.62	8.76	8.61	10.72	16.9	
4. Milk, Veg., fruits & nuts	Sugar, salt & spices	Sugar, salt & spices	Sugar salt & spices	Sugar salt & spices	
7.55	8.26	8.83	9.22	6.99	
5. Sugar, Salt & Spices	Miscel-laneous	Miscel-laneous	Fuel & light	Fuel & light	
6.64	6.84	5.12	8.84	7.16	
<b>Total</b>	<b>82.5</b>	<b>85.16</b>	<b>77.95</b>	<b>79.72</b>	<b>69.85</b>

23. Strata associated with changing composition of consumption in  
Urban Tamil Nadu in 1971 - 72. (in Rupees)

Expenditure class	8-21	18-21 to 21-24	24-28 to 28-34	34-43 to 43-55	55-75 to 75 & above
Percentage of population	3.12	10.75	26.41	37.87	21.85
Five main items of expenditure in descending order of per cent share	1. Cereals	Cereals	Cereals	Cereals	Cereals
	38.16	40.09	45.61	37.68	23.11
	2. Edible oil	Pan etc.	Milk veg. fruits & nuts	Milk veg. fruits & nuts	Miscellaneous goods & services
	12.44	24.71	10.21	13.49	18.85
	3. Fuel & light	Milk, veg. fruits & nuts	Fuel & light	Miscellaneous goods & services	Milk, veg. fruits & nuts
12.0	5.67	8.89	11.69	15.23	
4. Milk, Veg. fruits & nuts	Fuel & light	Miscellaneous goods & services	Fuel & light	Fuel & light	
9.81	5.12	8.42	11.69	7.25	
5. Sugar, Salt & Spices	Clothing	Sugar, Salt & Spices	Sugar, Salt & Spices	Sugar, Salt & Spices	
9.39	4.82	7.53	7.94	6.80	
Total	81.8	80.41	80.66	79.31	70.64

24) Strata associated with changing composition of consumption  
in Urban Tamil Nadu in 1973-1974. (in Rupees)

Expenditure	15-28	28-34	34-43	43-55	55 and above
Percentage of Population	2.48	4.93	18.15	30.20	54.24
Five main items of expenditure in descending order	cereals	cereals	cereals	cereals	cereals
	55.95	46.34	44.99	42.69	29.94
Milk					
vegetables fruits and nuts	8.34	9.48	10.86	11.43	14.69
Sugar salt spices	7.28	8.51	10.86	10.1	13.60
Miscellaneous goods and services	7.18	8.81	8.25	8.06	7.44
Fuel and light	6.37	7.48	8.25	7.64	7.25
		Edible oils			
		5.44			
Total	85.12	85.43	81.28	79.92	72.92

25) Strata associated with changing composition of consumption  
in the state of Tamil Nadu 1970-71. (In Rupees)

Expenditure class	0-8 to 24-28	28-34 to 34-43	43-55	55-75
Percentage of population	50.23	29.63	9.58	10.56
Five main items of expenditure descending order of percent share	Cereals	Cereals	Cereals	Cereals
		39.7	36.8	26.59
	56.38	Milk vegetables fruits and nuts	Milk vegetables fruits and nuts	Clothing
	Fuel & light			
	8.77	10.58	12.6	18.11
	Sugar salt and spices	Miscellaneous goods and services	Miscellaneous goods and services	Miscellaneous goods and services
	7.75	8.47	11.0	17.45
	Milk vegetables fruits & nuts	Sugar & spices salt	Miscellaneous goods & services	Miscellaneous goods and services
	5.95	8.36	7.96	15.14
	Miscellaneous goods & services	Fuel and light	Sugar salt & spices	Fuel and light
	5.06	7.93	7.71	7.05
<b>Total</b>	<b>83.91</b>	<b>75.04</b>	<b>76.07</b>	<b>84.34</b>

26) Strata associated with changing composition of consumption  
in the state of Tamil Nadu in 1971-72. (In Rupees)

Expenditure class	8-11 to 24-28	28-34	34-43	43-55	55-75	75 & above
Percentage of population	38.63	20.03	17.29	9.72	8.58	5.75
Five main items of expenditure in decending order of percent share	cereals	cereals	cereals	cereals	cereals	cereals
	59.85	51.5	46.9	38.8	35.2	21.57
	Fuel & light	Fuel & light	Milk vegetable- s fruits & nuts	Cloth- ing	Miscella- neous goods & nuts	Cloth- ing
	7.57	7.99	10.3	10.2	14.2	15.08
	Milk vegeta- bles fruits & nuts	Miscella- neous goods & services	Miscella- neous goods & services	Miscellaneo- us goods & services	Milk vegeta- bles fruits and nuts	Milk vegeta- bles fruits & nuts
	5.45	7.71	8.17	9.58	12.5	13.96
	Sugar salt & spices	Sugar salt & spices	Sugar, salt & spices	Fuel & light	Cloth- ing	Fuel & light
	5.10	6.64	8.01	7.06	8.43	6.48
	Miscella- neous goods & services	Milk vegeta- bles fruits & nuts	Fuel & light	Milk vegeta- bles fruits & nuts	Fuel & light	Sugar salt & spaces
	4.92	6.22	7.22	11.4	7.58	6.29
<b>Total</b>	<b>82.92</b>	<b>82.89</b>	<b>80.06</b>	<b>80.60</b>	<b>77.04</b>	<b>63.38</b>

27) Strata associated with changing composition of consumption in the state of Tamil Nadu

in 1973-74 (In Rupees)

Expenditure class	upto 18	18-21 to 24-28	28-34	34-43	43-55	55-75	75 & above
Percentage of population	0.75	6.75	9.93	19.92	23.03	25.20	16.92
	Cereals	cereals	cereals	cereals	cereals	cereals	cereals
Five main items of expenditure in descending order of percent share	54.12	52.33	46.2	33.2	36.8	31.1	22.07
	Fuel & light	Fuel & light	Milk vegetables & nuts	Milk vegetables & nuts	Milk vegetables & nuts	Milk vegetables & nuts	Miscellaneous goods & services
	10.47	9.89	9.71	11.45	12.6	14.8	22.00
	Milk vegetables & nuts	Milk vegetables & nuts	sugar, salt & spices	clothing	Miscellaneous goods & services	Miscellaneous goods & services	Milk vegetables & nuts
	8.49	9.56	8.52	10.90	11.0	12.91	15.47
	Clothing	Miscellaneous goods & services	Fuel & light	Miscellaneous goods & services	Fuel & light	Clothing	Clothing
	6.88	6.63	8.15	8.81	7.96	8.79	12.30
	Meat, fish eggs	Sugar, salt & spices	Miscellaneous goods & services	Sugar, salt & spices	Sugar, salt & spices	Fuel light	Sugar, salt & spices
	6.39	5.49	8.12	8.19	7.71	7.76	6.48
Total	86.35	83.90	80.70	72.55	76.07	75.35	78.34

28) Strata associated with changing composition of consumption  
in Rural Tamil Nadu in 1960-1961.

(In Rupees)

Expenditure class	0-8 to 8-11	11-13 to 34-43	43-55 to 55 & above
Percentage of population	25-34	64.44	10.22
Five main items of expenditure in decending order of percent share	Cereals	Cereals	Other food items
	59.2	38.8	31.92
	Other food items	Other food items	Other non-food items
	19.15	22.68	28.15
	Non-food items	Other non-food items	Cereals
			20.03
			Milk and milk products
	8.18	18.64	6.30
	Fuel & light	Fuel & light	Fuel & light
	4.35	7.45	5.56
	Clothing	Milk & milk products	
	4.07	4.43	
<b>Total</b>	<b>95.95</b>	<b>92.00</b>	<b>71.96</b>

29) Strata associated with changing composition of consumption in

Rural Tamil Nadu in 1961-62. (In Rupees)

Expenditure	0-8 to 15-18	18-21 to 28-34	34-43	43-55	55-75 & above
Percentage of population	47.22	41.14	4.56	3.88	3.20
Five main items of expenditure in decending order of percent share	cereals	cereals	cereals	cereals	Other non-food items
	55.45	48.15	30.5	25.72	37.18
	Other food items	Other food items	Other food items	Other food items	cereals
	17.66	21.64	26.6	24.95	20.23
	Other non-food items	Other non-food items	Other non-food items	Other non-food items	Other food items
	10.09	11.95	21.7	23.5	17.15
	Fuel & light	Fuel & light	Fuel & light	Clothing	Clothing
	8.26	7.79	6.82	10.7	14.53
	Clothing	Clothing	Clothing	Milk & Milk products	Fuel & light
	2.97	4.72	6.00	6.32	5.00
<b>Total</b>	<b>94.43</b>	<b>94.25</b>	<b>91.62</b>	<b>91.19</b>	<b>94.09</b>

30) Strata associated with changing composition of consumption in Rural Tamil Nadu 1963-64

(In Rupees)

Expenditure class	upto 18	18-21 to 24-28	28-34 to 34-43	43-55	55-75	75 & above
Percentage of population	44.27	31.3	17.16	3.07	2.79	1.41
Five main items of expenditure in descending order of percent share	cereals	cereals	Durable goods	Durable goods	Durable goods	Durable goods
	44.70	33.16	29.1	28.66	32.19	44.59
	Durable goods	Durable goods	cereals	cereals	Taxes	Taxes
	19.24	22.98	25.87	20.97	16.78	29.13
	Vegetables fruits & nuts	Vegetables fruits & nuts	Vegetables fruits & nuts	Taxes	cereals	cereals
	16.01	14.94	17.15	15.00	15.64	10.50
	Taxes	Taxes	Clothing	Vegetables fruits & nuts	Vegetables fruits & nuts	Vegetables fruits & nuts
	8.54	11.17	8.63	14.57	13.63	8.01
	Fuel & light	Fuel & light	Taxes	Clothing	Clothing	Clothing
	6.99	6.09	4.88	8.42	10.24	2.58
Total	95.48	88.34	85.63	86.62	88.48	94.81

31) Strata associated with changing composition of consumption  
in Rural Tamil Nadu in 1964-65. (In Rupees)

Expenditure class	Upto 11	11-13 to 24-28	28-34	34-43	43-55 to 55-75
Percentage of population	8.92	64.99	10.48	7.74	7.87
Five main items of expenditure in decending order of percent share	cereals	cereals	cereals	cereals	Miscellaneous goods & service
	56.11	52.77	42.11	34.50	21.87
	Fuel & light	Fuel & light	Miscellaneous goods & services	Miscellaneous goods & services	
	11.7	8.22	8.89	15.84	cereals
	Sugar, salt & spices	Miscellaneous goods & services	Milk and milk products	Clothing	17.95
	6.58	6.44	8.82	11.16	Clothing
	Milk vegetables fruits & nuts	Milk & milk products	clothing	Milk & milk products	10.35
	6.02	5.34	7.32	8.02	Milk vegetables fruits & nuts
	Pan etc	Sugar salt & spices	Fuel & light	Fuel & light	6.7 Dural goods
	4.29	4.85	6.93	7.60	5.62
<b>Total</b>	<b>84.66</b>	<b>77.62</b>	<b>74.07</b>	<b>77.12</b>	<b>62.49</b>

32) Strata associated with changing composition of consumption in Rural Tamil Nadu in 1971-72  
(In Rupees)

Expenditure Class	8-11 to 21-24	24-28	28-34	43-55	55-75	75 & above
Percentage of population	28.74	14.31	37.18	7.80	7.57	4.40
Five main items of expenditure in descending order of percent share	cereals	cereals	cereals	cereals	cereals	cereals
	55.6	53.3	50.85	40.97	34.4	28.13
	Milk, vegetables & nuts	Fuel & light	Fuels & light	Clothing	Miscellaneous goods & services	Clothing
	9.70	7.46	7.09	14.5	13.6	16.8
	Fuels and light	Milk, vegetables & nuts	Milk, vegetables & nuts	Miscellaneous goods & services	Milk, vegetables & nuts	Milk, vegetables & nuts
	6.85	7.26	8.44	8.29	11.64	13.90
	Sugar, salt & spices	Sugar, salt & spices	Miscellaneous goods & services	Milk, vegetables & nuts	Clothing	Miscellaneous goods & services
	6.58	6.70	6.75	8.25	9.38	9.31
	Miscellaneous goods & services	Miscellaneous goods & services	Sugar, salt & spices	Fuel & light	Fuel & light	Sugar, salt & spices
	4.11	6.70	7.24	6.46	6.46	7.60
Total	82.94	81.42	80.37	78.47	75.48	75.74

33) Strata associated with changing composition of consumption in Rural Tamil Nadu in 1970-71.  
(In Rupees)

Expenditure class	upto 18	18-21 to 21-24	24-28	28-34 to 34-43	43-55	55 & above
Percentage of population	14.89	29.80	18.18	27.29	7.30	7.54
Five main items of expenditure in descending order of percent share	cereals	cereals	cereals	cereals	cereals	cereals
	55.45	53.58	46.96	45.49	44.28	27.06
	Sugar, salt & spices	Fuel & light	Milk, vegetables, fruits & nuts	Milk, vegetables, fruits & nuts	Milk, vegetables, fruits and nuts	Miscellaneous goods and services
	8.67	8.68	8.33	9.52	11.49	17.10
	Fuel, and light	sugar, salts & spices	sugar, salts & spices	Sugar, salts & spices	Clothing and foot wear	Clothing and foot wear
	8.64	8.12	8.18	8.14	9.89	15.9
	Milk, vegetables and fruits	Milk, vegetables, fruits & nuts	Fuel and light	Fuel & light	Miscellaneous goods and services	Milk, vegetables, fruits and nuts
	6.38	6.86	7.56	7.54	8.69	11.20
	Edible oil	Miscellaneous goods and services	Miscellaneous goods & services	Miscellaneous goods & services	Fuel & light	Sugar, salt & spices
	4.96	5.82	6.94	7.59	8.39	6.25
Total	82.10	83.06	77.97	78.28	82.74	77.51

APPENDIX III

STATISTICAL ANALYSIS

T - Test to find out the difference in the estimate of rural poverty using the criterion of mean food expenditure and mean consumers expenditure

Year	Mean food expenditure criterion XI	Mean consumer expenditure criterion X <sub>2</sub>	Derivation from mean (X-43.05)	(x-xi) <sup>2</sup>	Derivation from mean (X-X <sub>2</sub> )	xx (X-X <sub>2</sub> ) <sup>2</sup>
1970-71	57.87	45.23	14.82	219.6	2.22	4.93
1971-72	43.05	43.05	0	0	0	0
1973-78	65.46	65.46	22.41	502.21	22.41	502.21
1977-78	52.88	52.88	9.83	96.63	9.83	96.63
Total	219.26	206.66	47.06	818.44	34.46	603.77

$$\bar{X}_1 = \frac{219.26}{4} = 54.82$$

$$\bar{X}_2 = \frac{206.66}{4} = 51.67$$

$$S = \sqrt{\frac{818.44 + 603.77}{4 + 4 - 2}}$$

$$\sqrt{\frac{1422.21}{6}} = \sqrt{237.04}$$

$$s = 15.40$$

$$t = \frac{\bar{x}_1 - \bar{x}_2}{15.40} \sqrt{\frac{n_1 \cdot n_2}{n_1 + n_2}}$$
$$= \frac{54.82 - 51.67}{15.40} \times \sqrt{16/8}$$

$$\frac{3.15}{15.40} \times \sqrt{16/8}$$

$$= 0.205 \times \sqrt{16/8}$$
$$= 0.205 \times 1.4141$$

$$\text{Calculated value} = 0.290$$

$$V = n_1 + n_2 - 2$$
$$= 4 + 4 - 2$$
$$= 6$$

6 at 5% level of significance 2.447 calculated value = 0.290

Therefore it is not significant.

T-Test to find out the difference in the estimates of rural poverty using the criterion of mean consumer expenditure and current needs.

Year	Mean consumer expenditure $x^1$	Current needs $x^2$	Derivation from mean $x-x_1$ 43.05	$(x-x_1)^2$	Derivation from mean $(x-x_2)$ 43.205	$(x-x_2)^2$
1970-71	45.27	39.67	2.22	4.93	-3.38	11.42
1971-72	45.05	43.05	0	0	0	0
1973-74	65.46	9.49	22.41	502.21	-33.56	1126.3
1977-78	52.88	31.21	9.83	96.53	-11.84	140.19
Total	219.26	123.42	34.46	603.77	-48.78	1277.91

$$\bar{x}_1 = \frac{21926}{4} = 54.82$$

$$\bar{x}_2 = \frac{123.42}{4} = 30.86$$

$$s = \sqrt{\frac{603.77 + 1277.91}{4 + 4 - 2}}$$

$$= \sqrt{\frac{1881.68}{6}} = \sqrt{313.61333}$$

$$s = 17.71$$

$$t = \frac{54.82 - 30.86}{17.71} \sqrt{\frac{4 \times 4}{4 + 4}}$$

$$= \frac{54.82 - 30.86}{17.71} \sqrt{\frac{16}{8}}$$

$$= \frac{23.96}{17.71} \sqrt{\frac{16}{8}}$$

$$= 1.353 \times 1.4142$$

Calculated value = 1.913

$$v = n_1 + n_2 - 2$$

$$= 4 + 8 - 2$$

$$= 6 \text{ at } 5\% \text{ level of significance} = 2.447$$

$$\text{Calculated value} = 1.913$$

Therefore it is not significance

Year	Mean food expenditure criterion $x_4$	Changing consumption composition $x^2$	Derivation from mean ( $x - 43.05$ )	$(x-x_1)^2$	Derivation from mean $x-x_2$ 43.05	$(x-x_2)^2$
1970-71	57.87	39.67	14.82	219.6	-3.38	11.42
1971-72	43.05	43.05	0	0	0	0
1973-74	65.46	9.49	22.41	502.21	-33.56	1126.3
1977.78	52.83	31.21	9.83	96.63	-11.84	140.19
<b>Total</b>	<b>219.26</b>	<b>123.43</b>	<b>47.06</b>	<b>218.44</b>	<b>-48.78</b>	<b>1277.91</b>

$$\bar{x}_1 = \frac{219.26}{4} = 54.82$$

$$\bar{x}_2 = \frac{123.42}{4} = 30.86$$

$$\begin{aligned}
 S &= \sqrt{\frac{54.82 + 30.86}{6}} \\
 &= \frac{54.62 + 30.86}{3.779} \sqrt{16/8} \\
 &= \frac{23.96}{3.779} \sqrt{16/8} \\
 &= 6.340 \times 1.1412 = 8.964
 \end{aligned}$$

calculated value = 8.964

$$V = n_1 + n_2 - 2$$

$$4 + 4 - 2 = 6$$

6 at 5% level of significance 2.447

Therefore it is significance

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TABLE XIII

STRATA ASSOCIATED WITH CHANGING COMPOSITION OF CONSUMPTION 1977-78 IN THE STATE OF TAMIL NADU

Expenditure Class	0 - 10	10-20	20-30	30-40	40-50 to 75-100	100-150	150-200 to 200 and above
Percentage of Population	0.02	0.51	6.94	17.39	63.65	7.97	3.52
Five main items of expenditure indicating in descending order of per cent share	1. Cereals 25.93	Cereals 50.98	Cereals 50.50	Cereals 47.92	Cereals 37.02	Cereals 22.40	Durable goods 16.85
	2. Sugar, Salt & Spices 17.98	Fuel and light 11.17	Fuel & light 9.54	Fuel & light 8.72	Miscellaneous goods and services 10.57	Miscellaneous goods and services 15.65	Miscellaneous goods and services 16.51
	3. Pan etc. 17.27	Sugar, Salt and Spices 7.36	Milk, Vegetables, Fruits & nuts 9.07	Sugar, Salt and Spices 8.02	Milk, Vegetables, Fruits & Nuts 10.11	Sugar, Salt & Spices 13.49	Cereals 12.55
	4. Beverages & refreshments 13.92	Milk, Vegetables, Fruits & Nuts 5.10	Sugar, Salt, and Spices 8.22	Miscellaneous goods & services 6.99	Fuel & light 7.60	Clothing & Foot wear 8.89	Beverages and refreshments 11.63
	5. Miscellaneous goods & services 10.67	Beverages & refreshments 5.04	Miscellaneous goods & services 6.26	Milk, Vegetables, Fruits & nuts 6.25	Sugar, Salt & Spices 7.29	Beverages & refreshments 6.52	7.46
Total	86.77	79.65	83.59	77.90	72.59	66.95	65.00

PERCENTAGE DISTRIBUTION OF POPULATION ACROSS EXPENDITURE GROUPS IN RURAL AND URBAN TAMIL NADU 1960 - 61 to 1977 - 78.

APPENDIX I

Age sex (Bs.)	1960-61		1961-62		1963-64		1964-65		1970-71		1971-72		1973-74		1977-78		
	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Percapita expen- diture	Rural	Urban
-8	11.37	2.00	5.04	1.23	3.27	0.92	2.44	0.44	0.25	0.04	-	-	-	-	0-10	0.03	-
-11	13.97	6.14	10.94	4.87	8.53	1.83	6.48	3.18	0.67	0.40	0.16	0.05	-	-	10-20	0.66	0.17
-13	14.37	4.31	7.21	5.87	7.46	0.92	5.96	3.07	3.06	0.34	0.66	0.27	-	-	20-30	9.07	2.04
-15	6.74	10.38	7.84	5.69	9.46	10.42	8.70	3.89	4.45	2.40	1.22	0.12	0.19	-	30-40	21.45	8.02
-18	14.46	7.35	16.19	9.36	15.55	10.70	13.88	12.06	6.46	4.32	7.26	2.68	0.77	0.23	40-50	21.67	13.27
3-21	8.70	8.91	15.94	10.59	12.18	13.79	13.48	10.80	12.20	6.26	7.83	3.45	1.36	0.23	50-75	29.82	36.36
1-24	5.73	9.93	10.00	14.37	9.61	13.11	12.22	11.83	12.60	8.06	11.61	7.30	2.04	0.40	75-100	10.29	18.32
1-28	9.69	19.17	6.72	10.74	9.51	6.98	10.75	10.69	18.18	11.84	14.31	10.62	15.13	1.62	100-150	5.09	14.60
3-34	3.29	11.79	8.48	15.27	10.95	17.91	10.48	16.41	14.80	16.95	21.36	15.79	11.90	4.93	150-200	1.16	4.52
4-43	1.46	13.74	4.56	8.72	6.21	7.67	7.74	9.57	12.49	17.78	15.82	21.99	19.92	18.15	200&above	0.76	2.70
3-55	1.22	2.25	3.88	6.18	3.07	5.50	3.77	6.78	7.30	14.50	7.80	15.88	24.15	20.20			
5-75	9	4.63	1.76	3.30	2.79	4.87	2.42	6.46	4.48	10.69	7.57	11.79	21.86	26.60			
5 & above	--	-	1.44	3.81	1.41	5.38	1.68	5.62	3.06	6.42	4.40	10.06	12.68	27.64			
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00		100.00	100.00



