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Socio-Economic Measures of Quality of Rural Life: An Alternative Approach for Measuring Rural Poverty

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In the development planning literature, poverty is usually discussed and measured within the framework of the minimum calories intake norm elaborated during the sixties. The point has often been made that the consumption (minimum calories) is not a completely satisfactory yardstick for measuring poverty especially when provision of minimum needs to the people is a basic objective of planning in India. It is worth noting that in doing this, we exclude not only 'luxuries' but also necessary items of private and social consumption such as housing, education, health, etc. (Chaudhri, 1979, p. 185). This concept of calorie intake is also considered difficult in a country like India with vast and diverse levels of economic development. This is because of considerable variation in prices in different parts of the country. It has been pointed out that even if a single calorie norm is prescribed, it is not possible to apply this cut-off point to a given distribution of intakes in a heterogeneous population. The heterogeneity occurs not only due to inter-personal and intra-personal variations in calorie requirement but also due to variation in age, sex and activity level (Krishnaji, 1981). Moreover, even in the case of relatively affluent people malnutrition prevails because they are not aware of nutritional value. Inflation also will reduce the real value of any income or consumption level, causing the poverty line to shift upwards (Venu, 1983). There is no in-built mechanism as, for example, in the case of cost of living index to provide for changes in the poverty line (Parashar, 1983, p. 7). Schultz is of the opinion that poverty can not be defined simply in terms of certain low level of income because there are families which have relatively little income but own substantial amount of wealth (Schultz, 1968, p. 65).

There has been a general perception that the poverty line methodology and poverty related statistics employed by the Planning Commission for the purposes of planning and policy decisions are not fine tuned (Mammen, 1989, p. 8). Indeed, the conventional concept based on calorie intake can not seem to be sufficient for measuring the poverty. One dimensional measurement of poverty is likely to be a misleading and inadequate basis for identification of the poor (Lassen, 1979, p. 3; Schultz, 1968, p. 65).[1] It has been suggested that a more reasonable way of identifying the poor is to use a number of indicators rather than income or consumption alone.[2] The Planning Commission has also referred to the fact that poverty needs multidimensional norm instead of calorie norm. When income increases, calorie intake may not alter as the increased income may be spent on clothing, housing, education, etc., so that the simple income into calories will not measure the extent of poverty.[3]

In the above context an attempt has been made here to evolve a new measure of poverty which may be called Rural Quality of Life Index (RQLI). The poverty index is a more scientific method, because various variables are taken into consideration in determining the poverty levels.

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METHODOLOGY

A survey was undertaken in a village of Gobichettipalayam block, Periyar district in Tamil Nadu, with a view to mainly evolving new indicators of poverty (index) at the household level. The block has been purposively selected because the area was easily accessible to the author that helped the conduct of a detailed survey in the sample village. Further, the selection of the area was found to be very appropriate to represent all caste, occupational and incomewise groups. A two-stage random sampling procedure was adopted for the selection of households. In the first stage, a sample of one village was selected at random from the block. Then the total households of the village were stratified into different groups, namely, (1) landless agricultural labourers, (2) rural artisans and service class, (3) marginal farmers, (4) small farmers, (5) big farmers and (6) large farmers. In the second stage, ten per cent from each group was selected by adopting random sampling method and put together they accounted for 127 households. A personal interview schedule was designed for the sample households of the village to obtain all the necessary information (Dhanasekaran, 1985, 1988, 1989). The survey was started and completed in the month of June 1989. The data from the survey were compiled and analysed using the Rural Quality of Life Index (RQLI) to assess the poverty levels of different occupational categories in the study village.

POVERTY INDEX

Many definitions of poverty (sometimes contradicting each other) have been given by economists and sociologists. However, there exists a great deal of agreement regarding certain elements of poverty. The identification of the poor depends partly on how poverty is defined. Here poverty is viewed as a complex of socio-economic state that characterised particular families in a particular society. Kurien (1978, p. 8) considered poverty as a "socio-economic phenomenon whereby the resources available to a society are used to satisfy the wants of the few, while the many do not have even their basic needs met." It is intrinsically related to the existing socio-economic structures and is influenced by the economic and social policies. Hence it is necessary to study this problem from different perspectives.

Having defined the concept broadly, for the purpose of measuring the extent of poverty, certain indices were developed. The index could be worked out on the lines suggested below by using the set of selected quantitative and qualitative indicators.

1. Rationale of Selecting the Indicators

Turning now to the details of the actual construction of the index, it is necessary to discuss the rationale of selecting the indicators. In this exercise, the following indicators have been included under five major components for constructing the RQLI.

I. *Social status:* (1) Caste levels, (2) Education; II. *Income status:* (3) Occupational category, (4) Female earners, (5) Household income, (6) Per capita Income; III. *Nutritional status:* (7) Calories intake, (8) Protein intake, (9) Annual food expenditure as percentage of annual income; IV. *Clothing:* (10) Value of clothing per person, (11) Quantity of clothing per person, (12) Annual expenditure on clothing per person; and V. *Housing:* (13) Type of housing, (14) Living area per person, and (15) Rooms per person.

I. *Social status:* It is a well known fact that the traditional society was stratified in the

form of caste system. The caste system prevents co-operation among various castes hampering economic progress. The lower the status in the hierarchy of the caste groups, the higher the level in hierarchy of the poverty levels and vice versa. In India, the caste system is mainly responsible for perpetuating poverty in rural areas (indicator 1).

Illiteracy compounds the problem of rural poverty. Education is generally recognised as an important social input which helps an under-developed community to seek ways and means of bringing about changes to develop itself and solving its social and economic problems. Minimum years of education is recognised as a very important input for human resource development and removal of poverty (Government of India, 1981*a*, p. 41) (indicator 2).

II. *Income status:* Occupational structure (along with caste stratification) throws light on the poverty status of any area. The rural poor in India consist of landless labourers, small and marginal farmers, rural artisans including fishermen, scheduled tribes and socially and economically backward classes. These people have either no assets or have assets with low productivity, few relevant skills and regular full time jobs or very low paid jobs (Government of India, 1981*b*, p. 51). According to Singh (1989, p. 10), 1.63 hectare (4.03 acres) of land per household is the minimum size that is needed to produce an adequate income (Rs. 6,400) for rural households. Access to land and access to employment are two basic sources of income in rural areas. Dandekar and Rath (1971, pp. 13-14) pointed out that at least 30 per cent of the rural population in India living below the poverty line was due to unemployment and under-employment (indicator 3).

The relationship between dependency and unemployment and poverty is too obvious. The higher the dependency ratio, the lower is collective income per head. This implied that families with a relatively higher proportion of infants, or elderly persons would suffer from low per capita income (Griffin and Saith, 1982, p. 205). The per capita/household income is basically related with the nature and magnitude of the poverty levels (indicators 5 and 6). Many rural development programmes were evolved with a view to enhancing employment opportunities and to increase incomes among the rural poor including women beneficiaries. Moreover, there is a possibility of increase in the adult female workers and in the female participation rates in future.[4] Hence female earnings are considered as an indicator of quality of rural life (indicators 4 and 5).

III. *Nutritional status:* In India poverty is measured by the yardstick of minimum requirement of calories intake which was propounded by the Planning Commission. Sukhatme (1962, p. 11) has worked out a minimum nutritional target of 2370 calories and 66.6 grams of protein per day per person. The Seventh Five Year Plan draft spelled out the poverty line on the basis of recommended nutritional requirements of 2400 calories per person per day for rural areas. In monetary terms the poverty line was estimated as an annual consumption of Rs. 1,284 per capita per annum at 1984-85 prices. Taking the average size of a family as five persons, the poverty line was fixed at an annual income of Rs. 6,400 in rural areas.[5] This method of identification does not always ensure the preparation of a correct list of poor families because there are families which have more than five members per family whose per capita income has been reduced considerably. According to a recent Planning Commission study, the family size has increased from 4.81 in 1951 to 5.55 in 1981 consequent to reduced morbidity and mortality rates (Mammen, 1989, p. 8; Singh, 1989, p. 6). The increased family size has not been taken into account in the Seventh Plan. Hence

both household and per capita incomes should be considered for the correction of deficiencies caused by the family size.

In our planning exercise, income is used as a proxy for minimum nutritional requirements but even in the case of rich classes under-nutrition and malnutrition prevail. Further, we need to react to recent suggestions that, even for very poor people, income elasticity of demand for dietary energy may be extremely low. Very careful econometric work by Bouis and Haddad (1988) on data from Bukidnon, Philippines, suggest that for these extremely poor a rise in household income of 20 per cent leads to a rise in the dietary energy intake of only 1 per cent (cited in Lipton, 1989, p. 26). Behrman reaches similar conclusions for India, using them to suggest that income and outlay, on the one hand, and calorie intake or adequacy, on the other, are "loosely linked not tightly meshed" (cited in Lipton, 1989, p. 26).

In view of these considerations both nutritional and income aspects should be taken into account in drawing up a realistic yardstick (indicators 5 to 8).

The income-consumption pattern of the household also reveals the poor economic conditions in rural areas. It is well known that ultra poor households spend a higher proportion (80 per cent) of their income on food items which is also indicative of poverty (Lipton, 1989, p. 25) (indicator 9).

IV. *Clothing:* Mass poverty can also be recognised in the form of shabby clothing. Clothing satisfies a basic need next to food. Minimum cloth requirement per head was estimated at 25 metres per capita annually[6] (indicators 10 to 12).

V. *Housing:* Housing is the third basic requirement of mankind next to food and clothing. Shelter is very much related to improving the quality of life. Non-availability of shelter will affect the socio-economic status of the people (indicators 13 to 15). The Seventh Plan unequivocally states : "In fulfilling the basic needs of the population, housing ranks next only to food and clothing in importance. A certain minimum standard of housing is essential for healthy and civilised existence. The development of housing, therefore, must enjoy high priority in poor society such as ours where housing amenities are far below the minimum standards that have been internationally accepted (Government of India, 1985, p. 653).

In the light of all these considerations, the poverty index must acquire in-built flexibility with the development strategies. To make the poverty yardstick as a more realistic one, the above indicators were in corporated in the RQLI.

2. *Construction of the RQLI*

In the construction of the RQLI the study converts the raw data on the five major component variables into a scale of 0 to 6, so that the data can be easily compared and subject to statistical analysis. Each indicator receives equal weight in the composite index, and the resulting RQLI provides numerical ranking order for the 127 households. A seven-point scale was used to measure the extent of poverty among the respondents. The respondents were presented with certain indicators and were measured in terms of their relative position on the composite index.

If the respondent belonged to the landless labour category a score of 1 was given. If he belonged to rural artisans or service class or marginal farmers a score of 2 was given and if he belonged to small farmers category a score of 3 was given and so on.

TABLE I. GUIDELINE TABLE FOR COMPUTING THE RQLI

Indicators	Scores						
	0	1	2	3	4	5	6
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1. Caste levels	Tribals	Scheduled caste	Lower caste	Middle caste	Upper-middle caste	-	Forward caste
2. Education of the household head (years)	Illiterate (0)	Primary level (1-5)	Middle level (6-8)	Secondary (8-10)	Higher Secondary (10-12)	Degree (13-15)	Post-graduate (16 and above)
3. Occupational category@	Casual worker and/or less than employed 100 days	Agricultural/ non-agricultural labour households (regular workers in unorganised sector)	Marginal farmers (less than 1.25 acre) Rural artisans	Small farmers (1.26 to 2.50 acres)	Medium farmers (2.51 to 5.00 acres)	Big farmers (5.01 to 10 acres) Self-employed in non-agriculture (excluding rural artisans)	Large farmers (10.01 and above acres) Employed in organised sectors of public/private
4. Female earner(s)	Widow family head and/or a destitute	Casual workers	-	Agricultural/non-agricultural labourers (regular workers in unorganised sector)	-	Self-employed	Employed in organised sectors of public/private
5. Annual household income*(Rs.)	500	2,500	4,500	6,500	8,500	10,500	12,500 and above
6. Annual per capita income*(Rs.)	100	500	900	1,300	1,700	2,100	2,500 and above
7. Calorie intake per day per person	1,500	1,800	2,100	2,400	2,700	3,000	3,000 and above
8. Protein intake per day per person(gm.)	Below 40	50	60	70	80	90	100 and above
9. Annual food expenditure* as percentage of income (per cent)	75 and above	70	65	60	55	50	45 and below

(Contd.)

TABLE I *(Concld.)*

Indicators	Scores						
	0	1	2	3	4	5	6
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
10. Value of clothing* per person (Rs.)	75	150	225	300	375	450	525 and above
11. Quantity of cloth per person (in metres)	Below 5	5	15	25	35	45	55 and above
12. Annual expenditure on clothing* per person (Rs.)	0	20	40	80	160	320	640 and above
13. Type of housing							
Roof (R)	Leaf-(R)	Leaf-(R)	Tiles-(R)	Tiles- (R)	Tiles- (R)		
Wall (W)	Leaf-(W)	Mud- (W)	Brick-(W)	Brick- (W)	Brick- (W)	Tiles pucca	Terrace
Floor (F)	Mud- (F)	Mud- (F)	Mud- (F)	Cement-(F)	Cement-(F) with compound wall		
14. Living area per person (sq. metres)	0	2	4	6	8	10	12 and above
15. Room per person	0	1/4	1/2	3/4	1	1 1/4	1 1/2 and above

@ Standarised the acres in the ratio of 1 : 2 (wet and dry). While using the secondary sources such as National Sample Survey or Census of Population, suitable modifications may be made.

* Base: At 1988-89 prices.

Similarly, if the respondent was illiterate with the indicator, he was a given score of 0, if he was in the range of 6-8 years (educational level) he was given a score of 2, and a score of 5 if he completed the degree course. The total number of indicators in the RQLI was 15. The minimum one could score on a particular indicator was 0 and the maximum 6. Thus the total score on the index of poverty for a respondent would vary from a minimum 0 to a maximum of 90. Range and points for each subdivision are arbitrarily fixed. The chief criterion has been to include the full range of the possible data actually found in the survey. In some cases the points represent the data proportionately. In others the interval between any adjacent two points may not be proportionate to any other two points in that subdivision (see Table I).

BREAK-EVEN ANALYSIS AND CLASSIFICATION OF POVERTY LEVELS

An attempt has been made here to relate the poverty index with the poverty line incomes at the household level by using break-even analysis (also see Singh, 1989, pp. 8-9).

An analysis of income levels according to the composite index of poverty may be useful in determining the poverty levels. In break-even analysis, firstly, the break-even point is determined. The break-even concept is shown in Figure 1, where net income is measured along the vertical axis, and the poverty index of the households, which gives the corresponding net income, is measured on the horizontal axis. The line PL which is parallel to the X axis is minimum necessary income to meet the minimum physical requirements or poverty line income of the household. The line Y" Y′ represents the linear relationship between the index value and the corresponding net income of the household. At the index value below E the household is so poor that it prefers to borrow or to find other means for maintaining the subsistence level rather than spend only its current disposable income on current consumption.

The break-even point is that value of the index at which poverty line income equals the net income. In Figure 1, point B is the family's subsistence level of income. That is, at point B, OE is the break-even index value which gives OP amount of income which just covers the subsistence level of income.

If X is the index value and Y is the net income, then income index relationship can be expressed as

$$Y = b_0 + b_1X \quad \text{.... (1)}$$

The line PL indicates the poverty line, which is assumed to be constant at all the values of index. At X index value, the subsistence level of income will be

$$PL = \alpha_0 + \alpha_1X \quad \text{.... (2)}$$

where α_0 is the poverty line income which is constant at all values of index, α_1 is equal to zero at all values of index.

For the break-even point, Y = PL

$$b_0 + b_1X = \alpha_0 + \alpha_1X \quad \text{.... (3)}$$

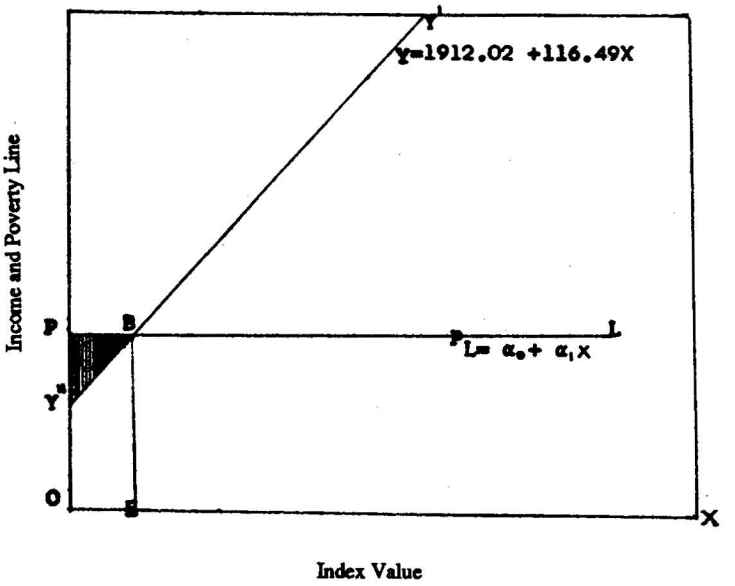

Figure 1. Poverty Line and Break-even Index Value

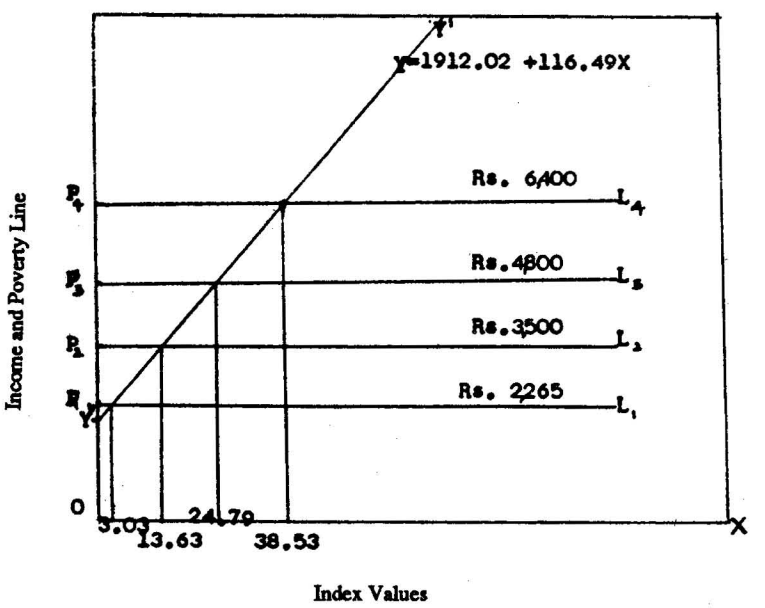

Figure 2. Break-even Index Values at Four Rings of Poverty

$$b_1X = \alpha_0 - b_0 \quad [\therefore \alpha_1 = 0]$$

$$X = \left(\frac{\alpha_0 - b_0}{b_1}\right) \qquad \text{.... (4)}$$

Any value of index which is less than OE, that is, a family is so poor, it may try to achieve the maintenance limit (subsistence level of income) by increasing debts or dis-savings or selling of entitlements, etc., as shown in by shaded area PBY" (Figure 1).

Area of debt (or) dis-savings (or) selling of entitlements, etc., for covering the maintenance limit = [Area below income line equivalent to OY" BE] − [Area below poverty line equivalent to OEBP]

$$= \int_0^X [b_0 + b_1X]\,dx - \int_0^X [\alpha_0]\,dx \qquad \text{.... (5)}$$

$$= \left[b_0X + \frac{1}{2}b_1X^2\right]_0^X - [\alpha_0X] \qquad \text{.... (6)}$$

Equation (6) shows the total debt or dis-savings or selling of entitlements or a combination of these three, etc., for covering the maintenance limit.

The study has considered the scale of poverty line on the basis of annual income to determine the poverty levels of the households. In official reports the following four rings of poverty have been identified:[7] the 'destitutes' with annual family incomes between Re. 1 and Rs. 2,265; the 'very very poor' with annual family incomes between Rs. 2,266 and Rs. 3,500; the 'very poor' with annual family incomes between Rs. 3,501 and Rs. 4,800 and the 'richest among the poor' with annual family incomes between Rs. 4,801 and Rs. 6,400. These incomes are at current (1984-85) prices, and for a family consisting of five members.

The present work adopts the above four poverty lines for determining the magnitude of poverty according to the poverty index. The break-even index value which just covers the poverty line income of Rs. 2,265 (per household) was 3.03 points. The break-even index value which gives the poverty line income of Rs. 3,500 (per household) was 13.63 points. The break-even index values which attain poverty line incomes of Rs. 4,800 and Rs. 6,400 (per household) were 24.79 and 38.53 respectively.

Table II shows the resultant break-even index values (by substituting equation 4) to attain the poverty line incomes of Rs. 2,265, Rs. 3,500, Rs. 4,800 and Rs. 6,400.

TABLE II. BREAK-EVEN INDEX VALUE AT FOUR RINGS OF POVERTY AND CLASSIFICATION OF POVERTY

Poverty line (Rs.) (1)	Break-even index value at poverty line (2)	Score range in the poverty index** (3)	Classification of poverty (4)
2,265	3.03	Below 3	Destitutes*
3,500	13.63	4-14	Very very poor*
4,800	24.79	15-25	Very poor*
6,400	38.53	26-39	Poor*
		40 and above	Non-poor

Source: Computed. ** Rounded off figures. * Target groups.

From the above table we can draw a diagram which represents the break-even index values corresponding to the poverty line incomes as given in Figure 2.

All those respondents who scored between 0 and 3 were classified as destitutes, those who scored between 4 and 14 were classified as very very poor, those who scored between 15 and 25 were considered as very poor, those who scored between the range of 26 and 39 were classified as poor and those who scored between 40 and above were classified as non-poor. The target group is identified as those households which do not attain a minimum score (below 39 points) in the composite index that separates them from the rest of the community.

The present model is essentially unweighted subdivisions and the present weighting used is only illustrative. It is hoped that further precision of the weight and scale could obtain in future after several studies are made and a more refined conceptual discussion attempted.

RESULTS AND DISCUSSION

The analysis presented in this section has two important objectives: Firstly, to determine the poverty level of households on the basis of poverty index and secondly, to find out whether there is any significant relationship between poverty index and income based poverty line. This comparison is designed to test the hypothesis that the use of poverty index does not significantly differ from per household income as a measure of poverty.

1. Poverty Index-RQLI

The poverty level of households can be known through the score obtained by the households on the poverty index. It is observed from Table III that none of the households belonged to the level of destitutes. The distribution of households with respect to various levels of poverty shows that 3.15 per cent of the households were classified as very very poor, 54.33 per cent as very poor, 24.41 per cent as poor and 18.11 per cent of them as non-poor. Thus about 82 per cent of the households lived below the poverty line. This may be due to the prevailing socio-economic cultural obstacles in the study area.

TABLE III. LEVELS OF POVERTY ACCORDING TO POVERTY INDEX

Index based poverty line classification (1)	Score range (2)	Number of households (3)	Percentage to the total households (4)
Destitutes	Below 4	-	-
Very very poor	4-14	4	3.15
Very poor	15-25	69	54.33
Poor	26-39	31	24.41
Below poverty	Below 39	104	81.89
Non-poor	40 and above	23	18.11
Total		127	100.00

Source: Computed.

2. *Income Based Poverty Line (NSS 38th Round)*

The study has also considered the scale of poverty line drawn on the basis of annual family income. The analysis of income based poverty line brings out the structure and extent of poverty in the sample village. The configuration of four rings of poverty is given in Table IV.

TABLE IV. INCOME BASED POVERTY LINE (NSS) AND POVERTY STRUCTURE

Index based poverty line classification (1)	Income range (2)	Number of households (3)	Percentage to the total households (4)
Destitutes	Below 2,265	4	3.15
Very very poor	2,266-3,500	10	7.87
Very poor	3,501-4,800	17	13.39
Poor	4,801-6,400	16	12.60
Below poverty	Below 6,400	47	37.00
Non-poor	6,401 and above	80	62.99
Total		127	100.00

Source: Computed.

It is revealed from Table IV that the distitute type of poverty has little influence (3.15 per cent) and very very poor have slightly more influence (7.87 per cent) than destitutes in the study area. But the very poor and poor have very great influence (26 per cent) among the rural poor. It is revealed that about 37 per cent of the households lived below the poverty line.

3. *Comparison of Poverty Index with Income Based Poverty Line*

A comparative analysis of the above two methods (Tables III and IV) revealed that there was no relationship between the poverty index and income based poverty line.

The χ^2 test was used to test the null hypothesis that there is no significant difference between the income based poverty line (conventional method) and index based poverty line (new method) in measuring the poverty levels (Gupta, 1989, pp. 12-14).

TABLE V. CLASSIFICATION AND METHOD

Method (1)	Classification		
	Poor (2)	Non-poor (3)	Total (4)
Income based (conventional)	47 (a)	80 (b)	127 (a + b)
Index based (New)	104 (c)	23 (d)	127 (c + d)
Total	151	103	254
	(a + c)	(b + d)	(N)

Source: Tables III and IV.

Applying χ^2 test:

$$= \frac{(ad - bc)^2 \, N}{(a+c)\,(b+d)\,(c+d)\,(a+d)}$$

$$= 53.06 \text{ [calculated value]}$$

For $\upsilon = 1$, χ^2 0.05 = 3.84 [Table value for 1 degree of freedom at 5 per cent level].

The calculated value of χ^2 was much greater than the table value at 5 per cent level. Hence the null hypothesis was rejected and it was concluded that there was significant difference between the methods in classifying the households, *i.e.*, the two methods produced dissimilar results.

On the basis of poverty index, the study has revealed that about 82 per cent of the households lived below the poverty line. In contrast, the percentage of households below the poverty line was 37 per cent while adopting the NSS norm. When considering the income per household as the poverty line, it neglects the other components of poverty which determine the poverty level of the households. As mentioned earlier, this study confirms the view that income or consumption level is only a partial indicator of poverty especially in the rural context.

CONCLUSIONS

Given the diversity in resource endowments, agro-ecological conditions and socio-cultural milieu of different areas in the country, it is obvious that no single indicator of poverty would be adequate. The index evolved here is intended to identify the rural poor and to evaluate the real impact of development programmes especially when eradication of poverty (*i.e.*, provision of minimum needs to the people) is a basic objective of planning.

In view of the stress laid in Indian planning on the provision of basic needs to the people, it is important to use some such yardstick as the RQLI for assessing growth and plan performance. In order to improve the applicability of this exercise at the macro level, it may be desirable to extend the RQLI using the data from the available secondary sources such as the National Sample Survey and Census of Population. It is hoped that the RQLI presents the possibility of constructing valid reliable micro and macro models of rural development which can shed more light on the development process.

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NOTES

1. For a discussion on this issue, see Mathur (1982) in Rao and Deshpande (1982, p. 8). The view of the Planning Commission is cited in Adiseshiah (1982).
2. See Drewenowski, cited in Osmani (1982, p. 61).
3. Khusro (1984) has argued that the estimates of poverty based entirely on personal expenditures linked with caloric values are totally one sided, "When people's income increases, their food consumption does not increase proportionately and the income elasticity of demand for food has always been less than one, even for the poor." He argues that the consumption of goods and services which characterise all the different non-food items and affect the quality of life has to be taken into account. See Jhingan (1986, p. 753).
4. This view was expressed by J. Krishnamurty and K. Sundaram, which is cited in Misra (1989, p. 668).
5. The estimates of the Draft Seventh Five Year Plan are cited in Dewett, *et al.*, 1990, p. 709.
6. The 15th Indian Labour Conference held at New Delhi in 1957 determined the minimum cloth requirements of an adult person at 25 metres per capita per annum. This estimate is cited in Kumar (1977, pp. 187 and 191).
7. This classification and range of incomes are based on the 38th Round of the National Sample Survey. See Khanna's paper (1986) cited in Jain (1986, pp. 384-385). Also see Singh (1989, p. 9).

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