


INTER DISTRICT VARIATION IN QUALITY OF LIFE OF SCHEDULED TRIBES IN TAMIL NADU – AN EMPIRICAL ANALYSIS.

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ABSTRACT

The quality of life is the degree to which the experience of an individual's life satisfies individual's wants and needs (both physical and psychological). Much of the debate about how quality of life should be defined has centred on subjective versus objective approaches. Physical quality of life index is a measure of performance in meeting the basic needs of population that lends itself well to international comparisons. In this context a research study on "**Inter District variation in quality of life of scheduled tribes in Tamil Nadu – An empirical analysis**" was formulated with the objectives of computing quality of life index for scheduled tribes in different Districts of Tamil Nadu, find out the extent of variation in different components of quality of life of scheduled tribes in different Districts of Tamil Nadu and identifying the factors causing inter district variation in quality of life of scheduled tribes in Tamil Nadu. The study is related to 30 districts in Tamil Nadu the required data were compiled from. Statistical Hand Book of Tamil Nadu (2010), Report of State Planning Commission; Government of Tamil Nadu (2007), District Level Estimates Infant and Child Mortality (2001) and Selected educational statistics, various issues - Ministry of Human Resource Development. Following the method adopted by K.R. Gupta (2011) for measuring development, the current study tried to estimate life expectancy index at age1, infant mortality index, literacy index and finally the quality of life index. The study estimated Gini co efficient ratio and applied factor analysis. The study found that the literacy rate was the highest in Chennai (75 percent) and lowest in Ramanathapuram (21 percent). The enrolment index was the highest in Nilgiris (49 percent) and lowest in Kanniyakumari (7 percent). The life expectancy index was the highest in Chennai (1.16 percent) and lowest in Virudunagar (0.84 percent). The estimated infant mortality index was found to be the highest in Kanniyakumari (0.93) and lowest in Theni (0.75). The quality of life index was the highest in Chennai (0.85 percent) and lowest in Theni (0.63 percent). The estimated Gini co efficient ratio was the highest for net irrigated area (0.99). The application of factor analysis revealed that the significant factors causing inter district variations in the quality of life were rain fall, net area irrigated and food grains production. To improve quality of life of the scheduled tribes population the study recommended expansions of educational facilities, increasing the number of primary health centres and also improving the health status of the population.

Key words: Quality of life, literacy rate, infant mortality, life expectancy, scheduled tribes

INTRODUCTION

The quality of life is the degree to which the experience of an individual's life satisfies that individual's wants and needs (both physical and psychological). Much of the debate about how quality of life should be defined has centred on subjective versus objective approaches. The objective approach



defines quality of life (OQL) as the degree to which specified standards of living are met by the objectively verifiable conditions, activities, and activity consequences of an individual's life. The objective approach depends upon the judgment of elite who have specified standards that they believe will satisfy human needs. Subjective quality of life (SQL) is defined as a set of alternative beliefs directed toward one's life. The subjective approach allows individuals to define for themselves the quality of their lives and recognizes the possibility of a multitude of different orientations. In general, governmental agencies have preferred objective approaches while survey organizations with academic affiliations typically have adopted subjective approaches.

Physical quality of life index is a measure of performance in meeting the basic needs of poor population that lends itself well to international comparisons. This ranked three factors – life expectancy at age, infant mortality and literacy – on a single index, without any direct reference to income levels. Life expectancy at age one and infant mortality sum up the combined effects of social relations, nutritional status, public health, and family environment. The third indicator, literacy provides information about the potential for development and the extent to which poor groups can share the possibilities and averages of development activity. A sample average of these three indicators is taken, after transforming the demographic variables to scales of 0-100 representing the feasible ranges for their values.

The quality of life of people of Tamilnadu is favourable as compare to other states. Tamilnadu State is situated at the South Eastern extremity of the Indian Peninsula bounded on the north by Karnataka and Andhra Pradesh on the east by Bay of Bengal, on the South by the Indian Ocean and on the West by Kerala State. The State can be divided broadly into two natural divisions (a) the Coastal plains of South India and (b) the hilly western area. It can further be subdivided into coromandal plains comprising the districts of Kancheepuram, Thiruvallur, Cuddalore and Vellore. The alluvial plains of the Cauvery Delta extending over Thanjavur and part of Tiruchirapally districts and dry southern plains in Madurai, Dindigul, Ramanathapuram, Sivaganga, Virudhnagar, Tirunelveli and Tuticorin districts. It extends a little beyond Western Ghats in Kanyakumari District. The population of Tamil Nadu stood at 62,110,839 comprising of 31,268,654 males and 30,842,185 females. The population of Tamil Nadu constitutes 6.05% of the India's population. It ranks 6th among the States/Uts. Literacy standard in Tamilnadu State as per 2001 census is 73.47% as against 62.66% in 1991 census. Tamilnadu is the third largest economy in India and its current State Domestic Product is well over US \$ 23 billion. At present, the state accounts for over 11% of India's industrial output. Tamilnadu is ranked third in terms of infrastructure development among Indian states.

The total population of Tamil Nadu, as per the 2001 Census is 62,405,679 of this, 651,321 (1 per cent) are Scheduled Tribes (STs). Thirty six Scheduled Tribes have been notified in Tamil Nadu by the Scheduled Castes and Scheduled Tribes Order (Amendment) Act, 1976. Of the Scheduled Tribes, six have been notified with area restriction. These are Malayali, Kurumbas, Kanikaran, Kammara, Kota and Toda. Malayali have been notified in Dharmapuri, Vellore, Tiruvannamalai, Pudukkottai, Salem, Namakkal, Villupuram, Cuddalore, Tiruchirappalli, Karur and Perambalur districts, Kurumbas in Nilgiri district, Kanikaran in Kanniyakumari district and Shencottah taluk of Tirunelveli district. Kammara, Kota and Toda have been notified throughout the state except Kanniyakumari district and Shencottah taluk of Tirunelveli district.

Table 1

DISTRICT WISE SCHEDULED TRIBES POPULATION IN TAMIL NADU - 2001

S.No.	District	Schedule tribes population	Percentage to total population
1	Chennai	6728	0.15
2	Kancheepuram	26508	0.92
3	Thiruvallur	37858	1.37
4	Vellore	63040	0.52
5	Tiruvannamalai	72760	2.16
6	Cuddalore	11773	1.81
7	Villupuram	63920	3.33
8	Thanjavur	3641	3.45
9	Nagapattinam	3420	3.44
10	Thiruvarur	2673	2.08
11	Salem	103921	0.69
12	Namakkal	51416	0.68
13	Dharmapuri	59549	3.72
14	Krishnagiri	8529	0.78
15	The Nilgiris	28373	0.15
16	Tiruchirappalli	18912	0.67
17	Karur	1450	1.23
18	Perambalur	3307	0.05
19	Pudukkottai	792	0.16
20	Coimbatore	29103	0.23
21	Erode	17693	0.23
22	Madurai	5972	0.23
23	Theni	1686	0.15
24	Dindigul	6484	0.34
25	Ramanathapuram	1078	0.09
26	Sivaganga	1083	0.13
27	Virudhunagar	2357	0.09
28	Thirunelveli	8358	0.31
29	Thoothukkudi	3494	0.22
30	Kanniyakumari	5443	0.32
	Tamil Nadu	651321	1.04

Source: Census of India 2001.

The quality of life of tribes in Tamilnadu poor in since low literacy rate, low infant mortality rate and low life expectancy.

In India researchers like Gargi Ghosh (2012), Indra and Venkatraja(2012) Sujoy das and Niranjana Roy (2013), have analysed the Quality of life of people. But there had been lack of effort concentrating on the analyses of **Inter District variation in Quality of life.**

Hence the research study on “Inter district variation in quality of life scheduled tribes in Tamil Nadu – An empirical analysis” was formulated with the following objectives.

- a. To compute quality of life index for scheduled tribes in different Districts of Tamil Nadu
- b. To find out the extent of variation in different components of quality of life of scheduled tribes in different Districts of Tamil Nadu and
- c. To identify the factors causing inter district variation in quality of life of scheduled tribes in Tamil Nadu

HYPOTHESES FORMULATED:

- i. There exist no district wise variation in quality of life of scheduled tribes
- ii. Total population, geographical area, area sown, gross cropped area, gross irrigated area, net irrigated area, cropping intensity, rainfall, food grain production, employment and per capita income are insignificant determinants of quality of life.

METHODOLOGY

The study is related to 30 districts in Tamil Nadu – Chennai, Kancheepuram, Thiruvallur, Vellore, Tiruvannamalai, Cuddalore, Villupuram, Thanjavur, Nagapattinam, Thiruvarur, Salem, Namakkal, Dharmapuri, Krishnagiri, The Nilgiris, Tiruchirappalli, Karur, Perambalur, Pudukkottai, Coimbatore, Erode, Madurai, Theni, Dindigul, Ramanathapuram, Sivaganga, Virudhunagar, Thirunelveli, Thoothukkudi, Kanniyakumari. The present research work extensively depends on the Secondary data from various official sources.

1. Statistical Hand Book of Tamil Nadu(2010)
2. Report of State Planning Commission; Government of Tamil Nadu (2007)
3. District Level Estimates Infant and Child Mortality(2001) and
4. Selected educational statistics, various issues - Ministry of Human Resource Development.

Following the method adopted by K.R. Gupta (2011) form Measuring development, the current study tried to estimate quality of life index based on the following indices.

1. EDUCATIONAL ATTAINMENT INDEX

Educational attainment (E) is measured as a combination of two indices, one for adult literacy (minimum value = 0 percent; maximum value =100) and of the combined primary, secondary, and tertiary enrolment ratio (minimum =0 percent; maximum = 100) with the following weights

$$E = 2/3 \text{ adult literacy rate} + 1/3 \text{ combined enrolment ratio.}$$

(i) Index of ‘literacy rate ’ is given by:

$$IE = \frac{(\text{Actual value}) - (\text{Minimum value})}{(\text{Maximum value}) - (\text{Minimum value})}$$

The minimum and maximum value are fixed as 0 and 100 respectively

(ii) Index of 'enrolment index' is given by:

$$IE = \frac{(\text{Actual value}) - (\text{Minimum value})}{(\text{Maximum value}) - (\text{Minimum value})}$$

The minimum and maximum value are fixed as 0 and 100 respectively

(iii) Index of 'life expectancy' is given by:

$$IE = \frac{(\text{Actual value}) - (\text{Minimum value})}{(\text{Maximum value}) - (\text{Minimum value})}$$

For life expectancy, the upper limit was assigned to 77 years and lower limit 1 was assigned to 28 years.

(iv) Index of 'infant mortality' is given by:

$$IM = \frac{(\text{Actual value}) - (\text{Minimum value})}{(\text{Maximum value}) - (\text{Minimum value})}$$

For infant mortality, the upper limit was set at 9 per 1,000 and the lower limit at 229 per 1,000.

(v) Index of 'quality of life index' is given by:

The value of quality of life index is calculated as a weighted average of L, E and I with each component having a value of 1/3.

$$QLI = 1/3 * E + 1/3 * L + 1/3 * I$$

TOOLS APPLIED

1. GINI CO-EFFICIENT RATIO

The current study tried to estimate Gini co-efficient ratio to find out the extent of variation in the selected variables life expectancy at age, infant mortality and literacy, Total population, geographical area, area sown, gross cropped area, gross irrigated area, net irrigated area, cropping intensity, rainfall, food grain production, employment and per capita income.

The formula used was

$$G = \frac{N+1}{N-1} - \frac{2}{N(N+1)U} \sum_{i=1}^n p_i X_i$$

P_i = The rank assigned to the districts;

X_i = Actual value assigned to the districts ;

U = Actual value of the districts / number of districts

N = Number of districts



2. FACTOR ANALYSIS

Factor analysis attempts to identify underlying variables, or factors, that explain the pattern of correlations within a set of observed variables. Factor analysis is often used in data reduction to identify a small number of factors that explain most of the variance observed in a much larger number of manifest variables. Factor analysis can also be used to generate hypotheses regarding causal relationship between two more variables or to screen variables for subsequent analysis

In the current study the factor analysis was applied to indentify the factors influencing quality of life. The factors include in the study were Total population, geographical area, area sown, gross cropped area, gross irrigated area, net irrigated area, cropping intensity, rainfall, food grain production, employment and per capita income.

In the study Kaiser Criteria is followed a way of reducing all factors with Eagan values more than 0.7. Through factor rotation, factor loadings were found out and the variable with factor loading more than 0.3 were retained Alpha test were applied to find out the significance of factor loading. The Kaiser – Mayer- Olkin ratio was calculated for individual and reliable factors The KMO statistic varies between 0 and 1. A value of 0 indicates that the sum of partial correlation is large relative to the sum of correlations, indicating diffusion in the pattern of correlation (hence, factor analysis is likely to be inappropriate). A value close to 1 indicates that patterns of correlations are relatively compact and so factor analysis should yield distinct and reliable factors.

FINDINGS OF THE STUDY

A. INTER DISTRICT VARIATION IN EDUCATIONAL ATTAINMENT INDEX OF SCHEDULED TRIBES

1. Estimated literacy rate index of scheduled tribes for the different districts of Tamil Nadu 2001

Since literacy rate is an important component of quality of life the current study tried to calculate literacy rate index.

Table 1 represents estimated literacy rate index of scheduled tribes for the different districts of Tamil Nadu

Table 1

**ESTIMATED LITERACY RATE INDEX OF SCHEDULED TRIBES FOR THE
DIFFERENT DISTRICTS IN TAMIL NADU 2001**

S.No.	District	Literacy rate	Literacy rate index	Rank
1	Chennai	75.4	0.75	1
2	Kancheepuram	36	0.36	25
3	Thiruvallur	42.5	0.42	18
4	Vellore	43.5	0.43	17
5	Tiruvannamalai	28.7	0.28	29
6	Cuddalore	38.8	0.38	23
7	Villupuram	35.2	0.35	27
8	Thanjavur	38.3	0.38	23
9	Nagapattinam	47.7	0.47	15
10	Thiruvarur	39.7	0.39	22
11	Salem	41.9	0.41	20
12	Namakkal	41.8	0.41	20
13	Dharmapuri	46	0.46	16
14	Krishnagiri	66.8	0.66	4
15	The Nilgiris	72.6	0.72	3
16	Tiruchirappalli	64.2	0.64	5
17	Karur	35	0.35	27
18	Perambalur	56.4	0.56	10
19	Pudukkottai	55.9	0.55	11
20	Coimbatore	57	0.57	9
21	Erode	52.9	0.52	13
22	Madurai	62.9	0.62	7
23	Theni	36.4	0.36	25
24	Dindigul	42.5	0.42	18
25	Ramanathapuram	21.4	0.21	30
26	Sivaganga	58.1	0.58	8
27	Virudhunagar	49.3	0.49	14
28	Thirunelveli	63.3	0.63	6
29	Thoothukkudi	53.6	0.53	12
30	Kanniyakumari	73.0	0.73	2
	Tamil Nadu	41	0.41	

Source: District Statistical Hand Book 2001

Table 1 reveals that literacy rate was the highest in Chennai (75 percent) and lowest in Ramanathapuram (21 percent) As such the estimated literacy rate index was found to be the highest in Chennai (0.75) and lowest in Ramanathapuram (0.21).

2. ESTIMATED ENROLMENT INDEX OF SCHEDULED TRIBES FOR THE DIFFERENT DISTRICTS OF TAMIL NADU 2001

Table 2 represents estimated enrolment index of scheduled tribes for the different districts of Tamil Nadu

Table 2
ESTIMATED ENROLMENT INDEX OF SCHEDULED TRIBES FOR THE DIFFERENT DISTRICTS IN TAMIL NADU 2001

S.No.	District	Enrolment ratio	Enrolment index	Rank
1	Chennai	24.2	0.24	17
2	Kancheepuram	33.9	0.33	6
3	Thiruvallur	30.9	0.30	9
4	Vellore	26.6	0.26	10
5	Tiruvannamalai	31.7	0.31	8
6	Cuddalore	36.9	0.36	5
7	Villupuram	37.9	0.37	4
8	Thanjavur	24.0	0.24	18
9	Nagapattinam	38.1	0.38	3
10	Thiruvarur	41.9	0.41	2
11	Salem	23.7	0.23	19
12	Namakkal	26.8	0.26	10
13	Dharmapuri	21.6	0.21	24
14	Krishnagiri	16.4	0.16	28
15	The Nilgiris	49.0	0.49	1
16	Tiruchirappalli	22.8	0.22	20
17	Karur	25.0	0.25	12
18	Perambalur	32.2	0.32	7
19	Pudukkottai	19.9	0.19	27
20	Coimbatore	22.5	0.22	20
21	Erode	24.0	0.24	16
22	Madurai	17.6	0.17	29
23	Theni	26.7	0.26	10
24	Dindigul	25.6	0.25	12
25	Ramanathapuram	22.4	0.22	20
26	Sivaganga	20.0	0.2	26
27	Virudhunagar	25.8	0.25	12
28	Thirunelveli	22.3	0.22	20
29	Thoothukkudi	24.4	0.24	15
30	Kanniyakumari	7.1	0.07	30
	Tamil Nadu	26.3	0.26	

Source: District Statistical Hand Book 2001,

Table 2 reveals that enrolment index was the highest in The Nilgiris (49 percent) and lowest in Kanniyakumari (7 percent) As such the estimated enrolment index was found to be the highest in The Nilgiri (0.49) and lowest in Kanniyakumari 0.07

INTERCONTINENTAL JOURNAL OF HUMAN RESOURCE RESEARCH REVIEW**B. ESTIMATED INFANT MORTALITY INDEX OF SCHEDULED TRIBES FOR THE DIFFERENT DISTRICTS OF TAMIL NADU 2001**

Table 3 represents estimated infant mortality index of scheduled tribes for the different districts of Tamil Nadu.

Table 3
ESTIMATED INFANT MORTALITY INDEX OF SCHEDULED TRIBES FOR THE DIFFERENT DISTRICTS IN TAMIL NADU 2001

S.No.	District	Infant mortality rate	Infant mortality index	Rank
1	Chennai	45	0.83	18
2	Kancheepuram	36	0.87	6
3	Thiruvallur	38	0.86	8
4	Vellore	47	0.82	23
5	Tiruvannamalai	45	0.83	18
6	Cuddalore	38	0.86	8
7	Villupuram	46	0.83	18
8	Thanjavur	32	0.89	2
9	Nagapattinam	40	0.86	8
10	Thiruvarur	33	0.89	2
11	Salem	51	0.80	26
12	Namakkal	56	0.78	29
13	Dharmapuri	50	0.81	25
14	Krishnagiri	40	0.86	8
15	The Nilgiris	39	0.86	8
16	Tiruchirappalli	41	0.85	13
17	Karur	42	0.85	13
18	Perambalur	47	0.80	26
19	Pudukkottai	32	0.89	2
20	Coimbatore	45	0.83	18
21	Erode	42	0.85	13
22	Madurai	49	0.82	22
23	Theni	63	0.75	30
24	Dindigul	52	0.80	28
25	Ramanathapuram	36	0.87	6
26	Sivaganga	43	0.84	17
27	Virudhunagar	49	0.82	22
28	Thirunelveli	41	0.85	13
29	Thoothukkudi	34	0.88	5
30	Kanniyakumari	23	0.93	1
	Tamil Nadu	44	0.84	

Infant and Child Mortality in India : District Level Estimates

Table 3 reveals that the estimated infant mortality index was found to be the highest in Kanniyakumari 0.93 and lowest in Theni 0.75

C. ESTIMATED LIFE EXPECTANCY INDEX OF SCHEDULED TRIBES FOR THE DIFFERENT DISTRICTS OF TAMIL NADU 2001

Table 4 represents estimated life expectancy index of scheduled tribes for the different districts of Tamil Nadu

TABLE 4
A. ESTIMATED LIFE EXPECTANCY INDEX OF SCHEDULED TRIBES FOR THE DIFFERENT DISTRICTS IN TAMIL NADU 2001

S.No.	District	Life expectancy	Life expectancy index	Rank
1	Chennai	84.8	1.16	1
2	Kancheepuram	76.5	0.98	5
3	Thiruvallur	75.5	0.96	6
4	Vellore	71.4	0.88	19
5	Tiruvannamalai	71.6	0.88	19
6	Cuddalore	71.8	0.89	14
7	Villupuram	72.2	0.90	13
8	Thanjavur	71.9	0.89	14
9	Nagapattinam	74.7	0.95	7
10	Thiruvarur	72.7	0.91	12
11	Salem	74.0	0.93	8
12	Namakkal	69.8	0.85	22
13	Dharmapuri	69.8	0.85	22
14	Krishnagiri	71.9	0.89	14
15	The Nilgiris	73.1	0.92	10
16	Tiruchirappalli	76.6	0.99	3
17	Karur	76.6	0.99	3
18	Perambalur	71.7	0.89	14
19	Pudukkottai	72.0	0.89	14
20	Coimbatore	73.8	0.93	8
21	Erode	73.1	0.92	10
22	Madurai	73.4	0.92	10
23	Theni	69.3	0.84	25
24	Dindigul	69.4	0.84	25
25	Ramanathapuram	69.6	0.84	25
26	Sivaganga	69.8	0.85	22
27	Virudhunagar	69.4	0.84	30
28	Thirunelveli	71.5	0.88	19
29	Thoothukkudi	78.2	1.02	2
30	Kanniyakumari	72.6	0.91	12
	Tamil Nadu	72.8	0.91	

Source: Government of Tamil Nadu (2007)

Table 4 reveals that life expectancy index was the highest in Chennai (1.16 percent) and lowest in Virudunagar (0.84 percent)

INTERCONTINENTAL JOURNAL OF HUMAN RESOURCE RESEARCH REVIEW**D. ESTIMATED QUALITY OF LIFE INDEX OF SCHEDULED TRIBES FOR THE DIFFERENT DISTRICTS OF TAMIL NADU 2001**

Table 5 represents estimated quality of life index of scheduled tribes for the different districts of Tamil Nadu

Table 5
ESTIMATED QUALITY OF LIFE INDEX OF SCHEDULED TRIBES OF SCHEDULED TRIBES FOR THE DIFFERENT DISTRICTS IN TAMIL NADU 2001

S.No.	Districts	Life expectancy index	Infant mortality index	Educational attainment index	Quality of life index	Rank
1	Chennai	1.16	0.83	0.58	0.85	1
2	Kancheepuram	0.98	0.87	0.35	0.73	9
3	Thiruvallur	0.96	0.86	0.38	0.73	9
4	Vellore	0.88	0.82	0.37	0.69	21
5	Tiruvannamalai	0.88	0.83	0.29	0.66	26
6	Cuddalore	0.89	0.86	0.37	0.70	19
7	Villupuram	0.9	0.83	0.35	0.69	21
8	Thanjavur	0.89	0.89	0.33	0.70	19
9	Nagapattinam	0.95	0.86	0.44	0.75	6
10	Thiruvarur	0.91	0.89	0.39	0.73	9
11	Salem	0.93	0.8	0.35	0.69	21
12	Namakkal	0.85	0.78	0.36	0.66	26
13	Dharmapuri	0.85	0.81	0.37	0.67	25
14	Krishnagiri	0.89	0.86	0.49	0.74	7
15	The Nilgiris	0.92	0.86	0.64	0.80	2
16	Tiruchirappalli	0.99	0.85	0.5	0.78	3
17	Karur	0.99	0.85	0.31	0.71	17
18	Perambalur	0.89	0.8	0.48	0.72	16
19	Pudukkottai	0.89	0.89	0.43	0.73	9
20	Coimbatore	0.93	0.83	0.45	0.73	9
21	Erode	0.92	0.85	0.42	0.73	9
22	Madurai	0.92	0.82	0.47	0.73	9
23	Theni	0.84	0.75	0.32	0.63	30
24	Dindigul	0.84	0.8	0.36	0.66	28
25	Ramanathapuram	0.84	0.87	0.21	0.64	29
26	Sivaganga	0.85	0.84	0.45	0.71	17
27	Virudhunagar	0.84	0.82	0.41	0.69	21
28	Thirunelveli	0.88	0.85	0.49	0.74	7
29	Thoothukkudi	1.02	0.88	0.43	0.77	5
30	Kanniyakumari	0.91	0.93	0.51	0.78	3
	Tamil Nadu	0.91	0.84	0.36	0.70	

Table 5 reveals that quality of life index was the highest in Chennai (0.85 percent) and lowest in Theni (0.63 percent)

E. ESTIMATED GINI CO EFFICIENT RATIO FOR THE SELECTED VARIABLES

The current study Estimated Gini co efficient ratio to find out the extent of variation in the selected variables.

Table 6 represents the estimated Gini co efficient ratio for the selected variables.

Table 6

ESTIMATED GINI CO EFFICIENT RATIO FOR THE SELECTED VARIABLES

S. No.	Variables	Gini co-efficient ratio
1	Educational index	0.231
2	Infant mortality index	0.172
3	Life expectancy index	0.238
4	Total population	0.284
5	Geographical area	0.288
6	Area sown	0.616
7	Gross cropped area	0.991
8	Gross irrigated area	0.981
9	Net irrigated area	0.999
10	Cropping intensity	0.979
11	Rainfall	0.982
12	Food grain production	0.983
13	Employment	0.915
14	Per capita income	0.659

Calculated values based on the data compiled

Table 6 reveals that there exist more inter district variation in quality of life since estimated Gini co efficient ratio was the highest for net irrigated area (0.99)

F. IDENTIFICATION OF FACTORS CAUSING INTER DISTRICT VARIATION IN QUALITY OF LIFE

Though in Tamil Nadu scheduled tribes population were spread in many districts the quality of life is poor as compare the general population it is due to low literacy and poor health status of tribals.

KMO AND BARTLETT'S TEST

Two tests namely, Kaiser-Meyer-Olkin measures of sampling adequacy (KMO) & Bartlett's Test of Sphericity have been applied to test whether the relationship among the variables has been significant or not:

Table 7

KMO AND BARTLETT'S TEST

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.779
Bartlett's Test of Sphericity	Approx. Chi-Square	1.322E3
	Df	66
	Sig.	.000

Bartlett's test of Sphericity is used to test whether the data are statistically significant or not. With the value of test statistic and the associated significance level, it shows that there exists a high relationship among variables. Since Kaiser-Meyer-Olkin measure of sampling adequacy is 0.77 the factor analysis for the selected variables is found to be appropriate.

FACTOR EXTRACTION

Using the Principle Component Analysis three factors have been extracted based on the variance. The variance explained by the initial solution, extracted components, and rotated components are displayed in the table below.

Communalities measure the percentage of variance in each variable explained by the factors extracted. It ranges from 0 to 1. A high communality value indicates that the maximum amount of the variance in the variable is explained by the factors extracted from the factor analysis.

Table 8
COMMUNALITIES

	Initial	Extraction
Quality of life index	1.000	.741
Total population	1.000	.997
Per capita income	1.000	.927
Employment	1.000	.996
Geographical area	1.000	.994
Area sown	1.000	.997
Cropping intensity	1.000	.916
Gross cropped area	1.000	.998
Rain fal	1.000	.880
Gross area irrigated	1.000	.998
Net area irrigated	1.000	.998
Food grains	1.000	.996

Extraction Method: Principal Component Analysis.

In the principle components solution, all initial communalities are 1. There can be as many factor (principle components) as there are variables. If so, there is no need for a unique factor in the model, and all the variance of each variable is accounted. For the other methods of extraction, the estimate for each variable is the multiple R^2 from regressing all the other variables on that variable.

Table 9

TOTAL VARIANCE EXPLAINED

Component	Initial Eigen values			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	8.539	71.156	71.156	8.539	71.156	71.156	8.517	70.974	70.974
2	1.816	15.135	86.291	1.816	15.135	86.291	1.570	13.084	84.058
3	1.082	9.021	95.312	1.082	9.021	95.312	1.350	11.254	95.312
4	.457	3.810	99.122						
5	.090	.746	99.868						
6	.008	.070	99.938						
7	.004	.031	99.968						
8	.002	.015	99.983						
9	.001	.010	99.993						
10	.001	.007	100.000						
11	4.836E-5	.000	100.000						
12	9.057E-6	7.547E-5	100.000						

Extraction Method: Principal Component Analysis.

These tables show statistics for each factor before and after the components are extracted. For principal components, the initial an extraction statistics are always the same. After rotation, the percentage of total variance accounted for by all factors (95.312%) does not change. However, the percentage accounted for by each factor does change. Hence we have reduced the number of variables from 10 to 3 underlying factors.

ROTATED COMPONENT MATRIX

Since the idea of factor analysis is to identify the factors that meaningfully summarize the sets of closely related variables, the rotation phase of the factor analysis attempts to transfer initial matrix into one that is easier to interpret. Varimax rotation method is used to extract meaningful factors. The results are given in the Table below.

Table 10
ROTATED COMPONENT MATRIX

	Component		
	1	2	3
Quality of life index	.998		
Total population	.998		
Per capita income	.998		
Employment	.997		
Geographical area	.997		
Area sown	.996		
Cropping intensity	.996		
Gross cropped area	.983	.171	
Rain fall	.766	.557	.176
Gross area irrigated		-.955	
Net area irrigated			.933
Food grains		.546	.662

Extraction Method: Principal Component Analysis.

The study noted that in the rotated factor solution, variables 1 to 8 load significant on factor1, variables 7 to 11 load significantly on factor 2, variables 8 to 11 load significantly on factor 3.

CONCLUSION

1. The highly developed district as high quality of life index in scheduled tribes while the backward districts have low quality of life.
2. The significant factor causing the quality of life was rain fall, net area irrigated and food grains production.

Measures recommended

To improve quality of life of the scheduled tribes in various district of Tamil Nadu the study recommended following measures

1. Establishing more number of school within easy accessibility of tribals
2. Teaching medium in tribals schools can be in tribal dialect language and
3. To control infant mortality more number of primary health center established in tribal areas

REFERENCES**Books**

Gupta K.R.(2011) Measuring Development, Advanced Economic development, New Delhi , pp. 41-49.

Journals

Diener, E., Suh, E. M., Lucas, R. E., & Smith, H. L. (1999) Subjective well-being: Three decades of progress. *Psychological Bulletin*, 125(2), 276-302.

Felce, D. and Perry J (1995) Quality of life: its definition and measurement. *Research in Developmental Disabilities*, 16, No. 1, 51-74.

Gargi Ghosh (2012) Impact of economic growth, literacy and infant mortality rate on human development in India – special focus on North – West States. *Asian Economic Review*, 54, 2, 293-303.

Indra.M and Venkatraja.B (2012) Capability approach as alternative framework for the measurement of human development. *Asian Economic Review*, 54,2, 307-320.

Sujoy Das and Niranjan Roy (2013) An inquiry in to the quality of life of people living in industrial area: A case study of cacher paper mill. *Journal of Man and Development*, XXXV, 1, 107-119.

Reports

Statistical Hand Book of Tamil Nadu (2010), Government of India.

Report of State Planning Commission Government of Tamil Nadu (2007).

India - District Level Estimates Infant and Child Mortality (2006-2007) .

Selected educational statistics, various issues Ministry of Human Resource Development, New Delhi.