

## **CHAPTER III**

### **METHODOLOGY**

Methodology is a guideline system for solving a problem, with specific components such as phases, tasks, methods, techniques and tools, essentially, the procedures by which researchers go about their work of describing and explaining. A systematic and careful analysis of information is of primary importance in any research. To obtain reliable results, it is essential to have a systematic planning of data collection and employability of appropriate techniques for the analysis of information. The methodology adopted for the current study on “Quality of life of migrant construction workers in Coimbatore city” is discussed in this chapter under the following heads.

- 3.1. Selection of the problem
- 3.2. Selection of the sample respondents
- 3.3. Profile of the geographical study area
- 3.4. Sources of data
- 3.5. Methods of data collection
- 3.6. Quantitative techniques and
- 3.7. Limitations

#### **3.1. Selection of the problem**

Worldwide, construction principally offers low status, low paid, short-term, unregistered, informal and hazardous jobs in a highly fragmented industry. Many workers, in particular rural-urban migrants, are faced with exploitative employment practices, hardship and hazards. Building and Wood Workers International investigations worldwide have discovered repeatedly that because the work has low social status, its problems have low visibility and their resolution has low priority. Conditions are not recognized, if recognized are not diagnosed, if diagnosed are not attributed to work and

whether recognized or not are rarely compensated or effectively treated (Fiona Murie, 2007).

With little capacity to bargain for their constitutional rights as workers, the construction workers are forced to work and live under conditions that are practically subhuman. Makeshift tents housing migrant families are a common sight in almost all big cities. The main features of the construction industry are employment insecurity, abusive practices, evasion of social security, taxation, accidental insurance, lack of training opportunities, inadequate law enforcement and poor relationships with regular employees on the site (ILO 2002). It is against this background, an attempt has been made in the present study to analyze the quality of life of migrant construction workers in Coimbatore city along with their skills and training, safety, working conditions, and mobility.

### **3.2. Selection of the sample respondents**

Multistage sampling technique was followed in the selection of the sample respondents. In the first stage, Coimbatore city was selected for the study.

#### **3.2.1. Stage 1: Selection of the Coimbatore city**

To carry out the study, migrant construction workers in Coimbatore city were selected. The reasons for selecting Coimbatore city were

- As per the 2001 Census data in Tamil Nadu, Coimbatore stands in the third place in the total number of migrants with 10,30,625 in migrants next to Kancheepuram (10,38,499 migrants) and Thiruvallur (11,75,307 migrants) districts. The growth in the construction, business, service and industrial sectors attract workers and non workers from other districts and states to Coimbatore district for better employment opportunities. As per the 2001 Census Report, the district had a population of 42,24,107 persons with 21,56,280 males and 20,67,827 females. There are 1,77,211 construction workers; 3,97,614 agricultural workers; 70,255 workers in household industry and

13,24,252 other workers. The booming industrial activities largely attract labourers from various parts of Tamil Nadu and other states to Coimbatore.

- As Coimbatore city attracts people in terms of job opportunities from different strata and from different places in and around Coimbatore district and also from other states, Coimbatore city was selected for the study.
- The district is a chief center for spinning mills and ginning factories. There are about 118 ginning mills and 769 spinning mills and 14 weaving mills. Trade includes electronic motors, textile machinery, hosiery, computer software, coconut, yarn, readymade garments and agricultural products. Minor trade consists of chemicals, areca nuts, bricks and marbles, building materials, electrical and electronic goods. The economy of Coimbatore is multifaceted with strong binding between agriculture and industries. The prime industrial commercial town of Coimbatore has lots of business potential, attracting labourers from other districts and states.

### **3.2.2. Stage 2: Deciding the number of households to be surveyed**

For administrative purpose, Coimbatore city which was divided in to 72 wards till 2010 and grouped in to four zones, viz, north, south, east and west. [From 2010, the total number of wards is increased to 120, (Census 2011)]. The number of wards in each zone was north 17, south 18, east 18 and west 19 with a total of 72. The following table gives the details followed in the selection of sample respondents.

**TABLE 3.1**  
**NUMBER OF MIGRANT CONSTRUCTION WORKERS DECIDED**  
**TO BE SURVEYED**

<b>Zone</b>	<b>Total number of wards</b>	<b>Proposed number of migrants to be surveyed from each ward</b>	<b>Number of migrants Proposed to be surveyed</b>	<b>Number of migrants Actually surveyed</b>
North	17	4	68	68
South	18	6	108	109
East	18	6	108	109
West	19	6	114	114
<b>Total</b>	<b>72</b>	<b>22</b>	<b>398</b>	<b>400</b>

A non systematic approach was used in locating specific construction sites where migrant workers are occupied which involved transect walk across the residential area looking for active construction sites. To bring the total number of migrants to be surveyed to 400, it was decided to add 1 migrant in south and east zones. Hence the final number of migrants surveyed from each zone was north 68, South 109, East 109, West 114, totaling 400.

### **3.2.3 Stage 3: Selection of the sample respondents**

- ✧ As mostly the migrants are easily absorbed in construction activities, the construction sites were approached and the respondents were contacted personally and the relevant information was gathered from them with utmost care.
- ✧ The workers were selected randomly but adequate attention was given to capture the diverse nature of construction activities. Accordingly, the migrants are grouped under eight headings- viz- 'masons', 'load carriers', 'iron and steel workers', 'plumbers', 'electricians', 'carpenters', 'floor finishers' and 'painters'. Thus 400 migrants who were willing to provide the necessary data were approached for the survey. These migrants were mainly working on projects developing flats and commercial cum residential buildings.

The following criteria were applied in the selection of the migrants:

- ❖ The migrant should be the prime earning member and the head of the household.
- ❖ The migrants should have been in the place of destination at least for a period of twelve months.
- ❖ The migrants must have been employed only in construction activities, Migrants satisfying the above criteria only were surveyed.

### **3.3. Profile of the geographical study area**

Coimbatore district lies in the western part of Tamil Nadu bordering the Western Ghats. It is surrounded by the Nilgiris in the west and southwest, Erode district in the north and Dindigul district in the east. The district is filled with naturally diverse eco-system such as hills, plants, forests, evergreen fields, drought prone areas, river bodies, tanks etc and is fed with water from Noyal, Siruvani, Bhavani and Amaravathi. Siruvani, world's second purest water body is the main source of water in the city (Cities of India, 2012). The district has a geographical area of 7,469 sq.kms, which is divided into three revenue divisions, nine taluks, 19 blocks and 482 revenue villages. According to the provisional data of census 2011, Coimbatore is among the top five districts in the State where the rate of population growth (decadal) is more than the State average. Population in the district has increased by 19.06 per cent during the last 10 years as against the State average of 15.6 per cent by registering a decadal growth of 32.77 per cent.

Coimbatore city known as the "Manchester of South India" is the district head quarters of Coimbatore district. The city of Coimbatore was constituted as Municipality in 1866 and elevated to Municipal Corporation on 01-05-1981. The city is divided into 120 wards and these wards are grouped into five zonal ward committees (Census 2011). It houses numerous textile mills and small engineering units. Coimbatore is located at a distance of 500km from Chennai in the district of Coimbatore. As per the 2011 Census report, the population of

Coimbatore city was 34.72 lakhs (Census, 2011) growing from 0.47 lakhs in 1911 to 1.98 lakhs in 1951; to 7.04 lakhs in 1981 and to 8.16 lakhs in 1991 and to 14.46 in 2001. It has the highest GDP among the districts of Tamil Nadu, even ahead of Chennai.

**TABLE 3.2**  
**DEMOGRAPHIC PROFILE OF COIMBATORE DISTRICT**  
**(Provisional data of 2011 census)**

<b>Description</b>	<b>Rural</b>	<b>Urban</b>	<b>Total</b>
Population (%)	24.17	75.83	100
Total Population (persons)	8,39,408	26,33,170	34,72,578
Male Population (persons)	4,18,771	13,16,591	17,35,362
Female Population (persons)	4,20,637	13,16,579	17,37,216
Sex Ratio	1004	1000	1001
Population Growth			18.46%
Proportion to Tamil Nadu Population			4.81%
Child Sex Ratio (0-6 Age)			963
Average Literacy			84.31 (%)
Male Literacy			89.49 (%)
Female Literacy			79.16 (%)
Total Child Population (0-6 Age)			2,95,584
Male Population (0-6 Age)			1,50,580
Female Population (0-6 Age)			1,45,004

Source : Directorate of Census Operations in Tamil Nadu, 2011

Coimbatore district is the chief center for spinning mills and ginning factories. There are about 118 ginning mills, 769 spinning mills and 14 weaving mills. Trade includes electronic motors, textile machinery, hosiery, computer software, coconut, yarn, readymade garments and agriculture products. Minor trade consists of chemicals, areca nut, bricks and marbles, building materials, electrical and electronic goods. Nearly 40 percent of the

workers are in agriculture as cultivators/agricultural labourers; 3 percent in household industry and 56 percent come under the Census category of 'other workers'. There are 3,97,614 agricultural workers; 70,255 workers in household industries; and 13,24,252 other workers (Census, 2001). The work participation rate showed a comfortable picture with 46.62 percent.

The district has a good network of roads. Town buses connect all-important places in and around the town. Coimbatore is connected by rail route to other states and it also has an airport. There are four national highways passing through Coimbatore district with a total length of 330.200 kms and the length of the state highways is 4058.030 kms. The total length of railways in the Coimbatore district is 580.33 kms, of which 410.33 kms are broad-gauge and 170 kms are meter-gauge lines. Telecommunications is well developed in this district. The economy of this part of Kongu Nadu is multifaceted with strong binding between agriculture and industries. The prime industrial and commercial town of Coimbatore has lot of business potential. The availability of medical facilities in this region has improved much during the past decade. In the district as a whole, there are 114 hospitals, 117 dispensaries, 45 primary health centres, 328 health sub centres and 107 other medical institutions (Coimbatore District Profile, 2010)

Coimbatore's growth is sustained by a variety of industrial activities, with textiles at the core of all the industrial activities, which revolutionized the region's industrial scene. There are 36,579 industrial units in Coimbatore district, out of which 2,462 units (138 large industrial units, 1,082 medium industrial units and 1,242 small industrial units) are present in Coimbatore corporation limits. These industries occupy about 12 percent of the total corporation area. As per the 2001 Census, 38.49 percent of the total population of the city constitutes the workforce, which has registered an increase of over 4 percent from the last decade. Ninety percent of the total workforce is in the tertiary sector followed by secondary sector contributing 5 percent. The establishment of the South India Textile Research Association and the South India Mills Association has helped the growth of textile

industries by contributing to the development of new design, marketing etc. It also has central textile research institutes like the Central Institute for Cotton Research- Southern Regional station and the Sardar Vallabhai Patel International School of Textiles and Management (Cities of India, 2012). Next to textiles, the manufacture of motor and pumps for domestic and agricultural use are taking place in small and also in large-scale units in and around Coimbatore city. There are more than 25,000 small, medium, large scale industries and textile mills.

### MAP OF COIMBATORE DISTRICT

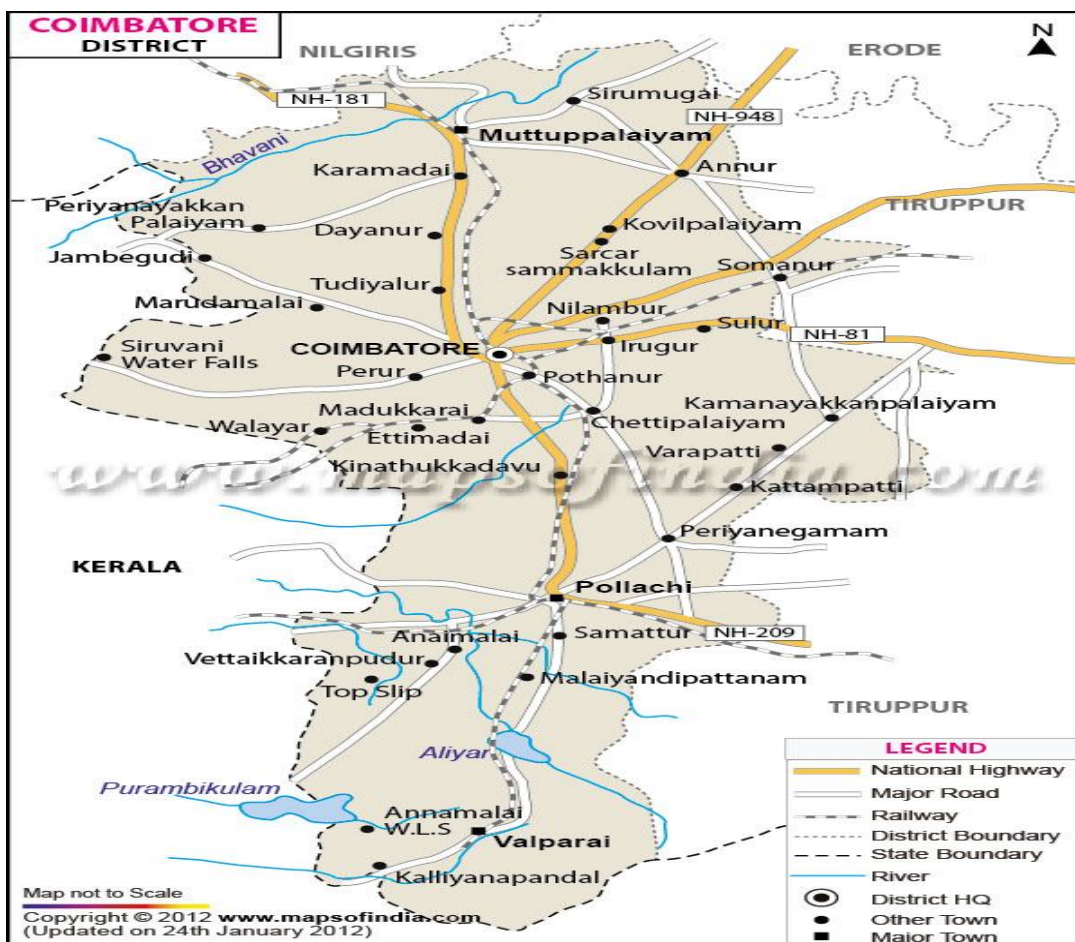


Fig 1

As per the 1991 Census, the total migration rate in Tamil Nadu was 24.04 percent in which male migration rate was 16.33 percent and female migration rate 31.96 percent. Coimbatore district far exceeded the state

average rate. The male migration rate was 25.03 percent and for females it was 35.55 percent and both combined the migration rate of Coimbatore district was 30.16 percent. In the year 2001 a different picture prevailed. For Tamil Nadu as a whole there was a marginal increase in the migration rate over 1991 data. While the male migration rate had increased from 16.33 percent in 1991 to 21.25 percent in 2001, it had declined for female population. The female migration rate was 29.52 percent much less than the 1991 figure of 31.96 percent. Coimbatore district, which stood ahead of the Tamil Nadu state migration rate in 1991 showed a dismal picture in 2001. For the district as a whole the migration rate was 24.4 percent much less than the 1991 migration rate of 30.16 percent. Both male and female migration rates had also declined to 23.74 percent and 25.08 percent respectively. Further the observations revealed that women are more migratory than men. After a decade, in 2001 the in-migration rate in Coimbatore had reduced.

The migration stream revealed that intra-district movement was the highest in both decades in Tamil Nadu as well as in Coimbatore district. This was followed by inter-district, inter-state and international movement. Compared to 1991 in 2001, the intra-district migration had shown greater preference among men and women. People preferred to have short distance movement. International migration had declined considerably in 2001. In Coimbatore, for men it had declined from 1.40 percent in 1991 to 0.48 percent in 2001. For women, the decline was from 1 percent to 0.04 percent in Coimbatore for the same period.

The district-wise details on the number of migrants in Tamil Nadu revealed that in 1991 Coimbatore occupied the second position (10,58,085 migrants) next to Kancheepuram (14,31,254 migrants) where as in 2001 Coimbatore was relegated to the 3<sup>rd</sup> position with 10,30,625 in migrants next to Kancheepuram (10,38,499 migrants) which was in the second position, with the top position being occupied by Thiruvallur with 11,75,307 in migrants.

### **3.4. Sources of Data**

The study was based mainly on primary data. A pre-tested interview schedule was administered to the sample migrant construction workers. The secondary data, which includes both published and unpublished sources – Census of India, NSS Reports on Migration, Documents from the District Corporation offices, books and journals have been used in the present study. From the official websites of the Government of India and the Government of Tamil Nadu; statistical data on the sample areas were compiled.

### **3.5. Methods of Data Collection**

A well-structured interview schedule was prepared covering the socio-economic background of the migrant construction workers, working conditions, skills and training, work history, housing details, mobility and aspirations and reasons for migration. The interview schedule was administered to 50 migrants in the Coimbatore Corporation. Based on their responses, the drawbacks in the questionnaire were noticed and modified. The modified pre-tested interview schedule (Appendix I) was administered to the sample respondents during June 2010 to December 2010.

### **3.6. Quantitative techniques**

The following quantitative tools are used in the study.

- 3.6.1. Measures of inequality
- 3.6.2. Garrett's Ranking Scale
- 3.6.3. Likert Rating Scale
- 3.6.4. Quality of Life Index
- 3.6.5. Regression analysis
- 3.6.6. Human Development Index
- 3.6.7. Averages and Percentages
- 3.6.8. Graphs

### 3.6.1. Measures of inequality

To measure the inequalities in the income, expenditure and assets distribution among the migrant households inequality coefficient was calculated. An inequality measure has to satisfy the following properties.

#### Properties of inequality measure

- i) **Mean independence:** If all incomes are doubled, the measure would not change.
- ii) **Population size independence:** Ceteris paribus, if the population is to change, the measure of inequality should not change.
- iii) **Transfer sensitivity:** The transfer of income from richer to poorer reduces measured inequality.
- iv) **Decomposability:** Inequality may be broken down by population sup groups.
- v) **Statistical testability:** One should be able to test for the significance of changes in index over time.

There is a wide range of measures of inequality. In the current study, Gini Coefficient simplified by Angus Deaton (1997) was used

Gini coefficient is a measure of statistical dispersion which ranges from 0 to 1. A low Gini coefficient indicates more equal income or wealth distribution, with 0 corresponding to perfect equality (everyone having exactly the same income). Higher Gini coefficients indicate more unequal distribution, with 1 corresponding to perfect inequality. Knowing the mean of a distribution, the number of people and the income of each person, Angus Deaton (1997), has simplified the Gini coefficient as

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

Where 'u' is the mean income of the population;  $P_i$  is the income rank P of person i; with income X such that the richest person receives a rank of 1 and the poorest a rank of N. This effectively gives higher weight to poorer

people in the income distribution which allows the Gini coefficient to meet the transfer principle.

The Angus Deaton Gini coefficient satisfies the four important principles.

- \* **Anonymity:** It does not matter who the high and low earners are.
- \* **Scale Independence:** The modified Gini coefficient does not consider the size of the economy, the way it is measured or whether it is rich or poor country on average.
- \* **Population Independence:** It does not matter how large the population of the country is.
- \* **Transfer Principle:** If income is transferred from a rich person to a poor person the resulting distribution is more equal.

### 3.6.2. Garrett's Ranking Scale

To find out the severity of selected problems that the migrants face both at the work place and the environment, Garrett's scaling technique was used. From the ranks given for each factor, percent positions were calculated by using the formula.

$$\text{Percent position} = \frac{100 (R-0.5)^2}{N}$$

Where R is the rank assigned and N is the number of items ranked

The percent position was then converted into scores using Garrett's Score table.

### 3.6.3. Likert Rating Scale

The average scores on working condition was calculated using 5 point rating scale, assigning value of two for 'very good'; one for 'good'; zero for 'average'; minus one for 'poor'; minus two for 'very poor'.

#### **3.6.4. Quality of Life Index (QLI)**

Quality of life index (QLI) represents the well-being of an average person. QLI reflects the current situation, and does not attempt any predictions of the future. As such, it does not take into account dynamic factors such as growth, and only represents their visible results. QLI also does not consider factors of debatable relevance, in particular factors which are only deemed relevant to the quality of life by certain ideologies, and does not use self-reported data. Hence based on 8 socio economic indicators grouped under five headings viz social status, income status, nutritional status, clothing and housing, Quality of Life Index table is constructed. The elaborate discussion on the same is given in chapter IV (p.180).

#### **3.6.5. Regression Analysis**

To find out the relationship between percapita income and quality of life index, linear and non linear models of the form

$$y_i = a+bx_i+u_i \text{ and}$$

$$y_i = e^{a+bx_i+u_i} \text{ were constructed}$$

$y_i$  = annual percapita income of the  $i^{\text{th}}$  household.

$x_i$  = QLI of the  $i^{\text{th}}$  household.

$u_i$  = disturbance term

The models were estimated by applying the ordinary least squares method.

#### **3.6.6. Human Development Index (HDI)**

Human Development Index was constructed using the methodology adopted by the Human Development Report (2007-2008). The three indicators used in the construction of the HDI are educational attainment, standard of living and health. The formula for the construction of an index is given as

$$\frac{\text{Actual value} - \text{minimum value}}{\text{Maximum value} - \text{minimum value}}$$

Educational attainment is measured by the adult literacy rate (with two-thirds weight) and the combined primary, secondary and tertiary gross enrolment ratio (with one third weight).

A long and healthy life is measured by life expectancy at birth.

A decent standard of living is measured by the percapita annual income in purchasing power poverty (PPP) terms in US dollar. The maximum and minimum values for calculating the HDI are given in the following table 3.3.

**TABLE 3.3**  
**GOALPOSTS FOR CALCULATING THE HDI**

Indicator	Maximum value	Minimum Value
Life expectancy at birth (years)	65	25
Adult literacy rate (%)	100	0
Combined gross enrolment ratio (%)	100	0
Annual per capita income ( ` )	40,000	100

Source HDR (2007-2008)

### **3.6.7. Percentages and Averages**

Apart from the above stated techniques, percentage and averages were used.

### **3.6.8. Graphs**

To give a pictorial representation of the findings, graphs were used.

### **Statistical Packages**

To carry out the analysis SPSS 16.5 version was used.

### **Limitations of the study**

1. This study can be viewed as a micro study of migrant construction workers and it cannot be taken as a representative of the construction sector. A study of small coverage has its own limitations.
2. During intensive stages of construction work, it was difficult to get responses from the sample units.
3. The limitations pertaining to primary data are applicable to this study. The respondents had to give details based on recall method; which could not be cent percent accurate.