CHAPTER 4
RESEARCH METHODOLOGY

The present research is an attempt to study the Taxation of Income in India during post liberalisation period. With a view to have a proper understanding of the research topic review of literature relating to taxation of income has been done in the previous chapter. Important studies relating to personal income tax, capital gains tax, agricultural taxation, efficiency of Income Tax Administration etc. conducted in India have been reviewed.

The study examines policy perspective relating to Taxation of Income in India, growth of income tax revenue, performance of Income Tax Department and perception of tax professionals regarding Income Tax System in India. This chapter deals with sampling design, data collection, data analysis, the statistical tools applied in the analysis of data and limitations of the study.

4.1 SAMPLE AND SAMPLING DESIGN

For studying the perception of tax professionals regarding Income Tax System, data has been collected from Chartered Accountants practicing in Punjab and Chandigarh (U.T.). The researcher resorted two stage sampling framework for the study. At the first stage, the districts to be covered under primary survey were selected. It was planned to select four districts of Punjab by giving representation to all the three belts of Punjab viz. Majha (Amritsar, Gurdaspur and Tarn Taran) Doaba (Jalandhar, Kapurthala, Hoshiarpur and Nawanshahr) and Malwa (Ferozepur, Faridkot, Bathinda, Patiala, Sangrur, Ludhiana, Ropar, Fatehgarh Sahib, Mansa, Muktsar, Mohali, Barnala and
Thus, on the basis of Table 4.1, Amritsar from Majha, Jalandhar from Doaba and Ludhiana and Patiala from Malwa have been selected for survey as these districts have the highest number of Chartered Accountants in their respective belts. Two districts from Malwa belt have been selected as it is the largest belt and covers 13 districts of Punjab. Chandigarh (U. T.) has been selected specifically. At second stage of sampling, a sample of 250 respondents

<table>
<thead>
<tr>
<th>District</th>
<th>Number of chartered accountants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amritsar</td>
<td>219</td>
</tr>
<tr>
<td>Gurdaspur</td>
<td>19</td>
</tr>
<tr>
<td>Tarn Taran</td>
<td>12</td>
</tr>
<tr>
<td>Hoshiarpur</td>
<td>64</td>
</tr>
<tr>
<td>Jalandhar</td>
<td>206</td>
</tr>
<tr>
<td>Nawanshahr</td>
<td>18</td>
</tr>
<tr>
<td>Kapurthala</td>
<td>21</td>
</tr>
<tr>
<td>Ferozepur</td>
<td>36</td>
</tr>
<tr>
<td>Ropar</td>
<td>19</td>
</tr>
<tr>
<td>Ludhiana</td>
<td>791</td>
</tr>
<tr>
<td>Sangrur</td>
<td>29</td>
</tr>
<tr>
<td>Patiala</td>
<td>134</td>
</tr>
<tr>
<td>Fatehgarh Sahib</td>
<td>75</td>
</tr>
<tr>
<td>Faridkot</td>
<td>17</td>
</tr>
<tr>
<td>Bathinda</td>
<td>103</td>
</tr>
<tr>
<td>Mansa</td>
<td>16</td>
</tr>
<tr>
<td>Muktsar</td>
<td>10</td>
</tr>
<tr>
<td>Moga</td>
<td>23</td>
</tr>
<tr>
<td>Barnala</td>
<td>19</td>
</tr>
<tr>
<td>Mohali</td>
<td>67</td>
</tr>
<tr>
<td><strong>Chandigarh (U.T.)</strong></td>
<td><strong>396</strong></td>
</tr>
</tbody>
</table>

*Source:* Directories of Patiala, Chandigarh, Ludhiana, Jalandhar, Amritsar, Sangrur and Bathinda branches of Northern India Regional Council of Institute Chartered Accountants of India, Year 2008.
(50 respondents each from selected four districts of Punjab and 50 respondents from Chandigarh) has been taken by using random sampling technique. So, Table 4.2 depicts final sample selected for the study. The primary data was collected during January 2009 to December 2009.

TABLE 4.2

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>NUMBER OF RESPONDENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chandigarh (L₁)</td>
<td>50</td>
</tr>
<tr>
<td>Patiala (L₂)</td>
<td>50</td>
</tr>
<tr>
<td>Ludhiana (L₃)</td>
<td>50</td>
</tr>
<tr>
<td>Jalandhar (L₄)</td>
<td>50</td>
</tr>
<tr>
<td>Amritsar (L₅)</td>
<td>50</td>
</tr>
</tbody>
</table>

4.2 DATA COLLECTION

For the purpose of the study, two sets of data have been collected. One set of data has been collected from secondary sources which includes the various Finance Acts, Explanatory Memorandum on the Budget of the Central Government, Reports of the various committees/commissions, Indian Economic Survey, Income Tax Act 1961, Income Tax Rules 1962, various announcements, circulars and notifications of Central Board of Direct Taxes, Budget speeches of Finance Ministers, Reports of Comptroller and Auditor General of India on Direct Taxes, Economic and Political Weekly, newspapers (Economic Times, Financial Express, Business Lines) etc. Moreover, websites of Income Tax Department, Ministry of Finance, Ministry of Statistics and Comptroller and Auditor General of India have also been used for collection of data. The secondary data pertains to the period from 1997-98 to 2007-08.
The second set of data has been collected from tax professionals i.e. chartered accountants by administering a questionnaire to them. To develop the questionnaire, the researcher reviewed the existing literature and contacted many experts in the field of taxation. The observations of the researcher during her visits to offices of chartered accountants, income tax office and discussions held with clients also helped in preparation of questionnaire. The preliminary draft of the questionnaire was pre-tested on 25 chartered accountants, which helped in improving the questionnaire. With a few changes, final questionnaire was framed which has been attached as Appendix I.

The questionnaire contains various questions relating to reasonability of tax rates, tax rate system, introduction of EET system, tax evasion, corruption, completion of assessments, refunds, computerisation of Income Tax Department, problems faced by taxpayers, satisfaction level regarding various factors and various opinion statements regarding simplification of tax laws, taxpayer friendly measures, social equity etc.

The addresses and contact numbers of the chartered accountants have been taken from various branch directories of Northern India Regional Council of Institute of Chartered Accountants of India. The tax professionals were contacted on phone and questionnaires were given personally or sent through courier. Generally, after a period of one week, they were reminded to fill the questionnaire. The filled questionnaires were collected personally.
4.3 DATA ANALYSIS

Data has been analysed on the basis of the various indicators for achieving various objectives of the study.

(a) Income Tax policy has been studied on the basis of the following indicators:

- **Social Welfare Measures**
  
  Incentives for education
  Incentives for investment in housing
  Relief for maintenance of medical fitness
  Incentives for savings
  Pension schemes
  Donations under Section 80 G
  Tax relief for senior citizens and women assessee
  Incentives for generating employment
  Simplified procedure for small taxpayers

- **Rationalization and Simplification Measures**
  
  Tax rates
  Income from house property
  Depreciation
  Capital gains
  Public charitable trusts
  Penalty related provisions

- **Measures to Accelerate Economic Development**
  
  Incentives for industrial development
  Exemption of agricultural income
  Promotion of scientific research and development
Investment-linked tax incentives
Incentives for capital market

**Widening of Tax Base**

- Permanent Account Number (PAN)
- Annual Information Return (AIR)
- Tax deduction at source (TDS)
- E-Filing of income tax return
- Online tax accounting system (OLTAS)
- Minimum alternative tax on companies (MAT)
- Dividend distribution tax (DDT)
- Securities transaction tax (SST)
- Withdrawal of standard deduction for salaried persons
- Withdrawal of deduction in respect of interest on specified securities
- Measures introduced and withdrawn

**Proposed Direct Taxes Code (DTC)**

(b) The growth of income tax revenue has been examined by classifying data into personal income tax and corporate tax corresponding to various variables given below:

- Significance of income tax revenue in the Indian tax structure
- Category-wise growth in number of personal assesses and corporate assesses
- Growth in income tax revenue
- Income tax to Gross Domestic Product (GDP) ratio
- Tax buoyancy coefficient
• State-wise share and growth of income tax revenue
• State-wise income tax to State Domestic Product (SDP) ratio

(c) The performance of Income Tax Department has been evaluated by classifying data into personal income tax and corporate tax with the help of the following indicators:

• Variation between budget estimates and actual collection
• Collection of income tax at pre assessment and post assessment stage
• TDS modes of personal income tax
• Cost of collection
• Disposal of assessments
• Refunds outstanding
• Arrears of tax
• Tax recovery
• Execution of deterrence measures i.e. penalty and prosecution proceedings
• Position of appeals
• Mistakes in assessments and their impact on tax revenue

(d) Perception of tax professionals regarding Income Tax System in India:

The perception has been studied by classifying primary data location-wise viz. Chandigarh (L₁), Patiala (L₂), Ludhiana (L₃), Jalandhar (L₄) and Amritsar (L₅).

4.4 STATISTICAL TOOLS USED

The analysis of data collected has been carried out by using simple frequencies, percentages, averages, simple growth rate, exponential growth rate, buoyancy coefficient, average weighted score, Chi Square Test, Kendall’s
Coefficient of Concordance etc. Brief description of some important tools is given as under:

**SIMPLE GROWTH RATE**

It simply gives the percentage increase over the previous year, i.e.

\[ g = \left( \frac{y_t - y_{t-1}}{y_{t-1}} \right) \times 100 \]

where,

- \( g \) = growth rate
- \( y_t \) = value of variable \( y \) in current year
- \( y_{t-1} \) = value of variable \( y \) in the previous year

**EXPONENTIAL GROWTH RATE (EGR)**

It is simply compound growth rate but unlike the compound growth rate, it is worked out for a period on the basis of the value of a variable for all the years. In this case, least square trend is fitted for given years and given values of the variable. The exponential equations used are:

\[ Y_e = ab^t \] \hspace{1cm} \ldots\ldots (1)

Where, \( b = 1 + \frac{g}{100} \) \hspace{1cm} \ldots\ldots (2)

\( Y_e \) is the computed value of concerned variables, \( a \) and \( b \) are the estimates, \( t \) is the time period and \( g \) is growth rate.

In the semi-logarithmic form, the equation (1) takes the form:

\[ \log y_e = \log a + t \log b \] \hspace{1cm} \ldots\ldots (3)
The present equation is known as semi-logarithmic equation which gives the straight line. For this linear equation, we get the estimated value of \( \log b \) and \( \log a \).

The growth rate obtained from equation (2) is

\[ g = (b - 1) \times 100 \]

if we have value of \( \log b \), then

\[ g = [\text{Antilog} (\log b) - 1] \times 100 \]

**AVERAGE WEIGHTED SCORES**

Average weighted scores were calculated at suitable places where the respondents were asked to rate different attributes relating to the Income Tax System on five-point scale to measure the extent of agreement/disagreement or degree of satisfaction/ dissatisfaction. Average weighted scores have been calculated by assigning weights as +2, +1, 0, -1 and -2 to highly satisfactory, satisfactory, neither satisfactory nor dissatisfactory, dissatisfactory and highly dissatisfactory respectively. On the basis of frequency of ratings for each attribute, average weighted scores for each attribute were calculated as below:

\[ W = \frac{\sum w f_w}{\sum f_w} \]

Where, \( W = \) Average weighted score

\( w = \) weight given to an attribute

\( f_w = \) number of respondents who attached weight to the attribute.
**KENDALL’S CO-EFFICIENT OF CONCORDANCE**

In order to sharpen the inferences drawn on the ranking/rating basis Kendall’s co-efficient of concordance (Siegel and Castellan, 2002) has been used at appropriate places by using. The following formula:

\[
W = \frac{12 \sum R_j^2 - 3k^2 N(N+1)^2}{k^2N(N^2-1) - k\Sigma T_j}
\]

Where, 
- \(k\) = number of sets of ranking
- \(N\) = number of objects to be ranked
- \(\sum R_j^2\) = sum of the squared sums of ranks for each of the \(N\) Objects
- \(\Sigma T_j\) = Sum of the correction factor for tied observations.

In case \(N\) is greater than 7, value of chi-square has been calculated as under

\[\chi^2 = k(n-1)W\]

\(\chi^2 = \text{Chi-square}\)

**CHI-SQUARE TEST**

The Chi-square test has been applied to study the differences with regard to various qualitative aspects highlighted by the respondents in the questionnaire.

It has been worked out as follows:

\[\chi^2 = \frac{\Sigma(O - E)^2}{E}\]

Where, \(\chi^2\) = Chi-square value
- \(O\) = Observed Frequencies
- \(E\) = Expected Frequencies.
A proper application of the chi-square test requires that the expected frequencies in each cell are not too small. When the theoretical frequencies are less than 10 and especially less than 5, the ordinary table values of $\chi^2$ are less reliable. This is especially true for 1 degree of freedom, it is true to a lesser extent for two or three degrees of freedom. However, the error is negligible for more than three degrees of freedom (Gupta, 2005: p. 959). Cochran (1954) recommends that in chi-square tests for which the degrees of freedom are greater than 1, no cell should have an expected frequency of less than 1 (Siegel and Castellan, 2002, p. 199).

At most of the places bar, line and area diagrams have also been used for presentation of results.

4.5 LIMITATIONS OF THE STUDY

1. The study is based on secondary data and the limitations of using secondary data may affect the results. In certain cases data of particular years was not available and was represented in tables as N.A.

2. Any primary data based study through pre-designed questionnaire suffers from the basic limitation of the possibility of difference between what is recorded and what is truth, no matter how carefully the data has been collected. The same may be with the present study because the respondents may not deliberately report their true opinion.

3. The Direct Taxes Code, which is proposed to replace the Income Tax Act 1961 w.e.f. April 1, 2012 has not been given much importance in the research
work as it has been referred to Parliament Standing Committee and there may be certain changes in it.

4. There were certain questions regarding Fringe Benefit Tax in the questionnaire, which were not analysed as it was withdrawn by the government w.e.f. April 1, 2009.

5. State-wise growth of income tax revenue and state-wise tax to SDP ratio has been analysed for selected states. Growth in case of small states such as Manipur, Meghalaya, Tripura etc. have been examined collectively as data for these states has been available in consolidated form only.