CHAPTER-3

Certain Methodological Consideration

As seen in the previous chapter, in different parts of the world different types of child rearing practices are followed. For instance in the African region, Mexican country, United States of America, United Kingdom, and Eastern countries, the bringing up of children from infancy to adolescence varies. The researcher reviewed the work that had been done on child rearing practices in India and found that there are relatively fewer studies that have tapped the child rearing practices in different parts of India. Considering, the cultural practices, value systems, traditions, religious beliefs ecological and environmental factors which all differ a great deal from one part of India to another, it was assumed that CRP would differ in different parts accordingly, and if so, the two different states having two different cultures such as the Punjab and Kerala would show totally different CRP’s and the Personality of children which are geographically poles apart (North Punjab), (South Kerala) would also show variation in Personality.

The researcher has chosen these two states which are in polarity to each other that is, Kerala being in the extreme southern part of India and Punjab at the extreme Northern part of the country. If any typical child rearing practices is delineated and related to personality traits obtained in the two different regions it may help to understand how personality traits are developed and maintained. Specifically, the objectives of this study are as stated below.

OBJECTIVES

a) To study the Child Rearing practices in terms of traditions, values, religious orietation and schooling used in the state of Punjab and Kerala, as experienced by children of the states studying in their own state school and studying in Delhi in school run by that state.

b) To compare the typical personality traits as obtained in the children of two different and farthest regions in India (Punjab and Kerala).

c) To relate typical factors in child rearing practices as contributing to personality traits.
HYPOTHESIS

Rationale for hypothesis 1

The cultural practices, value systems, traditions, Religious beliefs rituals, superstitious behaviors, ecological and environmental factors – all these differ a great deal from one part of India to another, and hence it is possible that the two different states such as the Punjab (North Punjab) and Kerala (South Kerala) which are geographically poles apart would differ in many factors including the child rearing practices (CRP) adopted by them. As this study has as its main objective that the child rearing practices will differ between the two regions, it was assumed that Kerala being in the extreme southern part of India and Punjab at the extreme Northern part of the country and having complete different culture, values and belief system, literacy rate etc., one could experience the perception of CRP to vary amongst students studying in the two different states schools (i.e. Punjab and Kerala) Thus the hypothesis 1 is formulated.

Hypothesis 1

1. There will be a significant difference in the CRP experienced as reported by students studying in different schools belonging to the two different regions (Punjab and Kerala).

1. (a) There will be a significant difference in the CRP experienced and reported by students studying in the state run school in Delhi and state run school in Punjab / Kerala.

1. (b) There will be significant differences between the CRP experienced and reported by children studying in the two different school in the same state (Punjab / Kerala).

1. (c) There will a significant difference in the CRP experienced and reported by male and female students of the same school and across the schools in Delhi and Punjab/ Kerala.

Rationale for hypothesis 2

Since the two regions (Kerala and Punjab States ) taken up have also been assumed to practice different CRP, it was expected that students from the different states there will
show a significant difference in the IPIP dimensions of Students of Punjab and Kerala will show differences in their major personality dimensions (IPIP). Thus the hypothesis 2 formulated was as given below:

**Hypothesis 2**

2. There will be a significant correlation between CRP and IPIP dimension of students of Punjab and Kerala states.

2. (a) This relationship between CRP and IPIP dimensions will differ amongst the schools.

**Rationale for hypothesis 3**

It was assumed that if personality dimensions differ due to differences in CRP, it may also be expected that the various personality traits as measured by Multiple Assessment of Personality (MAP) would also differ amongst students of different states and that there will be a relationship between the differing CRP’s and the obtained personality traits being high or low. Thus the hypothesis 3 was set up which reads as follows:

**Hypothesis 3**

3. There will be a significant association between CRP and the low or high scores of MAP (Personality traits).

3. (a) This association between CRP and MAP traits will differ across the different schools belonging to the two different regions (Punjab and Kerala).

**Rationale for hypothesis 4**

Since the personality dimensions and personality traits are considered to be influenced by CRP, one can also expect that these three factors will be inter relating with each other and there will be a significant association amongst these three variables and the degree of this association will also vary between the two regions taken up for this research. Thus the hypothesis 4 has been set up which reads as follows:
Hypothesis 4

4. There will be a significant relationship between the types of CRP and IPIP dimensions.

4 (a) This relationship between CRP and IPIP will differ across the different schools of two different regions.

RESEARCH DESIGN

To empirically test the above hypothesis, following research design has been used.

a) For testing the hypothesis 1 to 4 a comparative design was used.

b) A co relational design was used for relating the child rearing practices to the personality traits.

Sample

The sample chosen consisted of students of classes 9 and 11. The reason for selecting school students of class 9 and 11 was that they are in the adolescent age group and by this time their Personality Traits would have been fairly well formed. Also this is the age at which they would respond appropriately to the questions and various issues related to CRP as experienced by them. Thus the setting covers schools in two different regions as the personality of children for two different cultures were being studied.

1. Settings- Schools in two different states (Punjab and Kerala)

2. Settings- Schools of the two states located in Delhi

As CRP was being studied in two different regions, geographically placed in extreme opposite direction, the schools situated in Punjab (Ludhiana) namely Bahadur Chand Munjal (BCM) and Guru Ram Dass (GRD) and Kerala (Trivandrum) Bhartiya Vidya Bhavan (BVB) and Leo Christian were taken up. Also the 3rd set up was Delhi, where both the states were running their schools in Delhi for instance, Kerala Education Society School (KESS) at Vikas Puri and Mayur Vihar and Guru Harkrishan Public School (GHPS) Hemkunt Colony and India Gate.
Reason for taking Kerala and Punjab schools along with their counterpart schools in Delhi was that the students studying in Delhi usually get influenced by the Delhi culture and atmosphere. Therefore it was assumed that students from Kerala and Punjab who are studying in Delhi, may show possibly different personality traits as compared to their counterparts studying in the schools of Kerala and Punjab. With this view to reiterate, not only typical Kerala and Punjab schools were taken from the concerned states, the schools run by these two states in Delhi were also part of the sample.

3. Student Sample

A total of 800 Students from the 8 different schools were taken as given below

<table>
<thead>
<tr>
<th>State / Location</th>
<th>School Selected</th>
<th>No. of Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. North (Punjab)</td>
<td>1. BCM School, Ludhiana</td>
<td>86</td>
</tr>
<tr>
<td></td>
<td>2. GRD School, Ludhiana</td>
<td>94</td>
</tr>
<tr>
<td>2. South (Kerala)</td>
<td>3. Leo Christian school, Kerala</td>
<td>143</td>
</tr>
<tr>
<td></td>
<td>4. BVB school, Kerala</td>
<td>59</td>
</tr>
<tr>
<td>3. Delhi</td>
<td>5. GHPS, Hemkunt, Delhi</td>
<td>99</td>
</tr>
<tr>
<td></td>
<td>6. GHPS, India Gate, Delhi</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>7. KESS, Mayur Vihar, Delhi</td>
<td>143</td>
</tr>
<tr>
<td></td>
<td>8. KESS, Vikaspuri, Delhi</td>
<td>59</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>783</strong></td>
</tr>
</tbody>
</table>

From each of the above schools, students from classes 9 and 11 were taken for the study. The details of selection are presented below:

Criteria for selection of students:

1. Subjects- Students presently in Class IX- XI from all the above mentioned schools were taken, as at this age level (15+) they are almost mature young adults and thus their
personality trait will be more or less fairly well set and would also be able to answer the question related to CRP and other Personality Questionnaire.

While 800 students were selected, the responses from 17 students had to be rejected as they did not fill in and completed and hence all question were not answered. 769 tests were found valid, therefore, there is slight variation in the number of students from each region.

2. The students should not have failed in any class prior to the present class.
3. They should not be suffering from any mental disorder.
4. They should not be having any neurological disorders eg. Epilepsy etc.
5. At the time of the study they should be able to express and communicate.
6. Students should be of minimum 15-17 years of age at the time of conducting the study.

Tools for Data Collection

1. Scale for Child Rearing Practices- Specially designed by the Researcher.
2. IPIP Five Factor Personality Test by Buchanan (2001)
3. MAP Test by Psy-Com (2001)

Scale devised for Child rearing practices (CRP)

The procedure adopted for finalizing the CRP questionnaire is given below:

1. A large number of statements relating to child rearing Practices were worked out (200 in all) covering various dimensions such as the rituals followed during pregnancy and child birth, weaning methods used, typical relationship between the baby and the mother, toilet training, disciplinary measures, customs observed on different occasions, religious customs, Superstition observed, attitude towards child, relationship with opposite sex, attitude towards marriage etc.

2. These were then given to 50 experts (10 Psychologists, 10 Sociologists, 10 anthropologists, 10 Laymen, 10 School teachers).
3. They were given the following instructions “I am giving you a large number of statements relating to child rearing practices. I shall be grateful, if you could place each Statement on a Scale of “1-5”. In which I refer to “not at all indicative” of the CRP and 5 indicating “very highly indicative” of CRP, with 2,3,4 in between.

4. The responses received from all the 50 experts were taken and each statement was evaluated in terms of the following criteria for inclusion in the final Questionnaire.

   a) The same statement should not have been assigned 1 and 5 marks by two Persons: Where this existed, the statement was rejected.

   b) Statements which were by and large offered with two point difference in all the cases were taken up.

   c) The median of each of the statement was calculated so as to be sure of getting the statements which were relevant to the CRP.

   d) Statements which were not clear or ambiguous were omitted.

   Thus 73 statements were selected for the final questionnaire.

**Administration**

The CRP of 73 items were given to all the children of a particular school at the same time and were given the following instruction. “I have given you a questionnaire which consists of 73 items. I want you to answer each of them by tick marking the answer that is applicable to you. Answer all the question. Don’t leave any unanswered. If you want to have any clarification just let me know. The same will be clarified. After you complete the questionnaire, hand it over to me. Please remember that there is no “right” or “wrong” answer, given truthfully the answer, which is most applicable to you”. After the students completed the questionnaire, the same was collected from them. Then they were given the IPIP questionnaire and MAP questionnaire to fill in. The instructions given in the manual were read out to them.

**Instruction to Students**

The following instructions were given to the students while administering the CRP test.

“On the following pages, there are phrases describing people's behaviors. Please use the rating scale below to describe how accurately each statement describes
you. Describe yourself as you generally are now, not as you wish to be in the future. Describe yourself as you honestly see yourself, in relation to other people you know of the same sex as you are, and roughly your age, so that you can describe yourself in an honest manner, your responses will be kept in absolute confidence. Please read each statement carefully, and then fill in the bubble that corresponds to the number on the scale.”

Response Options

1: Very Rigid
2: Quiet Rigid
3: Average
4: Not Particular
5: Not at all Particular

Scoring for the responses obtained by the CRP Scale

The scoring of CRP scales is as follows:

A. For Positive keyed items, the response "Not at all particular" is assigned a value of 1, "Not particular" a value of 2, "Average" a value of 3, “Quiet Rigid” a value of 4, and "Rigid" a value of 5.

B. For Negative keyed items, the response "Not at all particular" is assigned a value of 5, "Not particular" a value of 4, "Average" a value of 3, “Quiet Rigid" a value of 2, and "Rigid" a value of 1.

C. Once numbers are assigned for all of the items in the scale, the response have to be summed up for all the values so as to obtain the total scale score. Scoring was done as per the manual.

Then the CRP was administered and the instructions given were as follows “I have given you a questionnaire which consists of 73 items. I want you to answer each of them by tick marking the answer that is applicable to you. Answer all the question. Don’t leave any unanswered. If you want to have any clarification just let me know. The same will be clarified. After you complete the questionnaire, hand it over to me. Please remember that there is no “right” or “wrong” answer, given truthfully the
answer, which is most applicable to you”. All the questionnaire were collected and taken up for the scoring etc process.

**Pilot Study**

A pilot study was conducted on a population of 50 students from class X1 from a totally different school in order to find out if the statements were clear to them and if they were able to answer. These 50 students also rated the items on 1-5 point scale. Where the questions were not clear and/or needed modifications, the same was carried out. Thus for final data collection on CRP, there were 73 Questions. (The questionnaire attached in Appendix A)

These students were also administered IPIP and the MAP tests and these two tests were found to be easily understood and responded to by the students and thus were retained as they were. (IPIP and MAP scales are reproduced in Appendix B)

**Reliability of CRP**

To work out the reliability of the CRP questionnaire another set of 50 students matched with the above 50 students were taken from a different school and administered the 73 Questions of CRP and asked them to rate each statement on a “1-5” point scale.

The responses obtained from these 50 students were correlated with those of the other 50 students. The correlation obtained was r=.73. Thus the reliability of the questionnaire was established by Test Retest method with matching sample of class XI children studying in a comparable school in all aspects.

**International Personality Item Pool (IPIP) Five Factor Personality Inventory**

IPIP is a Five Factor inventory model used as a basis for the 5-Factor IPIP Personality Test. IPIP refers to a large pool of questions that have been tested extensively and have been widely used in order to measure the five factors. The company which presents this IPIP Test tested similar items through an extensive survey of more than 120 questions, eventually whittling it down to just 60 questions one finds on the test, which have been used by the researcher. The reason for using this is that IPIP is a highly advanced measure of Individual differences.
The Five Factor Model is the most researched model of personality. There is a consensus among personality theorists that this model is the best current description of the structure of personality. The dimensions of this model, which describe five major domains or traits, identify the most important ways in which individuals differ across an infinite possibility of difference. This model is also referred to as OCEAN, which represents Openness, Conscientiousness, Extraversion, Agreeableness, and Negative emotionality.

The development of this personality model has evolved over the last 70 years with numerous contributors. A few of them will be mentioned but there are many others who played an important role. In 1934, Lewis L. Thurstone came up with five individual common factors from sixty adjectives describing personality. It was later said that he never followed up on his findings. A second theorist named Raymond Cattell in 1943 discovered sixteen primary factors and eight secondary traits. Donald Fiske in 1949 modified Cattell's work to form a five-factor solution. Other contributors after Cattell's work include E.C. Tupes in 1961, E.F. Borgotta in 1964, and Warren Norman in 1967.

The big breakthrough happened in the '80s by Professor Lewis R. Goldberg. At the Western Psychological Association meeting he announced that five factors of personality were stable across studies. This theory has become to be known as the "Big Five." He presented this new message to Paul T. Costa and R.R. McCrea and they launched the first Five Factor inventory in 1985. It was noted that they changed the name of three of the factors from what Goldberg had presented. This model is not only useful for an individual's curiosity about their own personality but can be applied in a clinical setting.

The 5 dimensions are briefly described below:

1st dimension: Openness to Experience

The level of openness is determined by six traits: how imaginative you are, how much you appreciate art and aesthetics, how in touch you are with your emotions, how much you like new experiences, how broad your interests are, and how mutable your values are.
2nd Dimension: Conscientiousness
Conscientiousness is a word that describes a conglomeration of several traits, including your level of confidence, how orderly you are, the extent to which you are dependable, how driven you are to be successful, how much self discipline you have, and whether you think through things before you act. Overall, it is, essentially, accountability.

3rd Dimension: Extraversion
Picture the most social person you've ever met — most likely on the lookout for leadership positions, involved in everything, and a friend to everyone. You know the type: The Big Man — or Woman — On Campus. We all share this outgoing nature or extraversion to a greater or lesser extent. The opposite of extraversion is introversion, which is associated with more quiet introspection and more alone time. People who are introverted tend to focus more on depth rather than breadth, which is opposite of an extravert. For example, you'd rather know a few things inside and out rather than be the proverbial Jack of all trades and master of none.

4th Dimension: Agreeableness
This factor generally refers to how positively you view other people and what kind of an effect you have on others. For instance, being guarded and suspicious has a less "agreeable" effect than being open and trusting does. Being compliant and gentle is more agreeable than being stubborn and harsh. Of course, there is a time and a place for being stubborn and harsh; this factor captures whether you generally lean more toward or away from being "agreeable."

5th Dimension: Negative Emotionality
Negative emotionality represents the extent to which you react to negative stimuli. In other words, when something negative hits you, how do you respond? Does it ruin your day or does it barely register? Most people fall between these two extremes.

Administration
The IPIP of 60 items were given to all the children of a particular school at the same time and were given the following instruction. “I have given you a questionnaire which
consists of 60 items. I want you to answer each of them by tick marking the answer that is applicable to you. Answer all the question. Don’t leave any unanswered. If you want to have any clarification just let me know. The same will be clarified. After you complete the questionnaire, hand it over to me. Please remember that there is no “right” or “wrong” answer, given truthfully the answer, which is most applicable to you”. After the students completed the questionnaire, the same was collected from them.

**Instruction to Students**
The following instructions were given to the students while administering the IPIP test.

“On the following pages, there are phrases describing people's behaviors. Please use the rating scale below to describe how accurately each statement describes you. Describe yourself as you generally are now, not as you wish to be in the future. Describe yourself as you honestly see yourself, in relation to other people you know of the same sex as you are, and roughly your same age. So that you can describe yourself in an honest manner, your responses will be kept in absolute confidence. Please read each statement carefully, and then fill in the bubble that corresponds to the number on the scale.”

**Response Options**

1: Very True
2: Some What True
3: Neither True or Untrue
4: Somewhat Untrue
5: Very Untrue

**Scoring for the responses obtained by the IPIP Scale**

The scoring of IPIP scales is as follows:-

A. For Positive keyed items, the response "Very Untrue" is assigned a value of 1, "Somewhat untrue" a value of 2, "Neither True nor Untrue" 3, “Somewhat True" a 4, and "Very True" a value of 5.
B. For Negative keyed items, the response "Very untrue" is assigned a value of 5, "Somewhat untrue" a value of 4, "Neither true nor Untrue" a 3, "Somewhat True" a 2, and "Very True" a value of 1.

C. Once numbers are assigned for all of the items in the scale, the response have to be summed up for all the values so as to obtain the total scale score. Scoring was done as per the manual.

**Reliability**

Test-retest & Split-half Reliability Coefficients were calculated and these were r=.74 to r=.88 for the Five dimensions. Thus the reliability of the questionnaire was established by Test Retest Method using Spearman Brown formula. The next test for description in the MAP test by Psy-com.

**Multi-Dimensional Assessment of Personality (MAP)**

For assessing the Personality traits of children, multiple test of Personality of Psy-Com was used. The MAP identifies twenty personality traits in the students. This was specially meant for Teens. These traits are described below.

**Academic Achievement**

This is a dimension consisting of two aspects: “learning skills” and “inclination to climb”. It reflects the amount of academic acumen the student has and the degree to which he is currently interested and concerned with academics.

**Boldness**

Boldness refers to individuals who are typically adventurous, bold and energetic with good insight. They enjoy being the focus of attention in a group situation and face no problems in groups or in crowd and do not show any stage fright.
**Competition**
This dimension refers to the student who is self assertive, dominant and aggressive. Such youngsters describe themselves as forceful and are generally very direct in their relations with other people.

**Creativity**
This dimension refers to critical thinking. Students with high scores are independent, undemonstrative and high on scholastic and mental abilities. They are also sensitive to scientific reasoning and experimental thinking. Low scorers on the other hand are dull, emotionally less stable, impatient and threat sensitive.

**Enthusiasm**
High scoring teenagers on this dimension are generally happy go lucky, lively and enthusiastic. The low scorers on this dimension are prudent, serious and sober.

**Excitability**
This dimension is a combination of immediate temperamental quality, mind-wondering, distractibility, insecurity and irrepressible impulsiveness. Students with high scores indicate that they are restless and get distracted fast. Students with low scores are complacent, not easily jealous and unemotional in nature.

**General Ability**
High Scores on this dimension have a greater mental capacity to learn. They are insightful, fast learning and intellectually adaptable. Low scorers on the other hand have poor mental capacity to learn and are unable to handle abstract problems.

**Guilt-proneness**
The high Guilt-proneness students feel over fatigued by exciting situation, feel unable to cope up with difficult situations and are remorseful.
**Individualism**

The high individualism prefers to do things on his own, is physically and intellectually obstructive, and thinks over his mistakes repeatedly and how to avoid them. Low scorers on the other hand are zestful and involved in group action.

**Leadership:**

A person who scores high on leadership has the ability to direct and control the attitude or actions of others. High scoring teenagers on this dimension are confident, controlled and has strong will power. They are also adventurous and responsive to people.

**Maturity**

This dimension is first of those involved in the anxiety pattern. The higher score in dimension suggests more resources the individual has available to meet the challenges of the day. Student with low maturity gets easily annoyed by things and people and is dissatisfied with the world situation.

**Mental Health**

High scoring individuals on this dimension are in relatively enduring state in which they are well adjusted, have a zest of living and are attaining self-actualization.

**Morality**

Teenagers who score high on this dimension tend to be more persistent, more respectful of authority and more conforming to the standard of groups.

**Self-control**

This dimension may be treated as ability to bind anxiety. High scoring teenagers generally have strong self-control over emotional life and behaviour in general.
Sensitivity
Descriptions associated with high scores on this dimension include tender minded, dependent, overprotected, fidgety, clinging and insecure. Low scorer on the other hand represents tough, practical, mature and realistic temperament.

Self-sufficiency
High scoring individuals on this dimension prefer to be alone. They do not need the support of groups. In group dynamics they are dissatisfied. The low scorers may be described as group dependent individual who strongly values social approval and is fashionable.

Social Warmth
High social warmth scorers are usually found to be warm hearted, personable, and easy to get along. Low scorers are uncompromising, prefer things to people and like to work alone.

Tension
High tension scorers are irritated by small things, are short tempered and may suffer from sleep disturbances.

Reliability
The reliabilities of the MAP (for Teens) were calculated as split-half reliability and test-retest reliability coefficients with one week interval. The reliability was computed over 800 teenagers using Spearman- Brown formula. The scale was divided into two parts using odd-even method and care was taken to ensure that each half contained more or less the same number of questions.

The test-retest reliability was also calculated for the present scale by calculating the correlation of coefficient between the two sets of scores of the same individual on the same scale, with one week time interval. The sample size for test-retest reliability was approximately 600 subjects. Test-retest & Split-half Reliability Coefficients were calculated and these were r=.64 to .76 for the twenty dimensions.
Validity

In the MAP series, the functional unities are identified by analyzing the intercorrelations among a number of separate, relatively restricted measures, which identify the common factors for the obtained coefficients. Factorial Validity here, is therefore, determined by the weights (called, “loadings”) contributed to the total test scores by each of derived scores. The Validity Coefficient was calculated and these were $r=0.77$ to $0.85$ for the twenty dimensions.

Standardization

The MAP form T has only 147 items, which cover twenty normal personality dimensions. The detailed description with the psychological meaning of these dimensions has already been discussed earlier. The test has been selected from a total pool of more than 2000 items that has been tested and refined in programmatic studies on personality structure. Each of the item in the questionnaire has three choices from which the subject may select one answer. Generally the last response (c) is an “uncertain”, or “somewhat”, or “undecided” type of category. The instructions specifically urge the subject not to use this category very frequently, and keep it as a last resort when both (A) and (B) are not suitable. All of the items were carefully screened and several criteria were considered in the final item selection.

The standardization of MAP Form T is based on more than 3000 protocols tested at more than 15 locations throughout the country. Various research scholars, assistants and psychologists participated in this standardization. The sample included School children, college students, normal adults and occupational group from various industries.

Administration

The MAP of 147 items were given to all the children of a particular school at the same time and were given the following instruction. “I have given you a questionnaire which consists of 147 items. I want you to answer each of them by tick marking the answer that is applicable to you. Answer all the question. Don’t leave any unanswered. If you want to have any clarification just let me know. The same will be clarified. After you complete the questionnaire, hand it over to me. Please remember that there is no “right”
or “wrong” answer, given truthfully the answer, which is most applicable to you”. After the students completed the questionnaire, the same was collected from them.

**Scoring**

The scoring procedure in MAP-t is objective and simple. Transparent stencil scoring key is available for this purpose. Following are the steps taken:-

1. Before starting the scoring procedure, examiner should ensure that the subject has answered all the questions in the booklet. If more than 15 questions are skipped, the test is invalid and should not be scored. This should however be checked and corrected during administration of test.

2. To ensure that each question has only and only one answer.

3. To place the key over the answer sheet. Be sure that the mark (*) on top of the answer sheet shows through the check circle of this key.

4. Please note that each answer scores either 2 or 1 as indicated by the numbers printed above the boxes, only exception being the ‘Ga’ dimension where the answers are scored either 2 or 0.

5. Add the scores vertically for each dimension and write down at the bottom of the answer sheet in the space provided for that dimension.

6. Each item in this test measures some dimension as indicated in the key.

7. For dimension “VI”, add the scores seen in the shaded boxes at the bottom of the scoring key and note it down in the right hand corner of the answer sheet.

8. Now, convert these raw scores to sten scores by the procedure mentioned later in the norm tables.

9. Plot the scores on the profile sheet provided with the test material.

**Norms**

In many research applications, the examiner will have no need to convert the raw scores obtained to sten scores. However, commonly the test users would like to know where the individual stands in terms of the population. For this purpose the raw scores are converted into sten scores. The term ‘sten’ comes from “standard ten”. The sten
score is distributed over ten equal intervals of standard score points, from 1 to 10. The sten of 4-7 indicates average score, sten 8-10 indicates high and extremely high score and sten of 1-3 indicates low and extremely low scores.

**Statistical Analysis:**
Frequency distribution, percentiles, pattern analysis & comparisons, chi-square analysis, correlational analyses were all carried out to empirically test the hypotheses formulated for this research.

**Analysis**
The pattern analysis has been carried out on CRP in the toll manner.

1. CRP across the students of school of 2 states.
2. CRP across the schools within a state.
3. CRP across the school male-female

The next chapter deals with the results of the analysis of the data.