CHAPTER - III
METHOD
AND
PROCEDURE
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The conceptual frame work along with the problem was discussed in the first chapter. The review of the related literature was also discussed in the second chapter. The purpose of the present chapter is to provide an overview of the design of the study. Research design is a description of the procedures to be followed:

Tuckman states that "A research design is a specification of operations for testing of a hypothesis under a given set of conditions."

As a matter of fact, one design can not solve all the problems. The nature of the problem determines which design is most appropriate and how the design should be tailored to meet the needs of investigation. As such, it specifies the methods and procedures to be followed, the selection of sample subjects, the measurement to be obtained and to find out the answers to the research questions to be investigated. It is a crucial step in the thesis because if a wrong decision is made, the whole study may be criticised on the grounds of inappropriate design or even worse as being unscientific or illogical.

In developing a research design, the researcher has to be guided by several factors such as objectives of the study, the hypotheses to be tested and the potentialities of the researcher. The description of the research design used in the present study is made in following heads:

1. Research Methodology
2. The population
3. The sampling technique, size and structure of the sample.
4. The variables involved
5. Tools used
   (i) Family Climate Scale
   (ii) 16PF - Personality Factors
   (iii) Personal value Questionnaire
   (iv) Academic Achievement
6. Procedure of Data Collection
7. Statistical Techniques

1. **Research Methodology:**

   It may be recalled that the study was initiated with the aim to find out the influence of family climate on personality traits, values and academic achievement. To find out the influence of these factors on personality, values and achievement, causal comparative method was preferred over other research methods such as normative survey, historical and experimental. The normative survey method is generally used for ascertaining trends and characteristics of a population, phenomenon and the like. The present study seemed to be more feasible through the use of causal comparative method of research. It was for this reason that this method was preferred over normative survey method.

   Adoption of historical method of research also did not seem appropriate for this study. It will be agreed that historical method of research is better suited in analyzing a phenomenon, event or condition in the context of forces operated in the past. For this purpose, it makes use of the external and internal evidences as well as of the primary and secondary sources of data. Needless to say, the present study did not aim at making a historical study of the factors which influence personality, values and achievement
during ancient, medieval and modern period. The present study, instead of
going into these historical details focussed its attention on the present day
factors i.e. family climate influencing on personality traits, values and
academic achievement.

Therefore, causal comparative method of research was adopted for
achieving the objectives of the study. It seems desirable to explain at this
stage the reason for not applying the experimental method of research. It
will be agreed that the experimental method is applied for studying the
influence of an independent variable on the dependent variable under
controlled conditions. The present study is aiming at the influence of family
climate on personality traits, values and academic achievement of
Intermediate students. Hence, this causal comparative method of research
is more fruitful than the above three methods.

2. Population:

The total Intermediate Institutions or Colleges of Bagpat and Meerut
Districts affiliated by the U.P. Board, Allahabad form the universe or the
population for the study in hand. The unit of this study was the Intermediate
College.

There are two approaches of studying a universe or the population.
The first is through parameter, which is often not possible to estimate the
characteristics of the population. The basis of a second method is a sample
which in turn gives the highly reliable and valid results. Accuracy of the
results is based on the true, representative and adequate sample. To meet
this technique or approach, a process called sampling is adopted.
3. **Sampling Technique:**

Sampling is the process by which relatively small number of individuals or measures of individuals, objects or events is selected and analysed in order to find out something about the population from which it was selected. It is often desirable in order to reduce expenditure, save time and energy, permit measurement of greater scope or produce greater precision and accuracy.

Miller has pointed out that the essential requirement of any sample is that it is representative as possible of the population or the universe from which it has been drawn. The generalizations of the findings very much depends on the representativeness of the sample. Hence, a representative sample has to be drawn. Though the actual unit of the sample is the secondary (+2 level) students, yet as the sampling of individual student as a unit was highly impossible, inconvenient and cumbersome, cluster method of sampling was used in which the intact groups of students available in the form of the schools were selected. The unit of this sample was the Intermediate schools and these units had been selected on the basis of Randomization and all the present student of class XII had been taken for the purpose of the sample. Hence in this way sample was called Randomly selected clusters.

4. **Size and Structure of the Sample:**

The first step in drawing the sample was to get a list of Intermediate Colleges from the offices of the District Inspector of Schools of Baghpat and Meerut District.

It was decided to take about ten colleges from these colleges through
the Lottery System. In this way the random cluster sampling technique was used to draw the most representative sample.

Out of these colleges only two colleges could not be reached for data collection due to the inability shown by their Principals because of certain reasons. Hence, ultimately the sample on which the study was conducted, included only eight colleges or Institutions.

Table No. 1

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Sex</th>
<th>Locality</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Rural</td>
<td>Urban</td>
</tr>
<tr>
<td>1.</td>
<td>Male</td>
<td>150</td>
<td>150</td>
</tr>
<tr>
<td>2.</td>
<td>Female</td>
<td>150</td>
<td>150</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>300</td>
<td>300</td>
</tr>
</tbody>
</table>

5. Variables of the Study:

The present study involves mainly two type of variables, namely:

A. Independent Variable.

B. Dependent Variable.

A. **Independent Variable:** According to Tuckman, "The independent variable is that factor which is measured, manipulated or selected by the researcher to determine the relationship to an observed phenomenon."

Thus, in the present study the Influence of Family Climate is the independent variable.

B. **Dependent Variable:** Again, according to Tuckman the dependent variable is defined as "The dependent variable is that factor which is
observed and measured to determine the effect of the independent variable”. In the present study, the dependent variables are personality traits, values and the academic achievement of the students of Intermediate colleges.

6. Tools used in the Study:

In selecting the tools for the measurement of the variables of the study, the main considerations were their high validity and reliability.

Application of the above selection criteria led to the selection of the reliable and valid tests mentioned as follows:-

<table>
<thead>
<tr>
<th>Test</th>
<th>Variable Concern</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Family Climate Scale (FCS) by Dr. Beena Shah</td>
<td>Family Climate</td>
</tr>
<tr>
<td>2. Catell’s 16 Personality Factor Test (16PF) Hindi Version by S.D. Kapoor</td>
<td>Personality Traits</td>
</tr>
<tr>
<td>3. Personality Values Questionnaire (PVQ) by G.P. Sherry &amp; R.P. Verma</td>
<td>Values</td>
</tr>
<tr>
<td>4. Academic Achievement</td>
<td>Academic Achievement</td>
</tr>
<tr>
<td>Final marks of class XII students of U.P. Board</td>
<td></td>
</tr>
</tbody>
</table>

7. Description of the Tools used:

The above tools, selected for the data collection were described in the nut shell as below :-

(i) Family Climate Scale (FCS)

Family plays a very significant role in the all round development of a child. Parent-child interaction and parents way to deal with their children,
develop certain attitudes among the children towards their home environment.

The word 'climate' is a more comprehensive one. It includes within itself the word 'environment'. The human elements around the child is called 'environment'. It embraces the social, physical and emotional activities of the family. All these combined together constitute the 'family climate'.

In this test, family climate means an interpersonal relationship between the parents and the child. It includes parents' attitude towards the child as perceived by him in the 10 dimensions of FCS.

### Distribution of items over 10 dimensions of FCS

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Dimensions</th>
<th>Item Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>A.</td>
<td>Restrictiveness Vs Freedom</td>
<td>4, 47, 48, 50, 56, 60, 68, 79, 89</td>
</tr>
<tr>
<td>B.</td>
<td>Indulgence Vs Avoidance</td>
<td>1, 16, 19, 25, 26, 54, 65, 78, 81</td>
</tr>
<tr>
<td>C.</td>
<td>Partiality Vs Fairness</td>
<td>2, 23, 28, 30, 38, 45, 62, 84, 85</td>
</tr>
<tr>
<td>D.</td>
<td>Attention Vs Negligence</td>
<td>3, 5, 7, 8, 49, 55, 67, 69, 75</td>
</tr>
<tr>
<td>E.</td>
<td>Acceptance Vs Rejection</td>
<td>6, 10, 13, 14, 40, 52, 59, 61, 71</td>
</tr>
<tr>
<td>F.</td>
<td>Warmth Vs Cold Relations</td>
<td>9, 18, 32, 34, 42, 53, 58, 64, 73, 80</td>
</tr>
<tr>
<td>G.</td>
<td>Trust Vs Distrust</td>
<td>11, 15, 17, 21, 27, 66, 76, 77, 82</td>
</tr>
<tr>
<td>H.</td>
<td>Dominance Vs Submissiveness</td>
<td>20, 29, 36, 51, 57, 72, 83, 86, 90</td>
</tr>
<tr>
<td>I.</td>
<td>Expectation Vs Hopelessness</td>
<td>22, 33, 35, 41, 43, 46, 70, 87, 88</td>
</tr>
<tr>
<td>J.</td>
<td>Open Communication Vs Controlled Communication</td>
<td>12, 24, 31, 37, 39, 44, 63, 74</td>
</tr>
</tbody>
</table>

### Reliability and Validity of Scale

The test-retest method was adopted to find out the reliability coefficients of the family climate scale (FCS). The values of reliability
coefficients for each dimension is given below.

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Dimensions</th>
<th>Coefficient of reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Freedom Vs Restrictiveness</td>
<td>.75</td>
</tr>
<tr>
<td>2.</td>
<td>Attention Vs Negligence</td>
<td>.72</td>
</tr>
<tr>
<td>3.</td>
<td>Dominance Vs Submission</td>
<td>.83</td>
</tr>
<tr>
<td>4.</td>
<td>Acceptance Vs Rejection</td>
<td>.76</td>
</tr>
<tr>
<td>5.</td>
<td>Trust Vs Distrust</td>
<td>.79</td>
</tr>
<tr>
<td>6.</td>
<td>Indulgence Vs Avoidance</td>
<td>.69</td>
</tr>
<tr>
<td>7.</td>
<td>Warmth Vs Coldness</td>
<td>.79</td>
</tr>
<tr>
<td>8.</td>
<td>Expectation Vs Hopelessness</td>
<td>.71</td>
</tr>
<tr>
<td>9.</td>
<td>Partiality Vs Fairness</td>
<td>.76</td>
</tr>
<tr>
<td>10.</td>
<td>Open Communication Vs Controlled</td>
<td>.81</td>
</tr>
</tbody>
</table>

All the values of reliability coefficient are highly significant (P < .001). The FCS thus is a reliable instrument.

Validity of the FCS was tested against the judgement of 20 judges. The selection of items on the opinions of the experts as well as the highly significant discriminative indices of all the items retained in the final format of FCS, confirm the item validity of the scale. The interdimensional coefficients of correlation as given in test manual also support the high validity of the FCS.

**Applicability and Administration of FCS**

This FCS can be used with the Hindi speaking students of both the sexes of Secondary and High Schools of our country belonging to rural or
urban areas. It can be administered either individually or in group. Some statements related to personal data and instructions are printed on the cover page of the Test Booklet. There is no time limit but usually it takes 35-40 minutes.

**Scoring**

This is a three point scale marking for negative statements- 0, 1 & 2 for 'always', 'sometimes' and 'never', respectively whereas it is 2, 1, 0 for positive statements. The 'Positive Total Score' speaks of the 'Favourable Family Climate' whereas 'Negative Total Score' indicates 'Unfavourable Family Climate' of the child.

(ii) **Personality Factor Test (16 PF)**

The Sixteen Personality Factors Questionnaire (16 PF) is an objectively scorable test devised by basic research in psychology to give the most complete coverage of personality possible in a brief time.

The personality factors measured by the 16 PF are not just unique to the test but instead rest within the context of a general theory of personality.

For convenience, these dimensions are set out briefly below. Each factor is listed with its alphabetic designation and brief descriptions of low and high scores. A more detailed description of each scale is given in Section 6 of Test Manual.

These sixteen dimensions or scales are essentially independent. Any item in the test contributes to the score on one and only one factor. Moreover, the experimentally obtained correlations among the sixteen scales are generally quite small so that each scale provides some new piece of information about the person being tested.
The Primary Source Traits Covered By The 16 PF Test

<table>
<thead>
<tr>
<th>Factor</th>
<th>Low Sten Score Description (1-3)</th>
<th>High Sten Score Description (8-10)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Reserved, detached, critical, aloof stiff Sizothymia</td>
<td>Outgoing, warmhearted, easygoing, participating Affectiothymia</td>
<td></td>
</tr>
<tr>
<td>B Dull Low intelligence</td>
<td>Bright High Intelligence</td>
<td></td>
</tr>
<tr>
<td>C Affected by feelings, emotionally less stable, easily upset, changeable Lower ego strength</td>
<td>Emotionally stable, mature, faces, reality, calm Higher ego strength</td>
<td></td>
</tr>
<tr>
<td>E Humble, mild, easily led, docile, Accommodating Submissiveness</td>
<td>Assertive, aggressive, competitive, stubborn Dominance</td>
<td></td>
</tr>
<tr>
<td>F Sober, taciturn, serious Desurgery</td>
<td>Happy-go-lucky, enthusiastic Surgency</td>
<td></td>
</tr>
<tr>
<td>G Expedient, disregards rules Weaker superego strength</td>
<td>Conscientious, persistent, moralistic, staid Stronger superego strength</td>
<td></td>
</tr>
<tr>
<td>H Shy, timid, thread-sensitive Threctia</td>
<td>Venturesome, uninhibited, socially bold Parmia</td>
<td></td>
</tr>
<tr>
<td>I Tough-minded, self-reliant, realistic Harria</td>
<td>Tender-minded, sensitive, clinging, overprotected Premsia</td>
<td></td>
</tr>
<tr>
<td>L Trusting, accepting conditions Alaxia</td>
<td>Suspicious, hard to fool Protension</td>
<td></td>
</tr>
<tr>
<td>M Practical, &quot;down-to-earth&quot; concerns Praxernia</td>
<td>Imaginative, bohemian, absent-minded Autia</td>
<td></td>
</tr>
<tr>
<td>N Forthright, unpretentious, genuine but socially clumsy Artlessness</td>
<td>Astute, polished, socially aware Shrewdness</td>
<td></td>
</tr>
<tr>
<td>O Self-assured, placid, secure, complacence, serene Untroubled adequacy</td>
<td>Apprehensive, self-reproaching, insecure, worrying, troubled Guilt proneness</td>
<td></td>
</tr>
<tr>
<td>Q&lt;sub&gt;1&lt;/sub&gt; Conservative, respecting traditional ideas Conservatism of temperament</td>
<td>Experimenting, liberal, free-thinking Radicalism</td>
<td></td>
</tr>
<tr>
<td>Q&lt;sub&gt;2&lt;/sub&gt; Group dependent, a &quot;joiner&quot; and sound follower Group adherence</td>
<td>Self-sufficient, resourceful, prefers own decisions Self-sufficiency</td>
<td></td>
</tr>
<tr>
<td>Q&lt;sub&gt;3&lt;/sub&gt; Undisciplined self-conflict, lax, follows own urges, careless of social rules Low self-sentiment integration</td>
<td>Controlled, exacting will power, socially precise, compulsive, following self-image High strength of self-sentiment</td>
<td></td>
</tr>
<tr>
<td>Q&lt;sub&gt;4&lt;/sub&gt; Relaxed, tranquil, torpid, unfrustrated, composed Low ergic tension</td>
<td>Tense, frustrated, driven, overwrought High ergic tension</td>
<td></td>
</tr>
</tbody>
</table>

*Titles in roman type are the technical names for the factors and are explained more fully in the Handbook.
Reliability and Validity

16-PF is a well known and widely used test having high reliability and validity.

Scoring of 16-PF Personality Test

Each answer scores 0, 1 or 2 points, except the factor B (intelligence) answers which 0 (incorrect) or 1 (correct). The score of each item contributes to only one factor and total test can be either hand scored with a stencil key or machine scored.

Hand scoring is accomplished by key easily, rapidly and in a standard manner. The answer appears as pencil marks in the boxes on the given answer sheets. Two cardboard stencil scoring key are used; one covers Factor (Traits) A, C, F, H, L, N, O and Q_3 and the other factors B, E, G, I, M, Q_1, Q_2 and Q_4. Simply fit stencil 1 cover the answer sheet and count the marks visible through the holes for factor 'A', allowing either 2 or 1, as indicated by the number printed adjacent to the hole. Sum up these scores and enter the total in the space indicated by the arrow on the stencil for Factor A (raw scores) but note the Factor B (intelligence) is peculiar in that each correct mark visible in a hole gives a scores of 1 only.

Before using the scoring stencil, the researcher has taken a quick look at each answer sheet to make sure that there are no odd, unscorable responses, e.g. marking two out of three alternatives, or entirely omitting any response to an item. If such misunderstanding of instructions has occured, the examinee must go back and do the affected items correctly.

(iii) Personal Values Questionnaire (PVQ)

In view of the different types of tools for measuring the values in India
and abroad it was very difficult to select one or the other test to use for the present study. Therefore, after a thorough deliberation and consultation about the problem and objective of the study as well as suitability of the available tests, the investigator finally decided to use personal values questionnaire (PVQ) by Dr. G.P. Sherry and Dr. R.P. Verma in the present study.

Ten values measured by PVQ are given in the table as follows—

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Name of Values</th>
<th>Symbol</th>
<th>S.No.</th>
<th>Name of Values</th>
<th>Symbol</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Religious Value</td>
<td>$V_1$</td>
<td>6.</td>
<td>Knowledge Value</td>
<td>$V_6$</td>
</tr>
<tr>
<td>2.</td>
<td>Social Value</td>
<td>$V_2$</td>
<td>7.</td>
<td>Hedonistic Value</td>
<td>$V_7$</td>
</tr>
<tr>
<td>3.</td>
<td>Democratic Value</td>
<td>$V_3$</td>
<td>8.</td>
<td>Power Value</td>
<td>$V_8$</td>
</tr>
<tr>
<td>5.</td>
<td>Economic Value</td>
<td>$V_5$</td>
<td>10.</td>
<td>Health Value</td>
<td>$V_{10}$</td>
</tr>
</tbody>
</table>

Reliability and Validity

Personal values questionnaire is a fairly valid and reliable tool.

Administration of the PVQ

PVQ may be administered individually as well as in a group. It should be filled out under the standard instructions. First the respondents should fill up the personal data blank printed on the front page. But they should be clearly instructed not to fill up the cage which is meant for the investigator. When all the respondents have filled up the blank they should be asked to turn over the page. The investigator should read out the instructions printed on Page 1 of the PVQ loudly and clearly. The respondents should follow him carefully. He should explain the mode of filling out the PVQ very carefully, preferably with the help of a black board if one is available there. When he
is sure that they have understood the mode of recording their responses, he should permit them to turn over the page, and ask them to record there responses. He should invigilate the respondents while they are filling up the PVQ lest they should consult one another.

There is no time limit for filling out the questionnaire. Therefore a respondent should be permitted to return it when he has completed it. Time permitting the investigator should summarily see if all the questions have been answered by the respondent. The administration of the PVQ should end with a thank by the investigator.

**Scoring of the PVQ**

The responses are to be scored as follows:

1. 2 for a check mark (✓) showing the most preferred value under the stem.
2. 0 for a cross (✗) showing the least preferred value under the stem.
3. 1 for the blank ( ) or unmarked item showing the intermediate preference for the value.

Sometimes the respondents leave some questions unanswered. If the number of such questions is four or less, each item of the unanswered question should be scored as one. If their number is more than 4 the questionnaire should be rejected.

In all the cases the scores should be recorded beside the corresponding bracket and the total for each value (क to ट) should be written in the cage given at the foot of the page. The correctness of scoring and recording of the totals for all the values is checked by summing the total for all of them on each page separately. If the grand total is 24 the scoring may
be correct, provided that compensating errors have not been committed.

Finally the entries in the cage at the foot of each page should be brought to the bigger cage on the front page of the PVQ. The total of each column should be noted down in the bottom row. These totals denote the scores of the respondent on the corresponding value given at the top of the column in this questionnaire.

6. Procedure of Data Collection:

After choosing the sample of the institutions, the investigator contacted the principals. He explained the purpose and significance of the study. Fortunately, most of them were kind enough to permit him to collect the data. After seeking their permission he established a personal rapport with the subjects of study through their class-teachers. This helped the investigator in getting their willing cooperation during administration of the tests on their students. Schools' offices were also contacted to note the academic achievement (percentage) of the students to whom tests were administered.

To administer the family climate scale, personal value questionnaire and the sixteen personality factor questionnaire (16PF) on the students of 12th class, in selected sample institutions and their sections a date wise and class teaching period wise a test schedule was developed in consultation with the class teachers of institutions. The date and timings of the tests were notified to the students.

The aforementioned tools were administered on the sample as per test schedule. Instructions were read a loud by the investigator exactly in the manner described in the test booklets. Whenever students failed to
understand any instruction, the investigator explained the same so that they could respond to the item of scale and questionnaire.

Needless to say, before reading the instructions each 12th grader of sample was supplied a copy of scale and questionnaire. They were asked to fill in all the information required on the spaces and sheets provided for response in scale. The investigator took all necessary precautions so that the students completed the test carefully and returned the same after its completion.

Scoring was done with the help of keys as per the direction given in the manuals. All the scores obtained after scoring on Family Climate, Personality Traits, Values and Academic scores were processed for statistical analysis.

7. Statistical Techniques:

The Regression analysis, factor analysis and t-test are so complex that it was very difficult and time consuming to analyse by hand. So the help of computer was taken. The computer made these technique accessible and practical. After making all the necessary computation, the results were summarised and interpreted. These have been set forth in the tables appearing in the fourth chapter.