BASES OF THE STUDY

In the previous chapter, a survey of the literature related directly or indirectly to the study is summarized. The present chapter deals with the description of the modus operandi of conducting the study, tools and techniques adopted for the study, and the procedure of selection and nature of the sample.
This chapter has been divided into two sections: In section 'A' method and selection of the sample have been described, section 'B' deals with the tools used for the present study.

SECTION 'A'

METHOD OF RESEARCH

The descriptive survey method provides opportunities for describing, studying and interpreting what exists today, and what is concerned with social conditions, relationships, aspirations and beliefs that prevail, and the processes and trends that are developing in our society.

The present study is based on the descriptive survey method; it employs a number of tools and techniques to investigate the aspirations of adolescents as related to socio-economic status, intelligence, and sex.

POPULATION:

The population for this study includes male and female adolescents in the age group of 13 to 16 years, from the schools of Chandigarh and surrounding areas (the Union Territory). The population of such males and females is very large. It is very difficult to contact all the adolescents and collect data from them. Hence a representative sample was selected for the present work.
The sample is drawn from the various high schools of Chandigarh and surrounding areas. A list of high schools under Chandigarh Administration was obtained from The Department of Education, Chandigarh Administration. It included two categories of schools: Govt. schools and private schools recognized by the Department of Education, Chandigarh Administration. In order to get a good representative sample, grouping of the schools was done under the following headings:

1. Exclusively boys' schools.
2. Exclusively girls' schools.
3. Co-educational schools.
4. Model High Schools.
5. Private public schools
6. Rural schools

Six schools were chosen one from each group by drawing lots groupwise. All the schools having children in the age range 13-16 years were multisection schools. Such sections were chosen from each school on random sampling basis. Strength of a section varied from 40 to 55 students. At the start 1000 students were randomly chosen but at the data collection stage 250 students were dropped due to the following
reasons: absence from the class, non-return of answer sheet, and failure to complete all the tests. The 750 students were only selected for the final analysis of the data out of which 429 were boys and 321 were girls.

SECTION 'B'

TOOLS

Results of the study depend on how the various variables are measured. While selecting the tools the following points were kept in mind.

(a) A test must be in simple language and easily understandable to the concerned population.

(b) The test should have been standardized on more or less similar population.

(c) Its scoring and administration should be simple.

(d) It must have good reliability and validity.

The following tools were selected on the basis of the above given criteria.

STANDARDIZED TOOLS AND TESTS

(1) INTELLIGENCE TEST

Group Test of General Mental Ability

(Jalota, 1972).
(2) **SOCIO-ECONOMIC STATUS SCALE**

Socio-economic Status Scale
(Dev-Mohan, 1972).

(3) **ASPIRATION SCALE** (Tools Developed by the Investigator)

(a) Aspiration Scale for Educational, Personal and Social Aspirations.

(b) Occupational Aspiration Blank.

**INTELLIGENCE TEST**

To measure intelligence the 'Group Test of General Mental Ability by Jalota (1972) was used. This Test contains 100 items divided into similar, opposites, Test answers, Reasoning, Classification, Number series, and Analogies. This is a group test which can be administered in 25 minutes. The test is reported to be standardized on school going students of eighth, ninth and tenth classes belonging to far-flung areas of Panjab, Haryana, Madhya Pradesh, Uttar Pradesh and Union Territory of Chandigarh. The reliability and validity of the test are reported to be very high. Mean and S.D. score of the test for different classes are as follows:

<table>
<thead>
<tr>
<th>Class</th>
<th>Mean</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>15.08</td>
<td>3.087</td>
</tr>
<tr>
<td>IX</td>
<td>14.94</td>
<td>2.074</td>
</tr>
<tr>
<td>VIII</td>
<td>12.99</td>
<td>2.76</td>
</tr>
</tbody>
</table>

Mean of the total sample was found to be 51.2 and S.D. 16.96.
Reliability Scores of the Test

<table>
<thead>
<tr>
<th>Class</th>
<th>VIII</th>
<th>IX</th>
<th>IXa</th>
<th>IXb</th>
<th>X</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>335</td>
<td>379</td>
<td>201</td>
<td>178</td>
<td>363</td>
</tr>
<tr>
<td>Toe</td>
<td>.783</td>
<td>.873</td>
<td>.906</td>
<td>.845</td>
<td>.908</td>
</tr>
<tr>
<td>Tit</td>
<td>.879</td>
<td>.932</td>
<td>.953</td>
<td>.916</td>
<td>.979</td>
</tr>
</tbody>
</table>

Validity of the Test

The validity of the test has been reported on the basis of factor analysis of inter-element scores which gave a pattern of three centroid factors, when obliquely rotated to simple structure, these exhibited an identification of verbal numerical and reasoning factors.

Table 4.3 for 370 students of class IX

<table>
<thead>
<tr>
<th>IT</th>
<th>2V</th>
<th>3N</th>
<th>4R</th>
</tr>
</thead>
<tbody>
<tr>
<td>V</td>
<td>.9033</td>
<td>-</td>
<td>.5841</td>
</tr>
<tr>
<td>N</td>
<td>.8004</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>R</td>
<td>.8565</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

R² = .9885

Coefficient of multiple non determination = .0116

Contribution of V = 32.84% N = 23.37% R = 42.64%
The coefficient of non-determination are quite low, the contribution of specific verbal, Numerical and Reasoning components indicate a fair distribution in the data of our standard sample.

This test was preferred to other tests because this one was standardized on the population on which present study is based. Moreover, this is a group test in sample language, which can be administered upto 40 students at a time and takes about 25 minutes only for its administration.

**SOCIO-ECONOMIC STATUS SCALE**

To measure socio-economic status four popular tools were available but out of them Pareek and Trivedi's and Kuppuswamy's were quite old and did not give correct estimate of the socio-economic status of an individual under changing conditions (Verma and Khana, 1976) particularly in Punjab, which has the highest per capita income in the country. The other reasons of non-suitability were devaluation of money, general increase in education, fast changing situation of caste-system and the changing pattern of family units. Other three socio-economic status scales available were prepared by S.P. Kulshertha 1974, Dhami and Dosajh 1974 and by Dev-Mohan 1972. Among these three, Dev-Mohan's socio-economic status
scale was chosen as it is in simple language and easy to administer and scores. It was standardized on the simple population on which the present study is being done. This scale comprises of twelve items. Academic qualification, profession and monthly income of the family members, landed property, conveyance, house, material possessions, social activities, hospitality, outings, leisure time activities and hobbies etc. Scoring was done by hand according to the marks allotted for different items in the scoring key. Total scores were obtained by adding the average scores of first three questions (concerning family's academic qualification, profession and income) and individual scores of other questions. Total scores on S.E.S scale are summated scores. First three items decide about the economic status and the rest eight items measure the social status. It's reported validity is .94 and Test-retest reliability is .91.

ASPIRATION SCALE:

To measure aspirations of adolescents, an aspiration scale was constructed by the investigator himself on the basis of inferences drawn from the questionnaire used in the study by Douvan and Adelson (1966) and a study of General wishes by Cobb (1954) where he has used 24 open ended statements for knowing the aspirations of adolescents. As no other scale
for measuring the Educational, Personal and Social aspirations was available, an aspiration scale was constructed by the investigator himself.

For measuring occupational aspirations of the adolescents, occupational aspiration Blank was constructed by the investigator himself.

PLANNING THE TEST:

The construction of the aspiration scale was planned with the objective of measuring aspirations of adolescents in Indian situations. The situation and items were selected from the daily life situations. The nature of the scale was planned to be verbal and as a power test. Douvan and Adelson's study was conducted by a group of persons by interviewing the subjects and recording their answers with the help of a questionnaire. The questionnaire contains exhaustive questions on the aspirations of adolescents. The study by Cobb contains 24 open-ended statements. Subjects were supposed to write their wishes at the end of the statements.

The investigator in consultation with his supervisor decided to construct a scale on the following three areas of aspirations:
The items were collected by consulting the students, teachers, research scholars and university lecturers through personal interviews.

The scale was planned to act as self administering individual as well group test.

For knowing the occupational aspirations of the adolescents it was decided that the students should themselves write any three aspired occupations on a occupational aspiration blank provided to them by the investigator.

COLLECTION OF ITEMS:

In the collection of the items for the scale the following considerations were kept in mind.

(1) The items should measure the desired aspirations as far as possible. It should convey the desired sense.

(2) Items should be nearly equally attractive or unattractive.

(3) Every item should be relevant to the criterion situation of the item.
SELECTION OF THE ITEMS:

The investigator first collected a number of items for each aspiration and then collected the opinions of 20 adolescents regarding these items. They were asked to state what they understood by each item in as many different ways as they could. Each response was critically evaluated and probed into further. The subjects were asked to respond to every item very carefully.

The investigator then was able to keep 90 items which were put into a five-point scale form. The five-point scale on which respondents were to respond were:

- Wish (very much)
- Wish
- Wish (Sometimes)
- Indifferent
- Wish never.

These collected items were further screened and were edited on the criterion of relevancy of a particular situation to be assessed. The opinion of twenty experts were taken on each item through agreed and disagreed columns. All the items were weighted employing the number 'one' for agreed and 'zero' for disagreed items. The scores on each item were recorded on an appropriate sheet; only those items were selected which got 80% or more unanimity of the responses.
(Edwards, 1957). Thus 18 items had to be rejected.

Thus after reviewing the item pool, 18 items were deleted and 72 items were retained. Now the scale with 72 items was ready for the first tryout.

**FIRST TRYOUT:**

The scale containing 72 items with instructions was administered to a sample of 30 subjects from two girls' High Schools in Chandigarh to locate the inadequacy in the items of the scale or in the instructions. Suitable modifications in the language were made in the light of the responses received. The instructions were given to the respondents. The scale which was administered in the first tryout had four choices.

**SECOND TRYOUT:**

The scale was given a second tryout also after making some amendments suggested by the first tryout subjects. In the first tryout the number of subjects were kept at 30* because only the clarity of instructions and language of the items was to be examined.

In the second tryout the number of subjects was increased to 60* the scale was administered individually to all the subjects selected at random from the four Govt. High Schools of Chandigarh.

*The criteria of selection of 30 persons for the first tryout and 60 persons for the second tryout have been suggested by pareek (1965).
SCORING PROCEDURE:

Scoring procedure adopted for the aspiration scale was that of simple weightage. The scores were assigned as follows:

<table>
<thead>
<tr>
<th>Response</th>
<th>Weighted Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wish (Very Much)</td>
<td>5</td>
</tr>
<tr>
<td>Wish</td>
<td>4</td>
</tr>
<tr>
<td>Wish (Some times)</td>
<td>3</td>
</tr>
<tr>
<td>Indifferent</td>
<td>2</td>
</tr>
<tr>
<td>Wish Never</td>
<td>1</td>
</tr>
</tbody>
</table>

ITEM ANALYSIS:

Item analysis was done in two different ways, first by determining the internal consistency of the scale and second by calculating popularity value.

(a) Internal Consistency Method:

While selecting the item opinions of 20 experts were taken and only those items which got 80 per cent or more unanimity (refer P.55) were selected. This unanimity in the opinion of experts about the items was taken as an indicator of the internal consistency of items as suggested by Pareek (1965). Therefore, no statistical technique was employed for the internal consistency criteria.

(b) Popularity Value (PV):

The popularity value of an item is an index of its relative attractiveness among the five alternatives of an item.
It is calculated by applying the following formula of A.K. Gayan's.

\[
P_V = \frac{\text{Average Scores of an item}}{\text{Total No. of maximum score allotted for the item}} \times \text{individual in the sample.}
\]

The P.V.'s for 90 items were calculated and frequency distribution was prepared and 18 items were rejected because either their PV exceeded 80 or PV was below 20. Only those items were retained in the scale which were in the prescribed limit of PV between 20 and 80 (Kulshrestha, 1974) of retaining the items. In the beginning the Aspiration Scale consisted of 90 items. The scale comprises of three sub-sections i.e. Educational, Personal and Social aspirations. 15 items were taken in Educational section, 49 items were placed in personal section and 26 items were kept in the section of social aspirations. In the final draft of the scale 72 items were retained thus leaving 11 items in Educational, 40 items in personal and 21 items in the social aspiration section of the scale.

**RELIABILITY OF THE SCALE:**

The reliability of a test or any measuring instrument depends upon the consistency with which it gauges the ability to whom it is applied (Garrett, 1973). It is one of the important characteristics of a tool, which denotes how accurately the tool measures whatever it expects to measure.
The reliability of the scale was computed with the help of test-retest method; which was done with an interval of two months show that on 200 cases the total scale relationship came to be 0.82 which is very high and significant. Section wise test retest relationship was calculated. Coefficient of correlation of the section of the scale dealing with educational aspirations was found to be 0.87. In personal aspirations it was 0.77, and for social aspirations it came to be 0.89. The figures show that entire scale and different sections of the scale were highly reliable.

THE VALIDITY OF THE SCALE:

Three types of validities of the aspiration scale were determined, namely, face validity, content validity and construct validity.

FACE VALIDITY:

Face validity refers not to what the test necessarily measures but what it appears to measure (Anastasi, 1957). The present scale seems to have a good face validity because it appears to be relevant to its objectives. This was the opinion expressed by the ten experts whose advice was sought by the investigator.
CONTENT VALIDITY:

The content area of the scale was systematically analysed. The opinion of ten experts in the field of psychology, sociology, and education and measurement confirmed that the aspiration scale was logically valid and thus had content validity.

CONSTRUCT VALIDITY:

The construct validity of the aspiration scale was worked out by calculating inter-correlations of the different sections of the aspiration scale. Three sections of the scale were inter-correlated and the results of the inter-correlations of the sections have been presented in the following table:

<table>
<thead>
<tr>
<th>Inter-correlations of the Aspiration Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sections</td>
</tr>
<tr>
<td>----------</td>
</tr>
<tr>
<td>Educational Aspiration</td>
</tr>
<tr>
<td>Personal Aspiration</td>
</tr>
<tr>
<td>Social Aspiration</td>
</tr>
<tr>
<td>Total Scale</td>
</tr>
</tbody>
</table>

Items measuring Educational, personal and social aspirations were found to have low inter-correlations as depicted in Table 3.1 above. When correlations were computed of different categories with the total scale, they were found
to be significant. The result revealed that each sub-section of the scale measured a distinct type of aspirations and each sub-section was contributing significantly towards the measurement of total aspirations. Low inter-correlations between the different sections of the scale ensured minimum overlapping of items in the scale. From the above analysis it can be inferred that the scale developed by the investigator has construct validity. Raw data upon which the correlations are based is given in the appendix.

Classification of sample on the basis of level of aspirations:

Aspirations were measured using the interval scale. In order to convert the data from continuous one to that of discrete one, the subjects were divided into three categories namely those possessing high aspirations, average aspirations and low aspirations. On the basis of aspiration score cutting points between three categories were decided on the basis of 27 percent criterion, upper 27 percent subjects scoring high on aspiration scale were placed in the high aspiration group, bottom 27 percent cases formed the lower aspiration group while the remaining 46% were placed in group having average aspirations. Thus the subjects were divided into three discrete categories.

OCCUPATIONAL ASPIRATION BLANK:

In order to measure the real occupational aspirations of the adolescents, direct method of asking the adolescents
about their aspirations is usually preferred by researchers. Cobb (1954) has used open-ended questionnaire to measure the aspirations of adolescents. Many others have directly asked the subjects (as given by Ruth Strang in his book named "The adolescent views himself) to write composition on their wishes in a particular area. An occupational aspiration blank was prepared by the investigator to measure in the occupational aspirations of the adolescents chosen for the study. Every adolescent was asked to write any three occupations of his choice in the order of preference, he would like to take up after the completion of his studies. Scoring of the occupational aspiration blank was done on the basis of the weightage given to the different occupations in the National Classification of occupations by the Director General of Employment and Training (occupational information) Ministry of Labour, employment and rehabilitation Govt. of India March 1968.

The total score of occupational aspirations of the subjects is a summated score. Weightage procedure is the same as adopted in the text of N.C.O. by D.G.E.T. Govt. of India, March, 1968. It is a standard text published by the Govt. of India. The revised edition of the national classification of occupation, N.C.O., 1968 has been fashioned after the second edition of the standard classification of occupations (I.S.C.O.) 1966, published by international labour organisation, ILO, in 1968.
This has been done to ensure international comparability of reporting and analysing of statistical data relating to occupations, manpower, population censuses etc. A copy of aspiration blank is given in the appendix.

DESIGN OF THE STUDY:

The present study was planned to examine the relationship of aspirations of adolescents with the intelligence, socio-economic status and sex. Descriptive method of study was used in the study. The relationship between variables of intelligence, socio-economic status and sex with the aspirations of adolescents were examined by applying statistical techniques.

COLLECTION OF THE DATA:

Standardized and non-standardized tools were administered to the adolescents (Male and Female) in the sample.

The time for administering the tools was fixed with the head of the institution. At the time of administering the tools, not more than 25 subjects were taken in a group at a time. In order to lessen fatigue and boredom some interval was given after every test. At the start of the test the subjects were told that these tests were being conducted for research purposes only and their replies will be kept confidential. They should give free and frank replies. All the tests were conducted under ideal conditions in spacious rooms with enough distance between the seats to avoid copying.
The absentees were not included in the study. The teachers of the class requested the students to co-operate fully with the investigator. The tests were administered following the instructions and methods provided in the test manuals of the respective tests, aspiration scale and occupational aspirations blank in the under mentioned order:

1. General Mental Ability Test
2. Socio-economic status Scale
3. Aspiration Scale

SCORING AND TABULATION:

The raw scores of socio-economic status scale, General mental Ability Test, Aspiration Scale and Aspiration Blank were obtained with the help of the scoring keys. Total scores of each individual in each scale were calculated and four master sheets were prepared to tabulate scores for males and females and for urban and rural adolescents. Three category classification was done to make the analysis more convenient. The limits of classification are given at page .

STATISTICAL TECHNIQUES APPLIED:

For the present study the following statistical techniques were employed for the processing of data.
DESCRIPTIVE STATISTICAL TECHNIQUES:

Descriptive statistical techniques namely Mean, Standard deviation, Skewness and Kurtosis were used. Graphic presentation had also been made.

HYPOTHESIS TESTING TECHNIQUE:

To test the hypotheses of the study chi-square were calculated. In order to find the relationship between intelligence, S.E.S. and sex with educational, personal, social and occupational aspirations, correlations were computed for different groups. In order to compare the magnitude of correlation between various variables among different groups, significance differences between correlations were worked out by converting \( r \) values to Fisher's \( z \) values. Factor analysis was applied to identify the factors affecting the aspirations of adolescents.

The details of the above mentioned statistical techniques are given in Chapter IV.