CHAPTER III

METHODOLOGY
This chapter deals with the description of the sample and sampling techniques used, tools used to draw the sample and the statistics applied to make the data interpretable and meaningful.

**GEOGRAPHICAL SETTING**

The present investigation has been carried out over the school going adolescent population of Bundelkhand Region, economically, the most backward part of the State, U.P. Historically, the Bundelkhand Region is comprised of five districts of U.P. namely, Jhansi, Lalitpur, Jalaun, Hamirpur and Banda along with four neighbouring districts, namely — Datia, Tikamgarh, Panna and Chhaterpur, of M.P. But, for the purpose of the present study only, the Bundelkhand of U.P. has been taken into consideration which lies between 24°15' to 25°30' north latitudes and 78°10' to 81°30' east altitudes.

So far the question of occupational background of the people of this region is concerned, agriculture, especially in rural areas, is the main source of earning. Agriculture based on traditional methods and scarcity of irrigative facilities affects the production adversely. Rocky land in some of its parts also minimizes the better
prospects of agricultural outputs. Thus, the net effect of all these odd situations is that the people of this region are bound to live in very poor conditions and consequently the standard of living of the people of this region is very low.

One more reason of poor living conditions of the people of this region lies in low percentage of literacy which affects the possibilities of mobility of the people for earning their livelihood from outside. Due to low literacy, people of this region are bound to get them engaged in agriculture which do not give sufficiently enough production to remove the odd-living conditions, adequately.

The main reason of poverty among inhabitants of this region which, in no way, is less significant, is the lack of industrial base of this region. The investigator has no hesitation in mentioning the fact that since independence no serious efforts have been launched to eradicate the backwardness of the masses of this region.

**THE SAMPLE**

The sample of the present investigation includes 560 adolescents of different grades from VIII to XII. The subjects from the two geographical settings have been considered in equal numbers i.e. 280 from each population group.
Urban sample has been drawn from all the five Government Inter Colleges situated at district headquarters whereas for the purpose of rural sample educational institutions situated at remote places of these districts have been taken into consideration to make the sample representative of these two geographical settings.

Initially, it was proposed to draw one hundred students from each grade levels i.e. VIII, X and XII separately, both from urban and rural population groups to have whole sample of six hundred adolescents on the basis of random sampling but due to incompletion of certain test items related with the Xth grade subjects of urban and XIIth grade subjects of rural settings, only eighty subjects each from these two grades could be included in the sample in place of proposed number of one hundred subjects from respective grades. Thus, the proposed sample of 600 adolescents was reduced to 560 subjects only.

The sample represents a broad spectrum of adolescents of grades VIII to XII to give the longitudinal character to the study.

A grade-wise distribution of the sample shows (Table no. 3.1) that 280 subjects have been taken each
from rural and urban settings. Categorically, rural sample includes 100, 100 and 80 subjects respectively, drawn from grade levels VIII, X and XII. While in case of the urban sample, the number of subjects included in it is 100, 80 and 100 respectively belonging to grade levels VIII, X and XII.

Thus, the total sample includes in all 560 subjects specifically, 200 from grade VIII and 180 each from grade X and XII.

TABLE 3.1

Grade-wise distribution of Rural and Urban Sample

<table>
<thead>
<tr>
<th>Geographical Area</th>
<th>Grade levels</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>VIII</td>
<td>X</td>
</tr>
<tr>
<td>Rural</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Urban</td>
<td>100</td>
<td>80</td>
</tr>
<tr>
<td>Total</td>
<td>200</td>
<td>180</td>
</tr>
</tbody>
</table>
TOOLS

In the present investigation four standardized tests namely, Vocational Interest Record (V.I.R.), Socio-Economic Status Scale (S.E.S. scale), Swatva Bodh Parikshan (S.B.P.) and General Mental Ability Test, have been used as the tools to collect the data. Detailed description of each test is given below.

I. VOCATIONAL INTEREST RECORD

In the field of Psychological and Educational researches, investigators have designed and used a variety of tests measuring the vocational interests of the subjects depending upon the needs and conditions of their respective researches. However, in present investigation, a vocational interest test known as Vocational Interest Record, prepared by Kulshrestha has been used on account of its merits and suitability over the other commonly used tests.

The test contains two hundred occupations in all belonging to ten different vocational fields. The interest areas covered by the test are Literary (L), Scientific (Sc), Executive (E), Commercial (C), Constructive (Co), Artistic (A), Agriculture (AG), Persuasive (P), Social (S) and House-hold (H). Each vocational area has twenty occupations on record, 10 in
horizontal and 10 on vertical sides. The test is equally useful in measuring the vocational interests of age group delta to the young adults.

Reliability

The test-retest reliability co-efficient of the test with a interval of 15 days is .69.

Validity

The test has high degree of validity. While co-relating the views of parents and teachers with the scores of students on record, it is found to be 0.81 and 0.83, respectively, significant at 0.01 level of confidence.

II. SOCIO-ECONOMIC STATUS SCALE (S.E.S.S)

There are a large number of tests designed to measure the socio-economic status of the subjects. A few important among them are like those of Kuppuswami (1962), Rahuckar (1960), Pareek and Trivedi (1964), Verma (1962), Pandey (1966), Lewis and Dhillon (1955), Singh (1967), Satya Prabha (1969), Shirpurkar (1967), Jalota (1970), Shrivastwa (1978) and Misra and Tripathi (1978, 1980).

The thing important about the popular tests frequently being used in Indian researches is that the
tests so used have been mostly designed on western pattern with the conception that Economic Status of the family decides its social status. But in societies like ours where caste is a predominating factor, the contention that the economic status of a family determines its social status, does not appears to be true. Therefore, in the present investigation, a test designed by Chauhan and associates (1980) which measures social as well as economic statuses separately, has been used. In this test the scores so obtained about these two statuses vis. social as well as economic are made scientifically additive. The test measures social as well as economic status in seven different areas and is equally usable over the urban as well as rural population.

**Reliability**

The reliability of the test, by test-retest method and by calculating co-rrelation between the two sets of scores by Spearman Brown formula, is found be 0.75 for the test as a whole. Co-rrelation for different areas in the test is — family (0.72), social (0.68), education (0.82), profession (0.76), caste (0.92), total assets (0.67) and monthly income (0.73).
Validity

Since, the areas and items included in the test are solely based on research proven items, therefore, the content validity of the test is expected to be fairly high and promising.

III. SWATVA BODH PARIKSHAN (S.B.P.)

It is a test constructed for the purpose of measuring the self concept of school going adolescents. The authors of the test-- Sherry, Verma and Goswami have included forty eight items in the test, yielding scores in eight different dimensions of the self-concept. Thus, the test provides eight separate measures of self-concept. The dimensions covered the test are Health and Physique, Temperamental Qualities, Academic Status, Intellectual abilities, Habits and behaviours, Emotional tendencies, Mental Health and Socio-economic status.

The responses of the subjects are desired in yes/no form on separate answer sheet. The test, generally, requires twenty minutes for its completion. A high score on this test indicates a bright self-concept while a low score shows a poor self-concept.

The maximum marks obtained by any subject may be 48 while minimum 0. The whole award is distributed in five class intervals or categories from very good to very poor self-concept.
**Reliability**

In this test two indices of reliability are found out. The first is test-retest reliability and the second is the rational equivalence reliability. The reliability indices in these two separate methods are .733 and .761 respectively.

**Validity**

The items included in the test are best chosen one which can be deemed suitably good to measure the various dimensions of the self-concept and hence it can be believed that the test is highly valid too.

**IV. GENERAL MENTAL ABILITY TEST**

Numerous tests are available in the field of vocational psychology which fairly measure the mental capacities (Intelligence) of the clients.

The present test constructed by Joshi (1960) known as 'Test of General Mental Ability' has been used fairly in many researches conducted by Indian researchers. The test has been constructed and standardized on students (population) belonging to grades VIII to XII, of age group 12 to 19 years. The population of the present investigation falls under the same age and grade range i.e. belonging to VIII to XII grade levels. Therefore, the
the researcher finds appropriate to use this test in the present investigation. The test contains 100 questions of seven types — synonyms, antonyms, number series, classification, best answer type, reasoning and analogue type. Among these hundred questions selected for the test, 40 belong to synonyms, antonyms, best answer and reasoning types — ten in each category while the rest 60 belong to number series, classification and analogies categories — 20 in each category.

Reliability

The reliability co-efficient of the test on the basis of Kuder-Richardson formula is found to be .883 with a S.E. of .003 and S.E. of measurement equivalent to 4.661. Hence, the test is highly reliable and the scores obtained on the basis of it can be depended upon.

Validity

The present test possesses the basic quality of any measuring device e.g. its validity — the characteristic to measure the what it meant for.

The test has high degree of discrimination as 75 of its questions at .01 and 25 questions at .05 level significantly discriminate the students of high and low I.Q.'s. The test scores when compared with scores of
Jalota's (1951) mental ability test, B.P.I. of Psychology, Allahabad (1955) and Joshi and Tripathi's (1968) non-verbal test of intelligence, the reliability co-efficients obtained are .824, .876 and .847 respectively. The comparative results prove the validity of the test.

DATA COLLECTION

The selection of tools and the collection of data are very important aspects of any research problem. Even in a well chosen problem if either of the two is misfit, the probability of obtaining appropriate results is rare. In the selection of a tool, care is to be taken that it meets the specific requirements of the research problem. In data collection, the thing of immense importance is the proper use of the selected tool by ensuring the conditions and situations it, essentially, requires.

In the present investigation, the data were collected on the basis of the standardized tests, discussed earlier. For this purpose, investigator contacted the Principals of institutions selected for the data collection at least one day prior and requested them for their co-operations in making the students available to get their responses with respect to different test items. A few
staff members were also requested for the help in admini-
stering the tests materials and get them collected.

The subjects included in the sample were
selected at random on the basis of lottery system. So far the
hours of the test administration are concerned, the first
four periods of the college time-table were thought appro-
priate for it with the view to keep the respondents untired
and ready for responding. In administering the different
test items no sequence was strictly followed especially in
test items - General Mental Ability Test, Self-concept
and Socio-economic status scale. However, the test meant
for the purpose of getting vocational preferences of the
subjects, i.e. Vocational Interest Record, was generally
served at last.

The responses of each grade subjects were
obtained in separate sittings. Thus, in drawing the
sample, investigator devoted four working days in each
institutions.

STATISTICAL TECHNIQUES USED

In the present investigation 't' test procedure
has been used to verify the significance of variations in
mean values of preference scores of respective vocational
field with the variation in grade levels. It has also been
applied to examine the variation in trends of vocational
preferences between the subjects of two distinct geographical
areas.
For measuring the relationship between vocational preferences and the independent variables, intelligence, self-concept, S.E.S. and geographical variations, simple correlation by product-moment method as well as multiple correlation coefficients along with $\beta$ (beta) coefficients have been obtained.

**Multiple R**

The multiple R represents the relationship between dependent variable (criterion variable) and the combined effect of team of independent variables. A significant R gives the maximum correlation between scores earned and the same predicted from a regression equation. Multiple R is defined as the correlation between scores actually earned on criterion and score predicted in the criterion from the multiple regression equation (Garrett, 1973, p. 410). A significant value of R is always less than 1 and greater than zero. It is also always greater than the every zero order correlation coefficients i.e. correlation between criterion variable and the every variable among the team of independent variables.

**$\beta$ (Beta) Coefficient**

Virtually, the zero order correlation gives an estimate of the relationship between the two variables under study, but, in certain cases the cause of their
mutual relationship may lie in some other variable or variables not apparently visible which influences simultaneously the variables being correlated. And the estimated relationship between them will exist so long the effect of that unknown variable/variables persists. And in situations like this, the zero order correlation coefficient becomes misleading.

Therefore, in present investigation, with the view to go into deep of finding out the cause and effect relationship between preference scores (criterion variables) of different vocational fields and the independent variables taken under study, the β (beta) coefficients for respective independent variable have been calculated. And, later on by way of multiplication between these β (beta) coefficients and corresponding zero order correlation coefficients, the percentage-variation caused by each independent variable in preference scores of different vocational fields have been obtained.

For statistical calculations, the help of computer center — Giri Institute Development of Studies, Lucknow, has been sought.
CONFIDENCE LEVEL

To test the significance of statistical results in educational researches two confidence levels, i.e. .01 and .05 are frequently used. In the present investigation the significance of statistical findings has been tested at the above two levels of confidence. However, for the purpose of accepting or rejecting a hypothesis, the .05 level of significance has been taken into consideration.