CHAPTER IV

METHOD AND PROCEDURE: DESIGN, SAMPLE, TOOLS & STATISTICAL TECHNIQUES.
This chapter presents detailed description of the research method used and the Sample frame. It also presents the construction and description of different tools used for collection of data, its organization and statistical techniques used for analysis of the data pertaining to the variables under study.

THE RESEARCH METHOD USED

Keeping in view, a number of considerations such as the nature and objectives of the study and resources of the investigator etc., the analytico normative survey method was selected for the purpose of the present study. The term normative survey is generally used for the type of research which proposes to ascertain what is the normal or typical condition or practice at the present time. It is a significant mode of attack in any field of knowledge where geographic distribution is involved or where the objects of any class vary among themselves. In the present study the normative survey method was used to understand and assess the extent of alienation in a particular class of people, i.e., non-teaching employees of Bundelkhand University, Jhansi.
DESIGN OF THE STUDY

Design of the study is just like a blue print. As the construction of a house, a systematic map is necessary. Without a design, research study is just like the building construction without any map or plan. For the systematic investigation, a systematic design is necessary which reveals what are the independent and dependent variables and every variable has how many levels?

In the present investigation alienation of employees is dependent variable and various factors related to personality characteristics, i.e., aspiration, job-satisfaction, values, Intelligence and aptitude are independent variables.

In the present investigation age, educational background, total income, total number of dependents in the family, length of service, residence, and nature of job and sex are classificatory variables. These variables normally do not need any measuring instrument and can be identified from the records or information obtained through the questionnaires. On the basis of various classificatory variables the sample was selected:
- **Age** - The age range of the subjects was 20 to 55 years.

- **Academic Qualification** - Only undergraduate and postgraduate males were selected.

- **Total Income** - Income range of the subjects was Rs.700 to 3200 only.

- **Total number of Dependents** - Dependents on the subjects were 2 to 8 persons only.

- **Length of Service** - Length of Service of the subjects was 1 year to 20 years.

- **Residence** - Those subjects lived in rural and urban areas were selected.

- **Nature of Job** - Temporary and permanent employees were selected.

- **sex** - Only male subjects were chosen because female employees less in number.
POPULATION AND THE SAMPLE

The term population means any set or group of things that are alike in respect to some particular characteristics. The population for the study has been defined as the total number of clerical staff working in different departments of Bundelkhand University, Jhansi and its affiliated colleges. The study of the total population is not possible due to some practical limitations such as cost, time and other factors. Sampling is also used in making the research findings economical and accurate. Sampling means selection of individuals from the population in such a way that every individual has an equal chance of being selected in the sample. Sampling has been increasingly used in education to ascertain information necessary in answering certain questions about a specific population (Cocharan, 1959).

The purposive sampling technique was used because this is found appropriate in the present study. In the purposive sampling a particular group is selected from the population to constitute the sample because this category is considered to mirror the whole with reference to variables under study. Thus a sample of 200 non-academic employees was taken.
SELECTION OF THE SAMPLE

A sample is any group drawn from a population. First of all the total number of employees working in different departments of Bundelkhand University, Jhansi and its affiliated colleges was found out by contacting the Registrar of the University. The number of non-teaching employees working in affiliated colleges was got from the principals of the respective colleges.

There are 80 Colleges affiliated to Bundelkhand University, Jhansi, but due to the random sample of 200, the investigator used the lottery method in the selection of Colleges. By using chit system the investigator had chosen only 9 Colleges and collected the data from University and the following colleges. List of the colleges and University are given in the table -
TABLE - 1

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Institution</th>
<th>No. of Non-teaching Employees</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Bundelkhand University, Jhansi</td>
<td>66</td>
</tr>
<tr>
<td>2.</td>
<td>D.V. Colleges, Orai</td>
<td>35</td>
</tr>
<tr>
<td>3.</td>
<td>Bundelkhand College, Jhansi</td>
<td>30</td>
</tr>
<tr>
<td>4.</td>
<td>Konch Mahavidyalaya, Konch</td>
<td>10</td>
</tr>
<tr>
<td>5.</td>
<td>Pt. J.L.N. College, Banda</td>
<td>30</td>
</tr>
<tr>
<td>6.</td>
<td>Gandhi Mahavidyalaya, Orai</td>
<td>19</td>
</tr>
<tr>
<td>7.</td>
<td>Atarra Post-Graduate College, Atarra</td>
<td>28</td>
</tr>
<tr>
<td>8.</td>
<td>Govt. Degree College, Hamirpur</td>
<td>5</td>
</tr>
<tr>
<td>9.</td>
<td>Govt. Girls Degree College, Banda</td>
<td>5</td>
</tr>
</tbody>
</table>

THE TOOLS

The following measurement tools were used. The detailed description about them have already been presented in chapter III.
THE UNIVERSITY EMPLOYEES ALIENATION SCALE - (UEAS)

In the present study the dependent variable - alienation was defined as the alienation from the work of Office. In this context the alienation was defined as the negative attitude towards Office works, lack of interest in University Office works, carelessness, non-cooperativeness with other colleagues, isolation and self-estrangement. This tool has only 46 items but the investigator made some adaptations and added 4 questions, i.e., 11, 24, 32, 40. It is a Likert type five point rating scale. Likert scaling is based on the fact that individuals are capable of indicating not only whether they agree or disagree with various statements, but also the extent to which they endorse or reject them. Each item, therefore, contains five response alternatives – strongly agree (SA), Agree (A), neither agree nor disagree (NAND), disagree (DA) and strongly disagree (SDA). The scale has no time limit. Scoring is done by giving one mark for strongly disagree, 2 marks for disagree, 3 marks for neither agree nor disagree, 4 marks for agree and 5 for strongly agree. Thus, the total score on the total alienation scale varies from 50 to 250. In this way the score of 50 represents the lowest level of alienation and
250, the highest level of alienation of the respondent.

**LEVEL OF ASPIRATION SCALE FOR UNIVERSITY EMPLOYEES — (LASUE)**

Level of Aspiration scale for University Employees measures the general level of aspiration of University Employees. It is a Likert type scale which is the most popular self-report measure of attitudes, contains only 32 items. The investigator made some adaptations and added 8 items more. Each item has five alternate responses — strongly disagree (SDA), disagree (DA), neither agree nor disagree (NAND), agree (A) and strongly agree (SA). The scale has no time limit. The scoring is based on a five point Likert type scaling. A response ticked in the square of 5 is given a score of 5 and if in the square of 4 is given as 4 marks and so on. By adding all the scores of each items the total level of aspiration is estimated. This may range from 40 to 200. The score 40 stands for the lowest level of aspiration and 200, for the highest level of aspiration.

**BRAYFIELD AND ROTHES INDEX OF JOB-SATISFACTION**

Brayfield and Rothe's Index of Job-satisfaction
(1967) adopted by Rathor (1983) was selected for the purpose of this study. In this tool, the author assures that job satisfaction can be inferred from individual's attitudes towards his work. This tool is applicable to a wide variety on jobs, is short and has easy scoring. Brayfield, and Rothe's Index measures only overall feelings of an individual towards his or her job, whatever be the nature of his job. Although the adaptation has been done on a sample of teachers. It was considered applicable for University employees also by changing a few words in the language of the scale here and there.

Job-satisfaction Index is unidimensional, unifactor and objectively scorabel test to measure the job-satisfaction of any individual in any profession he may be. It consists of 18 statements providing a five category response for each item. This scale is based partly on Thurstone method, partly on Likert method of attitude scale construction.

There are nine positive and nine negative items. Strongly agree means maximum score five and strongly disagree, minimum score one. On the negative items strongly agree means minimum score one and strongly
disagree means maximum score five. Maximum possible score on this scale for an individual is 90 and minimum is 18. The subjects have indicated their response on a five point scale by making a tick mark (✓) on the square against each item. Each item is then given a score according to the scoring procedure and sum of the scores of total item yields a total job-satisfaction score for an individual subject.

OFFICE EMPLOYEES VALUE SCALE (OEVS)

In this scale Joshi (1984) selected only three values - economic, ethical and work. Values are defined in this context as broader attitude or as components of attitudes, a concept of desirable ends, goals, ideals or modes of action which make the employees behaviour selective. The economic value stands for desire for money and material gains. The economic individual places highest value upon what is useful? The economic person is interested in making money by any means. He evaluates his duties or works in his job on the basis of money or it can be said that such persons give priority to works on the basis of money. Ethical value stands for desire for
honesty, selfishlessness punctuality, sincerity and regularity. A person having high ethical value is generally found sincere and punctual towards their office works. Thus, the person having high work value seeks fulfilment in their jobs.

In this scale 16 items were selected for each value by Joshi. So the total no. of items were 48. But the investigator added three items, one for each value. So one value has 17 items. The distribution of items in the scale is represented in the table -

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Type of value</th>
<th>Serial No. of the items</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Economic value</td>
<td>4, 8, 11, 15, 17,19,23,25,28</td>
<td>17</td>
</tr>
<tr>
<td></td>
<td></td>
<td>30,34,37, 39, 43,45,47,50</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Ethical value</td>
<td>2, 5, 7, 10,12,13,21, 24, 26</td>
<td>17</td>
</tr>
<tr>
<td></td>
<td></td>
<td>29,31,36,38,40,42,44, 49</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Work value</td>
<td>1, 3, 6, 9, 14,16,18,20,22,27</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>32,33,35,41,46,48,51</td>
<td>17</td>
</tr>
</tbody>
</table>
This is a scale which has no time limit. This can be administered individually or collectively in a group. This is a self-scoring scale. Each item has three response alternatives in the form of weightage 1, 3, 5. Thus the employees were requested to express their agreement by giving weightage as 1, 3 and 5. Five is given if they consider the statement very important. Three, if they consider the statement important but not as much and one if they consider the statement least important. Each item, thus, has a square in which the respondent has to give score. These squares were put at different places according to their respective values. Thus, the square for item No. 1, measuring work value, is placed below W.

The scoring for each value can be done by adding all the scores given in the squares of that respective value column. Thus the total score for each value may range from 17 to 85. The score of 17 shows the minimum acceptance or desire for that value while the score 85 gives the maximum acceptance or desire for that value.

**GENERAL MENTAL ABILITY TEST OF INTELLIGENCE**

The another independent variable in the study is intelligence of the employees. Although a number of tools
are available the researcher selected 'General Mental Ability Test of Intelligence' of Jalota revised in 1972. This test provides a measure of general mental ability. Mental ability is divided into three abilities - verbal, numerical and reasoning that are fundamental to counselling. This mental test contains 100 items. These items are of 10 similarities, 10 opposites, 20 classifications, 20 number series, 10 best answers, 10 reasoning and 20 analogies items. The investigator selected this test to test the general mental ability of non-teaching employees. Since it is in Hindi, easy to administer and has adequate reliability and validity indices. The test was administered and scored according to the instructions given in the manual.

CLERICAL SPEED AND ACCURACY TEST

One of the most widely used multiple aptitude batteries is the Differential Aptitude Tests (DAT). First published in 1947, the DAT was revised in 1962 and in 1972. The researcher selected Clerical Speed and Accuracy Test of DAT Battery of Benett, Seashore and Wesman because this test gives the clear picture of the aptitudes and abilities of the Ss. This test contains two parts - Form-A
and Form-B with 100 items for each part. In each test item, one of the five combinations is underlined. Find the same combination on the answer sheet and mark it. It is a time test of $3 + 3 = 6$ minutes. Test has short time limits and is very easy to administer. This test is administered and scored according to the instructions given in the manual.

**PROCEDURE OF DATA COLLECTION**

The present study was conducted in three sessions. In the first session the $S$s were asked to fill up the bio-data sheet given to them because non-classificatory variables were identified according to their bio-data. To know the work alienation and level of aspiration of the employees, University Employees alienation Scale (UEAS) and Level of Aspiration Scale for University Employees (LASUE) were distributed to the $S$s and they were requested to fill up these two tests according to the instructions given on the front page of each test.

In the second session two tests, Office Employees Value Scale (OEV) and Brayfield and Rothe's Index of job-satisfaction were given to the $S$s to know the three types
of values, i.e., economic, ethical and work and job-satisfaction of the employees.

In the third session Ss were requested to sit in a group and Jalota's General Mental Ability Test and Clerical Speed and Accuracy tests were administered according to the instructions as given in its manual. The prescribed time was noted with the help of stop watch.

The same process was applied on University Employees and the selected colleges for data collection.

The investigator visited Bundelkhand University, Jhansi and its affiliated colleges many times. All the employees were not available at the same time. Some tests were filled up by those Ss who were available and then less in the next visit and so on.

A comprehensive mastersheet having all the scores on all scales and tests for all the Ss was prepared by the investigator (Appendix-G).

STATISTICAL TECHNIQUES USED

The investigator used the non-parametric statistical techniques for testing the null-hypothesis. A
non-parametric statistical test is a test whose model does not specify conditions about parameters of the population from which the sample was drawn. Non-parametric tests deserve an increasingly prominent role in research in behavioural science. The investigator used the non-parametric statistical techniques because the conditions were not satisfied by the data to make parametric techniques as the following drawbacks -

1. The sample was not randomly drawn.
2. All the scores were not normally distributed
3. Observations are only of nominal or ordinal type.

Hence, the following non-parametric tests were used for testing the difference proposed for hypotheses of the study.

KOLMOGOROV SMIRNOV TEST

For testing the significance difference between high-alienated and low-alienated employees in respect to their level of aspiration, job-satisfaction, values, intelligence and aptitude, Kolmogorov Smirnov's two-tailed test of significance (Siegal, 1956) was used by applying the following formula -
\[ 0.05 = 1.36 \frac{\sqrt{n_1 + n_2}}{\sqrt{n_1 n_2}} \]

\[ 0.01 = 1.63 \frac{\sqrt{n_1 + n_2}}{\sqrt{n_1 n_2}} \]

**CHI-SQUARE TEST**

The Chi-Square test represents a useful method of comparing experimentally obtained results with those to be expected theoretically on some hypothesis. The researcher used the Chi-Square test (Garrett, 1966) to know the significant difference between high and low alienated employees regarding their non-psychological variables such as age, educational background, income, length of service, size of the family, nature of job and residence. Following formulas were used to find out Chi-Square -

a) \[ \text{Chi-Square}^1 = \sum \frac{(F_o - F_e)^2}{F_e} \]

in which -

\( F_o \) = frequency of occurrence of observed or experimentally determined facts.
Fe = expected frequency of occurrence on some hypothesis.

\[ \text{Chi-Square}^2 = \frac{N (AD-BC)^2}{(A + B)(C + D)(A + C)(B + D)} \]

in which -

N = Size of the sample and A, B, C, D are the four cells of the four fold contingency table.