CHAPTER 3

RESEARCH DESIGN

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CHAPTER-3
RESEARCH DESIGN

3.0.0 INTRODUCTION

Research is an endless quest for knowledge and an unending search for truth. It brings to light new knowledge or correct previous errors and misconceptions and adds information in an orderly way to the existing body of knowledge. The knowledge obtained by research is scientific and objective and is a matter of rational understanding, common verification and experience. Research is considered to be the more formal, scientific and intensive process of carrying on the scientific method of analysis, it involves a more systematic structure of investigation usually resetting in some sort of formal record of procedure and a report of results or conclusion (J.W. Best).

The formidable problem that follows the task of defining the research problem is the preparation of the design of the research project, popularly known as “the research design”. A design is a plan or strategy of investigation conceived so as to solve the research problem. Design and procedure constitute an important part of research without a design research study is just like the building construction without any plan or map. The research design enables us to answer research questions as validly, objectively, precisely and economically as possible.

So before starting any research work, at first, its preplanning is prepared. To proceed in this direction, firstly, population is defined and sample is selected after that it is necessary to make appropriate selection of essential tools and statistical methods used in research work so that the data
which are collected through this procedure could be classified, tabulated and analyzed.

Hence, in this chapter the description of Design of the study, the population defined, sample selected, tools used, procedure adapted for data collection and the statistical techniques are being given in the order.

### 3.1.0 DESIGN OF THE STUDY

In the present research study, the work has been done by making design in the following way-

1. At first, the list of all the rural and urban higher secondary schools which come under Sagar district has been taken from the district education office.
2. In the form of population of research study area all the higher secondary school teachers of the listed schools have been included.
3. 250 male and 250 female teachers which are working in the randomly selected urban and rural higher secondary schools have been selected for sample.
4. To study the job satisfaction of the selected male and female teachers job satisfaction scale constructed by Dr. Amar Singh and T.R. Sharma has been administered.
5. To study the teaching attitude of the selected male and female teachers Teaching Attitude Inventory constructed by S.P. Ahluwalia has been used.
6. Results have been tabulated by following the instructions given in the manual of both the tools.
(7) Statistical methods have been used for the verification of the hypotheses and on the final results suggestions have been given for the future research.

3.2.0 METHOD

To achieve the objectives of the study, normative survey method was found to be the most suited method because the investigation was primarily concerned with the conditions and relationships existing in the present. It altogether deals with relatively a large number of cases at a particular time and gives generalized statics about population through the sample. The present investigation endeavours to use the steps and characteristics essential for the normative survey method of research.

3.3.0 POPULATION

Population or universe means, the entire mass of observations, which is the parent group from which a representative sample is chosen for the collection of the data and for whom the researcher derives on the findings.

In the present context, teachers working at higher secondary schools in Sagar District constituted the target population. These teachers were both male and female. They belonged from urban and rural areas schools.

3.4.0 SAMPLE

A sample is a necessary tool for conducting the study so it is necessary to select a sample from the population. A sample selected from the population should be the true representative of the whole population in almost all characteristics. If not so, the results obtained from the sample cannot be validly generalized. So an adequate representative of selection of a sample is essential to obtain valid and reliable results.
The sampling is the process of selecting the sample from the universe. The ideal sampling should be such that error of estimation is minimized. Further it should be chosen impartially. The proper sampling technique enhances the quality of dependability of the obtained results.

Different methods for the selection of a good sample have been mentioned by educationists according to the purpose of the research. There are two broad types of sampling.

1) Probability Sampling
2) Non-probability sampling

(3) Probability sampling denotes that each element, the population, has equal probability of being included in the sample. Three common kinds of this sampling are:
   (a) Simple random sampling
   (b) Stratified sampling
   (c) Cluster Sampling

Non-probability sampling denotes that there is no assurance of any and/or every element to be included in the sample. Three popular kinds of this sampling are:

(a) Accidental sampling
(b) Quota sampling
(c) Purposive sampling

In the present investigation the sample consisted of a total 500 higher secondary school teachers, 250 each from rural and urban higher secondary schools. In each group there were 125 male and 125 female higher secondary school teachers.
A diagrammatic presentation of the sample is given below:

![Diagram of sample breakdown]

**Total Sample**
(N = 500)

- **Rural School Teachers** (N = 250)
  - Male Teachers (N = 125)
  - Female Teachers (N = 125)

- **Urban School Teachers** (N = 250)
  - Male Teachers (N = 125)
  - Female Teachers (N = 125)

**Figure 3.1: Diagrammatic presentation of the sample**

Thus, the best possible attempt was made to select a representative sample from the population.

In the present research study, detailed description of the sample, selected from the higher secondary schools which come under research area, has been given in the table below:

**Table 3.1**

**The Sample Size of Higher Secondary School Teachers in Sagar District**

<table>
<thead>
<tr>
<th>S.N.</th>
<th>RURAL</th>
<th>Total</th>
<th>URBAN</th>
<th>Total</th>
<th>Grand Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Name of the Schools</td>
<td>M</td>
<td>F</td>
<td>Total</td>
<td>Name of the Schools</td>
</tr>
<tr>
<td>1</td>
<td>Govt. H.S.S. Girls Gourjhamar</td>
<td>1</td>
<td>3</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>Govt. H.S.S. Boys Gourjhamar</td>
<td>8</td>
<td>0</td>
<td>8</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>Govt. H.S.S. Excellence Malthone</td>
<td>5</td>
<td>2</td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>Govt. H.S.S. Chandpur</td>
<td>2</td>
<td>4</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>Govt. H.S.S. Agriculture Surkhi</td>
<td>4</td>
<td>3</td>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td>6</td>
<td>Govt. H.S.S. Girls Dhana</td>
<td>0</td>
<td>5</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>7</td>
<td>Govt. H.S.S. Maharajpur</td>
<td>4</td>
<td>1</td>
<td>5</td>
<td>7</td>
</tr>
<tr>
<td>8</td>
<td>Govt. H.S.S. Bararu</td>
<td>4</td>
<td>3</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>S.N.</td>
<td>RURAL</td>
<td>URBAN</td>
<td></td>
<td></td>
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<td>------</td>
<td>-----------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------</td>
<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td>Name of the Schools</td>
<td>M</td>
<td>F</td>
<td>Total</td>
<td>Name of the Schools</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Govt. H.S.S. Girls Keshli</td>
<td>5</td>
<td>1</td>
<td>6</td>
<td>Privt. H.S.S. Jain Public Sagar</td>
</tr>
<tr>
<td>10</td>
<td>Govt. H.S.S. Bhapel</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>Privt. H.S.S. Vatsalya Sagar</td>
</tr>
<tr>
<td>11</td>
<td>Govt. H.S.S. Toda</td>
<td>4</td>
<td>2</td>
<td>6</td>
<td>Privt. H.S.S. Mahaveer Banda</td>
</tr>
<tr>
<td>12</td>
<td>Govt. H.S.S. Excellence Naryawali</td>
<td>4</td>
<td>4</td>
<td>8</td>
<td>Privt. H.S.S. Suryodaya, Deori</td>
</tr>
<tr>
<td>13</td>
<td>Govt. H.S.S. Patna Bujurg</td>
<td>3</td>
<td>2</td>
<td>5</td>
<td>Privt. H.S.S. Bina Public Bina</td>
</tr>
<tr>
<td>14</td>
<td>Govt. H.S.S. Sihora</td>
<td>6</td>
<td>2</td>
<td>8</td>
<td>AIDED, H.S.S. Boys Jain Multipurpose Sagar</td>
</tr>
<tr>
<td>15</td>
<td>Govt. H.S.S. Baleh</td>
<td>6</td>
<td>0</td>
<td>6</td>
<td>Privt. H.S.S. Deepak Memorial Rajakhedi</td>
</tr>
<tr>
<td>16</td>
<td>Privt. H.S. Abhyodaya Public Makronia</td>
<td>5</td>
<td>10</td>
<td>15</td>
<td>Privt. H.S.S. Takshshila Khurai</td>
</tr>
<tr>
<td>17</td>
<td>Privt. H.S.S. Ankur Makronia</td>
<td>3</td>
<td>8</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>Privt. H.S.S. Gyan Ganga Makronia</td>
<td>4</td>
<td>9</td>
<td>13</td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>Privt. H.S.S. Paras Vidya Vihar Tili Ward Sagar</td>
<td>8</td>
<td>10</td>
<td>18</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>Privt. H.S.S. Vanvasi, Mohli</td>
<td>2</td>
<td>8</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>Privt. H.S.S. Suryodaya Maharajpur</td>
<td>3</td>
<td>7</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>Privt. H.S.S. Pearl Public Convent Malthone</td>
<td>7</td>
<td>10</td>
<td>17</td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>AIDED. H.S.S. Girls Janta Bina</td>
<td>7</td>
<td>11</td>
<td>18</td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>Privt. H.S.S. Sai Kripa Surkhi</td>
<td>5</td>
<td>8</td>
<td>13</td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>Privt. H.S.S. Vivekand, Dhana</td>
<td>6</td>
<td>7</td>
<td>13</td>
<td></td>
</tr>
<tr>
<td>26</td>
<td>Privt. H.S.S. Little Star Shailesh Memo. Makronia</td>
<td>10</td>
<td>3</td>
<td>13</td>
<td></td>
</tr>
<tr>
<td>27</td>
<td>Privt. H.S.S. Saraswati Shishu Gyanmandir, Garhakota</td>
<td>8</td>
<td>0</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td>125</td>
<td>125</td>
<td>250</td>
<td><strong>Total</strong></td>
</tr>
</tbody>
</table>
Considering the nature of the study random sampling method has been used in the selection of higher secondary schools whereas quota sampling method has been used in the selection of male and female teachers because in the present research study emphasis is on the sex. Hence, quota sampling is appropriate. Therefore, keeping in mind the objectives and hypotheses of the study quota sampling method has been used in the present research study.

3.5.0 TOOLS

After a critical analysis of the tools available from National Psychological Corporation, Agra and consultation with the experts in the field, the following tools were selected in view of the nature and the objectives of the study. Both the tests are standardized ones and were adopted on Indian sample.

(i) Teacher Attitude Inventory (TAI)
(ii) Job satisfaction scale (JSS)

Description of the tools is as follows:

3.5.1 Teacher Attitude Inventory (TAI)

This inventory was constructed and standardized by Dr. S.P. Ahluwalia. It is a 90 items Likert Instrument consisting of six sub-scales. These sub-scales were developed by the Likert summated rating procedure. Each sub-scale has 15 statements that pertain to a particular aspect of prospective and practising teacher’s professional attitudes. The six aspects dealt within the inventory are Attitude towards:

1. Teaching Profession
2. Classroom teaching
3. Child-centered practices
4. Educational process
5. Pupils
6. Teachers
Keeping the rationale of attitude scale construction in mind 90 psychometrically “good attitude statement, 15 on each sub-scale were selected to constitute the final form of the TAI. Out of 90 items 56 are in the positive declarative form and 34 of them are in negative form. Again 43 items were meant to assess attitude in favorable direction and 46 in unfavorable direction. Thus the favorable–unfavorable continuum adequately measures the aforesaid six selected areas.

The following table shows the total number of favorable and unfavorable items and their distribution in each sub-scale.

**Table 3.2**

*Total Number of Favourable and Unfavourable Items and Scale-wise their Serial Numbers*

<table>
<thead>
<tr>
<th>Sub Scale</th>
<th>Conditions</th>
<th>Item Serial Numbers</th>
<th>Total No. of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>F</td>
<td>1, 8, 20, 33, 41, 66, 85</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>UF</td>
<td>13, 34, 46, 48, 60, 72, 79, 86</td>
<td>8</td>
</tr>
<tr>
<td>II</td>
<td>F</td>
<td>2, 9, 14, 17, 42, 47, 53, 67</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>UF</td>
<td>35, 38, 59, 61, 65, 73, 84</td>
<td>7</td>
</tr>
<tr>
<td>III</td>
<td>F</td>
<td>3, 11, 16, 21, 27, 39, 49, 62, 64, 80</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>UF</td>
<td>25, 54, 75, 83, 90</td>
<td>5</td>
</tr>
<tr>
<td>IV</td>
<td>F</td>
<td>15, 28, 36, 43, 50, 55, 71, 87</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>UF</td>
<td>4, 7, 10, 32, 63, 74, 76</td>
<td>7</td>
</tr>
<tr>
<td>V</td>
<td>F</td>
<td>5, 44, 81, 82, 89</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>UF</td>
<td>18, 22, 29, 31, 37, 51, 56, 58, 70, 77</td>
<td>10</td>
</tr>
<tr>
<td>VI</td>
<td>F</td>
<td>6, 23, 40, 52, 88</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>UF</td>
<td>12, 19, 24, 26, 30, 45, 57, 68, 69, 78</td>
<td>10</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td></td>
<td>90</td>
</tr>
</tbody>
</table>

S.A. = Strongly Agree, A = Agree, U = Uncertain, S.D. = Strongly Disagree
Response mode

Likert continuum strongly agree, undecided, disagree and strongly disagree has been provided of each item-subject respond to each item putting a tick (✓) in the square of the chosen alternative against the serial number of the attitude statement in the answer sheet. Subjects are required to respond to all the items like-wise. They do not have the option to leave any item unanswered. The subjects are not permitted to make any mark on the text booklets as they are re-usable

Scoring

Each item alternatives assigned a weight arranging from 4 (strongly agree) to 0 (Strongly disagree). The attitude score of a subject is the sum total of items scores of all the six sub-scales. The theoretical range of score indicating the more favourable attitude towards teaching and allied aspects.

Reliability

Reliability was estimated by the split-half method and found to be 79 (Correlated to .88) for a sample of 239 prospective teachers.

Validity

Determination of validity of an attitude inventory is very hard task. As the questionnaire is asking questions for measuring teacher’s attitude, the content and face validity were calculated and found to be very high according to the judge responses.

3.5.2 Job Satisfaction scale (JSS)

This scale was constructed by Dr. Amar Sigh and Dr. T.R. Sharma. It has been designed to use for any category of professionals. It is comprehensive and omni-bus in nature.
The Construction of Job Satisfaction Scale

There were 80 statements in the preliminary form of Job satisfaction scale. These 80 statements were got rated for suitability by 30 judges belonging to the fields of psychology, Sociology, business, administration, low and trade-union. Depending upon the unanimity among the judges only 40 items were retained for a pilot study made on nearly 50 professionals. This try-out resulted in deletion, modification and also inclusion of a few items. Finally in the present scale only 30 statements are retained.

The level of job satisfaction is measured in two types of areas-Job intrinsic (factors lying in the job itself) and Job extrinsic (factors lying outside the job) Job Intrinsic areas was further conceptualized as job concrete (say excursion, working conditions etc) and job- abstract (say cooperating, democratic functioning etc.) and Job extrinsic areas as consisting of three components viz. Psycho-social aspects, financial aspects and community nation growth aspect.

The following chart shows the connection of different items with different areas constituting the scale

**Table 3.3**

A Chart Showing Connection of Different Items with Different Areas of the Scale

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>(a)</td>
<td>Job concrete statements such as excursions, place of posting, working conditions:</td>
</tr>
<tr>
<td>Sr. Nos.:</td>
<td>6, 11, 13, 19, 23, and 25 Total = 06.</td>
</tr>
<tr>
<td>(b)</td>
<td>Job-abstract statements such as cooperation, democratic functioning etc.</td>
</tr>
<tr>
<td>Sr. Nos.:</td>
<td>8, 15, 16, 17, 20, 21 and 27 Total = 07.</td>
</tr>
</tbody>
</table>
2. **Job-extrinsic statements (factors residing outside the job):**

<table>
<thead>
<tr>
<th>Sr. Nos.:</th>
<th>Total = 08.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1, 3, 4, 7, 10, 12, 26 and 30</td>
<td>Total Statements=17.</td>
</tr>
</tbody>
</table>

(a) Psycho-social such as intelligence, social circle:

(b) Economic such as salary, allowance:

<table>
<thead>
<tr>
<th>Sr. Nos.:</th>
<th>Total = 04.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2, 5, 9, and 18</td>
<td></td>
</tr>
</tbody>
</table>

(c) Community/National growth such as quality of life, national economy:

<table>
<thead>
<tr>
<th>Sr. Nos.:</th>
<th>Total = 05.</th>
</tr>
</thead>
<tbody>
<tr>
<td>14, 22, 24, 28 and 29</td>
<td></td>
</tr>
</tbody>
</table>

**Response Mode**

This scale contains 30 statements. Each statement has five alternatives from which a respondent has to choose any one by putting a tick mark (✓) in the square of the chose alternative against the serial number of statement. Subjects are required to respond to all the items like-wise.

**Scoring-**

The scale has both positive and negative statements. Items at Sr. No. 13, 20, 21 27 and 28 are negative, other are all positive. The positive statements carry a weight age of 4, 3, 2, 1, and 0 and the negative ones a weight age of 0, 1, 2, 3 and 4. The total score gives a quick measure of satisfaction/dissatisfaction of a worker towards his job. The minimum and maximum range of score is zero to one twenty.

**Reliability**

The reliability of the scale has been estimated through test- retest which was found to be 0.97 with N=52 and gap of 25 days.
Validity

The scale compares favourably with Muthayya’s job satisfaction questionnaire giving a validity coefficient of .74. Moreover, the satisfaction measures obtained from this scale have a close resemblance to the ratings given to the employees on a 3-point Scale: fully satisfied, average satisfied and dissatisfied by the employers. The coefficient of correlation was 0.81 (N = 52).

3.6.0 PROCEDURE ADOPTED FOR DATA COLLECTION

In any research work, the collection of data, received from sample, is an important task. The Researcher collects data for the reliability of the study of research problem. These data are the base for the research work.

Hence, collected data play an important role in a research. That is why in the present study also data have been collected by the researcher.

In the present study, the Survey method has been used for the collection of data. This method is used as an important tool for the collection of data related to the problem of social and educational area.

Through the administration of Teaching Attitude Inventory and Job satisfaction Scale data has been collected. For this researcher personally visited and herself contacted the teachers of selected higher secondary school. She convinced them about the aims and form of both the tools. Then asked the subjects to fill the personal information by putting (✔) mark in the desired square, given before the items in the TAI answer sheet, after reading the instructions given in the TAI booklet.

The necessary instructions were read by the subjects and the confusion of subjects was cleared. Though there was no time limit but
generally most of the subjects took 15-20 minutes in filling up the answer sheets. Then they returned the TAI booklet as it was reusable.

As the second one, Job satisfaction scale was administered on the same subjects. There are 30 statements in it. Each statement is followed by the five response categories. The respondents were to make their agreement only with one response by putting tick mark (✓) in the square before the statement. There was no time limit for answering the JSS.

While administering both the tests, the respondents were assured that their personal information and answer scores would be treated confidentially. After getting the response sheets, the next step was to score them so scoring of the answer sheets was done strictly according to the instructions given in the manual.

3.6.1 Problems faced in data collection

The work of data collection was subject to certain problems posed by the respondents which are as under:

(1) Few of the respondents were not ready to accept the instrument.
(2) Out of the people who accepted the instrument either didn’t fill it or partially filled it.
(3) In many other cases the respondents took exceptionally long time to fill the instrument because of which the compilation work got delayed.

3.7.0 STATISTICAL TECHNIQUES

Statistical techniques are employed on the raw score to make it meaningful and to test the significance of the scores. Without use of statistical techniques raw scores do not have their own meaning and weight.
Different types of statistical techniques are available which can be used for statistical treatment, keeping in view the nature and objectives of the research problem researcher have used the following statistical techniques:

(Formulae for ungrouped data, large sample)

(1) Mean

\[ M = \frac{\sum X}{N} \]

Where,
- \( X \) = Score
- \( \sum X \) = Sum of the Scores
- \( N \) = Number of the scores

(2) Standard Deviation

\[ S.D. (\sigma) = \sqrt{\frac{\sum x'^2}{N}} = \sqrt{\frac{\sum (X - M)^2}{N}} \]

Where,
- \( x' = (X - M) \) = Deviation from mean
- \( \sum x'^2 \) = The sum of squared deviations from the mean
- \( N \) = Number of the scores

(3) Standard error of mean

\[ SE_m \text{ or } \sigma_m = \frac{\sigma}{\sqrt{N}} \]

Where,
- \( \sigma_m \) = Standard error or mean
- \( \sigma \) = Standard deviation (S.D.)
- \( N \) = No. of scores
(4) **Degrees of freedom for determining table value of ‘t’**

$$df = (N_1 + N_2) - 2$$

Where,  
\( df \) = Degree of freedom  
\( N_1 \) = Number of scores of the first group  
\( N_2 \) = Number of scores of the second group

(5) **‘t’ Test**

$$t = \frac{(M_1 - M_2)}{\sqrt{\frac{\sigma_1^2}{N_1} + \frac{\sigma_2^2}{N_2}}}$$

Where,  
\( M_1 \) = Mean score for first group  
\( M_2 \) = Mean score for second group  
\( \sigma_1 \) = S.D. for the first group  
\( \sigma_2 \) = S.D. for the second group  
\( N_1 \) = Total number of the first group  
\( N_2 \) = Total number of the second group

(6) **Correlation between two variables**

Correlation coefficient from ungrouped data using raw scores.

$$r = \frac{N \sum XY - \sum X \sum Y}{\sqrt{[N \sum X^2 - (\sum X)^2][N \sum Y^2 - (\sum Y)^2]}}$$

Where,  
\( X \) and \( Y \) are scores of \( X \) and \( Y \) respectively  
\( N \) = Number of scores  
\( \sum XY \) = Sum of the product of \( X \) and \( Y \)  
\( \sum X \sum Y \) = Product of the sum of \( X \) and \( Y \)  
\( (\sum X)^2 \) and \( (\sum Y)^2 \) = The squares of the sum of the product \( X \) and \( Y \)  
\( \sum X^2 \) and \( \sum Y^2 \) = Sum of \( X \) and \( Y \) squares
Pearson’s product moment correlation was used to test the relationship between the variables taken for the study. This method is useful, especially when machine is available for computation or when the data have to be analysed by computer.

The obtained value of ‘r’ is verified at 0.05 and 0.01 levels of significance.

(7) The standard Error of coefficient of correlation ($\sigma_r$)

$$SE_r \text{ or } \sigma_r = \frac{(1 - r^2)}{\sqrt{N}}$$

where, $\sigma_r$ = Standard error of ‘r’

r = Coefficient of correlation

N = No. of the scores

(8) Degrees of freedom (df) for determining table value of correlation coefficient

$$df = (N - 2)$$

where, N = Number of the scores

(9) ‘t’ Test for the correlation coefficient

$$| t | = \frac{|r|}{\sqrt{1 - r^2}, \sqrt{(n - 2)}}$$

Where, r = Correlation coefficient

n – 2 = Degrees of freedom