CHAPTER IV

METHODOLOGY

4.1 Introduction
4.2 Experimental Design
4.3 Tools Used in the Study
4.4 Samples for the Study
4.5 Data Collection Procedure and Consolidation of Data
4.6 Statistical Treatment and Processing of Data
4.1 Introduction

The study primarily aims at reconstructing the Secondary School Curriculum within the Gandhian educational framework. Since the curriculum of any country is indispensably related to the prevailing philosophical views, the problem had to be tackled at two angles. For that, firstly the researcher is bound to assess the extent of influence of the philosophical perceptions of the teachers on the curriculum. Secondly, he has to determine, the impact of Gandhian educational parameters (independent variables) in respect of the ‘culture of head’, ‘culture of hand’ and ‘culture of heart’ on the ‘academic achievement’ (dependent variable) of the secondary school students. The hypothesis already formulated enabled the researcher to frame the methodology for the study. The methodology has been classified under the following heads:

(a) Experimental design;
(b) Tools used in the study;
(c) Sample of the study;
(d) Date collection procedure and consolidation of data;
(e) Statistical treatment and processing of data.

4.2 Experimental Design

Design of the experiment was so planned as to test the tenability of the two proposed hypotheses. The design involved two sections and each section contained two parts.
Section A – Part I

First part of Section A was concerned with comparing the mean scores of the philosophical perceptions held by teachers in respect of the four major philosophical thoughts. This was done finding out the mean differences of the subgroups using the two-tailed test of significance and determining whether the difference was significant at 0.05 or at 0.01 level.

Section A – Part II

The second part of the design involved graphical representation of the teachers’ philosophical preference regarding the four major philosophical thoughts within certain stipulated patterns and interpreting the ‘grids’ so obtained.

Section B – Part I

The second section of the design was to ascertain the tenability of the second proposed hypothesis. Part one of this section was aimed at comparing the mean scores of ‘high’, ‘average’ and ‘low’ academic achievers in respect of the independent variables related to the culture of ‘head’, ‘hand’ and ‘heart’. For that the sample was divided into three subgroups based upon the academic achievement levels, viz., ‘high’, ‘average’ and ‘low’ achievers. The comparison was done subjecting the data to the test of significance. The two-tailed test for difference between means of large independent samples was used and noted whether the mean difference was significant at 0.05 level or at 0.01 level.
Section B – Part II

Second part of this section was concerned with finding out the extent to which the independent variables related to the Gandhian educational parameters correlate with the 'high', 'average' and 'low' academic achievers.

For this, the analysis of the scores was done using the following techniques: (i) product-moment correlation followed by the determination of confidence interval at 0.05 level; (ii) determination of the extent of the percentage of overlap of the variables with academic achievement.

Selection of the domains for Investigation

The domain selected might be as broad as that of "human interest factors" or as narrow as that of "perceptual closure abilities." It should not be too limited in scope. Hence the domains for the present study selected are the philosophical perceptions of teachers related to the four major philosophical thoughts and the Gandhian educational parameters related to the culture of 'head', 'hand' and 'heart' of 'high', 'average' and 'low' academic achievers.

4.3 Tools Used in the Study

"The selection or construction of suitable instruments or tools is of vital importance for successful research. Different tools are suitable for collecting various kinds of information for various purposes." In selecting the tools to

\[\text{[References]}\]

\[\text{[Page Numbers]}\]
be used, it is essential to ensure its adequacy from the standpoint of the purpose of the study.

Description of the tests used in the analysis

Two questionnaires were used in the present study. Questionnaire I consisted of forty variables related to the four major philosophical thoughts, variables of equal distribution. Questionnaire II consisted of thirty variables related to the Gandhian educational parameters in respect of the 'culture of head', 'culture of hand' and 'culture of heart'. The details of the test used in the analysis are given in Table 1.

a) Preparation of the questionnaire

It is evident that questionnaires are important instruments in normative survey research, being used to gather information from widely scattered sources. Hence, the researcher took meticulous care and effort systematic in compiling of questions to collect the desired data. The items included in the questionnaire were structured ones, which contained definite, concrete and directed questions intended to elicit the opinion and attitude of the respondents.

The items of the questionnaire were related to the problem under investigation and sought data, which could not be obtained from books, reports or records. The items were as short as possible, only long enough to avail the essential data. Questions were presented in good psychological order proceeding from general to more specific ones. A tabulation sheet was also prepared for easy tabulation and summarisation of data.
In planning and constructing the questionnaire the researcher sought help from the faculty members and experienced teachers. A thorough exploration of the hypotheses formulated, objectives stated and the nature of data required enabled the researcher to select items for the questionnaire from a pool of items.

b) Reliability and validity

It was essential to ensure reliability of the items of the questionnaires prior to their administration. Reliability was ensured through including specific questions, which would check the truthfulness of answers to general questions. Some parallel questions were also included to check the consistency of answers. Items, which did not satisfy the required criteria, were eliminated and only relevant items were included. Validity of the questionnaires was ensured through a pilot study. For this a rough sample of the two questionnaires were given to two selected groups. After this preliminary test the items were validated with an interview with the groups and found whether responses to the two questionnaires actually represented their views on the subjects discussed. Thus, face validity was established in the case of both the questionnaires prior to their administration to the sample.
### TABLE 3
Details of Tests Used in the Analysis

<table>
<thead>
<tr>
<th>Name of tests</th>
<th>Independent variables</th>
<th>No. of items</th>
<th>Time limit (minutes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The Philosophy Preference Assessment Scale</td>
<td>Idealism</td>
<td>10</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>Naturalism</td>
<td>10</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>Pragmatism</td>
<td>10</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>Realism</td>
<td>10</td>
<td>15</td>
</tr>
<tr>
<td>2. The Gandhian Educational Parameters Preference</td>
<td>Culture of the head</td>
<td>10</td>
<td>20</td>
</tr>
<tr>
<td>Assessment</td>
<td>Culture of the hand</td>
<td>10</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>Culture of the heart</td>
<td>10</td>
<td>20</td>
</tr>
</tbody>
</table>

#### 4.4 Samples for the Study

The dependability of the findings of any study is determined to a great extent by the nature of the sample used for the study. "A sample is a finite number of observations or cases, selected from all cases in a particular universe often assumed to be representative of the total group or universe of which it is a part."\(^{236}\) Cornell defines sampling as follows: "Sampling is process by which relatively small numbers of individuals or measures of individuals, objects or events is selected or analysed in order to find out something about the entire population or universe from which it was selected."\(^{237}\)

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It is virtually difficult or impossible to cover the entire population for the purpose of a study, although one would like to cover the population and obtain a conclusion, which is valid for the population. As an alternative, a suitable sample is selected from the population and the findings obtained for the sample is extended to arrive at generalisations regarding the population. The generalisations are valid only if the sample has been selected carefully to be representative of the population. "A representative sample would be a miniature or replica of the population at least with respect to the characteristics under investigation."^238

According to Lindquist, the numbers constituting the subgroups in a stratified sample are arbitrarily determined, and need not be proportional to the numbers in the corresponding subdivisions of the population. In the present study, the method of sampling used is 'stratified sampling' also called 'quota sampling'. It is a technique designed to ensure representativeness and avoid bias by use of a modified random sampling method. This scheme is applicable when the population is composed of subgroups or strata of different sizes, so that a representative sample must contain individuals drawn from each category or stratum in accordance with the sizes of the subgroups.

The present study entitled, "A Study of the Secondary School Curriculum with a View to Restructuring it into a Gandhian Educational Framework," demands selecting two types of samples. Sample I for assessing their perceptions regarding the four major philosophical thoughts. Sample II intended for assessing their perceptions on the Gandhian educational

parameters that would help in promoting the academic achievement of secondary school pupils.

(i) Sample I consisted of 130 secondary school teachers drawn from four revenue districts, namely, Kottayam, Ernakulam, Palakkad and Malappuram. Four schools were selected, of which two were governmental and the other two belonged to management. Further, they had an equal rural and urban representation.

(ii) Sample II represented pupils of standard IX drawn from nine secondary schools of Kerala from four revenue districts. Practical considerations have been taken to ensure a representative sample from Kottayam, Ernakulam, Palakkad and Malappuram districts. This has not in any way affected the representative nature of the sample, largely because of the fact that these districts represent all cultural categories (backward and forward areas), and also all categories of schools (very poor academic achievement to very good levels). The sample consisted of nine representative schools and they had an almost equal rural urban, government and private representation.

Factors considered in the selection of the samples

a) Sample I

The following factors were taken into account in selecting sample one:

(i) The sample was drawn from selected secondary schools of Kerala.

(ii) The sample consisted of teachers of high academic and professional qualifications, most of them trained post-graduates.
(iii) Most of the teachers belonged to the sample had more than eight years of teaching experience.

(iv) The sample was drawn from both government and management schools;

(v) The schools selected represented an equal rural, urban distribution.

(vi) Both men and women teachers were included in the sample.

b) Sample II

1. School efficiency

The schools were classified on the basis of their percentage of success in S.S.L.C. examination in the following manner. Schools having 60 per cent of the success are considered 'high', having success between 40 and 60 per cent are considered 'average' and those having below 40 per cent are considered 'low'. On the basis of this classification, two 'high', three 'average' and four 'low' schools were selected.

2. Rural-urban location of schools

It is apparently certain that urban schools attain greater instructional efficiency as compared with rural schools. Performance in public examinations usually points to this end. It was therefore, decided that schools of both categories should came into the sample in right proportions. Hence the schools were selected in such a way that two 'high' schools, one each from rural and urban areas. Similarly, out of the three 'average' schools, two belonged to the rural area and one from urban area. The four 'low' achievement schools selected, two belonged to rural and two to the urban areas.
3. **Coverage of different categories of schools**

The existing schools in Kerala fall into two broad categories, classified according to the agencies, which run the schools. Most of the schools are run by Government directly by the State Department of Education, which the remaining schools are run by private agencies. Hence, in the selection of the sample, both government and private schools are included.

4. **Sex of the subjects**

Due care was given to have the number of boys almost equal to the number of girls from each of the above categories of schools. Even though an equal subdivision is not absolutely representative at all stages of the true population of the sexes in the population, it is so close to it that no error is introduced.\(^{239}\)

**Sample size**

According to Guilford,\(^ {240}\) experience seems to show that when Pearson's 'r' is used for calculating the correlation coefficient, a sample of size 200 is a good policy. Verifiable results have been obtained on important studies in which there have been less than 200 subjects. It is shown that the sample size 200 drawn from a normal population covers the range \(\sigma\),\(^ {241}\) where \(\sigma\) is the standard deviation of the sample.

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\(^{241}\) Garrett, *op. cit.*, p. 207.
Hence, the researcher decided to fix the size of sample I to be near 130 and size of the sample II to be near 700. The distribution of the two samples actually tested are shown in Table 4 and Table 6.

**TABLE 4**

Distribution of the Sample (I) Actually Tested

<table>
<thead>
<tr>
<th></th>
<th>Government School Teachers (GTS)</th>
<th>Private School Teachers (PTS)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Rural</td>
<td>Urban</td>
</tr>
<tr>
<td></td>
<td>Gents</td>
<td>Ladies</td>
</tr>
<tr>
<td></td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>Total</td>
<td>60</td>
<td></td>
</tr>
<tr>
<td>Grand Total N</td>
<td>130</td>
<td></td>
</tr>
</tbody>
</table>

The questionnaire was administered to 130 teachers. But of these, 30 were rejected because of incomplete answers. Rejecting the 30 teachers, the sample finally taken includes only 100 teachers. The distribution of these 100 teachers is shown in Table 5.
TABLE 5
Distribution of the Final Sample (I)

<table>
<thead>
<tr>
<th></th>
<th>Government School Teachers (GTS)</th>
<th>Private School Teachers (PTS)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Rural Gents</td>
<td>Ladies</td>
</tr>
<tr>
<td></td>
<td>11</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>N = 25</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total = 47</td>
<td></td>
</tr>
<tr>
<td>Grand Total</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

TABLE 6
Distribution of the Sample II Actually Tested

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Level of Achievement</th>
<th>Government Schools</th>
<th>Private Schools</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Boys</td>
<td>Girls</td>
</tr>
<tr>
<td>1</td>
<td>Average</td>
<td>64</td>
<td>56</td>
</tr>
<tr>
<td>2</td>
<td>High</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Low</td>
<td>25</td>
<td>35</td>
</tr>
<tr>
<td>4</td>
<td>Average</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>High</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Low</td>
<td>18</td>
<td>19</td>
</tr>
<tr>
<td>7</td>
<td>Low</td>
<td>43</td>
<td>37</td>
</tr>
<tr>
<td>8</td>
<td>Low</td>
<td>46</td>
<td>52</td>
</tr>
<tr>
<td>9</td>
<td>Average</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>110</td>
<td>108</td>
</tr>
<tr>
<td></td>
<td></td>
<td>218</td>
<td>97</td>
</tr>
<tr>
<td>Grand Total</td>
<td></td>
<td>686</td>
<td></td>
</tr>
</tbody>
</table>
Thus 686 pupils were tested on the whole. But of these, 15 pupils were rejected because of incomplete answers. Rejecting the 15 pupils, the sample finally taken includes only 671 pupils. The distribution of the final sample is shown in Table 7.

**TABLE 7**

**Distribution of the Final Sample (II)**

<table>
<thead>
<tr>
<th></th>
<th>Government Schools</th>
<th>Private Schools</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Rural</td>
<td>Urban</td>
</tr>
<tr>
<td>Boys</td>
<td>109</td>
<td>43</td>
</tr>
<tr>
<td>Girls</td>
<td>108</td>
<td>52</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>217</td>
<td>95</td>
</tr>
<tr>
<td><strong>Grand Total N</strong></td>
<td>= 671</td>
<td></td>
</tr>
</tbody>
</table>

4.5 Data Collection Procedure and Consolidation of Data

After fixing the samples to be studied, the Headmasters/Headmistress of the selected schools were contacted for seeking permission and for fixing up the time schedule for the administration of the tests. The tests were administered in two occasions during the month January 1997.

At the first instance, the questionnaire for answering the philosophical preference of teachers regarding the four major philosophies was given to the selected samples. A general data sheet was attached to the questionnaire,
so that the subjects could furnish details like their name, sex, age, educational qualifications, nature of the school years of teaching experience etc. The subjects were brought to the confidence of the researcher through a prior information that the test has nothing to do with their professional career, but the data obtained would be used only for research purpose. The rapport so established enabled the subjects to respond to the test items freely and with full confidence within the stipulated time.

Secondly, the questionnaire intended to assess the extent of influence of Gandhian educational parameters on Academic Achievement of the secondary school students was administered to the selected sample.

The method of answering each item in the score sheet was explained and demonstrated on the blackboard. The subjects were informed that they should complete the tests within the prescribed time limit and in accordance with the instructions given.

The subjects were further informed that the test results have nothing to do with their class examinations, and they could freely attempt the items. The sample showed much interest and enthusiasm in finishing the test items within the time limit.

The general data sheet attached to the questionnaire was so elaborate that the sample had to furnish details like their name, age, standard, sex, locality of the school residence, parental occupations, level of academic achievement, income and other required data for the investigation.
Scoring

(i) After collecting the 120 answer sheets from the sample, they were scored using the five-point scale. Scoring was done by counting the responses and assigning appropriate credits to the responses. The total score for each of the philosophical thoughts were found separately keeping accuracy throughout scoring.

(ii) The answer sheets of the second questionnaire were collected from the sample. They were scored using the three-point scale. Scoring was done by counting the response. Appropriate credits were given to the response maintaining utmost care and accuracy throughout.

Consolidation of data

(i) The scores obtained for the 'philosophical preference assessment' were tabulated under 4 columns, 'idealism', 'naturalism', 'realism' and 'pragmatism' separately. This table was used for further analysis.

(ii) The scores obtained questionnaire 'Gandhian educational parameters preference assessment', were tabulated under three heads, namely, 'culture of head', 'culture of hand' and 'culture of heart'. The academic achievement of the sample was also tabulated along within the form of scores. These data were used for analysis of the problem.

4.6 Statistical Treatment and Processing of Data

The present study has mainly been intended to highlight the tenability of the proposed hypotheses.

(i) The different philosophical perceptions of the teachers will have profound influence in the construction of the Secondary School Curriculum of any country.
(ii) Gandhian educational parameters seriously conceived will reshape the present Secondary School Curriculum that will cater to the needs of emerging society.

The first hypothesis makes it necessary to estimate the extent to which the samples selected differ in their perceptions with respect to the four major philosophical thoughts. For this, the data were subjected to the following statistical treatment:

(i) Test of significance of the mean differences of the subgroups
- The two-tailed test ('t'-test) for difference between means of large independent samples was used for the present purpose.

(ii) Finding out whether the mean difference was significant at 0.05 level or at 0.01 level.

The scores obtained for the four philosophical perceptions were used to compute the arithmetic mean and standard deviation. The arithmetic mean was calculated using the formula

\[ M = M_a + \frac{\sum fd}{N} \times C \]

and the standard deviation was calculated using the formula

\[ S. D. = C \sqrt{\frac{\sum fd^2}{N} - \left(\frac{\sum fd}{N}\right)^2} \]

The standard deviation provides a relative measure of the degree to which each score differs from the mean.

In order to compare the extent of philosophical perceptions held by the subgroups, the data obtained were subjected to tests of mean differences. The two-tailed test for difference between means of large independent samples
suggested by Guilford and Fruchter, was used for the purpose. Standard
error of the difference of means compared were determined using the formula

\[ \sigma_{dm} = \sqrt{\frac{\sigma_1^2}{N_1} + \frac{\sigma_2^2}{N_2}} \]

Then the critical ratio (CR) indicating the size of the mean difference was
calculated using the formula

\[ CR = \frac{M_1 - M_2}{\sigma_{dm}} \]

where \( M_1 - M_2 \) is the difference between the computed means. Depending
upon whether the CR exceeds 1.96 or 2.58, it was decided whether the mean
difference was significant at 0.05 level or at 0.01 level.

The second part of the statistical procedure focuses attention on
plotting graphs depicting the philosophy preference of the sample. This
procedure is based on the criterion that in planning curriculum, the values
behind each philosophic thought should be clarified and understood in terms
of their implications. For this purpose, philosophy preference assessment is
of utmost significance.

The major philosophical thoughts commonly applied in the
construction of Secondary School Curriculum are idealism, naturalism,
pragmatism and realism. It is critical that the values embedded in each of this
philosophical thought should be clarified and understood in terms of their
implications. Hence, a philosophy preference assessment scale was

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243 Wiles and Bondi, *op. cit.*, pp. 51-55.
administered to the sample, which yielded adequate data for plotting the graphs and interpreting those graphs (Appendix VI).

The tenability of the second hypothesis was assessed using the following statistical procedures:

1) The selected sample was divided into three discrepant achievement levels—high achievers, average achievers and low achievers—based on the second terminal examination marks proceeding the study. The mean and standard deviation were worked out. Those getting scores at or above \( (M+\sigma) \) were classified as 'high-achievers' (HA) and those getting scores at or below \( (M - \sigma) \) were classified as 'low-achievers' (LA). The remaining subjects in the sample were classified as 'average achievers' (AA). The students identified as belonging to these three discrepant achievement levels have been compared to determine the extent of perception of Gandhian educational parameters, which will have a decisive impact in restructuring the Secondary School Curriculum.

2) Test of significance of the mean difference of the three achievement levels in respect of the Gandhian educational parameters pertaining to the 'culture of the head', 'culture of the hand' and 'culture of the heart'. The two-tailed test ('t'-test) for difference between means of large independent samples was used for the present purpose.

3) Finding out whether the mean difference was significant at 0.05 level or at 0.01 level.
Correlation analysis

Correlation analysis was done to determine:

(a) the extent to which the Gandhian educational parameters of the three domains correlate with the academic achievement of the subgroups of the sample (HA, AA and LA);

(b) the extent to which the variables of the Gandhian educational parameters correlate with each other in the case of Rural-Urban, Government-Private and between Boys and Girls;

(c) the extent of relationship between the Gandhian educational parameters that belong to the culture of 'head', 'hand' and 'heart' with the academic achievement of the whole sample;

(d) the percentage of overlap of the variables that come under the three domains with the academic achievement of the subgroups (HAA, AAA and LAA).²⁴⁴

Correlation analysis

Correlation analysis involving the following statistical procedures was employed:

(1) Pearson's product moment coefficient correlation;

(2) Determination of the confidence interval at 0.05 level by computing the standard error;

(3) Determination of the percentage of overlap of each of the philosophic perception among the subsamples.

Pearson's product moment correlation coefficient

The various correlation coefficients of the present study were calculated using the Pearson's product moment correlation coefficient (using the scatter grams) with the help of the formula,

\[
    r = \frac{N \sum fx y - (\sum fx)(\sum fy)}{\sqrt{N \sum fx^2 - (\sum fx)^2} \sqrt{N \sum fy^2 - (\sum fy)^2}}
\]

where \( N \) is the sample size and \( x \) and \( y \) are the variables to be correlated measured from appropriate origins.

The correlations obtained were interpreted using the concept of standard error and working out 0.05 confidence interval. The standard error or ‘\( r \)’ is given by the formula,

\[
    \text{Standard error of ‘} r \text{‘} = \frac{1 - r^2}{\sqrt{N}}.
\]

In this formula, ‘\( r \)’ is the correlation coefficient and ‘\( N \)’ is the sample size.

Limits of the confidence levels and significance of the r’s

The standard error of ‘\( r \)’ was worked out for estimating the confidence interval the 0.05 interval was given by

\[
    r \pm \left( \frac{1 - r^2}{\sqrt{N}} \right) \times 1.96.
\]

Significance of ‘\( r \)’ was tested using the result that, significant ‘\( r \)’ should exceed \( 1/\sqrt{n} \times 1.96 \) for significance at 0.05 level; considering whether the absolute

\[245\] Guilford and Fruchter, op. cit., pp. 1974-75.
\[246\] Ibid., p. 7.
values of ‘r’ exceed this limit. For the whole sample \((N' = 671)\) the limit for significance at 0.05 level was calculated as 0.0757 and significance at 0.01 level was estimated as 0.098.

**Shared common variance**

For the whole sample, the common variance, viz. the extent of overlap of the variables belonging to ‘culture of head’, ‘culture of hand’ and ‘culture of heart’ with their academic achievement was calculated using the formula,

\[
\text{Shared variance} = r^2 \times 100\%.
\]

**Special considerations in using the product moment coefficient of correlation**

In using the product moment coefficient of correlation, it is pertinent to see whether the variables satisfy the assumptions behind the use of this coefficient. The following are the assumptions underlying in the use and interpretation of the product moment correlation:\(^{247}\)

(a) The relationship between the two variables be rectilinear: This can be determined as the rule by an inspection of the scatter diagram.

(b) The distribution of the two variables should be normal or at least not badly-skewed: This can be decided by studying the distribution graphically.

(c) The conditions of equal scattering should be satisfied, which means that the dispersion should be the same for each row or column, in the correlated table. “This condition will prevail generally when two distributions are fairly symmetrical within themselves.”\(^{248}\)

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The distribution of the scores was plotted using scatter grams. The obtained correlations have been interpreted using significance of ‘r’ tested against the null hypothesis, viz. \( (r = 0) \). The coefficients have also been verbally interpreted by the following conventions:\(^{249}\)

(i) ‘r’ from 0.00 to ± 0.20 denotes indifferent or negligible relationship.
(ii) ‘r’ from ± 0.20 to ± 0.40 denotes low correlation.
(iii) ‘r’ from ± 0.40 to ± 0.70 denotes substantial or marked relationship.
(iv) ‘r’ from ± 0.70 to ± 1.00 denotes high to very high relationship.

The values of ‘r’ have been interpreted using yet another procedure, viz., estimating the 0.05 confidence interval, so that the possible range of the population value of ‘r’ could be specified.

\(^{249}\) Ibid.