CHAPTER – IV

ANALYSIS AND INTERPRETATION OF THE DATA

Data processing, analysis and interpretation of the data is the major aspect. Until and unless the said aspects are not taken-up properly, the research process cannot proceed further.

The Normative-Survey method was selected by the researcher for collecting the data through administering the scale on the teachers teaching to primary level at English medium schools of Aurangabad District.

After collecting the data it was found that lot of information is being gathered, which was followed by the Data Processing activity – which included sorting, classifying, analyzing and interpretation of the data collected.

Meaning of Data:-

Data means observations or evidences. The scientific educational researches require the data by means of some standardized research tools or self-designed instrument.

The Researcher collected the data from the teachers of English medium primary schools of Aurangabad District. The instructions given in the test manual were strictly followed by the researcher with utmost care. The researcher made every attempt to keep her research work free of shortcomings. Maximum time and effort was utilized in data collection. No
step was taken in haste because careful collection of data leads to maximum accuracy during the interpretation of data.

**Data Processing:**

A number of steps of operations are involved in the method of data processing. After the collection of the data classification and consolidation of the information collected by the researcher was done. It was done in such a way that it provided a framework for analysis. It helped the researcher to find out limitations and drawbacks if any.

The collected information helped in the systematic application of research techniques to interpret the collected data. During data processing the collected data was arranged and categorized into specific groups and the researcher represented into a tabulated form. Application of analytical techniques and statistical treatment was done after data processing.

As the information collected by the researcher was very much huge and bulky data processing proved to be very useful and essential. Data processing helped the researcher in a way that the process of classification and analysis was made more manageable. All irrelevant data was removed.

**Main stages of Data Processing:**

The main stages of data processing were Editing, Coding and Tabulation.
i) Editing:-

Editing of the data determines completeness and accuracy of the collected raw data in surveys; it is for examining and detecting errors for omissions when possible. Editing mainly involves a careful scrutiny of the completed questionnaire. While editing the researcher assured that the data is accurate, consistent with other facts gathered, uniformly entered as complete as possible and have been well arranged to facilitate coding and tabulation.

In her research work the researcher-collected data from 225 teachers. A few teachers didn’t respond some questions therefore, they were not included in the process of analysis. The no. of teachers from each school were 04. But every school (primary) doesn’t have the same number of teachers, therefore, the average no. of teachers were made to respond the questionnaire.

ii) Coding:-

After editing, ‘coding’ is the next important activity in the data processing. The qualitative data in the questionnaire was converted into numerical form and presented in the coding matrix.

The process of coding made it easier for the researcher to process the data more systematically and rapidly.

Coding was necessary for efficient analysis and through it the several replies were reduced to a small number of
classes, which contain the critical information required for analysis.

iii) Tabulation:-

The researcher put the data once edited and coded together in carefully designed tables for statistical analysis. Tabulation amounts to counting of number of cases falling into five different areas:-

a) Preparation for Teaching and Planning.
b) Classroom Management.
c) Knowledge of subject-matter etc.
d) Teacher characteristics.
e) Interpersonal relations.

When a mass of data was assembled it became necessary for the researcher to arrange the same in a logical order.

Tabulation was the process of summarizing raw data and displaying the same in compact form for further arrangement of data in columns and rows. Later on, the researcher carried out editing, coding and classification and lastly, tabulation was done.

In all 40 tables were prepared regarding the five areas of teaching effectiveness, which are given in Appendix B.

Statistics used in analysis of the Data:-

Statistical results can be useful only to the extent that they are correctly interpreted with full and proper
interpretations extracted from the data, statistical results are a most powerful source of meaning and significance. In the hands of skilled operators, statistics make data ‘talk’. It was, therefore, very important for the researcher that the implications of statistical results were to be realized and its proper meaning made to manifest.

The researcher therefore, used inferential statistics to get appropriate results. The primary objective of statistical inference is to enable us to generalize from a sample to some larger population of which the sample is a part.

We do not know of course, the parameters of a given population. But we can, under-specified conditions forecast the parameters from our sample statistics with known degree of accuracy.

The degree to which a sample, means to represent its parameters is an index of the significance or trust worthiness of the computed mean. When any sample is taken randomly it is found to cause some degree of error. Therefore, it is necessary to calculate the standard error of the ‘Mean’.

After going through the various statistics and taking into consideration the data collected in this research, the researcher came to the conclusion to use “t” test to see the significance level of difference of mean to interpret the data.

As a first step the researcher calculated “mean” of the ratings done by the teachers and headmasters regarding the five areas of teaching effectiveness – preparation and planning for teaching, classroom management, knowledge of the subject-matter, teacher characteristics and interpersonal relations.
The next step was the calculation of 'standard deviation'. Then the critical ratio was found and the hypotheses were tested on 0.05 level of significance. If the 't' value equals or exceeds 1.96, it may be concluded that the difference between means is significant at the 0.05 level.

**Hypotheses of the Study:-**

The following hypotheses were framed for this study:-

**H-1:-** On an average the teachers prepare and plan their lessons very well for teaching.

1.1 There is no significant difference between female and male teachers of urban area with reference to preparation and planning for teaching.

1.2 There is no significant difference between female teachers of urban and rural area with reference to preparation and planning for teaching.

1.3 There is no significant difference between female teachers of urban area and male teachers of rural area with reference to preparation and planning for teaching.

1.4 There is no significance difference between male teachers of urban area and female teachers of rural area with reference to preparation and planning for teaching.

1.5 There is no significant difference between male teachers of urban and rural area with reference to preparation and planning for teaching.
1.6 There is no significant difference between the female and male teachers of rural area with reference to planning and preparation for teaching.

Hypotheses:-

H-1 On an average the teachers plan and prepare their lessons very well.

Hypothesis No. 1.1
1.1 There is no significant difference between female and male teachers of urban area with reference to preparation and planning for teaching:-

<table>
<thead>
<tr>
<th></th>
<th>Female teachers of Urban Area</th>
<th>Male teachers of Urban area</th>
<th>C.R.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean $(M_1)$</td>
<td>$(N_1)$</td>
<td>Mean $(M_2)$</td>
<td>$(N_2)$</td>
</tr>
<tr>
<td>71.734</td>
<td>141</td>
<td>61.584</td>
<td>48</td>
</tr>
<tr>
<td>S.D. $(\sigma_1)$</td>
<td>25.268</td>
<td>S.D. $(\sigma_2)$</td>
<td>22.636</td>
</tr>
<tr>
<td>2.603</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Calculation of Critical Ratio:-

$$T = \frac{M_1 - M_2}{\text{SEM}} = \frac{M_1 - M_2}{\sqrt{\frac{\sigma_1^2}{N_1} + \frac{\sigma_2^2}{N_2}}}$$
\[ T = \frac{71.734 - 61.584}{\sqrt{\frac{(25.268)^2}{141} + \frac{(22.636)^2}{48}}} \]

C.R. = 2.603

**Interpretation:**

The C.R. comes 2.603 which is greater than 1.96, (2.603>1.96) so, it is proved that the difference between the mean of Male and Female teachers of Urban Area with reference to planning and preparation is significant at 0.05 level of confidence. Therefore, it is inferred that female teachers of urban area are better than the male teachers of urban area with reference to planning and preparation as the Mean of female teachers is (71.734) more than the Mean of male teachers (61.584).

**Hypothesis No. 1.2**

1.2 There is no significant difference between female teachers of urban area and female teachers of rural area with reference to preparation and planning for teaching.

<table>
<thead>
<tr>
<th>Female teachers of Urban Area</th>
<th>Male teachers of Urban area</th>
<th>C.R.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean ( (M_1) ) 71.734</td>
<td>Mean ( (M_2) ) 61.584</td>
<td>( \sigma_1 ) 25.268</td>
</tr>
<tr>
<td>( N_1 ) 141</td>
<td>( N_2 ) 26</td>
<td></td>
</tr>
</tbody>
</table>

165
Calculation of Critical Ratio:-

\[
T = \frac{M_1 - M_2}{SEM} = \frac{M_1 - M_2}{\sqrt{\frac{\sigma_1^2}{N_1} + \frac{\sigma_2^2}{N_2}}}
\]

\[
T = \frac{71.734 - 58.731}{\sqrt{\frac{(25.268)^2}{141} + \frac{(23.889)^2}{26}}}
\]

\[
C.R. = 0.542
\]

Interpretation:-

The C.R. comes 0.542 which is smaller than table value 1.96 therefore it can be inferred that there is no significant different between the female teachers of Urban and Rural area of 0.05 level of confidence. Therefore, we can say the Female Teachers of Urban and Rural Area are almost same with reference to planning and preparation for teaching as the Mean of female teachers of Urban area is (71.734) and that of Female Teachers of Rural Area is (58.731)
Hypothesis No. 1.3

1.3 There is no significant difference between female teachers of urban area and male teachers of rural area with reference to planning and preparation for teaching.

| Table No- 3 |
|-------------|------------------|------------------|-----------|
| Female teachers of Urban Area | Male teachers of Rural Area | C.R. |
| Mean \( (M_1) \) | S.D. \( (\sigma_1) \) | Mean \( (M_2) \) | S.D. \( (\sigma_2) \) | 0.074 |
| 71.734 | 25.268 | 74.5 | 27.202 |
| \( (N_1) \) | \( (N_2) \) | | |
| 141 | 10 |

Calculation of Critical Ratio:

\[
T = \frac{M_1 - M_2}{SEM} = \frac{M_1 - M_2}{\sqrt{\frac{\sigma_1^2}{N_1} + \frac{\sigma_2^2}{N_2}}}
\]

\[
T = \frac{71.734 - 74.5}{\sqrt{(25.268)^2 \frac{1}{141} + (27.202)^2 \frac{1}{10}}}
\]

C.R. = 0.074

Interpretation:

The C.R. comes 0.074 which is smaller than the table value 1.96 therefore, it can be inferred that there is no significant difference between the Female teachers of urban
area and Male teachers of Rural area at 0.05 level of confidence. Therefore, we can say that Female teachers of Urban area and Male teachers of Rural area are equal with reference to planning and preparation for teaching as the Mean of Female teachers of Urban Area is 71.734 and that of Male teachers of Rural Area is 74.5.

**Hypothesis No. 1.4**

1.4 There is no significant difference between the Male teachers of Urban Area and Female teachers of Rural Area with reference to palling and preparation for teaching.

<table>
<thead>
<tr>
<th>Table No. 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male teachers of Urban Area</td>
</tr>
<tr>
<td>Mean (M_1) 61.584</td>
</tr>
</tbody>
</table>

| \(N_1\) 48 | \(N_2\) 26 |

**Calculation of Critical Ratio:-**

\[
T = \frac{M_1 - M_2}{SEM} = \frac{M_1 - M_2}{\sqrt{\frac{\sigma_1^2}{N_1} + \frac{\sigma_2^2}{N_2}}}
\]

\[
T = \frac{61.584 - 58.731}{\sqrt{(22.636)^2 \cdot \frac{1}{48} + (23.889)^2 \cdot \frac{1}{26}}}
\]

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C.R. = 0.499

Interpretation:-

The C.R. comes 0.499 which is smaller than the table value 1.96, therefore, it can be inferred that there is no significant difference between the Male teachers of Urban Area and Female Teachers of Rural Area at 0.05 level of confidence. Therefore we can say that Male teachers of Urban Area and Female teachers of Rural Area are almost same with reference to planning and preparation for teaching as the Mean of Male teachers of Urban Area is 61.584 and that of Female teachers of Rural Area is 58.731.

Hypothesis No. 1.5

1.5 There is no significant difference between the Male teachers of Urban Area and Male teachers of Rural Area with reference to Planning and preparation for teaching.

Table No. 5

<table>
<thead>
<tr>
<th>Male teachers of Urban Area</th>
<th>Male teachers of Rural area</th>
<th>C.R.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean ((M_1)) 61.584</td>
<td>S.D. ((\sigma_1)) 22.636</td>
<td></td>
</tr>
<tr>
<td>((N_1)) 48</td>
<td>Mean ((M_2)) 74.5</td>
<td></td>
</tr>
<tr>
<td></td>
<td>((N_2)) 10</td>
<td></td>
</tr>
<tr>
<td></td>
<td>S.D. ((\sigma_2)) 27.202</td>
<td></td>
</tr>
</tbody>
</table>

Calculation of Critical Ratio:-
\[ T = \frac{M_1 - M_2}{\text{SEM}} = \frac{M_1 - M_2}{\sqrt{\frac{\sigma_1^2}{N_1} + \frac{\sigma_2^2}{N_2}}} \]

\[ T = \frac{61.584 - 74.5}{\sqrt{(22.636)^2 + \frac{(27.202)^2}{48} + \frac{(27.202)^2}{10}}} \]

\[ \text{C.R.} = 0.499 \]

**Interpretation:**

The C.R. comes 0.499 which is smaller than 1.96 (0.499 < 1.96) so, it is proved that the difference between the Mean of Male teachers of Urban area and Male teachers of Rural area with reference to planning and preparation is insignificant at 0.05 level of confidence reference to planning and preparation for teaching as the Mean of Female Teachers of Urban Area is 71.734 and that of Male Teachers of Rural Area is 74.5.

Therefore, it is inferred that Male teachers of Urban Area and Male teachers of Rural Area are almost equal with reference to Planning and Preparation for Teaching as the Mean of Male teachers of Urban area is 61.584 and that of Male teachers of Rural area is 74.5.
Hypothesis No. 1.6
1.6 There is no significant difference between the Female and Male teachers of Rural Area with reference to Planning and preparation for teaching.

Table No. 6

<table>
<thead>
<tr>
<th>Female teachers of Rural Area</th>
<th>Male teachers of Rural area</th>
<th>C.R.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean ($M_1$) 58.731</td>
<td>Mean ($M_2$) 74.5</td>
<td>0.571</td>
</tr>
<tr>
<td>(N_1) 26</td>
<td>(N_2) 10</td>
<td></td>
</tr>
<tr>
<td>S.D. ($\sigma_1$) 23.889</td>
<td>S.D. ($\sigma_2$) 27.202</td>
<td></td>
</tr>
</tbody>
</table>

Calculation of Critical Ratio:-

\[ T = \frac{M_1 - M_2}{SEM} = \frac{M_1 - M_2}{\sqrt{\frac{\sigma_1^2}{N_1} + \frac{\sigma_2^2}{N_2}}} \]

\[ T = \frac{58.731 - 74.5}{\sqrt{(23.889)^2 + (27.202)^2}} \]

\[ \sqrt{\frac{26}{10}} \]

C.R. = 0.571

Interpretation:-
The C.R. comes 0.571 which is smaller than 1.96 (0.571 < 1.96) so, it is proved that the difference between the Mean of Female teachers of the Rural Area and Male teachers of Rural
area with reference to Planning and preparation is insignificant at 0.05 level of confidence.

Therefore, we can say that Female teachers of Rural area and Male teachers of Rural area are almost same with reference to planning and preparation for teaching as the mean of Female teachers of Rural area is 58.731 and that of Male teachers of rural area is 74.5.
H-2 :- On an average the teachers are able to manage the class effectively.

2.1 There is no significant difference between female and male teachers of urban area with reference to classroom management.

2.2 There is no significant difference between the female teachers of urban and rural area with reference to classroom management.

2.3 There is no significant difference between the female teachers of urban area and male teachers of rural area with reference to classroom management.

2.4 There is no significant difference between male teachers of urban area and female teachers of rural area with reference to classroom management.

2.5 There is no significant difference between male teachers of urban and rural area with reference classroom management.

2.6 There is no significant difference between the female and male teachers of rural area with reference to classroom management.
Hypothesis No. 2.1

2.1 There is no significant difference between the Female & Male teachers of Urban Area with reference to Classroom Management.

<table>
<thead>
<tr>
<th>Female teachers of Urban Area</th>
<th>Male teachers of Urban area</th>
<th>C.R.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean ((M_1)) 92.301</td>
<td>Mean ((M_2)) 80.334</td>
<td>0.605</td>
</tr>
<tr>
<td>((N_1)) 141</td>
<td>((N_2)) 48</td>
<td></td>
</tr>
<tr>
<td>S.D. ((\sigma_1)) 30.131</td>
<td>S.D. ((\sigma_2)) 26.836</td>
<td></td>
</tr>
</tbody>
</table>

Calculation of Critical Ratio:-

\[
T = \frac{M_1 - M_2}{SEM} = \frac{M_1 - M_2}{\sqrt{\frac{\sigma_1^2}{N_1} + \frac{\sigma_2^2}{N_2}}}
\]

\[
T = \frac{92.301 - 80.334}{\sqrt{(30.131)^2 + (26.836)^2}}
\]

C.R. = 0.605

Interpretation:-

The C.R. comes to 0.605 which is smaller than 1.96 \((0.605 < 1.96)\) so, it is proved that the difference between the Mean of Male Teachers of Urban Area and Male teachers of
Rural area with reference to Classroom Management is insignificant at 0.05 level of confidence.

Therefore, it can be inferred that Female teachers of Urban area and Male teachers of Urban area are same with respect to Classroom Management as the Mean of Female Teachers of Urban area is 92.301 and that of Male teachers of Urban area is 80.334.

**Hypothesis No. 2.2**

2.2 There is no significant difference between the Female teachers of Urban Area and Rural Area with reference to Classroom Management.

**Table No. 8**

<table>
<thead>
<tr>
<th>Female teachers of Urban Area</th>
<th>Female teachers of Rural Area</th>
<th>C.R.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean ((M_1)) 92.301 ((N_1)) 141</td>
<td>S.D. ((\sigma_1)) 30.131 Mean ((M_2)) 80.334 ((N_2)) 48</td>
<td>S.D. ((\sigma_2)) 26.836</td>
</tr>
</tbody>
</table>

**Calculation of Critical Ratio:-**

\[
T = \frac{M_1 - M_2}{SEM} = \frac{M_1 - M_2}{\sqrt{\frac{\sigma_1^2}{N_1} + \frac{\sigma_2^2}{N_2}}}
\]

\[
T = \frac{92.301 - 71.424}{\sqrt{(30.131)^2 + (31.475)^2}} \left(\frac{141}{141} + \frac{26}{26}\right)
\]

**C.R. = 3.128**
Interpretation:-

The C.R. comes to 3.128 which is greater than 1.96, (3.128 > 1.96) so it is proved that the difference between the female of urban area and female of rural area with reference to classroom management is significant at 0.05 level of confidence. Therefore it is inferred that Female teachers of Urban Area are better than the female teachers of Rural area with reference Classroom Management as the Mean of Female Teachers of Urban area is 92.301 and that of Female teachers of Rural area is 71.424.

Hypothesis No. 2.3

2.3 There is no significant difference between the Female teachers of Urban area and Male teachers of Rural area with reference to Classroom Management.

Table No. 9

<table>
<thead>
<tr>
<th>Female teachers of Urban Area</th>
<th>Male teachers of Rural area</th>
<th>C.R.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean ((M_1)) 92.301</td>
<td>Mean ((M_2)) 84.5</td>
<td>0.765</td>
</tr>
<tr>
<td>((N_1)) 141</td>
<td>((N_2)) 10</td>
<td></td>
</tr>
<tr>
<td>S.D. ((\sigma_1)) 30.131</td>
<td>S.D. ((\sigma_2)) 31.304</td>
<td></td>
</tr>
</tbody>
</table>

Calculation of Critical Ratio:-

\[ T = \frac{M_1 - M_2}{SEM} = \frac{M_1 - M_2}{\sqrt{\frac{\sigma_1^2}{N_1} + \frac{\sigma_2^2}{N_2}}} \]
\[ T = \frac{92.301 - 84.5}{\sqrt{\frac{(30.131)^2}{141} + \frac{(31.304)^2}{10}}} \]

C.R. = 0.765

**Interpretation:**

The C.R. comes to 0.765 which is smaller than the table value 1.96. therefore, it can be inferred that there is no significant difference between the Female teachers of Urban area and Male teachers of Rural area at 0.05 level of confidence. Therefore, we can say that female teachers of Urban area and Male Teachers of Rural area are almost same with reference to Classroom Management as the Mean of Female teachers of Urban Area is 92.301 and that of Male teachers of Rural Area is 84.5.

**Hypothesis No. 2.4**

2.4 There is no significant difference between the Male teachers of Urban area and Female teachers of Rural area with reference to Classroom Management.

**Table No. 10**

<table>
<thead>
<tr>
<th>Male teachers of Urban Area</th>
<th>Female teachers of Rural area</th>
<th>C.R.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean ( (M_1) ) 80.334</td>
<td>S.D. ( (\sigma_1) ) 26.836</td>
<td></td>
</tr>
<tr>
<td>( (N_1) ) 48</td>
<td>Mean ( (M_2) ) 71.424</td>
<td></td>
</tr>
<tr>
<td></td>
<td>( (N_2) ) 26</td>
<td></td>
</tr>
<tr>
<td></td>
<td>S.D. ( (\sigma_1) ) 31.475</td>
<td>1.242</td>
</tr>
</tbody>
</table>

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Calculation of Critical Ratio:-

\[ T = \frac{M_1 - M_2}{SEM} = \frac{M_1 - M_2}{\sqrt{\frac{\sigma_1^2}{N_1} + \frac{\sigma_2^2}{N_2}}} \]

\[ T = \frac{80.334 - 71.424}{\sqrt{(26.836)^2 + (31.475)^2}} \]

\[ \sqrt{48} + \frac{26}{26} \]

C.R. = 1.242

Interpretation:-

The C.R. comes to 1.242 which is smaller than 1.242 which is smaller than table value 1.96 therefore, it can be inferred that there is no significant difference between the Male teachers of Urban area and Female teachers of Rural Area at 0.05 level of confidence. Therefore, we can say that Male teachers of Rural area are almost equal with reference to Classroom Management as the Mean of Male teachers of Urban area is 80.334 and that of Female teachers of Rural area is 71.424.
Hypothesis No. 2.5
2.5 There is no significant difference between the Male teachers of Urban and Rural area with reference to Classroom Management.

<table>
<thead>
<tr>
<th>Male teachers of Urban Area</th>
<th>Male teachers of Rural Area</th>
<th>C.R.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean (M&lt;sub&gt;1&lt;/sub&gt;) 80334 (N&lt;sub&gt;1&lt;/sub&gt;) 48</td>
<td>S.D. (σ&lt;sub&gt;1&lt;/sub&gt;) 26.836</td>
<td>Mean (M&lt;sub&gt;2&lt;/sub&gt;) 84.5 (N&lt;sub&gt;2&lt;/sub&gt;) 10</td>
</tr>
</tbody>
</table>

Table No. 11

Calculation of Critical Ratio:-

\[ T = \frac{M_1 - M_2}{SEM} = \frac{M_1 - M_2}{\sqrt{\frac{\sigma_1^2}{N_1} + \frac{\sigma_2^2}{N_2}}} \]

\[ T = \frac{80.334 - 84.5}{\sqrt{\frac{(26.836)^2}{48} + \frac{(31.304)^2}{10}}} \]

C.R. = 0.394

Interpretation:-

The C.R. comes to 0.394 which is smaller than table value 1.96, therefore, it can be inferred that there is no significant difference between the Male teachers of Urban area and Male teachers of Rural area at 0.05 level of
confidence. Thus, we can say that Male teachers of Urban area and Male teachers of Rural area are almost same with reference to classroom Management. As the Mean of Male Teachers of Urban area is 80.334 and that of Male teachers of Rural area is 84.5.

**Hypothesis No. 2.6**

2.6 There is no significant difference between the Female teachers of Rural area and Male teachers of Rural area with reference to Classroom Management.

<table>
<thead>
<tr>
<th>Female teachers of Rural Area</th>
<th>Male teachers of Rural area</th>
<th>C.R.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean (M₁) 71.424</td>
<td>Mean (M₂) 84.5</td>
<td>1.120</td>
</tr>
<tr>
<td>(N₁) 26</td>
<td>(N₂) 10</td>
<td></td>
</tr>
<tr>
<td>S.D. (σ₁) 31.475</td>
<td>S.D. (σ₂) 31.304</td>
<td></td>
</tr>
</tbody>
</table>

**Calculation of Critical Ratio:**

\[
T = \frac{M₁ - M₂}{SEM} = \frac{M₁ - M₂}{\sqrt{\frac{σ₁^2}{N₁} + \frac{σ₂^2}{N₂}}}
\]

\[
T = \frac{71.424 - 84.5}{\sqrt{\frac{(31.475)^2}{26} + \frac{(31.304)^2}{10}}}
\]

C.R. = 1.120
Interpretation:-

The C.R. comes to 1.120 which is smaller than table value 1.96, therefore, it can be inferred that there is no significant difference between the Female teachers of Rural area and Male teachers of Rural area at 0.05 level of confidence. Thus, we can say that Female teachers of Rural area and Male teachers of Rural area are almost equal with reference to classroom management. As the Mean of Female Teachers of Rural area is 71.424 and that of Male teachers of Rural area is 84.5.
H-3: On an average the teachers have the required amount of knowledge regarding the subject-matter.

3.1 There is no significant difference between the female and male teachers of urban area with reference to the knowledge they possess regarding the subject-matter.

3.2 There is no significant difference between the female teachers of urban area, rural area with reference to the knowledge they possess regarding the subject-matter.

3.3 There is no significant difference between male teachers of rural area and female teachers of urban area with reference to the knowledge they possess regarding the subject-matter.

3.4 There is no significant difference between male teachers of urban area and female teachers of rural area with reference to the knowledge they possess regarding the subject-matter.

3.5 There is no significant difference between male teachers of urban and rural area with reference to the knowledge they possess regarding the subject matter.

3.6 There is no significant difference between female and male teachers of rural area with reference to the knowledge they possess regarding the subject-matter.
Hypothesis No. 3.1

3.1 There is no significant difference between the Female and Male teachers of Urban area with reference to the Knowledge they possess regarding the subject-matter.

<table>
<thead>
<tr>
<th>Table No. 13</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Female teachers of Urban Area</strong></td>
</tr>
<tr>
<td>Mean $(M_1)$ 46.911</td>
</tr>
<tr>
<td>$(N_1)$ 141</td>
</tr>
</tbody>
</table>

**Calculation of Critical Ratio:-**

\[
T = \frac{M_1 - M_2}{SEM} = \frac{M_1 - M_2}{\sqrt{\frac{\sigma_1^2}{N_1} + \frac{\sigma_2^2}{N_2}}}
\]

\[
T = \frac{46.911 - 43.459}{\sqrt{(15.927)^2 \frac{141}{N_1} + (16.739)^2 \frac{48}{N_2}}}
\]

C.R. = 1.249

**Interpretation:-**

The C.R. comes to 1.249 which is smaller than 1.96 (1.249 < 1.96), so, it is proved that the difference between the Mean of Female and Male teachers of Urban area with
reference to the knowledge they possess regarding the subject-matter is insignificant at 0.05 level of confidence.

Therefore, we can say that Female teachers of Urban area and Male teachers of Urban area almost same with reference to the knowledge they possess regarding the subject-matter as the Mean of Female teachers of Urban area is 46.911 and that of Male teachers of Urban area is 43.459.

3.2 There is no significant difference between the Female teachers of urban area and female teachers of rural area with reference to the knowledge they possess regarding the subject-matter.

**Table No.14**

<table>
<thead>
<tr>
<th><strong>Female teachers of Urban Area</strong></th>
<th><strong>Female teachers of Rural Area</strong></th>
<th><strong>C.R.</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean ((M_1)) 46.911</td>
<td>S.D. ((\sigma_1)) 15.927</td>
<td></td>
</tr>
<tr>
<td>((N_1)) 141</td>
<td>Mean ((M_2)) 36.808</td>
<td></td>
</tr>
<tr>
<td></td>
<td>S.D. ((\sigma_2)) 74.973</td>
<td>0.684</td>
</tr>
<tr>
<td></td>
<td>((N_2)) 26</td>
<td></td>
</tr>
</tbody>
</table>

**Calculation of Critical Ratio:**

\[ T = \frac{M_1 - M_2}{\text{SEM}} = \frac{M_1 - M_2}{\sqrt{\frac{\sigma_1^2}{N_1} + \frac{\sigma_2^2}{N_2}}} \]

\[ T = \frac{46.911 - 36.808}{\sqrt{\frac{(15.927)^2}{141} + \frac{(74.943)^2}{26}}} \]

**C.R. = 0.684**
Interpretation:-

The C.R. comes to 0.684 which is smaller than table value 1.96 therefore, it can be inferred that there is no significant difference between the female teachers of urban area and female teachers of rural area at 0.05 level of confidence. Thus we can say that female teachers of urban area and female teachers of rural area are almost equal with reference to the knowledge they possess regarding the subject-matter. As the Mean of female teachers of urban area is 46.911 and that of female teachers of Rural area is 36.808.

3.3 There is no significant difference between the Female teachers of urban area and Male teachers of rural area with a reference to the knowledge they possess regarding the subject-matter.

Table No. 15

<table>
<thead>
<tr>
<th>Female teachers of Urban Area</th>
<th>Male teachers of Urban area</th>
<th>C.R.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean ($M_1$) 46.911</td>
<td>Mean ($M_2$) 61.50</td>
<td>2.583</td>
</tr>
<tr>
<td>(N_1) 141</td>
<td>(N_2) 10</td>
<td></td>
</tr>
<tr>
<td>S.D. ($\sigma_1$) 15.927</td>
<td>S.D. ($\sigma_1$) 17.349</td>
<td></td>
</tr>
</tbody>
</table>

Calculation of Critical Ratio:-

$$T = \frac{M_1 - M_2}{SEM} = \frac{M_1 - M_2}{\sqrt{\frac{\sigma_1^2}{N_1} + \frac{\sigma_2^2}{N_2}}}$$
\[ T = \sqrt{\frac{46.911 - 61.5}{(15.927)^2 + (17.349)^2}} \]

C.R. = 2.583

Interpretation:-

The C.R. comes to 2.583 which is greater than table value 1.96, (2.583 > 1.96) so, it is proved that the difference between the mean of female and male teachers of urban area with reference to knowledge they possess regarding the subject-matter is significant at 0.05 level of confidence. Therefore, it is inferred that Male teachers of urban area are better than female teachers of urban area with reference to the knowledge they possess regarding the subject- matter as the Mean of Male teachers is 61.5 more than the Mean of female teachers 46.911.

3.4 There is no significant difference between the Male teachers of urban area and female teachers of rural area with reference to the knowledge they possess regarding the subject-matter.
Table No. 16

<table>
<thead>
<tr>
<th>Male teachers of Urban Area</th>
<th>Female teachers of Rural Area</th>
<th>C.R.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean ( (M_1) ) 43.459</td>
<td>Mean ( (M_2) ) 36.808</td>
<td>0.446</td>
</tr>
<tr>
<td>S.D. ( (\sigma_1) ) 16.739</td>
<td>S.D. ( (\sigma_2) ) 74.973</td>
<td></td>
</tr>
<tr>
<td>( (N_1) ) 48</td>
<td>( (N_2) ) 26</td>
<td></td>
</tr>
</tbody>
</table>

Calculation of Critical Ratio:

\[
T = \frac{M_1 - M_2}{SEM} = \frac{M_1 - M_2}{\sqrt{\frac{\sigma_1^2}{N_1} + \frac{\sigma_2^2}{N_2}}}
\]

\[
T = \frac{43.459 - 36.808}{\sqrt{(16.739)^2/48 + (74.943)^2/26}}
\]

C.R. = 0.446

Interpretation:

The C.R. comes to 0.446 which is smaller than table value 1.96 therefore, it can be inferred that there is no significant difference between the Male teachers of urban area and female teachers of rural area at 0.05 level of confidence. Thus, we can say that Male teachers of urban area and female teachers of rural area are almost equal with reference to the knowledge they possess regarding the subject-matter. As the
mean of male teachers of urban area is 43.459 and that of female teachers of rural area is 36.808.

3.5 There is no significant difference between the Male teachers of urban area and Male teachers of rural area with reference to the knowledge they possess regarding the subject-matter.

<table>
<thead>
<tr>
<th>Male teachers of Urban Area</th>
<th>Male teachers of Rural Area</th>
<th>C.R.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean ((M_1)) 43.459 ((N_1)) 48</td>
<td>S.D. ((\sigma_1)) 16.739</td>
<td>Mean ((M_2)) 61.5 ((N_2)) 10</td>
</tr>
</tbody>
</table>

**Table No. 17**

**Calculation of Critical Ratio:**

\[
T = \frac{M_1 - M_2}{SEM} = \frac{M_1 - M_2}{\sqrt{\frac{\sigma_1^2}{N_1} + \frac{\sigma_2^2}{N_2}}}
\]

\[
T = \frac{43.459 - 61.5}{\sqrt{\frac{(16.739)^2}{48} + \frac{(17.349)^2}{10}}}
\]

\[
C.R. = 3.009
\]
Interpretation:-

The C.R. comes to 3.009 which is greater than 1.96, (3.009 > 1.96) so, it is proved that the difference between the mean of Male teachers of urban area and male teachers of rural area with reference to the knowledge they possess regarding the subject-matter is significant at 0.05 level of confidence. Therefore, it is inferred that Male teachers of rural area are better than male teachers of urban area with reference to the knowledge they possess regarding the subject-matter as the Mean of Male teachers of rural area is 61.5 more than the Mean of Male teachers of urban area 43.459.

3.6 There is no significant difference between the female and male teachers of rural area with reference to the knowledge they possess regarding the subject-matter.

<table>
<thead>
<tr>
<th>Table No.18</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Female teachers of Rural Area</strong></td>
</tr>
<tr>
<td>Mean $(M_1)$ 36.808</td>
</tr>
</tbody>
</table>

| $(N_1)$ 26 | $(N_2)$ 10 |

Calculation of Critical Ratio:-

$$ T = \frac{M_1 - M_2}{SEM} = \frac{M_1 - M_2}{\sqrt{\frac{\sigma_1^2}{N_1} + \frac{\sigma_2^2}{N_2}}} $$
\[ T = \frac{36.808 - 61.5}{\sqrt{\frac{(74.943)^2}{26} + \frac{(17.349)^2}{10}}} \]

C.R. = 1.573

Interpretation:-

The C.R. comes to 1.573 which is smaller than 1.96 (1.573 < 1.96) so, it is proved that the difference between the mean of female and male teachers of rural area with reference to the knowledge they possess regarding the subject-matter is insignificant at 0.05 level of confidence.

Therefore, we can say that female and male teachers of rural area are almost same with reference to the knowledge they possess regarding the subject-matter as the Mean of female teachers of rural area is 36.808 and that of male teachers of rural area is 61.5.
H-4 :- On an average the teachers possess the 'teacher characteristics' according to the teaching profession.

4.1 There is no significant difference between the female and male teachers of urban area with reference to the 'teacher characteristics' possessed by them.

4.2 There is no significant difference between the female teachers of urban and rural area with reference to the teacher characteristics possessed by them.

4.3 There is no significant difference between the female teachers of urban area and male teachers of rural area with reference to the 'teacher characteristics' possessed by them.

4.4 There is no significant difference between the male teachers of urban area and female teachers of rural area with reference to the 'teacher characteristics' possessed by them.

4.5 There is no significant difference between the male teachers of urban and rural area with reference to the 'teacher characteristics' possessed by them.

4.6 There is no significant difference between the female and male teachers of rural area with reference to the 'teacher characteristics' possessed by them.

4.1 There is no significant difference between the female and male teachers of urban area with reference to the teachers characteristics possessed by them.
Table No. 19

<table>
<thead>
<tr>
<th>Female teachers of Urban Area</th>
<th>Male teachers of Urban area</th>
<th>C.R.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean ($M_1$) 114.783</td>
<td>Mean ($M_2$) 98.25</td>
<td>0.440</td>
</tr>
<tr>
<td>(N$_1$) 141</td>
<td>($N_2$) 48</td>
<td></td>
</tr>
<tr>
<td>S.D. ($\sigma_1$) 38.093</td>
<td>S.D. ($\sigma_2$) 36.149</td>
<td></td>
</tr>
</tbody>
</table>

**Calculation of Critical Ratio:**

\[
T = \frac{M_1 - M_2}{\text{SEM}} = \frac{M_1 - M_2}{\sqrt{\frac{\sigma_1^2}{N_1} + \frac{\sigma_2^2}{N_2}}}
\]

\[
T = \frac{114.783 - 98.25}{\sqrt{(38.093)^2 \frac{1}{141} + (36.149)^2 \frac{1}{48}}}
\]

C.R. = 0.349

**Interpretation:**

The C.R. comes to 0.349 which is smaller than table value 1.96 therefore, it can be inferred that there is no significant difference between the female and male teachers of urban area at 0.05 level of confidence. Thus, we can say that female and male teachers of urban area are almost equal with reference to the teachers characteristics possessed by them.
As the Mean of female teachers is 114.783 and that of Male teachers of urban area is 98.25.

4.2 There is no significant difference between the female teachers of urban area and female teachers of rural area with reference to the teachers characteristics possessed by them.

<table>
<thead>
<tr>
<th>Female teachers of Urban Area</th>
<th>Female Teachers of Rural Area</th>
<th>C.R.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean (M₁) 114.783 (N₁) 141</td>
<td>Mean (M₂) 91.424 (N₂) 26</td>
<td>38.093 38.309 0.349</td>
</tr>
</tbody>
</table>

Calculation of Critical Ratio:-

\[
T = \frac{M_1 - M_2}{\text{SEM}} = \frac{M_1 - M_2}{\sqrt{\frac{\sigma_1^2}{N_1} + \frac{\sigma_2^2}{N_2}}}
\]

\[
T = \frac{114.783 - 91.424}{\sqrt{\frac{(38.093)^2}{141} + \frac{(38.309)^2}{26}}}
\]

C.R. = 0.349

193
Interpretation:-

The C.R. comes to 0.349 which is smaller than table value 1.96 therefore, it can be inferred that there is no significant difference between the female teachers of urban area and the female teachers of rural area at 0.05 level of confidence. Thus, we can say that female teachers of urban area and female teachers of rural area are almost equal with reference to the teachers characteristics possessed by them.

As the Mean of female teachers of urban area is 114.783 and that of female teachers of rural area is 91.424.

4.3 There is no significant difference between the female teachers of urban area and male teachers of rural area with reference to the teachers characteristics possessed by them.

<table>
<thead>
<tr>
<th>Table No. 21</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Female teachers of Urban Area</strong></td>
</tr>
<tr>
<td>Mean $(M_1)$</td>
</tr>
<tr>
<td>114.783</td>
</tr>
</tbody>
</table>

Calculation of Critical Ratio:-

\[
T = \frac{M_1 - M_2}{SEM} = \frac{M_1 - M_2}{\sqrt{\frac{\sigma_1^2}{N_1} + \frac{\sigma_2^2}{N_2}}}
\]
\[ T = \frac{114.783 - 113.5}{\sqrt{(38.093)^2 + (42.532)^2}} \sqrt{\frac{141}{10}} \]

\[ C.R. = 6.71 \]

**Interpretation:**

The C.R. comes to 6.71 which is greater than 1.96, \((6.71>1.96)\) so, it is proved that difference between the Mean of female teachers of urban area and male teachers of rural area with reference to the characteristics possessed by them is significant at 0.05 level of confidence, therefore, it is inferred that female teachers of urban area are better than Male teachers of rural area with reference to the teacher characteristics possessed as the Mean of female teachers of urban area is 114.783 more than the Mean of male teachers of rural area 113.5.

4.4 There is no significant difference between the male teachers of urban area and female teachers of rural area with reference to the teachers characteristics possessed by them.

<table>
<thead>
<tr>
<th>Male teachers of Urban Area</th>
<th>Female teachers of Rural Area</th>
<th>C.R.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean ((M_1)) 98.25</td>
<td>S.D. ((\sigma_1)) 36.149</td>
<td></td>
</tr>
<tr>
<td>((N_1)) 48</td>
<td>Mean ((M_2)) 91.424</td>
<td></td>
</tr>
<tr>
<td></td>
<td>((N_2)) 26</td>
<td></td>
</tr>
<tr>
<td></td>
<td>S.D. ((\sigma_2)) 38.309</td>
<td>0.017</td>
</tr>
</tbody>
</table>
Calculation of Critical Ratio:-

\[
T = \frac{M_1 - M_2}{SEM} = \frac{M_1 - M_2}{\sqrt{\frac{\sigma_1^2}{N_1} + \frac{\sigma_2^2}{N_2}}}
\]

\[
T = \frac{98.25 - 91.424}{\sqrt{\frac{(36.149)^2}{48} + \frac{(38.309)^2}{26}}}
\]

C.R. = 0.017

Interpretation:-

The C.R. comes to 0.017 which is smaller than table value 1.96 therefore, it can be inferred that there is no significant difference between the male teachers of urban area and female teachers of rural area at 0.05 level of confidence. Thus, we can say that male teachers of urban area and female teachers of rural area almost equal with reference to the teachers characteristics possessed by them. As the mean of male teachers of urban area is 98.25 and that of female teachers of rural area is 91.424.

4.5 There is no significant difference between the male teachers of urban area and male teachers of rural area with reference to the teachers characteristics possessed by them.
Table No. 23

<table>
<thead>
<tr>
<th>Male teachers of Urban Area</th>
<th>Male teachers of Rural Area</th>
<th>C.R.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean ((M_1)) 98.25</td>
<td>Mean ((M_2)) 113.5</td>
<td>1.131</td>
</tr>
<tr>
<td>((N_1)) 48</td>
<td>((N_2)) 10</td>
<td></td>
</tr>
<tr>
<td>S.D. ((\sigma_1)) 36.149</td>
<td>S.D. ((\sigma_1)) 42.532</td>
<td></td>
</tr>
</tbody>
</table>

Calculation of Critical Ratio:

\[
T = \frac{M_1 - M_2}{SEM} = \frac{M_1 - M_2}{\sqrt{\frac{\sigma_1^2}{N_1} + \frac{\sigma_2^2}{N_2}}}
\]

\[
T = \frac{98.25 - 113.5}{\sqrt{\frac{(36.149)^2}{48} + \frac{(42.532)^2}{10}}}
\]

C.R. = 1.131

Interpretation:

The C.R. comes to 1.131 which is smaller than table value 1.96. therefore, it can be inferred that there is no significant difference between the male teachers of urban area and male teachers of rural area at 0.05 level of confidence. Thus we can say that male teachers of urban area and male teachers of rural area are almost equal with reference to the
characteristics possessed by them. As the mean of male teachers of urban area is 98.25 and that of male teachers of rural area is 113.5.

4.6 There is no significant difference between the female teachers of rural area and male teachers of rural area with reference to the teachers characteristics possessed by them.

<table>
<thead>
<tr>
<th>Table No. 24</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Female teachers of Rural Area</strong></td>
</tr>
<tr>
<td>Mean ($M_1$) 91.424</td>
</tr>
</tbody>
</table>

**Calculation of Critical Ratio:**

$$T = \frac{M_1 - M_2}{SEM} = \frac{M_1 - M_2}{\sqrt{\frac{\sigma_1^2}{N_1} + \frac{\sigma_2^2}{N_2}}}$$

$$T = \frac{91.424 - 113.5}{\sqrt{\frac{(38.309)^2}{26} + \frac{(42.532)^2}{10}}}$$

**C.R. = 1.433**
Interpretation:-

The C.R. comes to 1.433 which is smaller than table value 1.96 therefore, it can be inferred that there is no significant difference between the female and male teachers of Rural area at 0.05 level of confidence. Thus, we can say that female and male teachers of rural area are almost equal with reference to the teachers characteristics possessed by them as the mean of female teachers of rural area is 91.424 and that of male teachers of rural area is 113.5.
H-5 :- On an average the teachers possess the 'interpersonal relations' according to the teaching profession.

5.1 There is no significant difference between the female and male teachers of urban area with reference to the 'Interpersonal relations' possessed by them.

5.2 There is no significant difference between the female teachers of urban and rural area with reference to the 'Interpersonal relations' possessed by them.

5.3 There is no significant difference between the female teachers of urban area and male teachers of rural area with reference to the 'Interpersonal relations' possessed by them.

5.4 There is no significant difference between the male teachers of urban area and female teachers of rural area with reference to the 'Interpersonal relations' possessed by them.

5.5 There is no significant difference between the male teachers of urban area with reference to the 'Interpersonal relations' possessed by them.

5.6 There is no significant difference between the female and male teachers of rural area with reference to the 'Interpersonal relations' possessed by them.
5.1 There is no significant difference between the female teachers of urban area and male teachers of urban area with reference to the Interpersonal Relations possessed by them.

<table>
<thead>
<tr>
<th>Table No. 25</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Female teachers of Urban Area</strong></td>
</tr>
<tr>
<td>Mean $(M_1)$</td>
</tr>
<tr>
<td>72.869</td>
</tr>
</tbody>
</table>

**Calculation of Critical Ratio:**

$$T = \frac{M_1 - M_2}{SEM} = \frac{M_1 - M_2}{\sqrt{\frac{\sigma_1^2}{N_1} + \frac{\sigma_2^2}{N_2}}}$$

$$T = \frac{72.869 - 68.875}{\sqrt{(1.63)^2 (23.004)^2}} \sqrt{141 \ 48}$$

**C.R. = 1.201**

**Interpretation:**

The C.R. comes to 1.201 which is smaller than table value 1.96. Therefore, it can be inferred that there is no significant difference between the female and male teachers of urban area at 0.05 level of confidence. Thus we can say that the female and male teachers of urban area are almost equal with reference to interpersonal relations possessed by them.
5.2 There is no significant difference between the female teachers of urban area and female teachers of rural area with reference to the interpersonal relations possesses by them.

Table No. 26

<table>
<thead>
<tr>
<th>Female teachers of Urban Area</th>
<th>Female teachers of Rural Area</th>
<th>C.R.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean (M₁) 72.869</td>
<td>Mean (M₂) 65.27</td>
<td>1.561</td>
</tr>
<tr>
<td>(N₁) 141</td>
<td>(N₂) 26</td>
<td></td>
</tr>
<tr>
<td>S.D. (σ₁) 1.63</td>
<td>S.D. (σ₂) 24.805</td>
<td></td>
</tr>
</tbody>
</table>

Calculation of Critical Ratio:-

\[ T = \frac{M₁ - M₂}{\text{SEM}} = \frac{M₁ - M₂}{\sqrt{\frac{\sigma₁^2}{N₁} + \frac{\sigma₂^2}{N₂}}} \]

\[ T = \frac{72.869 - 65.27}{\sqrt{\frac{(1.63)^2}{141} + \frac{(24.805)^2}{26}}} \]

C.R. = 1.561

Interpretation:-
Since the C.R. comes to 1.561 which is smaller than the table value 1.96. Therefore, it can be inferred that there is no significant difference between female teachers of urban and rural area at 0.05 level of confidence. Thus we can say that the female teachers of urban and rural area are almost equal.
with reference to Interpersonal Relations possess by them. As the Mean of female teachers of urban area is 72.869 and that of female teachers of rural area is 65.27.

5.3 There is no significant difference between the female teachers of urban area and male teachers of rural area with reference to the interpersonal relations possessed by them.

Table No. 27

<table>
<thead>
<tr>
<th>Female teachers of Urban Area</th>
<th>Male teachers of Rural Area</th>
<th>C.R.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean ((M_1)) 72.869</td>
<td>((N_1)) 141</td>
<td>S.D. ((\sigma_1)) 1.63</td>
</tr>
</tbody>
</table>

Calculation of Critical Ratio:-

\[
T = \frac{M_1 - M_2}{SEM} = \frac{M_1 - M_2}{\sqrt{\frac{\sigma_1^2}{N_1} + \frac{\sigma_2^2}{N_2}}}
\]

\[
T = \frac{72.869 - 84.5}{\sqrt{(1.63)^2 + (26.457)^2}}
\]

\[
= \frac{72.869 - 84.5}{\sqrt{141 + 10}}
\]

C.R. = 4.392
Interpretation:-

The C.R. comes to 4.392 which is greater than 1.96. (4.392 > 1.96) so, it proved that the difference between the Mean female teachers of urban and male teachers of rural area with reference to the Interpersonal Relations possessed by them is significant at 0.05 level of confidence. Therefore it is inferred that Male teachers of rural area better than female teachers of urban area with reference to the Interpersonal relations possessed by them as the Mean of Male teachers of rural area is 84.5 more than the Mean of female teachers of urban area 72.869.

5.4 There is no significant difference between the Male teachers of urban area and female teachers of rural area with reference to the Interpersonal Relations possessed by them.

<table>
<thead>
<tr>
<th>Male teachers of Urban Area</th>
<th>Female teachers of Rural Area</th>
<th>C.R.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean ( (M_1) ) 68.875</td>
<td>Mean ( (M_2) ) 65.27</td>
<td>0.612</td>
</tr>
<tr>
<td>(( N_1 )) 48</td>
<td>(( N_2 )) 26</td>
<td></td>
</tr>
<tr>
<td>S.D. ( (\sigma_1) ) 23.004</td>
<td>S.D. ( (\sigma_2) ) 24.805</td>
<td></td>
</tr>
</tbody>
</table>

Calculation of Critical Ratio:-

\[
T = \frac{M_1 - M_2}{SEM} = \frac{M_1 - M_2}{\sqrt{\frac{\sigma_1^2}{N_1} + \frac{\sigma_2^2}{N_2}}}
\]
\[ T = \frac{68.875 - 65.27}{\sqrt{(23.004)^2 + (24.805)^2}} \]
\[ \sqrt{48} \]

C.R. = 0.612

**Interpretation:-**

The C.R. comes to 0.612 which is smaller than table value 1.96. Therefore, it can be inferred that there is no significant difference between the Male teachers of urban area and female teachers of Rural area at 0.05 level of confidence. Thus, we can say that Male teachers of urban area and female teachers of rural area are almost equal with reference to the Interpersonal Relations possessed by them. As Mean of Male teachers of urban area is 68.875 and that of Female teachers of Rural area is 62.27.

5.5 There is no significant difference between the Male teachers of urban area and Male teachers of Rural Area with reference to the Interpersonal Relations possess by them.

**Table No. 29**

<table>
<thead>
<tr>
<th>Male teachers of Urban Area</th>
<th>Male teachers of Rural Area</th>
<th>C.R.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean ( M_1 ) 68.875</td>
<td>Mean ( M_2 ) 84.5</td>
<td>1.736</td>
</tr>
<tr>
<td>( N_1 ) 48</td>
<td>( N_2 ) 10</td>
<td></td>
</tr>
<tr>
<td>S.D. ( \sigma_1 ) 23.004</td>
<td>S.D. ( \sigma_2 ) 26.457</td>
<td></td>
</tr>
</tbody>
</table>

205
Calculation of Critical Ratio:-

\[ T = \frac{M_1 - M_2}{SEM} = \frac{M_1 - M_2}{\sqrt{\frac{\sigma_1^2}{N_1} + \frac{\sigma_2^2}{N_2}}} \]

\[ T = \frac{68.875 - 84.5}{\sqrt{(23.004)^2 + (26.457)^2}} \]

\[ \sqrt{48 + 10} \]

C.R. = 1.736

Interpretation:-

The C.R. comes to 1.736 which is smaller than table value 1.96. Therefore, it can be inferred that there is no significant difference between the Male teachers of urban and rural area at 0.05 level of confidence. Thus, we can say that Male teachers of urban and rural area are almost equal with reference to the Interpersonal Relations possessed by them. As the Mean of Male Teachers of Urban Area is 68.875 and that of Male teachers of urban area are almost same with reference to the knowledge they possess regarding the subject matter as the Mean of Female teachers of Urban area is 46.911 and that of Male teachers of urban area is 43.459.
5.6 There is no significant difference between the female teachers of rural area and male teachers of rural area with reference to the Interpersonal Relations possessed by them.

Table No. 30

<table>
<thead>
<tr>
<th>Female teachers of Rural Area</th>
<th>Male teachers of Rural Area</th>
<th>C.R.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean $(M_1)$ 65.27</td>
<td>S.D. $(\sigma_1)$ 24.805</td>
<td></td>
</tr>
<tr>
<td>$(N_1)$ 26</td>
<td>Mean $(M_2)$ 84.50</td>
<td></td>
</tr>
<tr>
<td>$(N_2)$ 10</td>
<td>S.D. $(\sigma_2)$ 26.457</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1.987</td>
<td></td>
</tr>
</tbody>
</table>

Calculation of Critical Ratio:-

\[
T = \frac{M_1 - M_2}{\text{SEM}} = \frac{M_1 - M_2}{\sqrt{\frac{\sigma_1^2}{N_1} + \frac{\sigma_2^2}{N_2}}}
\]

\[
T = \frac{65.27 - 84.5}{\sqrt{\frac{(24.805)^2}{26} + \frac{(26.457)^2}{10}}}
\]

C.R. = 1.987

Interpretation:-

The C.R. comes to 1.987 which is greater than 1.96, (1.987 > 1.96) so, it is proved that the difference between the mean of female teachers of rural area and male teachers of rural area with reference to Interpersonal Relation Possessed by them is significant at 0.05 level of confidence. Therefore, it
is inferred that male teachers of rural area are better than female teachers of rural area with reference to Interpersonal Relation Possessed by them as the Mean of male teachers of rural area is 84.5 more than the mean of female teachers of rural area 65.27.

**Hypothesis No. 6**

H-6 The teachers have an above average effectiveness in teaching.

**Table No. 31**

Table showing total sample of teachers (225) (overall effectiveness of teachers).

<table>
<thead>
<tr>
<th>Class Interval</th>
<th>f</th>
<th>$x^1$</th>
<th>$fx^1$</th>
</tr>
</thead>
<tbody>
<tr>
<td>150-199</td>
<td>29</td>
<td>-4</td>
<td>-116</td>
</tr>
<tr>
<td>200-249</td>
<td>26</td>
<td>-3</td>
<td>-78</td>
</tr>
<tr>
<td>250-299</td>
<td>10</td>
<td>-2</td>
<td>-20</td>
</tr>
<tr>
<td>300-349</td>
<td>17</td>
<td>-1</td>
<td>17/231</td>
</tr>
<tr>
<td>350-399</td>
<td>35</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>400-449</td>
<td>22</td>
<td>1</td>
<td>22</td>
</tr>
<tr>
<td>450-499</td>
<td>40</td>
<td>2</td>
<td>80</td>
</tr>
<tr>
<td>500-549</td>
<td>25</td>
<td>3</td>
<td>75</td>
</tr>
<tr>
<td>550-599</td>
<td>21</td>
<td>4</td>
<td>84/261</td>
</tr>
</tbody>
</table>

\[ N=225 \quad \sum fx^1 = -30 \]

**Mean** = A.M. + \( \frac{\sum fx^1}{N} \times i \)

\[ = 374.5 + \frac{30}{225} \times 50 \]

208
Mean = 381.166

For concluding the overall effectiveness of all primary teachers a tentative scale was prepared which is as follows:-

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>70</td>
<td>Poor</td>
</tr>
<tr>
<td>176</td>
<td>Fair</td>
</tr>
<tr>
<td>282</td>
<td>Good</td>
</tr>
<tr>
<td>388</td>
<td>V. Good</td>
</tr>
<tr>
<td>494</td>
<td>Excellent</td>
</tr>
<tr>
<td>600</td>
<td></td>
</tr>
</tbody>
</table>

The, calculated mean score of teachers’ effectiveness is 381.166 which comes in the range of 282 – 388.

Therefore, the hypothesis “The teachers have an above average effectiveness in teaching” is proved as the score comes under category of good teachers.

**Hypothesis No. 7**

H-7 There is no significant difference between the effectiveness of Male and Female teachers in primary schools.

**Table No. 32**

<table>
<thead>
<tr>
<th>Female teachers of Rural Area</th>
<th>Male teachers of urban and Rural areas</th>
<th>C.R.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean ( (M_1) ) = 388.871</td>
<td>Mean ( (M_2) ) = 363.017</td>
<td>1.625</td>
</tr>
<tr>
<td>( (N_1) ) = 167</td>
<td>( (N_2) ) = 58</td>
<td></td>
</tr>
<tr>
<td>S.D. ( (\sigma_1) ) = 128.452</td>
<td>S.D. ( (\sigma_2) ) = 94.557</td>
<td></td>
</tr>
</tbody>
</table>

**Calculation of Critical Ratio:-**

\[
T = \frac{M_1 - M_2}{SEM} = \frac{M_1 - M_2}{\sqrt{\frac{\sigma_1^2}{N_1} + \frac{\sigma_2^2}{N_2}}}
\]

209
\[ T = \frac{388.871 - 363.017}{\sqrt{(128.452)^2 + (94.557)^2}} \]

\[ \sqrt{167 \quad 58} \]

C.R. = 1.625

**Interpretation:**

Since the C.R. comes to 1.625 which is smaller than the table value 1.96, therefore, it can be inferred that there is no significant difference between the female and male teachers at 0.05 level of confidence.

Thus, we can say that female as well as male teachers of primary schools possess almost equal amount of effectiveness.

**H-8 :-** According to Heads of the Institutions Teaching Effectiveness is normal among the teachers of Primary Schools in English Medium.

**Hypothesis No. 8**

H-8 According to Heads of the institutions teaching effectiveness is normal among the teachers of primary schools in English medium.
Table No. 33
Table showing ratings done by the H.M. with respect to all the five components of teaching effectiveness of teachers.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>fo</td>
<td>49</td>
<td>179</td>
<td>378</td>
<td>400</td>
<td>119</td>
<td>1125</td>
</tr>
<tr>
<td>fe</td>
<td>40.387</td>
<td>268.20</td>
<td>507.826</td>
<td>268.20</td>
<td>40.387</td>
<td>1125</td>
</tr>
<tr>
<td>(fo-fe)</td>
<td>8.613</td>
<td>98.2</td>
<td>129.826</td>
<td>131.8</td>
<td>78.613</td>
<td>447.052</td>
</tr>
<tr>
<td>(fo-fe)^2</td>
<td>74.18</td>
<td>7956.64</td>
<td>16854.79</td>
<td>17371.24</td>
<td>6180.003</td>
<td>48436.853</td>
</tr>
<tr>
<td>(fo - fe)^2</td>
<td>1.836</td>
<td>303.688</td>
<td>33.190</td>
<td>64.769</td>
<td>153.019</td>
<td>556.502</td>
</tr>
</tbody>
</table>

\[ \sum \frac{(fo-fe)^2}{fe} = 556.502 \]

\[ d.f = (2-1) \ (5-1) = 1 \times 4 = 4. \]

0.05 level of significance table value = 9.488
0.01 level of significance table value = 13.277

Degree of freedom is 4.

At 4 d.f. the table value of chi-square at 0.05 level of significance is 9.488 which is very small than calculated value 556.502. Therefore, it is safely inferred that observed frequency and expected frequencies have significant difference. And by observing the table it can be said the frequency of rates of Good, V. Good, Excellent are more and it can be inferred that the effectiveness of teachers is not normal but it is tending towards the positive side. So, it can be said that, "According to head of the school, the teachers are good and very good in their effectiveness."