

**CHAPTER 4:  
DATA ANALYSIS AND RESULTS**

## 4.1 Introduction:

This chapter intends to test the hypotheses, interpret the data, draw conclusions and make generalizations as well. The present study entitled, “**Attitude towards environment among pre-service teachers**” is based upon descriptive survey method. The major aim of the study was to assess attitude of student-teachers and teacher educators towards environment.

The data was analyzed through computers using SPSS package.

Accordingly, the relevant statistical techniques like mean, standard deviation, T-test were worked out for the testing of the hypotheses pertaining to all the objectives. For the sake of convenience, all the results and their interpretations depending upon various statistical techniques used, have been discussed viz. descriptive statistics, T-test.

The attitude score of an individual is the sum total of item scores on all six areas. The range of scores is from 61 to 244 with the higher score indicating the more favorable attitude towards environment and vice-versa. In the present research there was 139 minimum score and 166 maximum score.

## 4.2 Interpretation of Data

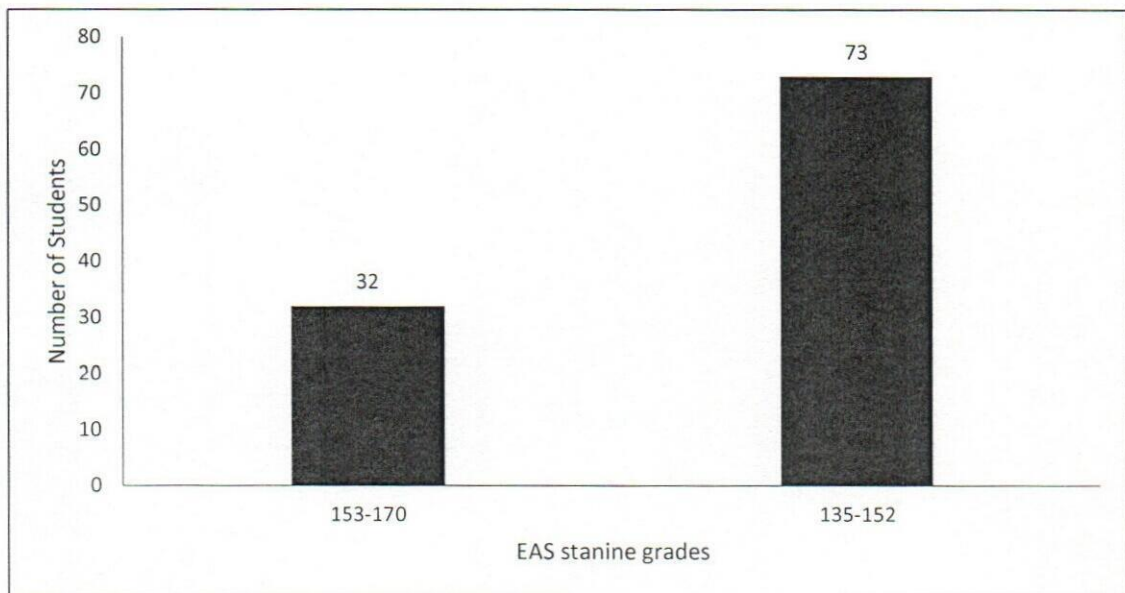
Data interpretation is the application of statistical procedures to analyze specific observed or assumed facts forms a particular study. They appear as questions or statements in tests. For the data interpretation it is crucial to understand the measurement scales and decide which statistical approach is required to be followed by the researcher based on the research objectives set.

In present research the researcher has studied the Attitude of pre service teachers in relation to gender and educational courses. For that the researcher has construct two null hypotheses. These hypotheses have been shown in chapter 1.

A descriptive analysis of the scores obtained across the sample was analyzed comparing the range of the raw scores on Taj Environment Attitude Scale (TEAS) for stanine

grades of students. The norms are in stanine grades. Using TEAS manual table for students, the TEAS raw scores fall under the stanine grades of V and VI with TEAS scores ranges, 135-152 and 153-170 respectively.

On comparing with tabulated TEAS scores, a total of 73 pre-service teachers obtained EAS scores under the stanine grade V (135-152). Remaining 32 obtained EAS scores under the stanine grade VI (153-170) (Graph 4.1). This means a large number of pre-service teachers has an average score. Thus the sample showed a favorable attitude towards environment.



**Graph 4.1 Distribution of EAS scores across RIE students**

For testing of hypothesis the researcher has divided the whole data into 2 sets interpreting the individual data sets as per the objectives and hypothesis set for this research study. Researcher has found the mean value, standard deviation, standard error and t- value for testing Hypotheses. The hypotheses were testing at significant level 0.05.

After getting response of pre-service teachers, researchers prepared score sheet according to different groups. According to the variables namely, educational courses and gender, the researcher has divided the scores into following group as under:

- Male pre-service teachers
- Female pre-service teachers
- B. Ed, B.Ed-M.Ed (Integrated) and M. Ed pre-service teachers

**Table 4.1. Frequency distribution of all above group**

Gender		Courses		
Males	Females	B. Ed	B.Ed-M.Ed(integrated)	M. Ed
36	69	55	35	15

#### **4.2.1 Analysis and Interpretation of scores in context to Gender:-**

The analysis and interpretation of scores on Environment Attitude Scale of pre-service teachers in relation to Gender is as follows:

##### **4.2.1.1 Standard Error of Mean, t-value and significant level of scores of Attitude scale of males and females**

The standard error of Mean, t-value and the significant level of score of Attitude scale of Pre service male and female teachers are computed for testing research questions. This detail is given in below Table-4.2

**Research Question 1: Is the attitude of male and female student teachers same towards environment?**

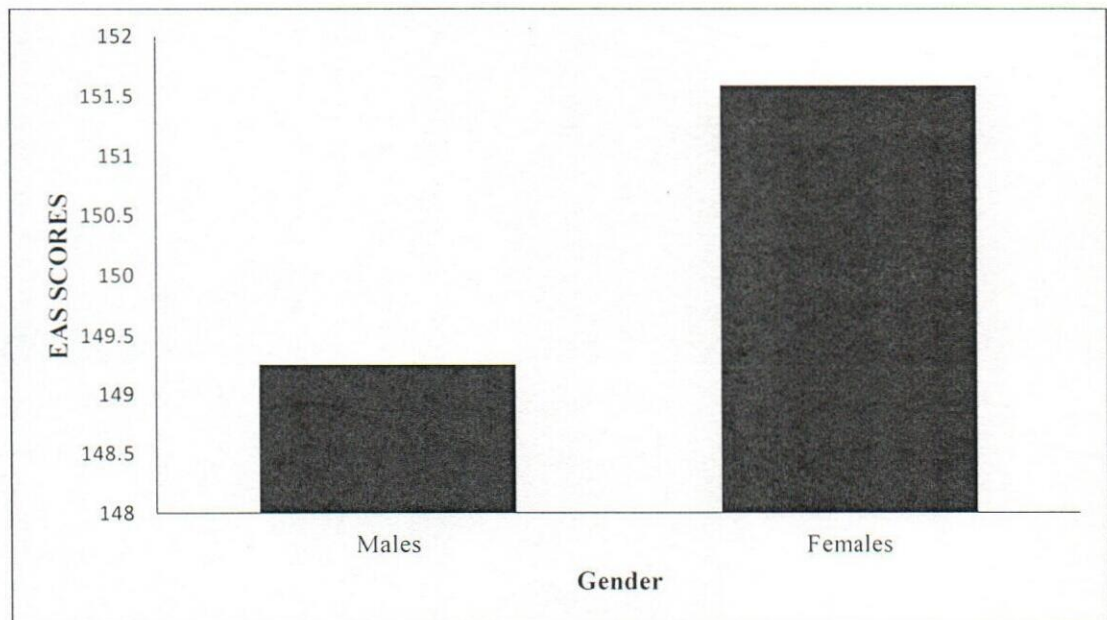
**Table 4.2 Statistics of male and female pre-service teachers**

Gender	N	Mean	T-Score
Male	36	149.25	2.21
Female	69	151.59	

From above table 4.2 we can see that mean values of male and female pre-service teachers are 149.25 and 151.59 respectively. The S.D. value is 5.079 and 5.163. Standard error of mean is 1.177. With the help of all these values computed t is 2.21 which is higher than the tabulated value 1.98 at 0.05 level.

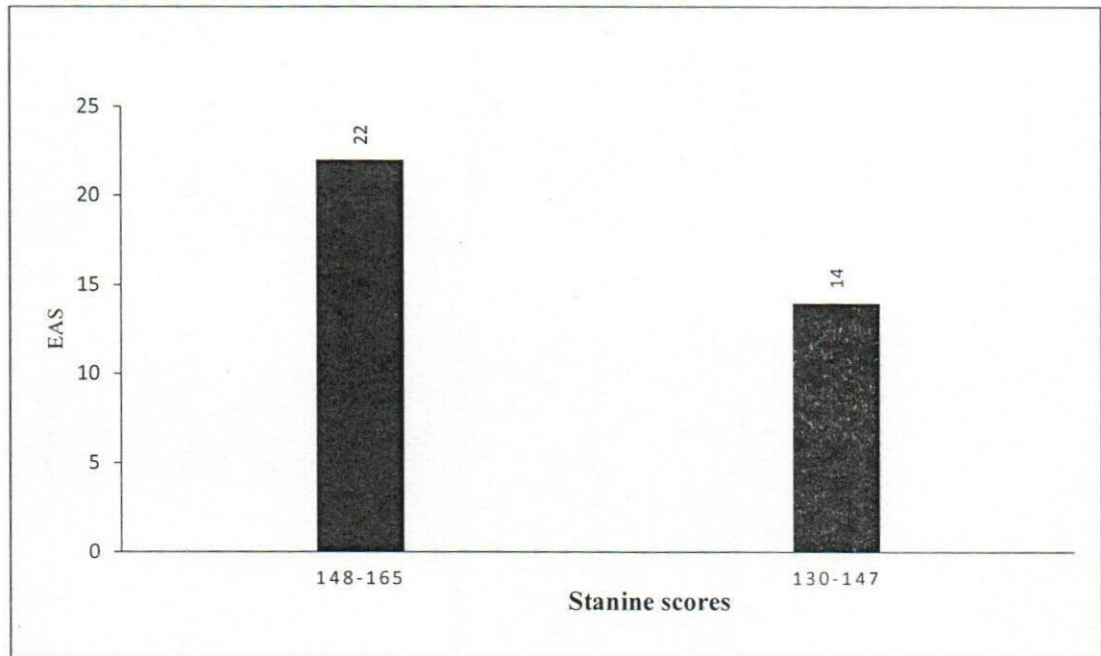
**Thus there is no significant difference in the attitude of male and female pre-service teachers towards environment.** Therefore we can say that there is a significant difference between the average score of male and female pre service teachers on Environment Attitude scale.

The graphical representation of the above detail is shown in graph 4.2



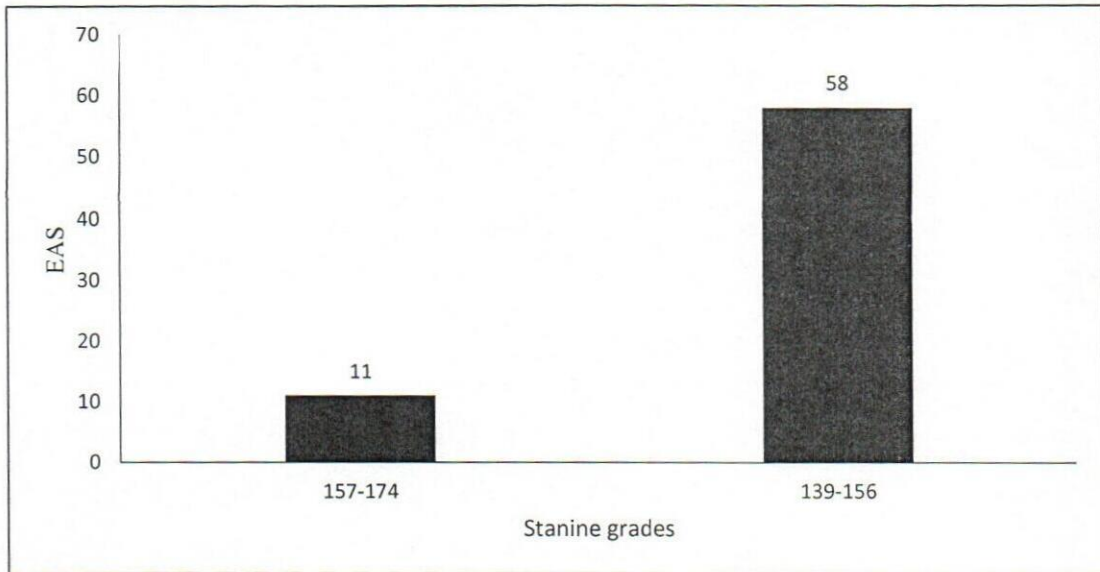
**Graph 4.2 Mean scores of male and female pre-service teachers**

Both males and females obtained nearly similar EAS scores marking a favorable attitude towards environment. On further exploration among the males we observe that large number of males falls under the stanine grade VI (scores between 148-165) as per tabulated TEAS values. The rest males fall under stanine grading V (130-147) as shown in graph 4.3.



**Graph 4.3 Distribution of EAS scores across male pre-service teachers**

Both males and females obtained nearly similar EAS scores marking a favorable attitude towards environment. On further exploration among the females we observe that large number of females falls under the stanine grade V (scores between 139-156) as per tabulated TEAS values. The majority of females fall under stanine grading VI (157-174) as shown in graph 4.4



**Graph 4.4 Distribution of EAS scores across female pre-service teachers**

#### **4.2.2 Analysis and Interpretation of scores in context to Educational Course**

The analysis and interpretation of scores on Environment Attitude scale of pre service teachers are as follows:

- Standard Error of Mean, t-value and significant level of scores on EAS of pre service teachers having educational qualification of B. Ed and B.Ed-M.Ed (Integrated). The standard error of Mean, t-value and the significant level of score on EAS of pre service teachers of B.Ed. and B.Ed-M.Ed (Integrated) courses are computed for testing the null hypotheses. This detail is given in below Table 4.3

**Table 4.3 Statistics of B. Ed and B.Ed-M.Ed (Integrated) pre-service teachers**

Course	N	Mean	t-score
B. Ed	55	150.22	1.337
B.Ed-M.Ed (Integrated)	35	151.77	

**Table 4.4 Statistics of B.Ed-M.Ed (Integrated) and M.Ed pre-service teachers**

Course	N	Mean	t-score
<b>B.Ed-M.Ed (Integrated)</b>	35	151.77	0.770
<b>M.Ed</b>	15	150.60	

In above table 4.3 we can see that mean values of B. Ed and B.Ed-M.Ed (Integrated) pre service science teachers are 150.22 and 151.77 respectively. The S.D. value is 5.490 and 5.180. With the help of all these values computed t is 1.337 which are lower than the tabulated value 1.99 at 0.05 level of significance.

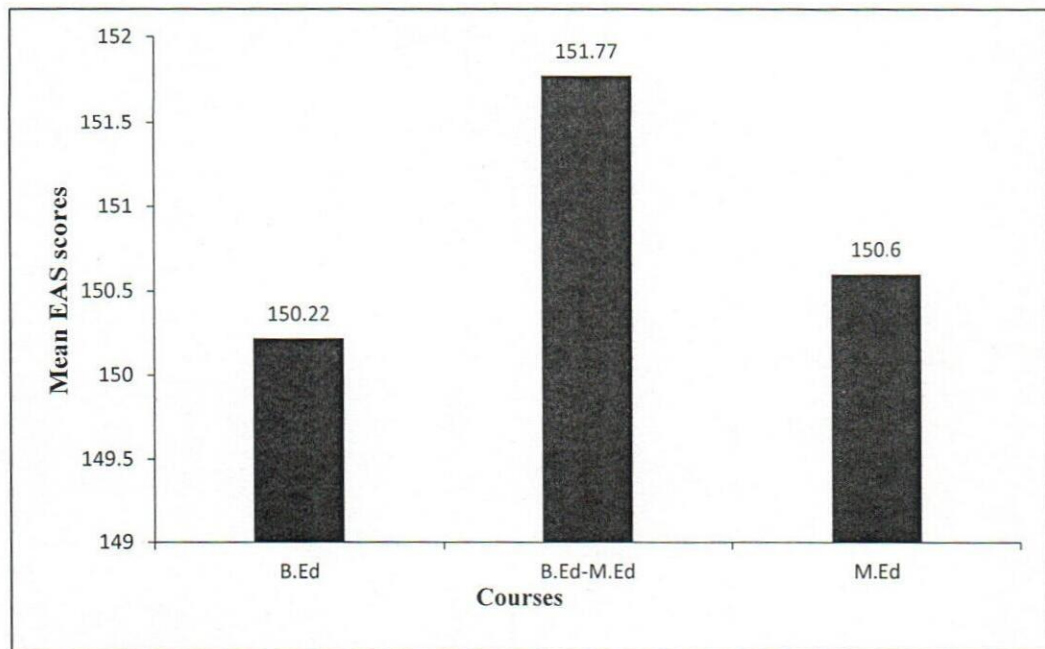
Similarly in Table 4.4, we can see that the mean values of B.Ed-M.Ed (Integrated) pre-service teachers are 151.77 and 150.60 respectively. The S.D. value is 5.180 and 4.256. With the help of all these values, the computed value of t is 0.770 which is lower than the tabulated value 1.99 at 0.05 level of significance.

Thus we observe that across all the three courses, the computed t values are less than the tabulated t-value 1.99 at 0.05 level of significance.

Research Question 2: Is the attitude of pre-service teachers towards the environment same or changes across the educational courses? Therefore we can say that there is no significance difference between the average score of all the three courses in RIE.

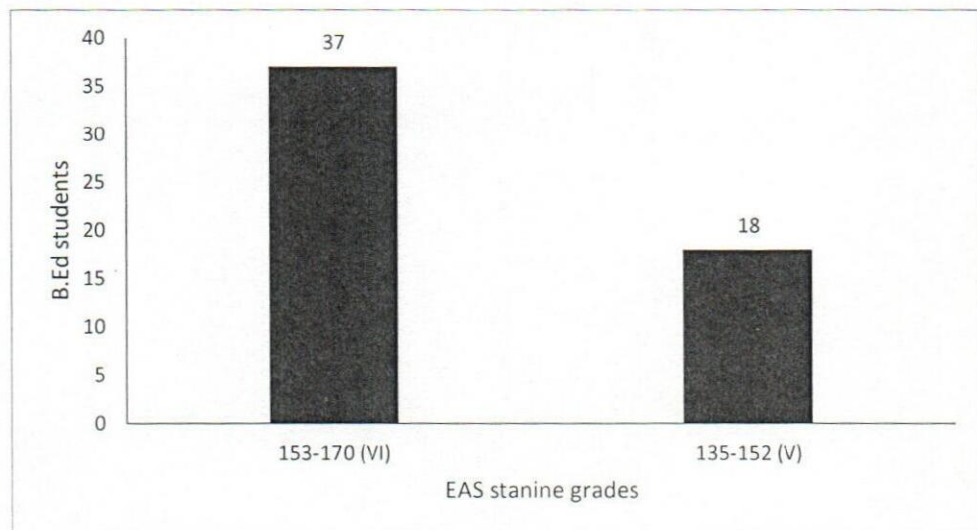


The graphical presentation of the above details is shown in graph no.4.5.



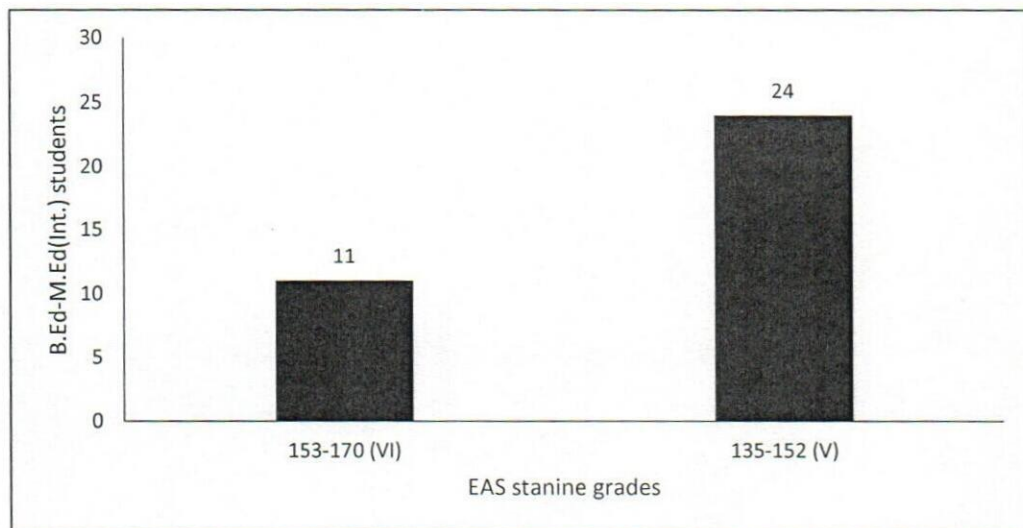
**Graph 4.5 Mean EAS scores across different courses in RIE.**

The B.Ed-M.Ed course students achieved slightly higher EAS scores than B. Ed and M.Ed course pre-service teachers. On further exploration of the data for the EAS scores within B. Ed course we can observe that few students fall under the stanine grading V while the remaining 37 students obtained a stanine grading of VI (Graph 4.6) This shows that a greater number of students marked above average attitude towards environment.



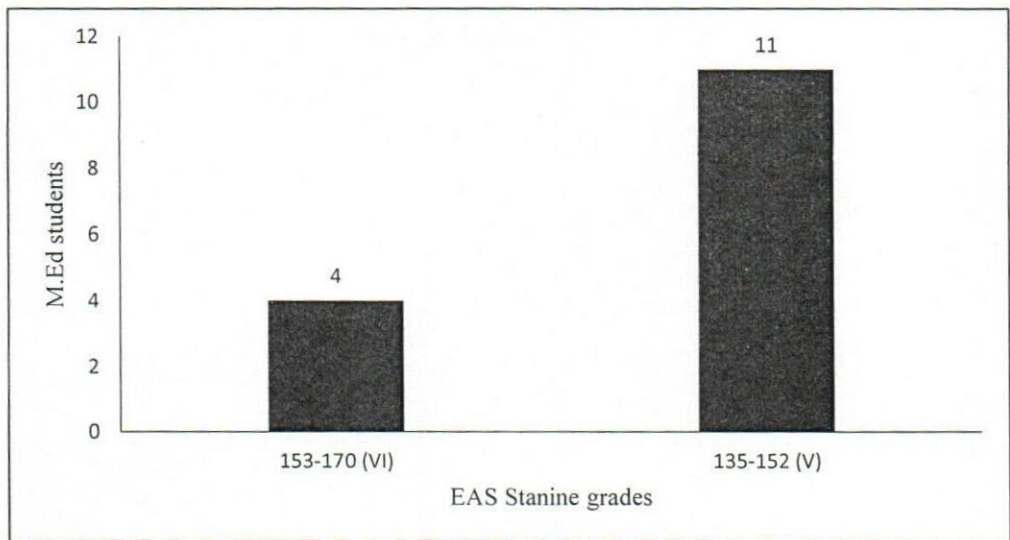
**Graph 4.6 Stanine EAS scores for pre-service teachers of B. Ed course**

For course B.Ed-M.Ed course we observe that around 24 students fall under the stanine grading V while the remaining 11 students obtained a stanine grading of VI (Graph 4.7). This shows that a greater number of students have a moderate favorable attitude towards environment.



**Graph 4.7 Stanine EAS scores for pre-service teachers of B.Ed-M.Ed course**

Exploration of the data for the EAS scores within M.Ed course we can observe that 11 students fall under the stanine grading V while the remaining 4 students obtained a stanine grading of VI (Graph 4.8). This shows that a greater number of students have a moderate favorable attitude towards environment.



**Graph 4.8 Stanine EAS scores for pre-service teachers of M.Ed course**

### 4.3 Conclusion

Thus, in this chapter data representation across different gender and different courses was well portrayed. Based on different EAS values, the t-values were obtained and it was found there was a significant difference in the mean EAS values of males and female pre-service teachers thus rejecting the null hypothesis and concluding that females have a more favorable attitude towards environment than males.

Across the different educational courses, we find that there is no significant differences in EAS values across all the three courses. Thus the researcher accepts the null hypothesis and concludes that pre-service teachers across all the three courses showed a favorable attitude towards environment.