

*Chapter IV*

**DATA ANALYSIS, INTERPRETATION AND  
DISCUSSION**

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# **DATA ANALYSIS, INTERPRETATION AND DISCUSSION**

### **4.1 INTRODUCTION**

The purpose of this chapter is to report the main finding about the attitude of students and teachers towards vocational education. The results of the study will be presented in this. The presentation will consist of the study's finding about the underlying questions of the study. These are the two research questions and three hypotheses of the study. The results associated with the descriptive and inferential analysis will be presented along with the interpretation.

The purpose of this study was to examine the attitude of students and teachers towards vocational education. As per the design of the study, the data was collected and analysed by applying statistical methods for research. The results are presented here according to the research questions and hypotheses in the sequence as presented in chapter one.

### **4.2 ANALYSIS OF DATA AND INTERPRETATION**

The data was collected from the students and teachers of the schools of Bhopal city which were selected for the study. As discussed in the previous chapter, three government and three private schools were selected by purposive sampling and secondary students and teachers were randomly selected for survey. The information of schools and the samples collected from them is given in table 4.1.

*Table 4.1: Schools selected for the study and number of data samples collected*

<b>Sr. no.</b>	<b>Name of the School</b>	<b>Type of school</b>	<b>No. of students</b>	<b>No. of teachers</b>
1	Kendriya Vidyalaya no. 1, M.P Nagar	Government	20	10
2	Govt. Higher Secondary School, Bawadia kala	Government	20	10
3	Jawahar Navodaya Vidyalaya, Ratibad	Government	20	10
4	DAV Public School, New Market	Private	20	10
5	Sardar Patel Public School, Misrod	Private	20	10
6	Silver Bells Convent School, Arvind Vihar	Private	20	10

The most logical way to structure quantitative results is to frame them around the research questions or hypotheses. So following is the analysis for the research questions and hypotheses.

- **Attitude of students towards vocational education.**

To find the attitude of students towards vocational education, the tool was used to collect the raw scores of the attitude of students. Raw scores were obtained by adding the individual item scores of the scale as described in the tool description according to the table. Likert scale data was analyzed as interval data, i.e. the mean is the best measure of central tendency and parametric analysis was done. Positive and negative statements were scored differently. Data was collected from 60 government and 60 private school students and mean and standard deviation was found for the data as given in table 4.2

*Table 4.2: Scores of attitude of students towards vocational education*

SN	Variable	Type	N	Mean	SD
1	School	Government	60	123.67	14.11
2		Private	60	124.06	15.42
3	Gender	Male (boys)	50	121.71	15.54
4		Female (girls)	70	124.97	13.96

For interpretation of attitude the score was divided into four quartiles, where the first quartile is denoted as less favourable, the inter quartile range which includes the second and the third quartile as favourable and fourth quartile as more favourable.

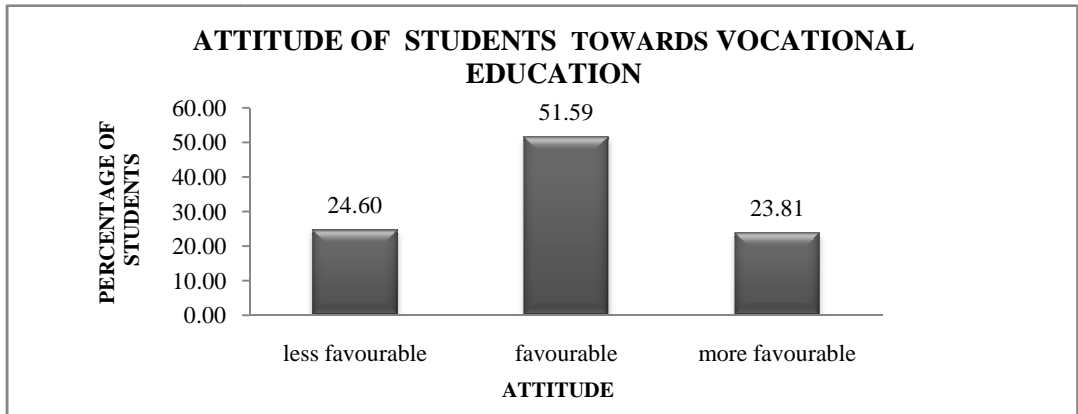
*Table 4.3: Quartiles of attitude of students towards vocational education*

Range	1 <sup>st</sup> quartile	IQR (2 <sup>nd</sup> & 3 <sup>rd</sup> quartile)	4 <sup>th</sup> quartile
Scores	89 – 114	114 – 135	135 – 152
Attitude taken as	“less favourable”	“favourable”	“more favourable”

From the data analysed in table 4.3 it was found that the scores below 114 were considered as less favourable attitude, above 135 was considered as more favourable attitude and between 114 – 135 was considered as favourable attitude towards vocational education. The above ranges of scores were used divide the scores into the categories mentioned in table 4.3. These categories were used to represent the attitude of students in the following table and graphical representation of the obtained data.

*Table 4.4: Representation of attitude of students towards vocational education*

SN	Attitude towards vocational education	Frequency	Percentage
1	Less favourable	29	24.60
2	Favourable	63	51.59
3	More favourable	28	23.81
4	Total	120	100.0



*Figure 4.1: Attitude of students towards vocational education*

**Interpretation:**

From the table 4.4 and fig. 4.1 it was found that 24.6% of students had less favourable attitude towards vocational education, 51.59% had favourable whereas 23.81% had more favourable attitude towards vocational education.

**H<sub>01</sub>: There is no significant difference between attitude of government and private secondary school students towards vocational education.**

The hypothesis was tested using 2-tailed t-test for unpaired data at 0.05 significance level. The statistical values obtained are given in the table 4.5.

**Table 4.5: Comparison of attitude of government and private school students**

SN	School	N	Mean	SD	t-value	df	P-value	Significance at 0.05(t-critical)
1	Government	60	123.67	14.11				
					-0.160	118	0.872	1.979 NS*
2	Private	60	124.06	15.42				

\*NS = not significant

From table 4.5, t-value (-0.160) is found to be less than the critical value (1.979) for df = 118. Hence we fail to reject the null hypothesis.

Using P-value (0.872) and comparing it with significance level at  $\alpha = 0.05$ , as P-value is  $> 0.05$ , it is statistically not significant, therefore null hypothesis is not rejected.

**Interpretation:**

From the above discussion the hypothesis, there is no significant difference between attitude of government and private school students towards vocational education is not rejected.

**H<sub>02</sub>: There is no significant difference between attitude of male and female secondary school students towards vocational education.**

The hypothesis was tested using 2-tailed t-test for unpaired data at 0.05 significance level. The statistical values are given in the table 4.6.

*Table 4.6: Comparison of attitude of male and female school students*

SN	Gender	N	Mean	SD	t-value	df	P-value	Significance at 0.05(t-critical)
1	Male (boys)	50	121.71	15.54	-1.414	118	0.160	1.983 NS*
2	Female (girls)	70	124.97	13.96				

\*NS = not significant

From table 4.6, t-value (-1.414) is less than the critical value (1.979) for df = 118. Hence we fail to reject the null hypothesis.

Using P-value (0.160) and comparing it with significance level at  $\alpha = 0.05$ , as P-value is  $> 0.05$ , it is statistically not significant, therefore null hypothesis is not rejected.

**Interpretation:**

From the above discussion the hypothesis, there is no significant difference between attitude of male and female secondary school students towards vocational education is not rejected.

- **Attitude of teachers towards vocational education.**

To find the attitude of teachers towards vocational education, the tool was used to collect the raw scores of the attitude of teachers. Raw scores were obtained by adding the individual item scores of the scale as described in the tool description according to the table. Positive and negative statements were scored differently. Data was collected from 60 teachers and mean and standard deviation was found for the data as given in table.

*Table 4.7: Scores of attitude of teachers towards vocational education*

SN	Variable	N	Mean	SD
1	Teachers	60	120.3	17.07

For interpretation of attitude the score was divided into four quartiles, where the first quartile is denoted as less favourable, the inter quartile range as favourable and fourth quartile as more favourable.

*Table 4.8: Quartiles of attitude of teachers towards vocational education*

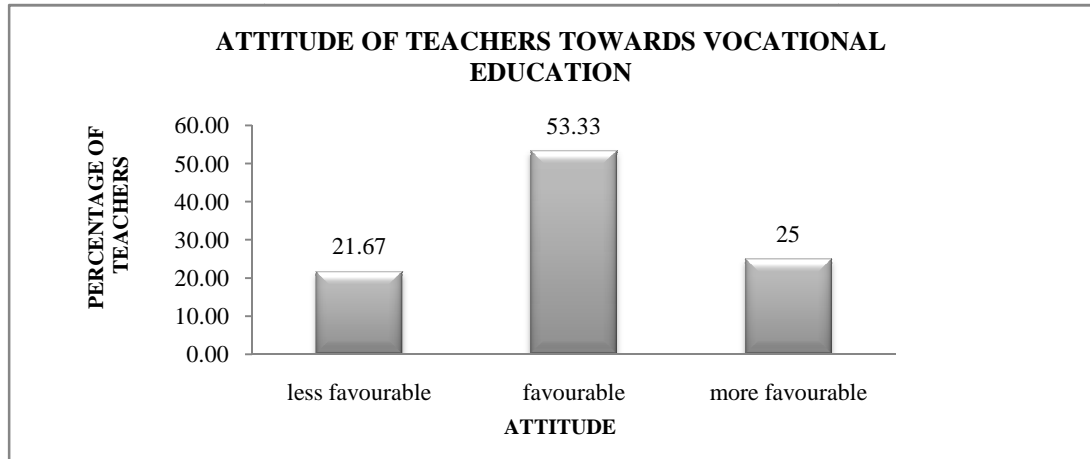
Range	1 <sup>st</sup> quartile	IQR (2 <sup>nd</sup> & 3 <sup>rd</sup> quartile)	4 <sup>th</sup> quartile
Scores	92 – 104	104 – 136.5	136.5 – 151
Attitude taken as	“less favourable”	“favourable”	“more favourable”

From the data analysed in table 4.8 it was found that the scores below 104 were considered as less favourable attitude, above 136.5 was considered as more favourable attitude and between 104 – 136.5 was considered as favourable attitude towards vocational education. The above ranges are used to represent the attitude of students in the following table and graphical representation of the obtained data.

*Table 4.9: Representation of attitude of teachers towards vocational education*

SN	Attitude towards vocational education	Frequency	Percentage
1	Less favourable	13	21.67
2	Favourable	32	53.33
3	More favourable	15	22
	Total	60	100.0





*Figure 4.2: Attitude of teachers towards vocational education*

**Interpretation:**

From the data analysed from the table 4.9 and fig.4.2 it was found that 21.67% of teachers had less favourable attitude towards vocational education, 53.33% had favourable whereas 25% had more favourable attitude towards vocational education.

**H<sub>03</sub>: There is no significant relationship between the attitude of government and private school students and teachers towards vocational education.**

This hypothesis was tested separately for relationship between teachers attitude and government and private school students. Attitude of students is tested against attitude of teachers where scores of teachers is taken as predictor variable(X) and scores of students is taken as outcome variable(Y).

The hypothesis was tested using Pearson correlation coefficient and by plotting scatter plot for simple linear regression analysis between scores of teachers and government and private school students. The statistical values are given in the table.

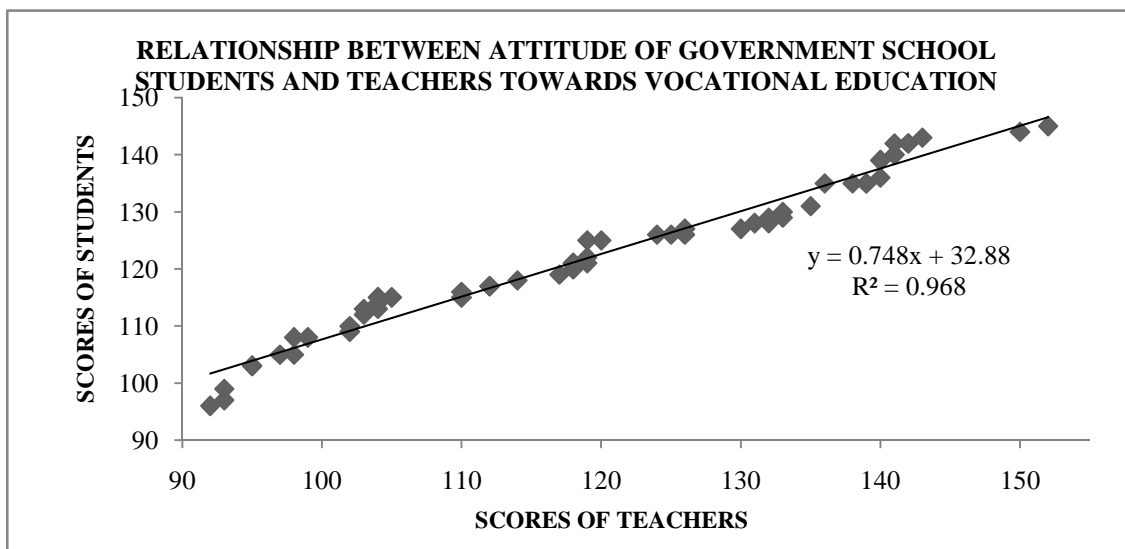
**Section 1:** Relationship between attitude of government school students and teachers.

**Table 4.10: Relationship between attitude of government school students and teachers**

SN	Attitude	N	Mean	r-value	P-value
1	Teachers	60	120.3	0.984	0.000
2	Students	60	123.67		

**Interpretation:**

From the table 4.10, using P-value (0.000) and comparing it with significance level at  $\alpha = 0.05$ , as P-value is  $< 0.05$ , it is statistically very significant, therefore null hypothesis is rejected. There is statistically significant relationship between attitude of government school students and teachers towards vocational education. As r-value (0.984) is positive and near +1, there is strong positive relationship between attitude of students and teachers.



**Figure 4.3: Relationship between attitude of government school students and teachers towards vocational education**

Fig. 4.3 showed that the trend line has a positive slope indicating a strong positive relationship between the attitude of government school students and teachers.

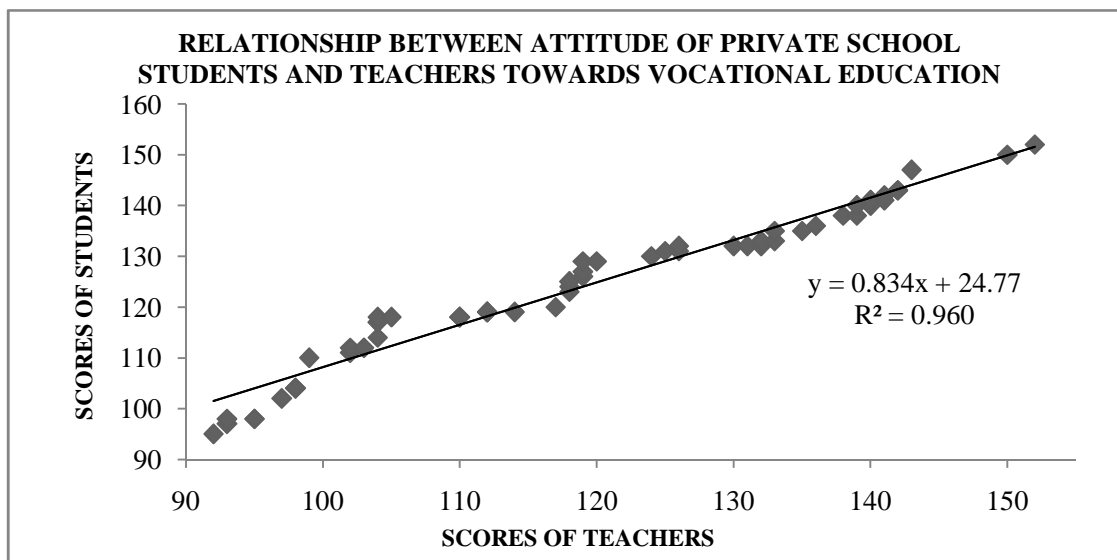
**Section 2:** Relationship between attitude of private school students and teachers

*Table 4.11: Relationship between attitude of private school students and teachers*

SN	Attitude	N	Mean	r-value	P-value
1	Teachers	60	120.3	0.979	0.000
2	Students	60	124.06		

**Interpretation:**

From the table 4.11, using P-value(0.000) and comparing it with significance level at  $\alpha = 0.05$ , as P-value is  $< 0.05$ , it is statistically very significant, therefore null hypothesis is rejected. There is statistically significant relationship between attitude of private school students and teachers towards vocational education. As r-value (0.979) is positive and near +1, there is strong positive relationship between attitude of students and teachers.



*Figure 4.4: Relationship between attitude of private school students and teachers towards vocational education*

Fig. 4.4 showed that the trend line has a positive slope indicating a strong positive relationship between the attitude of government school students and teachers.

From data analysis of section 1 and 2 it is evident that there is a strong positive relationship between attitude of teachers and students towards vocational education. This was seen from the Pearson correlation coefficient 'r' and P-value obtained from regression analysis as well as from the scatter plot between attitude of teachers and students and slope of the trend line.

**Interpretation:**

From the above discussion the hypothesis, there is no significant relationship between the attitude of government and private secondary school students and teachers towards vocational education is rejected. There is significant positive relationship between the two.

In this chapter, statistical analysis of the data was done and inferences were drawn for the research questions and hypotheses. Appropriate statistical tests were applied to find answers to the research questions and to test the hypotheses. On the basis of the test results the hypotheses were rejected or not rejected. Results were reported of the entire statistical tests conducted for the data analysis.

In the next chapter, conclusions inferred from the findings of the data analysis are presented. Educational implications of the study and suggestions for further research are discussed which will help in broadening the understanding of attitude of secondary school students and teachers towards vocational education.