

**CHAPTER:IV DATA
ANALYSIS AND
INTERPRETATIONS**

CHAPTER IV

DATA ANALYSIS AND INTERPRETATION

4.1 INTRODUCTION

In the first chapter, researcher presented with an introduction to the problem, stated the problem and brought out the rationale of the problem. Further researcher formulated objectives of the study and also framed research questions that guided the research work. At the end, the researcher has mentioned limitations of the study.

In the second chapter, brief review of researches conducted by various researchers has been mentioned.

In the third chapter, the methodology is given. This portion is as important part of the dissertation. This is the chapter that deal with the presentation of all the methods implemented to gather data and how the actual research work has been conducted by the researcher.

In the fourth chapter, the data analysis and interpretation will be given. This chapter helps in drawing conclusions.

The data thus collected was subjected to appropriate statistical procedure to test the hypotheses with which this study was initiated. The details of the statistical technique employed for analysis of data, results obtained through this analysis and the decisions regarding the rejection and non rejection of hypotheses are presented in this chapter. Statistics is a body of mathematical techniques or processes for gathering, organizing, analysis and interpreting numerical data. Since research yields such quantitative data, statistics is a basis of measurement, evaluation and research. The word statistical data describe group behaviour or group

characteristics abstracted from a number of individual observations, which are combined to make generalization possible. Statistical methods go to the fundamental purposes of description and analysis. By statistics we can analyze and interpret the data and draw conclusion.

Interpretation of data refers to that important part of the investigation, which is associated with the drawing of inferences from the collected facts after analytical study. It is extremely useful and important part of the study because it makes possible use of collected data. Statistical facts by themselves have no utility; it is interpretation that makes possible for us to utilize collected data in various field of activity.

The need and justification, objectives along with the hypothesis are presented in the headings in the chapter 1. The reviews of the related literature are presented in the chapter 2. The methodology, sample, design, tools and techniques, procedure of data collection and statistical techniques used for the analysis of data are presented in chapter 3. In this chapter, objectives wise analysis of data is presented as given below, under headings.

4.2 ANALYSIS OF DATA

“Analysis is the ordering – the breaking down of data into constituent parts in order to obtain answer to research question.” **F.N. Kerlinger (1964)**

Analysis of data is done according to the objectives and hypotheses. Objectives-wise results and their interpretations are presented under various headings.

4.3 OBJECTIVES OF THE STUDY

1. To study students attitude towards mathematics.
2. To compare the attitude towards mathematics of boys and girls.
3. To study various career choice of students.
4. To study the influence of school on attitude towards mathematics.

5. To study the influence of gender, school and their interaction on attitude towards mathematics
6. To study the relationship between attitude towards mathematics and career choices.

4.4 HYPOTHESIS OF THE STUDY

1. There is no significant difference between attitude towards mathematics of boys and girls.
2. There is no significant influence of school (based on type of board school belongs to) on attitude towards mathematics.
3. There is no significant influence of gender, school and their interaction on attitude towards mathematics.

4.5 Objective Wise Analysis

4.5.1 STUDENTS ATTITUDE TOWARDS MATHEMATICS

Table – 4.1: ATTITUDE TOWARDS MATHEMATICS SCALE

| Score | Type of Attitude |
|-----------|-------------------|
| 100 – 130 | Positive attitude |
| 70 – 99 | Neutral attitude |
| 40 – 69 | Negative attitude |

Table – 4.2: Number of students with various percentages of Attitude towards Mathematics

| Attitude towards mathematics | No. of students | Percentage % |
|------------------------------|-----------------|--------------|
| Positive attitude | 28 | 31.11 |
| Neutral attitude | 52 | 57.77 |
| Negative attitude | 10 | 11.11 |
| Total | 90 | 100 |

Interpretation

Table: 4.2 indicate that most of the students have the neutral attitude towards mathematics. Students are neither interested nor disinterested in mathematics. From above table show that out of 90, 31.11% students have positive attitude towards mathematics, 57.77% students have neutral attitude towards mathematics and 11.11% students have negative attitude towards mathematics.

4.5.2 To compare the attitude towards mathematics of boys and girls.

H_0 : There is no significant difference between attitude towards mathematics of boys and girls.

Table – 4.3: N, Mean, SD, Standard Error of Mean and t-value for the Attitude towards Mathematics

| | Gender of Students | N | Mean | Std. Deviation | Std. Error Mean | df | t-Value |
|------------------------|--------------------|----|-------|----------------|-----------------|----|---------|
| Attitude towards Maths | Male | 53 | 88.09 | 15.17 | 2.08 | 89 | 0.93 |
| | Female | 37 | 91.51 | 19.56 | 3.217 | | |

Interpretation

Table 4.3 indicates that the t-value for Attitude towards Mathematics for df 89 is 0.93, which is not significant at 0.05 levels. Therefore, the null hypothesis, namely, “there is no significant difference between attitude towards mathematics of boys and girls”, is not rejected. But, the mean of the female students is higher than the male students. The SD, also, shows that the female students are on higher side than the male students. But, the difference is not significant. Mean indicates that attitude of female students towards mathematics varies and slightly higher than the males.

4.5.3 TO STUDY VARIOUS CAREER CHOICE OF STUDENTS

Table: 4.4, Different career chosen by the students

| Careers | No. of students | Percentage % |
|-------------------------------|-----------------|--------------|
| Engineering sciences | 33 | 12 |
| Medical sciences | 12 | 13 |
| Civil services | 04 | 04 |
| Teaching | 05 | 06 |
| Defence | 14 | 16 |
| Business sales/ management | 09 | 10 |
| Others | 13 | 14 |
| Total | 90 | 100 |

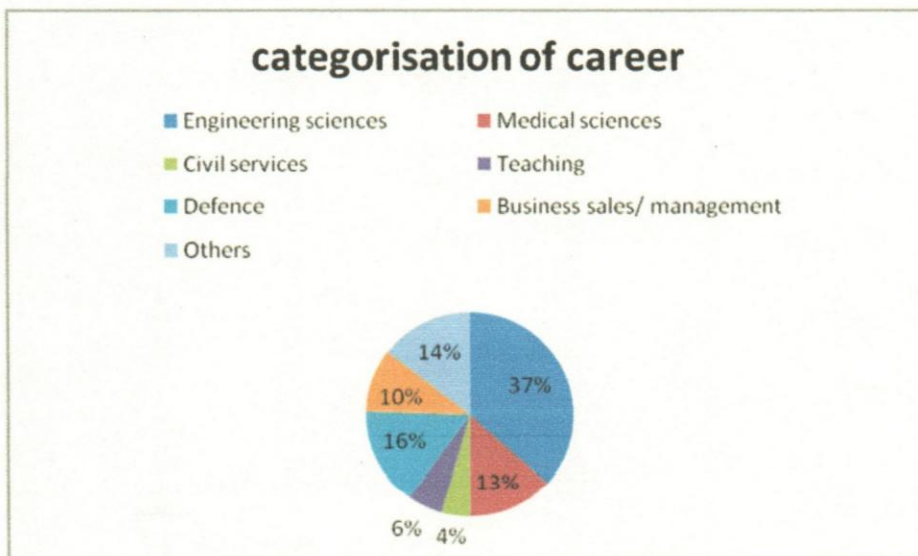


Fig. 1 Categorisation of career

Interpretation

Table 4.4: indicates various career options chosen by the students. Students had choice career according to their preferences. The table 4.4: indicates that, out of

ninety students, 37% students have choose engineering as their career, 13% choose medical profession as their career, 4% selected civil services , 6% want to become a teacher, 16% want to join defence and 14% want to be a part of business sales and management. Most of the students have chosen to become an engineer as their career.

4.5.4 TO STUDY THE INFLUENCE OF GENDER, SCHOOL AND THEIR INTERACTION ON ATTITUDE TOWARDS MATHEMATICS

H_0 : There is no significant influence of gender, school and their interaction on attitude towards mathematics.

Table – 4.5: Summary of 2 X 2 Factorial Designs ANOVA of Unequal Cell Size for Attitude towards Mathematics

| Sources of Variance | df | Sum of Squares | Mean sum of Squares | F-Values |
|---------------------|----|----------------|---------------------|----------|
| Gender | 1 | 549.366 | 549.366 | .17 |
| School | 1 | 364.625 | 364.625 | .26 |
| Gender X School | 1 | 728.052 | 728.052 | .11 |
| Error | 86 | 24510.773 | 285.009 | |
| Total | 89 | 746941.000 | | |

To study the influence of gender on attitude towards mathematics

Table 4.5 indicates that the F-Value for gender on attitude towards mathematics with df equal to 1/89 is 0.17, which is not significant at 0.05 levels. Therefore, the null hypothesis, namely, “there is no significant influence of gender on attitude towards mathematics”, is not rejected.

Table-4.6: N, Mean and SD for Attitude towards Mathematics

| Gender | Type of School | | | | | |
|--------|----------------|-------|-------|-------------|-------|-------|
| | CBSE | | | State Board | | |
| | N | Mean | SD | N | Mean | SD |
| Male | 35 | 91.54 | 15.08 | 18 | 81.39 | 13.33 |
| Female | 21 | 90.76 | 23.49 | 16 | 92.50 | 13.47 |
| Total | 56 | 91.25 | 18.47 | 34 | 86.62 | 14.34 |

To study the influence of school on attitude towards mathematics

Table 4.5 indicates that the F-Value for school on attitude towards mathematics with DF equal to 1/89 is 0.11, which is not significant at 0.05 levels. Therefore, the null hypothesis, namely, “there is no significant influence of school on attitude towards mathematics”, is not rejected.

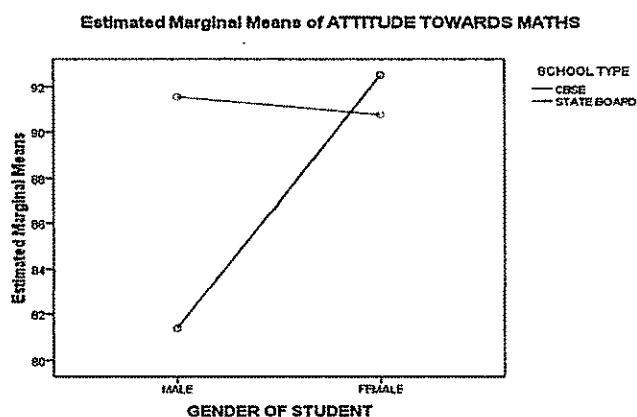


Fig: 3 Attitude of male students and female students of CBSE and SATE BOARD schools

To study interaction of gender and school on attitude towards mathematics

Table 4.5 indicates that the F-Value for interaction of gender and school on attitude towards mathematics with DF equal to 1/89 is 0.26, which is not significant at 0.05 level. Therefore, the null hypothesis, namely, “there is no significant interaction of gender and school on attitude towards mathematics”, is not rejected.

Interpretation

Interaction of gender and school on attitude towards mathematics is not significant; therefore there is no influence of gender and school on attitude towards mathematics. The fig: 3, shows that female students of State Board have more attitude towards mathematics than the male students. There is little difference in attitude towards mathematics of female students and male students of CBSE board.

4.5.5 TO STUDY THE RELATIONSHIP BETWEEN ATTITUDE TOWARDS MATHEMATICS AND CAREER CHOICES.

Table : 4.7 Various careers, kind of attitude and number of students in different career

| | Engineering sciences | Medical science | Civil service | Teaching | Defence service | Business sales/ mgnt | Other |
|-------------------|----------------------|-----------------|---------------|----------|-----------------|----------------------|-------|
| Positive attitude | 12 | 04 | 00 | 00 | 04 | 05 | 03 |
| Neutral attitude | 17 | 07 | 03 | 05 | 07 | 04 | 09 |
| Negative Attitude | 04 | 01 | 01 | 00 | 03 | 00 | 01 |
| Total | 33 | 12 | 04 | 05 | 14 | 09 | 13 |

Interpretation

Table: 4.7 indicate no. of students in various career options and with attitude towards mathematics, positive, neutral or negative attitude towards mathematics. Table 4.7: also indicates that most of the students with positive attitude towards mathematics have selected engineering as a career. To become engineer, there is necessary requirement of mathematics background. Therefore this table show there is a positive relationship of attitude towards mathematics with perceived career choice.

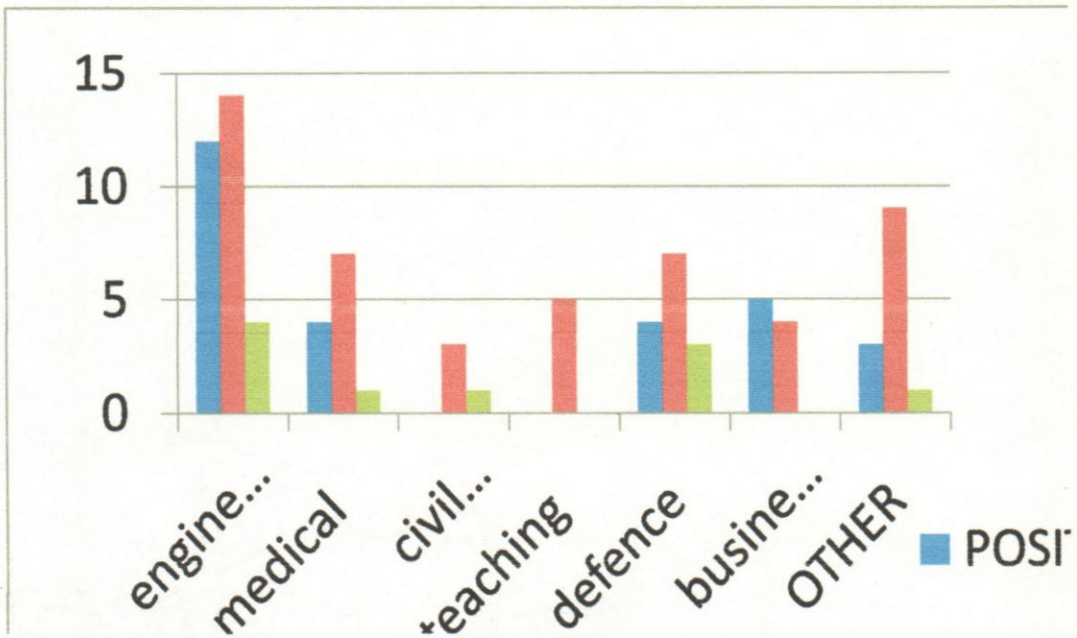


Fig: 2 attitude towards mathematics and career choice