CHAPTER VII

ANALYSIS OF THE DATA

(Part I)

7.1. INTRODUCTION

The purpose of this chapter is to analyse the data collected and to find the significant difference between the two contrasted groups with the help of statistics.

It is previously said that all the test booklets were analysed and the representative median score of each pupil on each scale was found for all the subjects. The properly filled-in test booklets were 230 in the disciplined group and 230 in the indisciplined group.

7.2. COMPARISON OF THE TWO GROUPS BY APPLYING 't' TECHNIQUE.

For the comparison of the two contrasted groups, 't' test was applied. To find out the 't' value of the particular test, the mean, standard, deviation and standard error of the mean were required. The following tables show the data of the two groups for the scales (I to IV).

TABLE NO.2

FREQUENCY DISTRIBUTION OF THE DISCIPLINED GROUP ON SCALES I TO IV.

Step int.	Mid.pt.	Frequency Scale I	Scale II	Scale III	Scale IV
0.5-1.4	1	0	0	0	0
1.5-2.4	2	0	1	1	0
2.5-3.4	3	8	3	3	2
3.5-4.4	4	10	1	3	3
4.5-5.4	5	15	3	11	5
5.5-6.4	6	38	6	14	9
6.5-7.4	7	50	32	14	24
7.5-8.4	8	44	78	29	69
8.5-9.4	9	54	87	90	85
9.5-10.4	10	11	19	65	33
10.5-11.4	11	0	0	0	0
		230	230	230	230

TABLE NO.3

FREQUENCY DISTRIBUTION OF THE INDISCIPLINED GROUP ON SCALES I TO IV

Step int.	Mid.pt.	Frequency Scale I	Scale II	Scale III	Scale IV
0.5-1.4	1	2	0	0	0
1.5-2.4	2	5	2	2	0
2.5-3.4	3	8	0	2	5
3.5-4.4	4	16	5	9	10
4.5-5.4	5	28	6	8	21
5.5-6.4	6	55	21	19	34
6.5-7.4	7	50	25	24	56
7.5-8.4	8	48	89	41	74
8.5-9.4	9	18	70	75	30
9.5-10.4	10	0	12	50	0
10.5-11.4	11	0	0	0	0
		230	230	230	230

With the help of these tables, mean, S.D. and S.E.Mean of all the scales were computed. They are shown in the following Table.

TABLE NO.4

THE VALUES OF MEAN, S.D. AND S.E. MEAN OF ALL THE FOUR SCALES TOGETHER

Scales	Mean		S.D.		S.E.M.	
	Dis.	Indis.	Dis.	Indis.	Dis.	Indis.
I	7.15	6.41	2.05	1.701	.135	.117
II	8.162	7.9	1.25	1.36	.082	.089
III	8.487	7.135	1.64	1.75	.108	.115
IV	8.314	7.035	1.3	1.44	.085	.035

Now in order to test the significant difference between the two means of both the disciplined and the indisciplined groups for each scale of attitude, the 't' test was applied. The results of the Scale I to IV are given below in the Table.

TABLE NO.5

CENTRAL TENDENCY AND 't' VALUES
OF THE SCALES I TO IV

Scales	Mean Dis.	Mean Indis.	S.D. Dis.	S.D. Indis.	$S.E_M$ Dis.	$S.E_M$ Indis.	't'
I.Education	7.15	6.41	2.05	1.701	.135	.112	7.1**
II.School	8.162	7.9	1.25	1.36	.082	.089	2.52*
III.Teachers	8.487	7.135	1.64	1.75	.108	.115	8.6**
IV.Home	8.314	7.035	1.3	1.44	.085	.035	4.4**

** Sig. at .01

* Sig. at .05

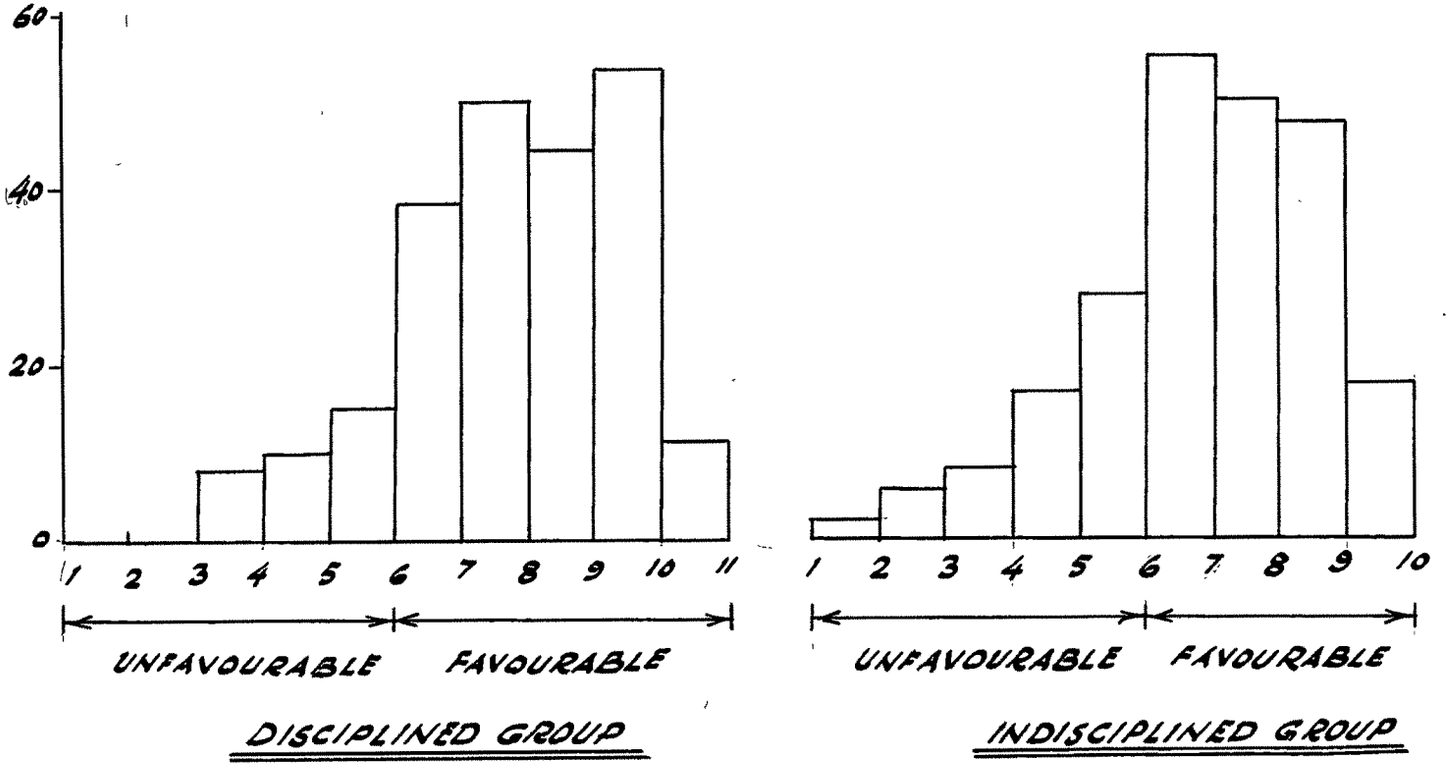
7.3. Graphs showing the Frequency distribution of both the groups.

With the help of the Tables I and II, the histograms of all the four scales were drawn with a view to having a comparative idea of both the contrasted groups. The two graphs of the disciplined and the indisciplined groups of each scale have been drawn on separate sheets.

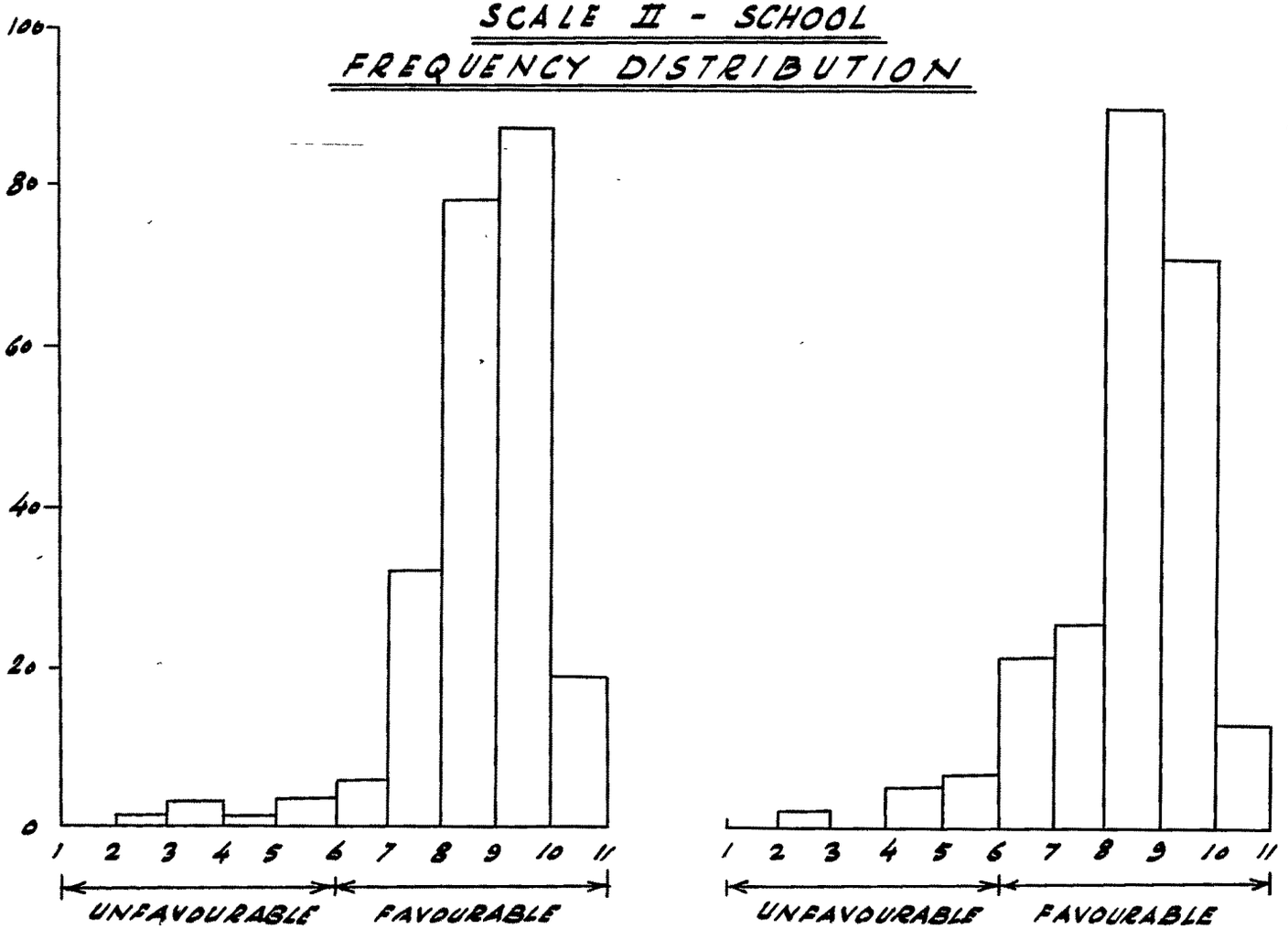
SCALE I

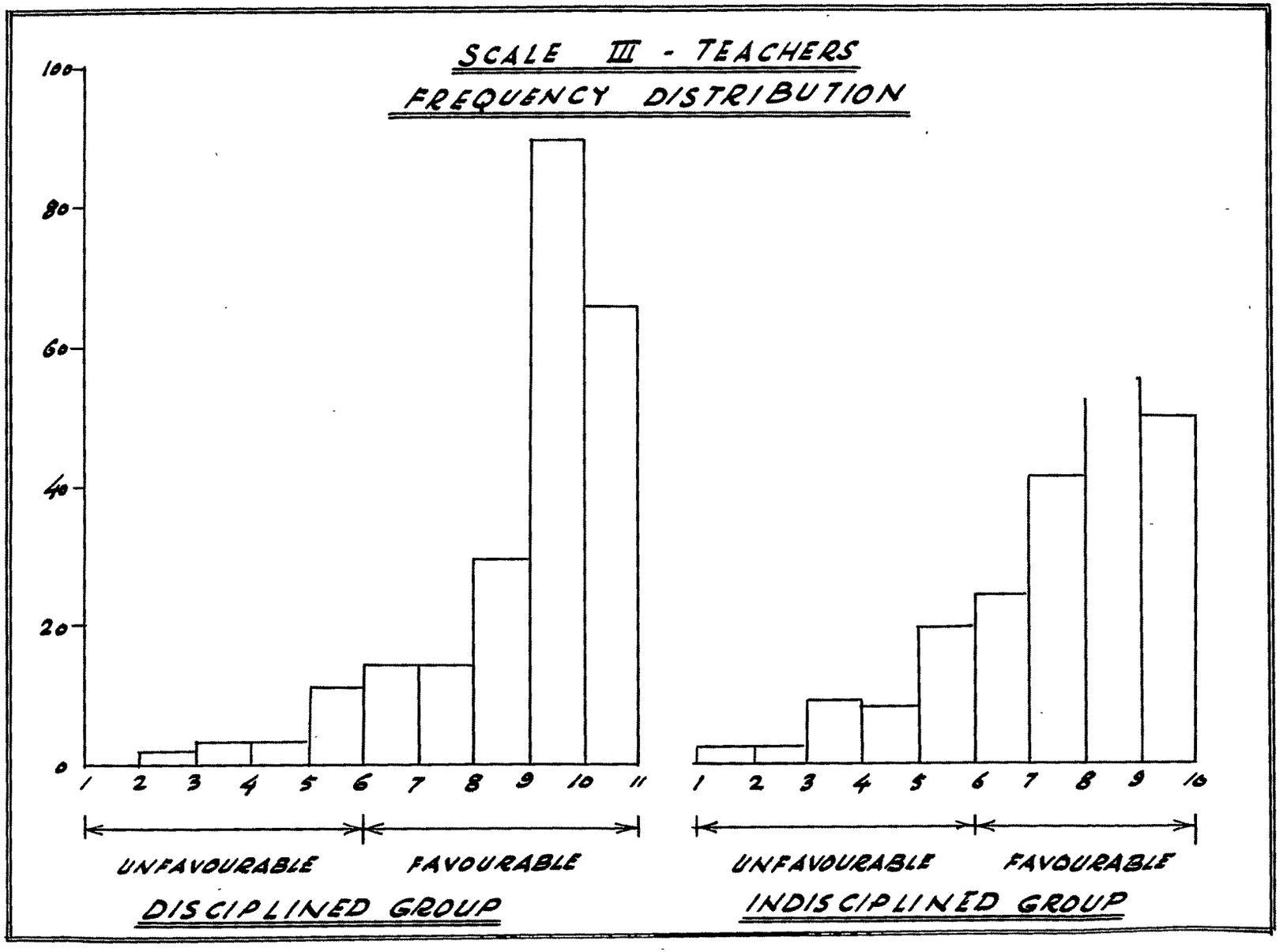
EDUCATION AND EDUCATIONAL PROGRAMME

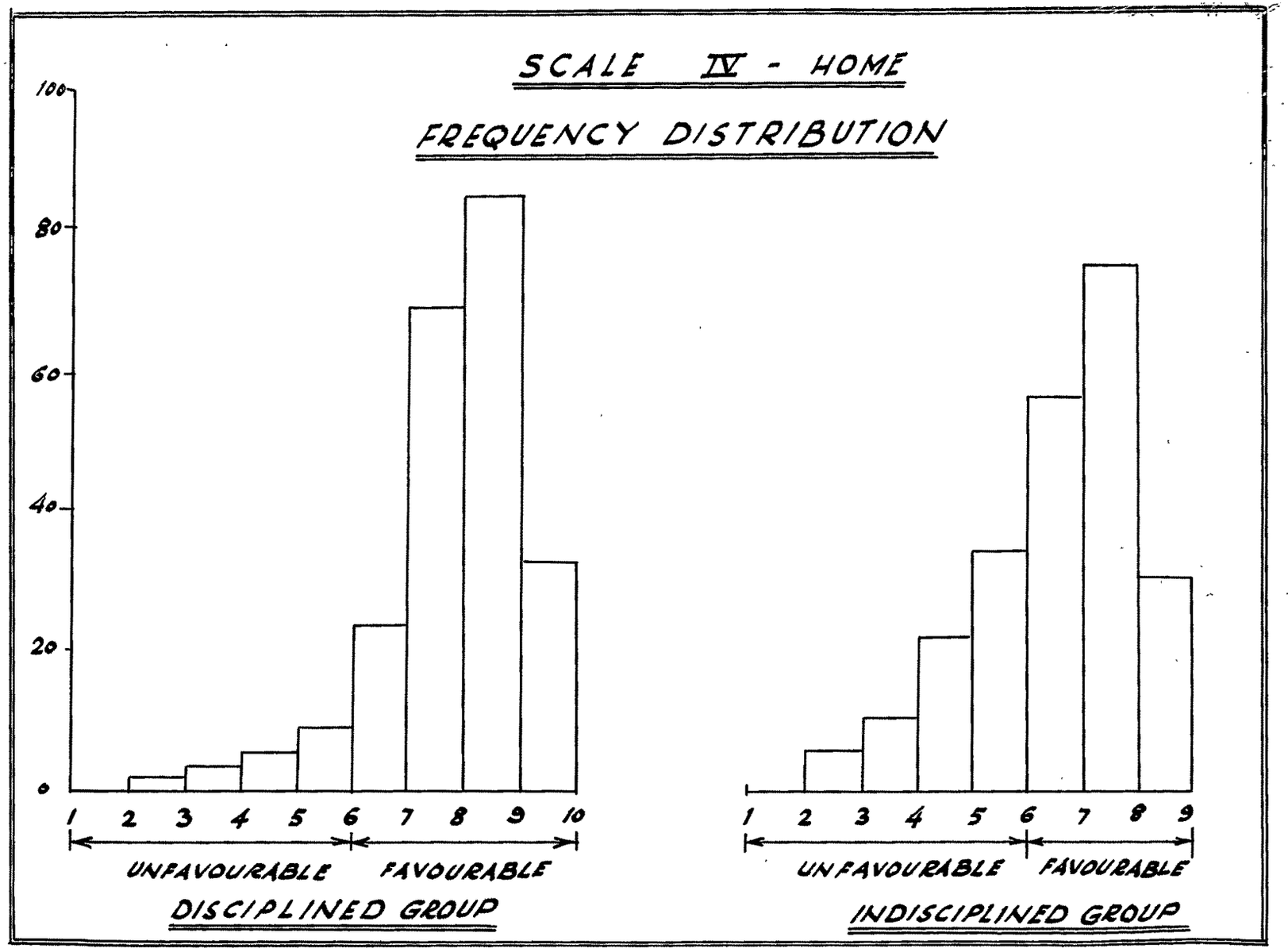
FREQUENCY DISTRIBUTION



SCALE II - SCHOOL
FREQUENCY DISTRIBUTION




SCALE III - TEACHERS
FREQUENCY DISTRIBUTION
100
80
60
40
20
0
1 2 3 4 5 6 7 8 9 10 11
UNFAVOURABLE
FAVOURABLE
DISCIPLINED GROUP
1 2 3 4 5 6 7 8 9 10
UNFAVOURABLE
FAVOURABLE
INDISCIPLINED GROUP


SCALE IV - HOME
FREQUENCY DISTRIBUTION
100
80
60
40
20
0
1 2 3 4 5 6 7 8 9 10
UNFAVOURABLE
FAVOURABLE
DISCIPLINED GROUP
1 2 3 4 5 6 7 8 9
UNFAVOURABLE
FAVOURABLE
INDISCIPLINED GROUP

7.4. INTERPRETATION OF THE RESULTS

Scale I

All the scales were prepared in such a way that higher score would indicate favourable attitude towards the area to be measured. The mean value of the disciplined group in the first scale i.e. attitude towards education and educational programme is greater than that of the corresponding indisciplined group.

Looking to the 't' value of the first scale it is highly significant beyond.01 level. This shows that the attitude of the two groups towards education differs significantly.

The result is in accordance with the first hypothesis. The first hypothesis - the attitudes of the disciplined group, is more favourable than that of the indisciplined group, is supported.

Theoretically we all know that there is a vast difference between the students showing good behaviours and those showing misbehaviours but here this very fact is investigated with the help of statistics. Now in this case it can be said that in the question of

students' attitude towards education and educational programme, there is a significant difference between the two contrasted groups and theoretical and practical values are in agreement.

From the graph of Education and Educational programme a greater number of pupils falls between the scale values 9 and 10 in the disciplined group, while in the indisciplined group, the highest peak is between the scale values 6 and 7. This also supports the first hypothesis.

Scale II

In the same way to find out the significant difference between the two contrasted groups in the second scale i.e. attitude towards school, 't' test was applied.

In the IInd scale - students' attitude towards 'School,' the mean values of the disciplined group is greater than that of the indisciplined group which is also seen in the first scale. The mean values also indicate that disciplined group has more favourable attitude towards school than the indisciplined group. This may be interpreted thus: the disciplined group

though attending the school for one reason or the other is less inclined towards study than the other group. Mischief is one of the manifestation of their attitudes. It is quite obvious that the attitudes of both the groups must differ.

Looking to the 't' values in the second scale, it is significant beyond .05 level of confidence. It is not highly significant as is the case in the first scale. Both the groups of students may prefer to come to the school though they both show different behaviours at the school. This result is in agreement with the first hypothesis that the disciplined and the indisciplined groups should differ in their attitudes towards school.

From the graphs of the second scale towards school, it can be seen that a large number of pupils falls between the scale values 9 and 10 in the disciplined group and in the indisciplined group, the highest peak is between the scale values 8 and 9. It means the disciplined group has more favourable attitude towards school than the indisciplined group.

Scale III

Here also 't' technique is applied to detect the differences between the two contrasted groups.

The third scale 'Pupils' attitudes towards teachers' shows the difference between the two means of disciplined and indisciplined groups. The mean value of the disciplined group is greater than that of the indisciplined group - which clearly shows that indisciplined students do not behave well with teachers. They have no respect and regard for their teachers. They want to defy the teachers while the other group does not behave in a disorderly way. Disciplined group shows due regards for their teachers and even if they find faults with the teachers, they would not show disorderly behaviour.

The 't' value of this scale is highly significant beyond .01 level of confidence which is an indication that the significant difference exists between the disciplined and the indisciplined groups. The 't' value of this scale towards teachers is also in accordance with our first hypothesis. Moreover, all the first three scales, education, school and teachers are

closely related more or less to one another.

From the groups of the third scale towards 'teachers' can be seen that a large number of disciplined pupils falls between the scale values 9 and 10 while in the indisciplined group, the highest peak is between the scale values 8 and 9. This is also in agreement with the above result.

Scale IV

The fourth scale is on pupils' attitudes towards 'Home'. Here also 't' technique is applied to find out the significant difference between the two contrasted groups.

Looking to mean values, of the fourth scale, both the disciplined and indisciplined groups show greater difference. Disciplined group has greater mean value than that of the indisciplined group. This means the attitude of the disciplined group towards home is more favourable than that of indisciplined group. From this we can say that those students who are disciplined, show their good behaviours at school and at home also.

The 't' value of this fourth scale shows the significant difference between the two contrasted groups

which supports our first hypothesis.

From the graphs of the fourth scale towards 'Home' it can be seen that a large number of disciplined pupils falls between the scale values 8 and 9 while in the other group, the highest peak is between the scale values 7 and 8. This also indicates the same thing as above.

Thus it can be concluded from the 't' values of all the four scales, that both the disciplined and the indisciplined groups differ in their attitudes towards education, school, teachers and home. Disciplined group shows more favourable attitude towards all the four areas than the indisciplined group.

7.5. COMPARISON OF THE EXTREME GROUPS ON EACH MISBEHAVIOUR AREA.

As discussed in the previous chapter, there were ten misbehaviours selected as the basis of the indisciplined group, for the present work. The investigator wanted to know, which misbehaviour area affects the pupils most. For this the rated forms prepared by the two teachers of X class of each school were taken and the number of pupils getting A grade were counted in each misbehaviour. The following table shows the number of

pupils of the indisciplined group getting A grade out of 230 in each misbehaviour. The pupils getting a grade are defined as most extreme in showing that misbehaviour. To have an immediate understanding and comparative view of the pupils showing extreme misbehaviour, a graph was drawn.

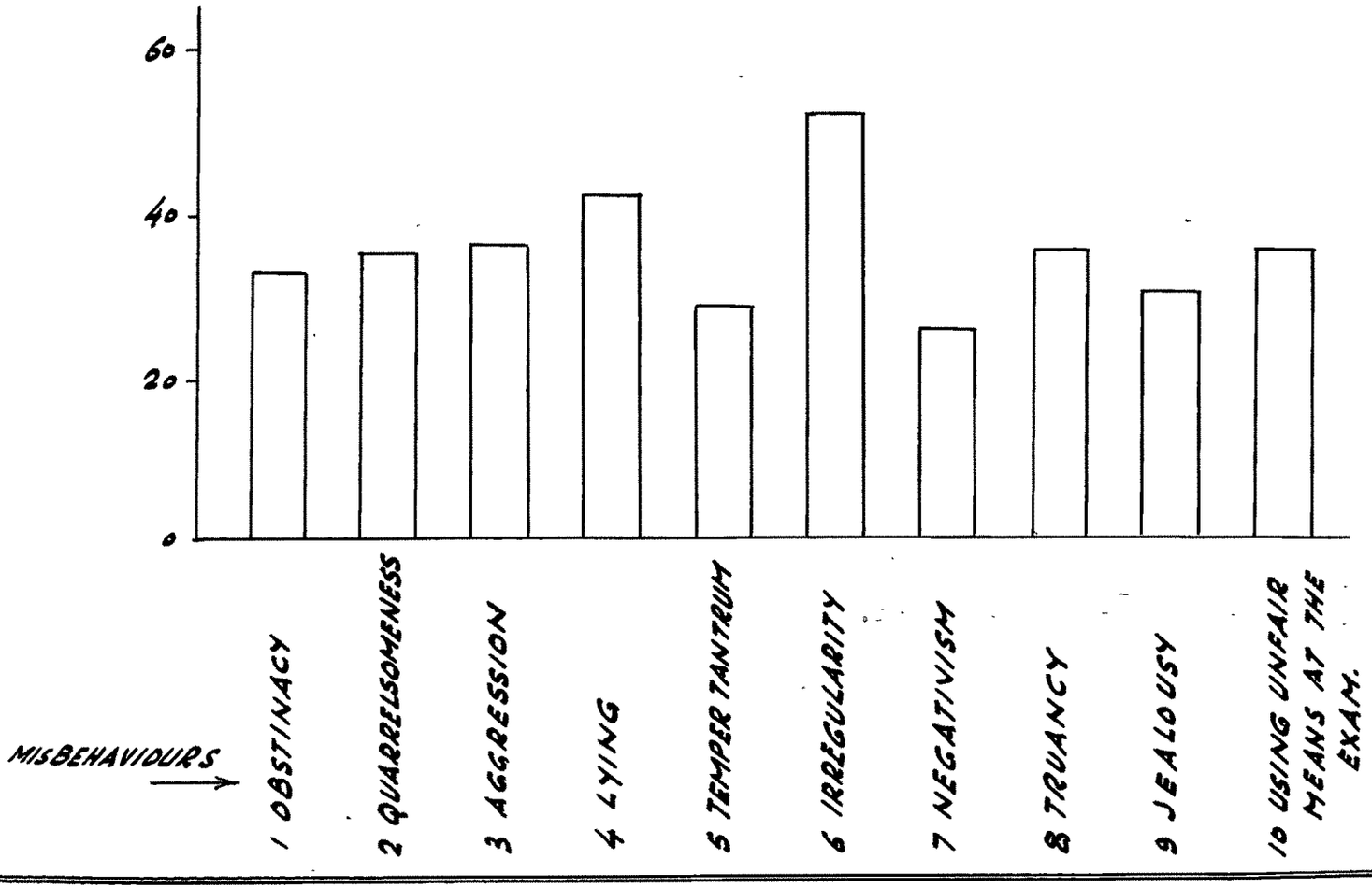
Frequencies of the indisciplined students showing the extreme misbehaviours.

TABLE NO.6

MISBEHAVIOURS AGAINST INDISCIPLINED SUBJECTS-GRAPH V

Misbehaviours	Frequencies
1. Obstinacy	32
2. Quarrelsomeness	35
3. Aggression	36
4. Lying	42
5. Tempertantrum	28
6. Irregularity	52
7. Negativism	26
8. Truancy	35
9. Jealousy	30
10. Using Unfair means at the examination.	35

FREQUENCY DISTRIBUTION OF TEN MISBEHAVIOURS



7.6 & 7.7 Interpretation of the Graph representing all the ten misbehaviours

From the graph, it can be said that -

1. Many subjects fall under the misbehaviour 'Irregularity.' This is quite true experimentally as well as theoretically that students show irregularity in each and every field of their work.

2. The next in order is 'Lying'.This nuisance has affected and spoiled the life of many children. There is experimental evidence to show that even at the secondary level, students show this misbehaviour.

3. 'Aggression' - This misbehaviour is mostly found amongst boys. Anyhow it is third in rank.

4. 'Quarrelsomeness'- Students due to lack of tolerance adopt this type of attitude with a slight excuse. It is the fourth in rank.

5. 'Truancy' - is found due to uncongenial home and school atmosphere. It is fifth in rank.

6. 'Using Unfair means at the examination' - This misbehaviour is adopted by the students as they want to gain their ends by cheap means.

7. 'Obstinacy' - This is found mostly at the young age.

8. 'Jealousy' - It may be possessed by all persons but there are less chances for its exposure in the class.

9. 'Tempertantrum' - There are very few chances to show this misbehaviour at school and even at home, if there is no free discipline.

10. 'Negativism' - This misbehaviour is last in rank as the present sample consists of less number of students showing this misbehaviour. The present sample is selected from the X class and its manifestations decrease as the age increased.

The above interpretations can be put in a nutshell thus: Pupils possess certain misbehaviours due to some psychological reasons. The misbehaviour irregularity affects the large number of pupils while negativism affects less number of pupils of X class.

7.7. COMPARISON OF THE TWO EXTREME GROUPS ON EACH OF THE TEN MISBEHAVIOUR AREAS IN SCALE I

The investigator compared the above extreme pupils with the group of disciplined pupils. The number of disciplined pupils was constant for all the misbehaviours and all the scales. The number of pupils in the disciplined group was sixty.

To find out the significant difference between the two extremely contrasted groups, 't' technique was applied. This gave an idea of the significance of each misbehaviour in each scale of the two contrasted groups.

TABLE NO.7

COMPARISON OF THE TWO EXTREME GROUPS ON EACH OF THE TEN MISBEHAVIOURS AREAS IN SCALE I

Misbehaviours	Mean		S.D.		S.E.M.		't'
	Dis.	Indis.	Dis.	Indis.	Dis.	Indis.	
1.Obstinacy	9.2	7.99	0.65	1.37	0.09	0.245	4.6**
2.Quarrelsomeness	9.2	7.24	0.65	1.775	0.09	0.3	6.26*
3.Aggression	9.2	7.76	0.65	1.83	0.09	0.305	4.6**
4.Lying	9.2	7.6	0.65	1.7	0.09	0.26	5.92*
5.Tampertantrum	9.2	7.53	0.65	1.55	0.09	0.3	5.38*
6.Irregularity	9.2	7.26	0.65	1.575	0.09	2.18	8.50*
7.Negativism	9.2	7.895	0.65	1.605	0.09	0.314	4.2**
8.Truancy	9.2	7.65	0.65	1.635	0.09	0.28	5.34*
9.Jealousy	9.2	7.18	0.65	1.195	0.09	0.218	8.56*
10.Using Unfair means at the Examination.	9.2	7.6	0.65	1.995	0.09	0.337	4.70*

** Significant at .01

* Significant at .05

From the above table of 't' values in all the ten misbehaviours areas, it is seen that all the 't's aresignificant beyond .01 level of confidence, which means that the two groups which were at the extreme ends in their behaviours differ significantly towards education and educational programme.

Also looking to the means of both disciplined and indisciplined groups, it can be said that the mean value of the former group is greater than that of the later group. This can be interpreted as, the disciplined group has more favourable attitude towards Education and Educational programme, than those of the indisciplined group.This fully explains the difference in the attitudes of the two extreme groups.

TABLE NO.8

COMPARISON OF THE TWO EXTREME GROUPS ON EACH OF THE TEN MISBEHAVIOUR AREAS IN SCALE II

Misbehaviours	Mean		S.D.		S.E.M.		't'
	Dis.	Indis.	Dis.	Indis.	Dis.	Indis.	
1.Obstinacy	8.85	8.4	0.60	.88	.078	.16	2.50*
2.Quarrelsome-ness.	8.85	8.34	0.60	.90	.078	.15	2.95**
3.Aggression	8.85	8.255	0.60	.91	.078	.15	3.52**
4.Lying	8.85	8.165	0.60	.90	.078	.13	4.53**
5.Tempertantrum	8.85	8.12	0.60	1.015	.078	.20	3.39**
6.Irregularity	8.85	8.05	0.60	1.0	.078	.14	5.0**
7.Negativism	8.85	7.76	0.60	1.49	.078	.29	3.62**
8.Truancy	8.85	8.18	0.60	.985	.078	.16	3.76**
9.Jealousy	8.85	8.0	0.60	1.05	.078	.19	4.14**
10.Using Unfair means at the examination	8.85	8.775	0.60	1.965	.078	.332	4.05**

* Significant at .05

** Significant at .01

Looking to the above table of 't' values in all the misbehaviour areas, it is seen that all except,first 't' value are significant beyond .01 level of confidence. In the first misbehaviour Obstinacy, it is significant beyond .01 level of confidence. This indicates that both these extreme groups differ significantly in the problem of discipline towards school.

Also the mean of the disciplined group is greater than that of the indisciplined group which denotes that the former group has more favourable attitude than the later group, towards school.

TABLE NO.9

COMPARISON OF THE TWO EXTREME GROUPS ON EACH OF THE TEN MISBEHAVIOUR AREAS IN SCALE III

Misbehaviours	Mean		S.D.		S.E.M.		't'
	Dis.	Indis.	Dis.	Indis.	Dis.	Indis.	
1.Obstinacy	9.515	8.55	.885	2.05	.11	.37	2.54*
2.Quarrelsome ness.	9.515	8.77	.885	1.79	.11	.303	2.33*
3.Aggression	9.515	8.8	.885	1.8	.11	.30	6.5**
4.Lying	9.515	8.725	.885	1.835	.11	.28	2.63**
5.Tempertan- trum.	9.515	8.69	.885	1.77	.11	.33	8.08**
6.Irregularity	9.515	8.425	.885	1.92	.11	.26	3.51**
7.Negativism	9.515	9.395	.885	1.32	.11	.26	0.43 -
8.Truancy	9.515	8.665	.885	2.045	.11	.069	6.64**
9.Jealousy	9.515	8.65	.885	1.75	.11	.32	2.56*
10.Using Unfair means at the Examination	9.515	8.775	.885	1.965	.11	.332	2.17*

* Significant at .05
** Significant at .01

A glance at the above table of 't' values all the misbehaviours, except negativism are significant beyond .05 level and .01 level of confidence. This is an indication that the two extreme groups differ significantly in the problem of discipline towards teachers.

The misbehaviour - negativism does not show any significant difference between the two groups. It can be interpreted, that perhaps both disciplined and indisciplined groups possess this misbehaviour.According to the graphical representation, very few students show this misbehaviour and its rank is the last in the graph.

The means also show the marked difference between the two groups which can be interpreted as the disciplined group has more favourable attitude towards teachers than those of the indisciplined group. However the mean values in the case of negativism do not show significant difference.

TABLE NO.10

COMPARISON OF THE TWO EXTREME GROUPS ON EACH OF THE TEN MISBEHAVIOUR AREAS IN SCALE IV

Misbehaviours	Mean		S.D		S.E.M.		't'
	Dis.	Indis.	Dis.	Indis.	Dis.	Indis.	
1.Obstinacy	8.86	8.345	.09	1.05	.11	.18	2.45*
2.Quarrelsome-ness	8.86	8.24	.09	1.09	.11	.185	2.88**
3.Aggression	8.86	8.20	.09	1.05	.11	.175	3.17**
4.Lying	8.86	8.01	.09	1.50	.11	.23	3.40**
5.Tempertan-trum	8.86	8.37	.09	1.24	.11	.20	2.11*
6.Irregularity	8.86	8.47	.09	1.46	.11	.20	1.77 -
7.Negativism	8.86	8.47	.09	1.5	.11	.29	1.26 -
8.Truancy	8.86	8.46	.09	1.445	.11	.25	1.48 -
9.Jealousy	8.86	7.98	.09	1.7	.11	.31	2.75 **
10.Using Unfair means at the examination	8.86	8.46	.09	1.25	.11	.21	1.70 -

* Significant at .05

** Significant at .01

Looking to the results in the above table, it is seen that misbehaviour areas 1 to 5 and 9 are significant beyond .05 and .01 level of confidence. While misbehaviour areas

No. 6,7,8 and 10 do not show significant difference between the two groups.

It can be said that four misbehaviour areas - Irregularity, Negativism, Truancy and Using Unfair Means at the Examination, do not discriminate between the two groups. It can be said that both the groups of the pupils possess the above four misbehaviours at least at home. So they might have not shown significant difference between them.

The means of the misbehaviours, which show significant difference, are greater in the disciplined group than in the indisciplined group, while those misbehaviours which do not show significant difference between the two groups, have a negligible difference between means of both the groups.

Thus it can be interpreted in general that disciplined students show more favourable attitude towards education, school, teachers and home than the indisciplined students, and both the groups differ in their behaviours regarding the problem of discipline.

To have an overall picture of the 't' values of all the misbehaviours in all the four scales, the following table is given.

TABLE NO.11

COMPOSITE PICTURE OF 't' VALUES OF ALL THE SCALES

Misbehaviours	Showing the 't' values			
	Education	School	Teachers	Home
1.Obstinacy	4.6**	2.5*	2.54*	2.45*
2.Quarrelsomeness	6.26**	2.95**	2.33 *	2.88**
3.Aggression	4.65**	3.52**	6.5**	3.17**
4.Lying	5.92**	4.53**	2.63**	3.40**
5.Tempertantrum	5.38**	3.39**	8.08**	2.11*
6.Irregularity	8.50**	5.0**	3.51**	1.77 -
7.Negativism	4.2**	3.62**	0.43 -	1.26 -
8.Truancy	5.34**	3.76**	6.64**	1.48 -
9.Jealousy	8.56**	4.14**	2.56*	2.75**
10.Using unfair means at the Examination	4.70**	4.05**	2.17*	1.70*

The following symbols indicate the significance at the 't' values shown above:

Significant at .01 level **
Significant at .05 level *
Not significant - (dash) ___

7.9. COMPARISON OF THE TWO GROUPS CONSIDERING ORGANISMIC VARIABLES

Uptill now the investigator has applied the 't' test considering only disciplined - indisciplined variable to the entire sample, and the extreme sample. Not a single organismic variable was considered. To study the effects of organismic variables such as residence, age and sex, two groups of 80 subjects each, under each variable were formed.

These groups were formulated from the original contrasted groups. (1) Residence is divided under two headings (a) Rural subjects and (b) urban subjects. (2) Age is also divided under two headings (a) older age group which is above 15 years and younger age group which is below 15 years. They were, named as ' Age Group I' and 'Age Group II'. Age Group I is below the age of 15 years and the Group II is above the age of 15 years. (3) The third variable is sex - (a) Boys and (b) girls and (4) fourth group is (a) disciplined and (b) indisciplined.

To find out the significant difference between the two groups of the organismic variables the 't' test was applied.

The Mean,S.D. and S.E.Mean were found out to calculate the 't' values of all the four scales. Each sub-group consisted of 80 subjects.

TABLE NO.12

COMPARISON OF 't' VALUES OF RURAL AND URBAN GROUPS IN ALL THE FOUR SCALES

Scales	Mean		S.D.		S.E.M.		't'
	Rural	Urban	Rural	Urban	Rural	Urban	
I	7.42	7.1	1.63	1.88	0.18	0.21	1.78 -
II	8.137	8.27	1.46	1.55	0.164	0.17	0.57 -
III	8.187	8.35	2.2	1.98	0.247	0.222	0.50 -
IV	8.237	7.94	1.5	1.67	0.16	0.18	1.3 -

* Significant at .05

** Significant at .01

\- Insignificant

Looking to the above values, not a single 't' value is significant which means that the rural group towards all the four areas do not differ significantly from those of the urban group in the problem of discipline. The reason for this is quite obvious. As the scales were

constructed mainly for comparing attitudes of the disciplined and the indisciplined groups it was expected that their attitude should not differ, towards the problem of discipline.

Looking to the misbehaviours which are considered as indisciplined, there must not be any difference in rural and urban subjects. These misbehaviours are the tendencies which do not differentiate the rural and urban subjects.

It is a matter of common observation that the attitudes of the various age groups may not be the same. Hence it was hypothesized that in the problem of discipline the attitudes of the younger age group are more favourable towards all the scales than those of the older age groups. In order to test this hypothesis, the 't' test was applied and four 't' values corresponding to four scales were obtained. They are shown in the table below.

TABLE NO.13

COMPARISON OF 't' VALUES OF THE TWO AGE GROUPS IN ALL THE FOUR SCALES

Scales	Mean		S.D.		S.E.M.		't'
	Age Gr. I	Age Gr. II	Age Gr. I	Age Gr. II	Age Gr. I	Age Gr. II	
I	7.62	6.912	1.68	1.8	0.18	0.20	2.62*
II	8.35	8.087	1.49	1.27	0.167	0.14	1.2 -
III	8.18	8.495	2.25	1.9	0.25	0.21	0.98-
IV	8.92	8.0	1.0	1.6	0.11	0.179	5.1**

* Significant at .05

** Significant at .01

\- Insignificant

In the second variable age, the hypothesis is supported in the first and the fourth scales only and in the remaining two scales the differences between the two groups are not significant. It means, attitudes of the younger age group towards education and home are more favourable than those of the older age group. Both the age groups do not differ in their attitude towards school and teachers.

The results of the second and the third scales cannot be explained, however, it can be said that both the older and the younger age groups may have more or less the same type of attitudes towards the problem of discipline. The school and the teachers are interrelated. While the significant 't' values in the case of the first and the fourth scales are not very difficult to explain and in fact they do not need any explanation.

Again by the way of curiosity it was hypothesized that the attitudes of boys do not differ from those of girls towards all the four scales. The four 't' values of the four scales are found out as above and they are shown below.

TABLE NO.14

COMPARISON OF 't' VALUES OF THE BOYS AND GIRLS IN ALL THE FOUR SCALES

Scales	Mean		S.D.		S.E.M.		't'
	Boys	Girls	Boys	Girls	Boys	Girls	
I	7.46	7.075	1.9	1.6	0.21	0.179	1.43 -
II	8.06	8.325	1.7	1.0	0.19	0.11	1.2 -
III	8.425	8.88	3.73	2.17	0.41	0.24	0.97 -
IV	8.38	8.0	1.8	1.4	0.20	0.15	1.4 -

* Significant at .05 ** Significant at .01 - Not sig.

Looking to the 't' values in the above table, all the 't' values are not significant. This result supports the hypothesis. There is no reason why the attitudes of boys and girls towards Education, School, Teachers and Home should differ. This means boys and girls do not differ in their attitudes towards the problem of discipline.

The attitudes of disciplined and indisciplined groups were also compared in all the four scales which are shown below. The results are in agreement with the former results of the entire group. Highly significant 't' values indicate that even with the smaller group of 80 subjects, significant difference is obtained.

TABLE NO.15

COMPARISON OF 't' VALUES OF THE DISCIPLINED AND INDISCIPLINED GROUPS IN ALL THE FOUR SCALES

Scales	Mean		S.D.		S.E.M.		't'
	Dis.	Indis.	Dis.	Indis.	Dis.	Indis.	
I	8.125	6.41	1.4	1.68	.15	.18	7.3**
II	8.82	8.125	0.86	1.44	.096	.16	3.7**
III	9.125	7.413	1.6	2.12	.179	.238	5.7**
IV	8.86	7.525	1.1	1.74	.11	.19	6.06**

* Significant at .05

** Significant at .01

The reason for taking 80 subjects in each of the group is, they were at the two extremes of the disciplined-indisciplined continuum.

The investigator had hypothesized that the two groups of the variables other than disciplined-indisciplined should not differ as the scale construction was done on the comparison of attitudes of disciplined and indisciplined groups only.

The results showed no difference between the groups rural - urban and boys-girls, while it showed significant difference between the two age groups in two scales, towards education and home. Here it can be said that younger age group has more favourable attitude towards education and home. It can be said that with the increase in age, the individual has many things to divert his attention to. So the older age group shows less favourable attitude towards education and home in relation to the problem of discipline.

'Although the statistical tests are quite varied and their applications are numerous, they do not provide for all our needs. The 'Z' and 't' tests lack complete generality. One reason is that they rest upon the assumption of normal distribution of measurement in the population. Another is that they are limited to the evaluation of one

statistic or one difference at a time.'[1]

7.10. CHI-SQUARE TECHNIQUE

To substantiate the 't' values, the chi-square technique was applied. Chi-square is used for general purpose. It has diverse applications. The most common use of chi-squqre is in connection with the data in the form of frequencies. The data can be reduced to frequencies. This includes also proportions and probabilities. The important advantage of chi-square lies in its additive properties which make possible the combination of several statistics or other values in the same test. Thus a hypothesis which consists of more than one set of data can be tested for significance at a time. 'Thus chi-square is the sum of ratios. Each ratio is between a squared discrepancy or difference and an expected frequency. This discrepancy is between an obtained frequency and a frequency expected on the basis of the hypothesis we are testing.'[2]

The investigator used the chi-square technique for comparing the attitudes of the two groups towards

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[1] J.P.Guilford. Fundamental Statistics in Psychology and Education.(New York:McGraw Hill Book Company,1942), p.228

[2] Ibid.

all the four scales considering the organismic variables such as age, sex, residence and disciplined-indisciplined.

In this technique, the data should be converted into frequency. So the investigator tabulated the scores of each group and calculated their frequencies on the favourable side. As it was stated in the previous chapter that greater score indicates favourable attitude. But the question is: which score should be called greater ? As the rating was done on a 13-point scale, the score above 6 was considered as favourable attitude towards an object. The investigator counted the subjects possessing scores above 6 in each group. The following table shows the frequencies of dis. - Indis. group in Scale I.

The investigator has also drawn the Histograms by using the frequencies on the favourable continuum, of the two groups of each variable of each scale. The graphs attached after the completion of each scale. The interpretations of the graphs are given alongwith the discussion on Chi-square results.

TABLE NO.16

FREQUENCIES OF DIS.INDIS.GROUPS IN SCALE I (Favourable - Unfavourable)

	Disciplined	Indisciplined	Total	
Favourable	61	27	88	
Unfavourable	19	53	72	χ^2 =19.10 Highly significant
	80	80	160	

TABLE NO.17

FREQUENCIES OF RURAL AND URBAN GROUPS IN SCALE I (Favourable and Unfavourable)

	Rural	Urban	Total	
Favourable	48	40	88	χ^2 = 1.60 Not significant
Unfavourable	32	40	72	
	80	80	160	

TABLE NO.18

FREQUENCIES OF BOYS AND GIRLS IN SCALE I(Favourable & Unfavourable)

	Boys	Girls	Total	
Favourable	49	39	88	χ^2 = 2.54 Not significant
Unfavourable	31	41	72	
	80	80	160	

TABLE NO.19

FREQUENCIES OF THE AGE GROUPS IN SCALE I (Favourable - Unfavourable)

	Age I	Age II	Total	
Favourable	48	40	88	$\alpha^2 = 1.60$
Unfavourable	32	40	72	Not significant
	80	80	160	

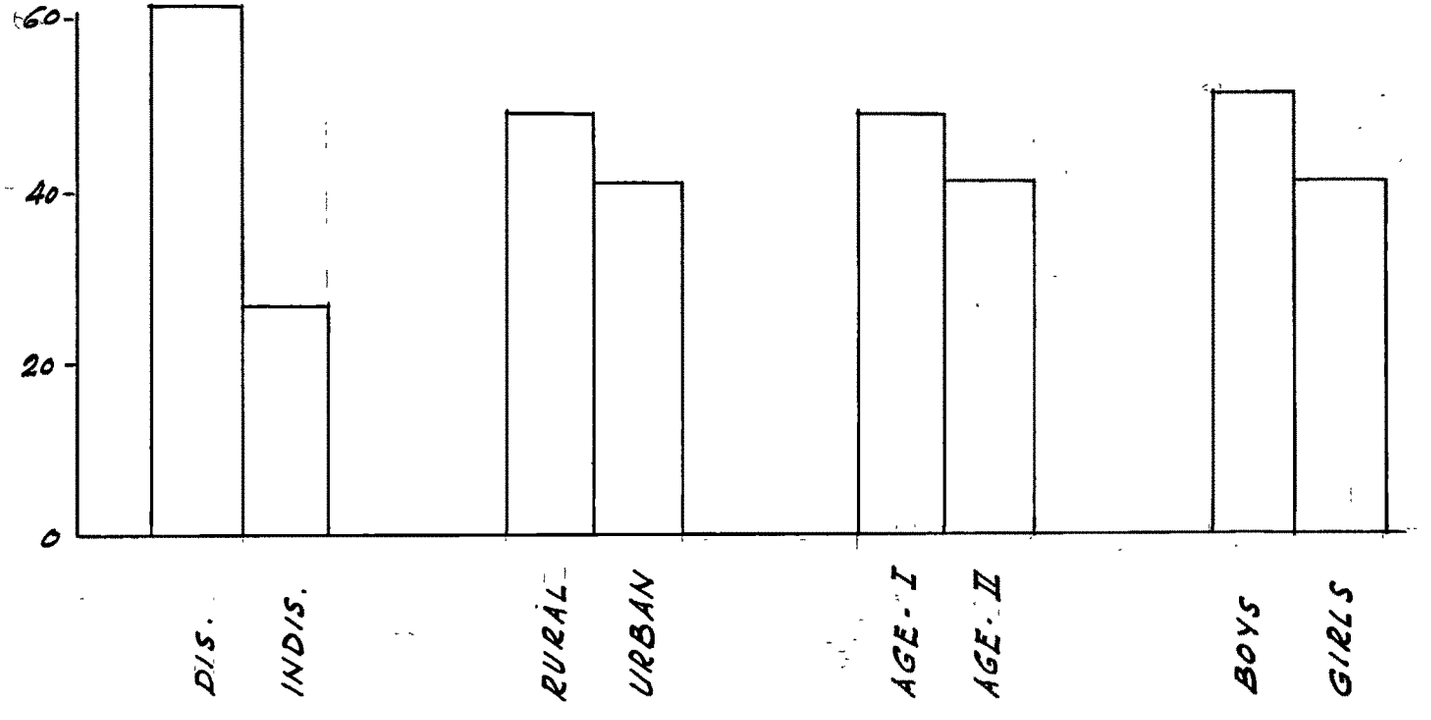
TABLE NO.20

ALL THE FOUR CHI-SQUARE VALUES OF SCALE I ARE PUT TOGETHER IN THE FOLLOWING TABLE

Variables	Scale I	
Disciplined-Indisciplined	19.10	Only disciplined Indisciplined group shows significant difference.
Rural Urban	1.60	
Boys Girls	2.54	
Age Gr. I - II	1.60	

SCALE I

FREQUENCIES FOR FAVOURABLE ATTITUDES



Similarly for all the variables for all the scales Chi-square values were found out. They are shown as follows - Scale II

TABLE NO.21

FREQUENCIES OF DIS. INDIS. GROUPS IN SCALE II (Favourable - Unfavourable)

	Dis.	Indis.	Total	
Favourable	80	64	144	$\chi^2 = 17.76$
Unfavourable	0	16	16	Highly significant
	80	80	160	

TABLE NO.22

FREQUENCIES OF RURAL-URBAN GROUPS IN SCALE II (Favourable - Unfavourable)

	Rural	Urban	Total	
Favourable	72	72	144	
Unfavourable	8	8	16	$\chi^2 = 0$
	80	80	160	

TABLE 23

FREQUENCIES OF BOYS AND GIRLS GROUPS IN SCALE II (Favourable - Unfavourable)

	Boys	Girls	Total	
Favourable	66	78	144	$\chi^2 = 10$
Unfavourable	14	2	16	Significant beyond .01Level
	80	80	160	

TABNE NO.24

FREQUENCIES OF AGE GROUPS IN SCALE II (Favourable-Unfavourable)

	I	II	Total	
Favourable	72	72	144	$\chi^2 = 0$
Unfavourable	8	8	16	
	80	80	160	

All the four chi-squqre values of Scale II are put together in the following Table

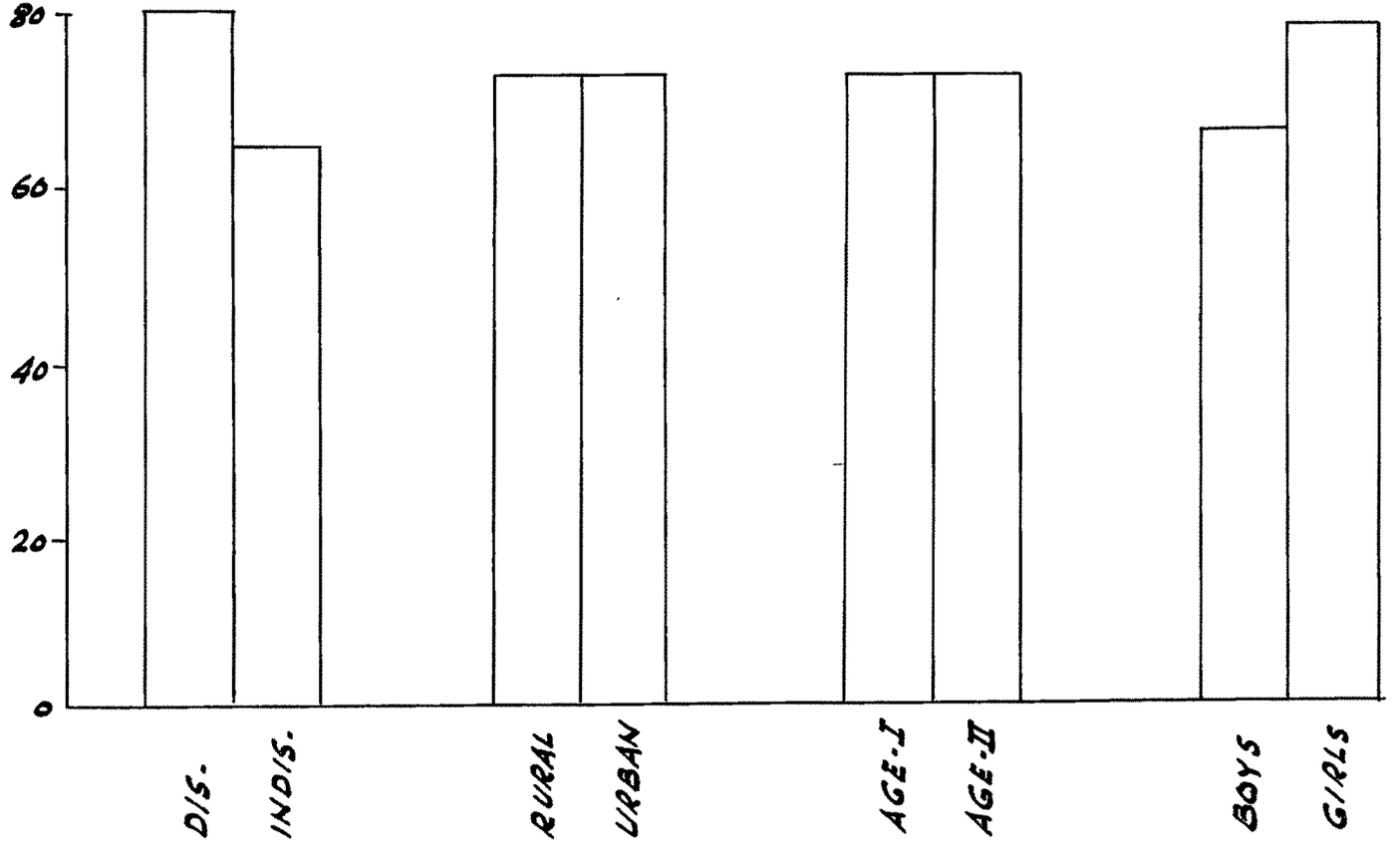
TABLE NO.25

Dis. - Indis.	17.76
Rural - Urban	0
Boys - Girls	10.00
Age I - II	0

Only Dis.- Indis. and Boys-girls groups are significant. This means that these two groups differ in their attitudes towards school.

SCALE II

FREQUENCIES FOR FAVOURABLE ATTITUDES



Scale III

TABLE NO.26

FREQUENCIES OF DIS.-INDIS. GROUPS
IN SCALE III
(Favourable - Unfavourable)

	DIS.	INDIS.	TOTAL	
Favourable	73	55	128	χ^2 = 12.64 Highly significant
Unfavourable	7	25	32	
	80	80	160	

TABLE NO.27

FREQUENCIES OF RURAL-URBAN GROUPS
IN SCALE III
(Favourable - Unfavourable)

	Rural	Urban	Total	
Favourable	63	65	128	χ^2 = 0.15 Not significant
Unfavourable	17	15	32	
	80	80	160	

TABLE NO.28

FREQUENCIES OF BOYS - GIRLS GROUPS
IN SCALE III
(Favourable - Unfavourable)

	Boys	Girls	Total	
Favourable	68	60	128	χ^2 = 2.50 Not significant
Unfavourable	12	20	32	
	80	80	160	

TABLE NO.29

FREQUENCIES OF AGE GROUPS IN SCALE III
(Favourable-Unfavourable)

	Age I	Age II	Total	
Favourable	62	66	128	
Unfavourable	18	14	32	$\chi^2 = .62$ Not significant
	80	80	160	

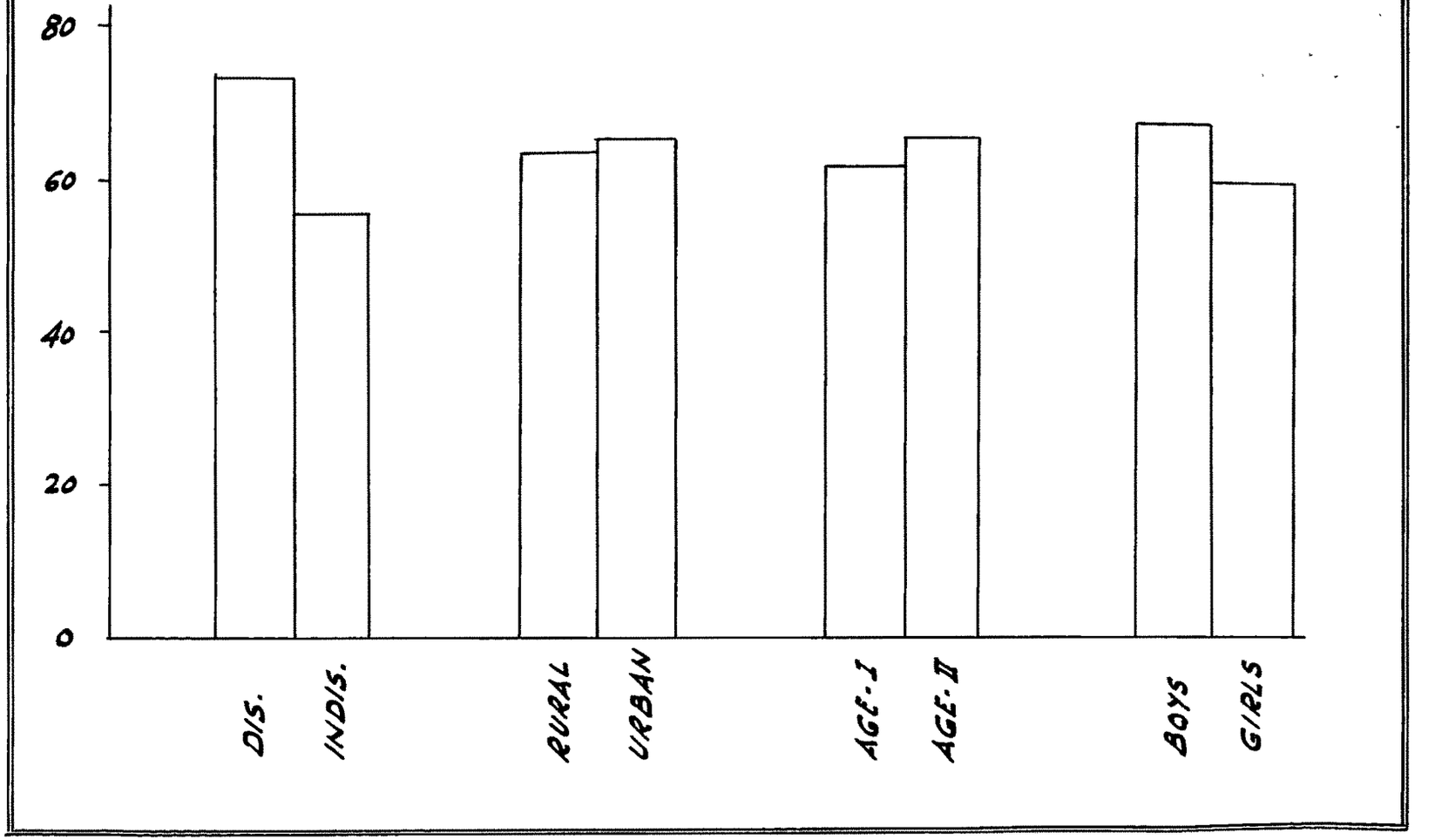
All the four Chi-square values of Scale III

TABLE NO.30

Scale III		
Dis. - Indis.	12.64	Only dis.- Indis. group shows significance
Rural - Urban	.150	
Boys - Girls	2.50	
Age I - II	0.62	

SCALE III

FREQUENCIES FOR FAVOURABLE ATTITUDES



Scale IV

TABLE NO.31

FREQUENCIES OF DIS.-INDIS.GROUPS IN SCALE IV (Favourable - Unfavourable)

	Dis.	Indis.	Total	
Favourable	78	55	133	$\chi^2 = 23.56$ Highly significant
Unfavourable	2	25	27	
	80	80	160	

TABLE NO.32

FREQUENCIES OF RURAL-URBAN GROUPS IN Scale IV (Favourable-Unfavourable)

	Rural	Urban	Total	
Favourable	69	64	133	$\chi^2 = 1.11$ Not Significant
Unfavourable	11	16	27	
	80	80	160	

TABLE NO.33

FREQUENCIES OF BOYS-GIRLS GROUP IN SCALE IV (Favourable-Unfavourable)

	Boys	Girls	Total	
Favourable	66	67	133	$\chi^2 = 3.708$ Not significant
Unfavourable	14	13	27	
	80	80	160	

TABLE NO.34

FREQUENCIES OF AGE GROUPS IN SCALE IV
(Favourable-Unfavourable)

	Age I	Age II	Total	
Favourable	70	63	133	$\alpha^2 = 2.16$
Unfavourable	10	17	27	Not Significant
	80	80	160	

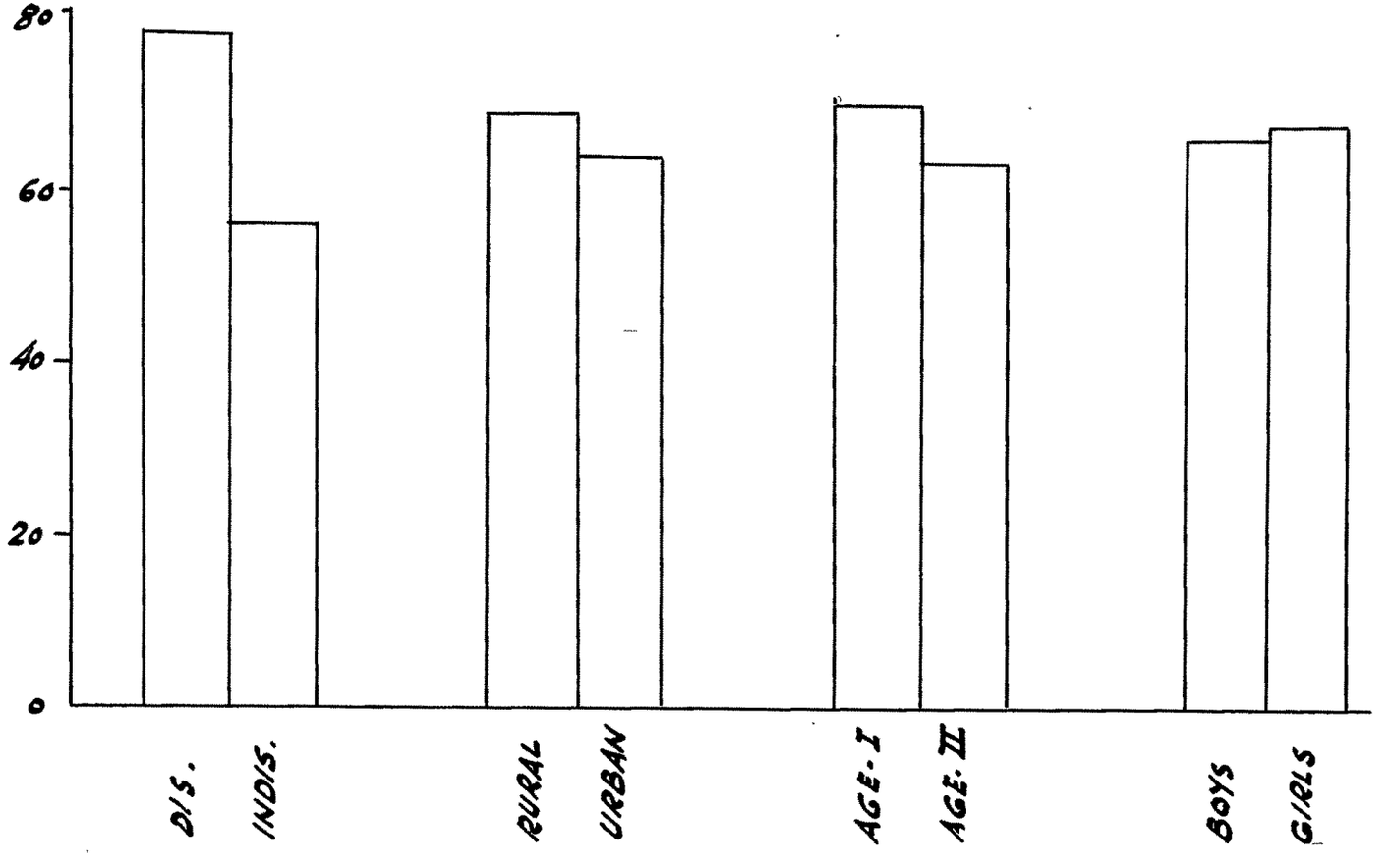
All the four values of chi-square of Scale IV together

TABLE NO.35

Scale IV		
Dis. Indis.	23.56	Only dis. Indis. Group shows significance
Rural - Urban	1.11	
Boys - Girls	3.708	
Age I - II	2.16	

SCALE IV

FREQUENCIES FOR FAVOURABLE ATTITUDES



Composite picture of Chi-squares for all the four Scales.

TABLE NO.36

Variables	Scale I	Scale II	Scale III	Scale IV
Dis.- Indis.	19.10**	17.76**	12.64**	23.56**
Rural-Urban	1.60	0.0	0.150	1.11
Boys-Girls	2.54	10.00**	2.50	3.708
Age Group I-II	1.60	0.0	.62	2.16

* Significant at .05

** Significant at .01

7.11 &

7.12. INTERPRETATIONS OF THE CHI-SQUARE AND GRAPHS

The chi-square values of dis.-indis. group in all the four scales are significant beyond .01 level of confidence. This indicates that the attitudes of the two groups differ significantly in all the four areas.

Inspection of the entriew in the table above, shows that the disciplined group has more favourable attitudes towards all the four areas than the indisciplined group. This is in support of our hypothesis. Now the question

strikes why do we hypothesize that these two groups should differ.

From the very beginning these two groups were formed on the basis of ten misbehaviours. Those subjects who showed the misbehaviours prominently, were considered to be indisciplined. And those who did not show the misbehaviours, were considered as disciplined. Our hypothesis was whether the attitude of the pupils have any impact upon the problem of discipline or not.

While selecting the sample, the variables like the place of residence, sex and age were kept in mind otherwise the groups of other variables could not have been formed.

Now looking at the values of the other three variables, only the group boys-girls show significant difference in the Scale II all the other variables are not significant. Boys and girls differ in their attitudes towards school. This might have happened by chance.

All these results obtained by the chi-square technique are in conformity with the results obtained earlier by 't' tests, the age groups are not significant here. Even by 't' technique, the age groups differ only

in two scales.

Looking to the graphs of the two groups of each variable of all the scales, a greater difference exists between the two groups of the disciplined-indisciplined variable only. The two groups of other variables such as rural-urban, older age group and younger age group, boys-girls etc. do not show much difference as the disciplined-indisciplined variable in all the four scales and also they are not statistically significant. This means that attitudes of the groups of various organismic variables do not differ in their attitudes in relation to the problem of discipline. Uptill now, the results obtained by 't' technique, chi-square technique and observation of the graphs are in agreement.

CHAPTER VII

ANALYSIS OF VARIANCE

(Part II)

7.13. Analysis of Variance
7.14. Interpretation of the Values obtained
7.15. General Discussion

In order to have an over all picture of the whole data the investigator applied the technique of Analysis of Variance. 'The 't' test is appropriate only for tests of the population means in pairs,' the corresponding statistical tests would not be independent of each other, nor would they provide a direct and valid test of this more general null hypothesis but the Analysis of Variance technique does provide a valid test. It is a general method of analysis of data subject to the influence of number of factors. It provides not only a measure of the effect of each such factor (if the experiment is designed properly) but a valid statistical test of the significance of each such effect.'[1]

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[1]Robert W.B.Jackson and Johnson O.Palmer. Modern Statistical Methods, Descriptive and Inductive. (Chicago: Rand M. M wally & Co.),p.192.

7.13. ANALYSIS OF VARIANCE

This method can easily be, adopted to provide appropriate analysis of the data secured from the various types of experimental design.

This method is an improvement over the 't' technique. Hence the data were analysed by this method. This method is associated with the design of experiments. Here the investigator has used 2 x 2 x 2 x 2 = 16 cell factorial design.

All the four scales were evaluated by means of factorial design with four variables each at two levels in the manner 2 x 2 = 4 times factorial design. The following table shows the 16 cell design.

TABLE NO.37

16 CELL DESIGN FOR THE SCALE I

		Rural Group				Urban Group			
		Age	Gr.I	Age	Group.II	Age	Gr.I	Age	Group II
Disciplined	Boys	8,3	10.4	6.6	8.7	8.3	9.8	8.7	9.8
		10.4	9.2	9.8	10.4	9.2	9.2	8.7	7.1
		8.7	9.2	8.7	7.2	7.1	8.7	8.7	9.8
		9.2	10.4	8.7	7.8	8.7	8.7	8.7	9.8
		8.7	9.8	9.8	7.8	8.7	8.7	9.2	9.2
			94.3		85.5		87.1		89.7
	Girls	8.3	6.6	6.6	7.1	3.8	9.2	8.7	6.6
		6.6	7.1	5.8	8.7	8.3	9.2	6.6	8.3
		8.7	4.1	8.3	8.3	8.7	6.6	8.3	8.3
		8.3	6.6	8.3	7.1	6.6	9.2	6.6	6.6
		8.3	6.6	6.6	8.3	8.3	6.6	4.1	
			71.2		75.1		76.5	5.2	69.3
Indisciplined	Boys	7.1	8.7	3.8	7.1	6.6	4.1	4.1	6.1
		3.2	8.3	6.6	6.6	8.7	4.1	4.7	4.1
		8.3	6.6	6.6	8.7	6.6	6.1	6.6	4.7
		7.8	8.7	4.1	7.8	4.1	6.1	6.6	3.8
		6.6	5.2	5.2	6.4	4.1	6.6	6.6	3.8
			70.5		62.6		57.1		48.6
	Girls	4.1	6.6	7.8	6.6	8.3	6.1	4.1	6.6
		8.7	6.1	6.6	8.3	6.1	7.8	6.6	4.1
		6.6	6.6	5.8	7.1	6.6	10.4	6.6	7.1
		7.1	8.3	4.1	8.7	5.8	9.2	3.2	7.1
		6.6	8.3	4.1		9.8		3.2	7.1
			69.0	3.8	62.9	8.7	78.8	3.8	8.3
									57.5

Correction = $\frac{(EX)^2}{N}$ = 8347.765

(1) Ss.Residence = $\frac{(X_R)^2 + (X\bar{U})^2}{N}$ - C = 4.389

(2) Ss.Age = $\frac{(X_1)^2 + (X_{11})^2}{N}$ - C = 17.756

(3) Ss.Sex = $\frac{(X_B)^2 + (X_G)^2}{N}$ - C = 7.7

(4) Ss.Dis.-Indis. = $\frac{(X_{Dis.})^2 + (X_{Indis.})^2}{N}$ -C=125.495

First order interactions = Residence X Age

TABLE NO.38

TOTAL SCORES OF RESIDENCE X AGE

	Rural	Urban	
Age I	305	299.5	Ss = 1.501
Age II	286.1	265.1	

TABLE NO.39

TOTAL SCORES OF RESIDENCE X SEX

	Rural	Urban	
Boys	312.9	282.5	Ss = 7.353
Girls	278.2	282.1	

(3) Ss.Resi. X Dis.-Indis. =

TABLE NO.40

TOTAL SCORES OF RESI. X DIS.-INDIS.

	Rural	Urban	
Dis.	326.1	322.6	Ss = 2.377
Indis.	265.0	242.0	

(4) Ss. Age X Sex =

TABLE NO.41

TOTAL SCORES OF AGE X SEX

	AGE I	AGE II	
Boys	309.0	286.4	
Girls	295.5	264.8	Ss = 0.411

(5) Ss. Age X Dis. Indis. =

TABLE NO.42

TOTAL SCORES OF AGE X DIS.INDIS.

	Age I	Age II	
Dis.	329.1	319.6	
Indis.	275.4	231.6	Ss = 7.354

(6) Ss. Sex X Dis. Indis. =

TABLE NO.43

TOTAL SCORES OF SEX X DIS.INDIS.

	Boys	Girls	
Dis.	356.6	292.1	
Indis.	238.8	268.2	Ss = 55.108

SECOND ORDER OF INTERACTIONS

(1) Ss.Resi. X Age X Sex =
TABLE NO.44

TOTAL SCORES OF RESIDENCE X AGE X SEX

	Rural		Urban	
	Age I	Age II	Age I	Age II
Boys	164.8	148.1	144.2	138.3
Girls	140.2	138.0	155.3	126.8

$Ss = 8.603$

(2) Ss. Resi. X Sex X Dis.Indis. =

TABLE NO.45

TOTAL SCORES OF RESIDENCE X SEX X DIS.INDIS.

	RURAB		URBAN	
	Dis.	Indis.	Dis.	Indis.
Boys	179.8	133.1	176.8	105.7
Girls	146.3	131.9	145.8	136.3

$Ss=5.465$

(3) Ss. Resi. X Age X Dis. Indis. =

TABLE NO.46

TOTAL SCORES OF RESIDENCE X AGE X DIS.INDIS

	Rural		Urban	
	Age I	Age II	Age I	Age II
Dis.	165.5	160.6	163.6	159.0
Indis.	139.5	125.5	135.9	106.1

Ss =1.619

(4) Ss. Age X Sex X Dis. - Indis. =

TABLE NO.47

TOTAL SCORES OF AGE X SEX X DIS.-INDIS.

	Dis.		Indis.	
	Age I	Age II	Age I	Age II
Boys	181.4	175.2	127.6	111.2
Girls	147.7	144.4	147.8	120.4

Ss=1.205

THIRD ORDER OF INTERACTIONS =

(1) Ss. Age X Sex X Resi. X Dis.-Indis. =

TABLE NO.48

TOTAL SCORES OF AGE X SEX X RESI X DIS.INDIS.

		Rural		Urban		
		Age I	Age II	Age I	Age II	
Dis.	Boys	94.3	85.5	87.1	89.7	
	Girls	71.2	75.1	76.5	69.3	
						Ss=0.292
Indis.	Boys	70.5	62.6	57.1	48.6	
	Girls	69.0	62.9	78.8	57.5	

Total sum of the Squares = 547.725

Ss. Within = 301.099

TABLE NO.49

ENTIRE CHART OF 'F' RATIOS OF SCALE I

Source	df	Ss.Value	MSS(x) v/df	X/within F. Ratio
1. Ss.Resi.	1	4.389	4.389	2.1 -
2. Ss.Age	1	17.756	17.756	8.49**
3. Ss.Sex	1	7.70	7.70	3.68 -
4. Ss.Dis.Indis.	1	125.493	125.493	60.04 **
5. Ss.Resi. X Age	1	1.501	1.501	0.71 -
6. Ss.Resi. X Sex	1	7.353	7.353	3.51 -
7. Ss.Resi. X Dis. Indis.	1	2.377	2.377	1.13 -
8. Ss.Age X Sex	1	0.411	0.411	0.196-
9. Ss.Age X Dis.- Indis.	1	7.354	7.354	3.51 -
10.Ss.Sex X Dis.- Indis.	1	55.108	55.108	26.36**
11.Ss.Resi.X Age X Sex	1	8.603	8.603	4.11*
12.Ss.Resi.X Sex X Dis.Indis.	1	5.465	5.465	2.61 -
13.Ss.Resi. X Age X Dis.Indis.	1	1.619	1.619	0.774 -
14.Ss.Age X Sex X Dis.Indis.	1	1.205	1.205	0.57 -
15.Ss.Age. X Sex X Resi.X Dis.Indis.	1	0.292	0.292	.14-
16 Ss.Within	144	301.099	2.090	
Total	159			

Sig. at .05 = 3.90 * Signat .01 = 6.81 **

7.14. INTERPRETATION OF THE VALUES OBTAINED

Looking to F ratios, it is seen that F in the case of residence is not at all significant, which means that the attitudes of the two groups viz. rural and urban are not significantly different.

F ratio for age is significant beyond .01 level, that means that age is a factor in determining the attitudes of the subjects towards an object or issue.

In the case of sex and dis-Indis. groups, F ratio in the case of sex is not significant while that in dis.indis. group, it is highly significant. Thus out of the four main effects two are significant and two are not significant.

Looking to the first order interactions the interaction between (1) Residence X Age and that between (2) Age X Sex and the third between Age X Dis.Indis. are not significant. This again means that the effect of age in determining attitudes does not depend upon any other variable. In other words the effect of age is independent of other factors.

The interactions, between (1) Residence X Age, (2) Residence X Sex and (3) Residence X Dis.-Indis. are also not significant. This can be interpreted to mean that residence has nothing to do with the attitudes towards education and educational programme. However the interaction between residence X Sex approaches singificance. Thus the effect of residence can be said to be independent of other factors.

The interactions between (1) Residence X Sex (2) Age X Sex and (3) Sex X Dis.Indis. are not significant. Also the main effect of sex is not significant. That can be interpreted as, boys and girls do not differ significantly in their attitudes towards education and educational programme. The third, Sex X dis.-Indis. interaction is highly significant. It can be said that the difference in attitude scores between boys and girls at the first level of residence is not the same at the other level.

The main effect of dis.-indis. group is highly significant and the interactions viz. (1) Residence X Dis.-Indis. (2) Age X Dis.-Indis. are not significant.

This means that the effect of dis.-indis. variable is independent of residence and age. However, the interaction between Sex X Dis.-Indis. is highly significant which means that the effect of discipline is not independent of sex. On the whole it can be said that the variables age X dis.-indis. are significant and the F ratio in the case of age is completely independent of other factors. In the case of dis.-indis. group the main effect as well as the interaction between the sex X dis.-indis. are significant. Thus the effect of dis.-indis. variable is not independent of sex but it is independent of the other variables.

Scale II

TABLE NO.50

16 CELL DESIGN FOR THE SCALE II

		Rural Group				Urban Group			
		Age.Gr.I		Age Gr.II		Age Gr.I		Age Gr.II	
Disciplined	Boys	9.4	9.0	7.1	8.8	9.4	9.4	8.8	7.2
		9.4	9.0	9.0	8.8	8.8	9.4	7.1	9.4
		9.4	9.4	8.8	9.4	9.4	9.4	9.4	9.4
		9.4	9.4	8.8	7.2	9.4	9.4	9.4	9.2
		9.4	9.4	9.4	9.4	8.8	9.4	9.4	9.4
			93.2		86.7		92.8		88.7
	Girls	9.0	7.3	7.3	8.8	8.8	7.3	7.3	7.3
		7.3	9.0	9.4	9.0	8.8	9.4	7.3	9.4
		9.0	9.0	9.4	8.8	9.0	9.0	9.4	8.8
		7.3	9.4	7.3	7.2	7.3	9.0	7.3	9.4
		7.3	7.3	7.3	7.3	9.4	7.3	8.8	9.4
			81.9		81.8		85.3		81.4
Indisciplined	Boys	7.2	2.2	8.8	7.3	7.2	6.8	7.1	7.2
		1.1	6.8	5.7	7.2	7.4	7.3	4.5	5.7
		9.0	9.4	7.3	7.1	9.4	6.8	7.1	4.4
		8.8	7.3	7.4	6.0	6.8	7.1	8.8	5.7
		6.8	7.3	9.0	7.3	9.4	7.1	3.5	7.2
			65.9		73.1		75.3		61.2
	Girls	9.0	(7.1)	7.2	6.0	9.0	7.3	7.3	8.8
		7.2	(7.3)	(7.1)	(7.1)	(7.1)	7.3	9.4	9.0
		5.8	7.3	7.1	9.0	9.4	8.8	7.3	8.8
		(7.3)	7.2	9.4	9.4	9.4	9.0	7.3	6.8
		9.0	7.1	(7.3)	9.4	9.0	9.4	8.8	7.3
			74.3		79.0		85.7		80.8

$$\text{Correction} = \frac{(Ex)^2}{N} = 10353.91$$

$$(1)\quad \text{Ss.Resi.} = \frac{(XR)^2 + (XU)^2}{N} - C = 1.46$$

$$(2)\quad \text{Ss. Age} = \frac{(XI)^2 + (XII)^2}{N} - C = 2.94$$

$$(3)\quad \text{Ss.Sex} = \frac{(X_B)^2 + (X_G)^2}{N} - C = 1.4$$

$$(4)\quad \text{Ss.Dis.-Indis.} = \frac{(X_{Dis.})^2 + (X_{Indis.})^2}{N} - C = 58.20$$

FIRST ORDER OF INTERACTIONS

(1) Resi. X Age =

TABLE NO.51

TOTAL SCORES OF RESI. X AGE

	Rural	Urban	
Age I	315.3	339.1	Ss. = 6.53
Age II	320.6	312.1	

(2) Ss. Resi. X Sex =

TABLE NO.52

TOTAL SCORES OF RESI. X SEX

	Rural	Urban	
Boys	318.9	318.0	Ss = 1.83
Girls	317.0	333.2	

(3) Ss. Resi. X Dis.- Indis. =

TABLE NO.53

TOTAL SCORES OF RESI. X DIS.-INDIS.

	Rural	Urban	
Dis.	343.6	348.2	Ss = 0.24
Indis.	292.3	303.0	

(4) Ss. Age X Sex =

TABLE NO.54

TOTAL SCORES OF AGE X SEX

	Age I	Age II	
Boys	327.2	309.7	Ss = 1.1
Girls	327.2	323.0	

(5) Ss. Age X Dis. - Indis. =

TABLE NO.55

TOTAL SCORES OF AGE X DIS. INDIS.

	Age I	Age II	
Dis.	353.2	338.6	Ss. = 0.36
Indis.	301.2	294.1	

(6) Ss. Sex X Dis. - Indis. =

TABLE NO.56

TOTAL SCORES OF SEX X DIS. INDIS.

	Boys	Girls	
Dis.	361.4	330.4	Ss. = 35.44
Indis.	275.5	319.8	

SECOND ORDER INTERACTIONS

(1) Resi. X Age X Sex =

TABLE NO.57

TOTAL SCORES OF RESI. X AGE X SEX

	Age I	Age II	Age I	Age II
Boys	159.1	159.8	168.1	149.9
Girls	156.2	160.8	171.0	162.2

Ss = 0.19

(2) Ss. Resi. X Sex X Dis.-Indis. =

TABLE NO.58

TOTAL SCORES OF RESI. X SEX X DIS.INDIS.

	Rural		Urban	
	Dis.	Indis.	Dis.	Indis.
Boys	179.9	139.0	181.5	136.5
Girls	163.7	153.3	166.7	166.5

Ss = 1.27

(3) Ss.Resi. X Age X Dis.-Indis. =

TABLE NO.59

TOTAL SCORES OF RESI. X AGE X DIS.-INDIS.

	Rural		Urban	
	Dis.	Indis.	Dis.	Indis.
Dis.	175.1	168.5	178.1	170.1
Indis.	140.2	152.1	161.0	142.0

Ss = 5.42

(4) Ss. Age X Sex X Dis.-Indis. =

TABLE NO.60

TOTAL SCORES OF AGE X SEX X DIS.INDIS.

	Dis.		Indis.		
	Age I	Age II	Age I	Age II	
Boys	186.0	175.4	141.2	134.3	Ss = .05
Girls	167.2	163.2	160.0	159.8	

THIRD ORDER INTERACTIONS

Ss. Age X Sex X Resi. X Dis.-Indis. =

TABLE NO.61

TOTAL SCORES OF AGE X SEX X RESI. X DIS.-INDIS.

		Rural Group		Urban Group	
		Age I	Age II	Age I	Age II
Dis.	Boys	93.2	86.7	92.8	88.7
	Girls	81.9	81.8	85.3	81.4
Indis.	Boys	65.9	73.1	75.3	61.2
	Girls	74.3	79.0	85.7	80.'

Ss = 1.963

Total sum of the squares = 372.20

Ss within = 254.097

TABLE NO.62

ENTIRE TABLE OF F RATIOS
OF SCALE II

Source	df	Ss Value	MSS(x) v/df	X/Within F
1.Ss.Residence	1	1.46	1.46	0.89 -
2.Ss.Age	1	2.94	2.94	1.66 -
3.Ss.Sex	1	1.11	1.11	0.629-
4.Ss.Dis.-Indis.	1	58.20	58.20	32.9**
5.Ss.Resi. X Age	1	6.53	6.53	3.70 -
6.Ss.Resi. X Sex	1	1.83	1.83	1.037-
7.Ss.Resi.X Dis.Indis.	1	0.24	0.24	0.136-
8.Ss. Age x Sex	1	1.1	1.1	0.62-
9.Ss.Age X Dis.Indis.	1	0.36	0.36	0.204-
10.Ss.Sex X Dis.Indis.	1	35.44	35.44	20.09**
11.Ss.Resi. X Age X Sex	1	0.19	0.19	0.107-
12.Ss.Resi. X Sex X Dis.Indis.	1	1.27	1.27	0.72-
13.Ss.Resi. X Age X Dis.Indis.	1	5.42	5.42	3.072-
14.Ss.Age X Sex X Dis. Indis.	1	0.05	0.05	0.028-
15.Ss.Age X Sex X Resi.X Dis.Indis.	1	1.963	1.963	1.11-
16.Ss. Within	144	254.097	1.764	
Total :	159			

** Significant at .01 level

* Significant at .05 level

Looking to the F ratios, it is seen that F in the case of residence is not at all significant which means that the attitudes of the two groups namely rural and urban, do not show significant difference.

F ratios in the case of age and sex are also not significant. This means the attitudes of the two groups older age group and younger age group and those of boys and girls are not significantly different. That means residence, Age and Sex are independent factors in determining attitudes of the subjects towards the school.

Thus out of four main effects only one is significant and the others are not significant.

Age.- Looking to the first order interactions, the interaction between (1) Resi. X Age (2) Age X Sex and (3) Age X Dis. - Indis. are not significant. This again means that the effect of Age, in determing pupils' attitudes towards school does not depend upon any other variable. In other words the effect of age is independent of other factors.

Resi.- The interaction between (1) Residence X Age, (2) Residence X Sex and (3) Residence X Dis.- Indis. are

not significant. This can be interpreted as residence has no relation in determing pupils' attitudes towards school.

Sex.- The interactions between (1) Resi. X Sex (2) Age X Sex and (3) Sex X Dis.-Indis. are not significant. Also the main effect of sex is not significant that means boys and girls do not differ in their attitudes towards school. However the interaction between Sex X Dis.-Indis. shows significance which can be interpreted as, dis.-indis. variable has the main effect significant and here that value affects this interaction.

The main effect of Dis.-Indis. groups is highly significant and the interactions viz. (1) Resi. X Dis. - Indis. (2) Age X Dis.-Indis. are not significant which has a meaning that dis.-indis. variable is independent of the two variables residence and age. However the interaction between Sex X Dis.-Indis. is highly significant which means that the effect of disciplined-Indisciplined variable is not independent of Sex.

Looking to the second order interactions, there is not a single interaction significant. In general it can be said that the three variables taken jointly to form treatments do not influence the results.

SCALE III

TABLE NO.63

16 CELL DESIGN FOR THE SCALE III

		Rural Group				Urban Group			
		Age Gr.I		Age Gr.II		Age Gr.I		Age Gr. II	
Disciplined	Boys	10.2	9.7	10.2	8.2	10.2	10.2	9.2	8.2
		10.2	10.2	7.6	9.2	9.2	9.2	10.2	10.2
		9.7	10.2	8.8	10.2	10.2	9.2	8.8	7.6
		8.8	10.2	9.2	9.2	10.2	10.2	8.8	8.2
		9.2	10.2	8.2	9.2	9.2	10.2	10.2	10.2
			98.6		90.0		98.2		91.6
	Girls	8.8	10.2	8.2	9.2	9.2	10.2	9.7	6.5
		4.2	7.6	4.2	9.2	9.7	10.2	8.8	5.5
		10.2	7.6	8.2	10.2	9.2	5.5	8.8	8.2
		8.2	10.2	10.2	10.2	10.2	9.7	10.2	2.7
		7.6	7.7	8.2	10.2	10.2	8.2	5.5	8.8
			84.3		88.0		92.3		74.7
Indisciplined	Boys	5.5	5.0	3.2	7.6	6.0	4.2	10.2	8.8
		1.7	7.6	10.2	8.2	7.0	4.2	7.6	8.2
		9.2	7.6	10.2	8.2	7.0	7.0	7.0	6.0
		8.8	7.6	10.2	6.5	7.6	5.5	7.0	2.1
		8.2	8.8	6.5	7.6	7.0	4.2	8.8	7.6
			70.0		78.4		59.7		73.3
	Girls	9.2	2.4	8.2	5.5	7.6	9.2	8.2	7.0
		9.2	4.2	5.5	10.2	5.5	7.6	5.5	8.2
		3.8	3.2	9.7	10.2	9.2	9.2	10.2	10.2
		4.2	6.0	4.2	7.6	9.7	9.2	9.2	6.0
		7.6	7.6	8.8	7.0	4.2	10.2	8.2	9.2
			57.4		76.9		81.6		81.9

$$\text{Correction} = \frac{(E_x)^2}{N} = 10508.94$$

$$(1)\ \text{Ss.Resi.} = \frac{(X_R)^2 + (X_U)^2}{N} - C = 0.567$$

$$(2)\ \text{Ss.Age} = \frac{(X_1)^2 + (S_{II})^2}{N} - C = 1.04$$

$$(3)\ \text{Ss.Sex.} = \frac{(X_B)^2 + (X_G)^2}{N} - C = 3.16$$

$$(4)\ \text{Ss. Dis.-Indis.} = \frac{(X_{Dis.})^2 + (X_{Indis.})^2}{N} - C = 119.54$$

FIRST ORDER INTERACTIONS

(1) Resi. X Age =

TABLE NO.64

TOTAL SCORES OF RESI. X AGE

	Rural	Urban	
Age I	310.3	331.6	Ss = 6.843
Age II	333.3	321.5	

(2) Ss. Resi. X Sex =

TABLE NO.65

TOTAL SCORES OF RESIDENCE X SEX

	Rural	Urban	
Boys	337.0	322.6	
			Ss = 9.163
Girls	306.6	330.5	

(3) Resi. X Dis. Indis. =

TABLE NO.66

TOTAL SCORES OF RESI. X DIS.INDIS.

	Rural	Urban	
Dis.	360.9	356.6	
Indis.	282.7	296.5	Ss = 2.041

(4) Ss. Age X Sex =

TABLE NO.67

TOTAL SCORES OF AGE X SEX

	Age I	Age II	
Boys	326.3	333.3	
Girls	315.6	321.5	Ss = 0.01

(5) Ss. Age X Dis.Indis. =

TABLE NO.68

TOTAL SCORES OF AGE X DIS.INDIS.

	Dis.	Indis.
Age I	373.2	344.7
Age II	268.7	310.5

Ss = 31.24

(6) Ss. Sex X Dis.Indis.

TABLE NO.69

TOTAL SCORES OF SEX X DIS. INDIS.

	Dis.	Indis.
Boys	378.2	281.4
Girls	339.3	297.8

Ss = 19.12

SECOND ORDER INTERACTIONS

(1) Ss. Resi. X Age X Sex =

TABLE NO.70

TOTAL SCORES OF RESI. X AGE X SEX

	Rural		Urban	
	Age I	Age II	Age I	Age II
Boys	168.6	168.4	157.7	164.9
Girls	141.7	164.9	173.9	156.6

Ss = 22.847

(2) Ss. Resi. X Age X Dis.-Indis. =

TABLE NO.71

TOTAL SCORES OF RESI. X AGE X DIS.INDIS.

	Rural		Urban	
	Age I	Age II	Age I	Age II
Dis.	182.9	178.0	190.3	166.3
Indis.	127.4	155.3	141.3	155.2

Ss = 0.169

(3) Ss. Resi. X Sex. X Dis. - Indis.

TABLE NO.72

TOTAL SCORES OF RESI. X SEX X DIS.INDIS.

	Rural		Urban	
	Dis.	Indis.	Dis.	Indis.
Boys	188.6	148.4	189.6	133.0
Girls	172.3	134.3	167.0	163.5

Ss = 16.199

(4) Ss. Age X Sex X Dis. Indis.

TABLE NO.73

TOTAL SCORES OF AGE X SEX X DIS.INDIS.

	Dis.		Indis.	
	Age I	Age II	Age I	Age II
Boys	196.6	181.6	129.7	151.7
Girls	176.6	162.7	139.0	158.8

Ss = .069

THIRD ORDER INTERACTIONS

TABLE NO.74

TOTAL SCORES OF AGE X SEX X RESI. X DIS.INDIS.

		Rural		Urban	
		Age I	Age II	Age I	Age II
Dis.	Boys	98.6	90.0	98.0	91.6
	Girls	84.3	88.0	92.3	74.7
Indis.	Boys	70.0	78.4	59.7	73.3
	Girls	57.4	76.9	81.6	81.9

Ss. Age X Sex X Resi. X Dis.Indis. = 1.499

Total sum of the squares = 678.81

Ss. Within = 445.303

TABLE NO.75

ENTIRE CHART OF F RATIOS OF SCALE III

Source	df	Ss.Value	MSS(x) v/df	X/within F
1. Ss.Residence	1	0.567	0.567	0.183-
2. Ss.Age	1	1.04	1.04	0.336-
3. Ss.Sex	1	3.16	3.16	1.02-
4. Ss.Dis.Indis.	1	119.54	119.54	38.66**
5. Ss.Resi. X Age	1	6.843	6.843	2.21 -
6. Ss.Resi. X Sex	1	9.163	9.163	2.96-
7. Ss.Resi.X Dis.Indis.	1	2.041	2.041	0.6609-
8. Ss.Age X Sex	1	0.01	0.01	.0032-
9. Ss.Age X Dis.Indis.	1	31.24	31.24	10.10**
10. Ss.Sex X Dis.Indis.	1	19.12	19.12	6.18*
11. Ss.Resi.X Age X Sex	1	22.847	22.847	7.38**
12. Ss.Resi.X Sex X Dis.Indis.	1	16.199	16.199	5.32*
13. Ss.Resi.X Age X Dis.Indis.	1	0.169	0.169	.0546-
14. Ss.Age X Sex X Dis.Indis.	1	0.069	0.069	.0223-
15. Ss.Age X Sex X Resi.X Dis.Indis.	1	1.499	1.499	.483-
16. Ss.Within	144	445.303	3.092	
	159			

** .01 Significance

* .05 Significance

Looking to the F ratios, it is seen that F in the case of residence, age and sex is not significant which means that the attitudes of the two groups viz. rural and urban, older age group and younger age group and boys and girls are not significantly different.

F ratio in the case of Dis. Indis. variable is highly significant. Thus out of four main effects only one is significant and the other three are not significant.

Looking to the first order interactions, the interaction between (1) Resi. X Age, (2) Age X Sex and (3) Age X Dis. - Indis. first two are not significant and the third one is significant beyond .01 level of confidence. This means, age is not an independent factor in determining the attitudes of the students towards teachers. Age and discipline are interdependent factors.

The interactions between (1) Residence X Age, (2) Resi. X Sex and (3) Resi. X Dis. Indis. all are not significant. It means that residence has no effect on the attitudes of the students towards teachers.

The interactions between (1) Resi. X Sex, (2) Age X Sex and (3) Sex X Dis.-Indis. out of the three, first two

are not significant and only third is significant - which means,boys and girls do not differ in their attitudes towards teachers. Sex X Dis.Indis. is significant which means, sex is not the independent factor in determinging the attitudes of the students towards teachers but both are inter-dependent factors.

The main effect of Dis.Indis. variable is highly significant while the interaction Resi. X Dis.Indis. is not significant. This means, the effect of dis.Indis. variable is independent of residence. The other two interactions namely (1) Age X Dis.Indis. and (2) Sex X Dis.Indis. are significant. This can be interpreted as the disciplined-indisciplined variable is not independent of age and sex.

On the whole it can be said that the variable Dis.Indis. is significant and the F ratio is completely independent of other variable. However, Age X Dis.Indis., and Sex X Dis.Indis. are significant. From this it can be said that Dis.Indis. variable is not independent of age and sex.

TABLE NO.76

16 CELL DESIGN FOR SCALE IV

		Rural Group				Urban Group			
		Age Gr. I		Age Gr. II		Age Gr. I		Age Gr.II	
DISCIPLINED	Boys	9.3	10.3	9.3	7.2	9.3	10.3	10.3	9.2
		9.3	8.3	8.3	10.3	9.3	8.3	10.3	9.3
		9.3	9.3	9.3	7.2	8.3	9.3	9.3	9.3
		10.3	9.3	7.2	8.3	8.3	9.3	8.3	8.8
		9.3	9.3	9.3	7.2	10.3	10.3	8.3	9.3
			94.0		83.6		93.0		92.4
	Girls	7.8	9.3	10.3	9.3	9.3	7.2	8.3	10.3
		7.8	7.8	8.8	7.2	7.2	8.3	10.3	4.8
		10.3	8.3	7.8	9.3	7.8	8.3	7.8	9.3
		7.8	9.3	7.8	10.3	7.8	6.7	8.8	7.8
		9.3	9.3	8.3	7.8	8.2	8.3	8.3	8.3
			87.0		86.9		79.1		84.0
INDISCIPLINED	Boys	6.1	10.3	7.8	7.2	8.3	3.8	10.1	4.3
		7.2	9.3	5.7	4.3	7.2	5.7	10.3	10.3
		9.3	6.7	9.3	7.2	8.3	7.8	3.2	5.7
		6.7	7.8	9.8	7.8	10.3	8.3	6.1	7.2
		7.2	7.8	5.7	7.2	5.0	11.0	5.7	7.8
			78.4		72.0		75.7		61.7
	Girls	8.3	7.8	4.8	6.7	9.3	7.2	7.8	7.2
		8.3	7.8	8.8	7.8	6.7	8.3	7.8	6.1
		5.2	10.3	10.3	6.7	7.8	9.3	8.3	5.7
		8.3	3.2	7.8	8.3	7.8	7.2	6.7	6.7
		7.8	8.3	7.8	8.3	8.3	8.3	8.3	4.8
			75.3		77.3		80.2		69.4

$$\text{CORRECTION} = \frac{(Ex)^2}{N} = 10400.6$$

$$(1)\ \text{SS.Resi.} = \frac{(X_R)^2 + (X_U)^2}{N} - C = 2.28$$

$$(2)\ \text{Ss. Age} = \frac{(X_I)^2 + (X_{II})^2}{N} - C = 7.85$$

$$(3)\ \text{Ss.Sex} = \frac{(X_B)^2 + (X_G)^2}{N} - C = 0.86$$

$$(4)\ \text{Ss.Dis.} = \frac{(X_{Dis.})^2 + (X_{Indis.})^2}{N} - C = 75.40$$

FIRST ORDER OF INTERACTIONS

(1) Resi. X Age =

TABLE NO.77

TOTAL SCORES OF RESI. X AGE

	Rural	Urban	
Age I	334.7	328.0	Ss = 0.179
Age II	319.8	307.5	

(2) Ss. Resi. X Sex =

TABLE NO.78

TOTAL SCORES OF RESI. X SEX

	Rural	Urban	
Boys	328.0	322.8	Ss = 0.444
Girls	326.5	312.7	

(3) Resi. X Dis. Indis. =

TABLE NO.79

TOTAL SCORES OF RESI. X DIS.INDIS.

	Rural	Urban	
Dis.	351.5	348.5	Ss = 1.28
Indis.	303.0	287.0	

(4) Ss.Age X Sex

TABLE NO.80

TOTAL SCORES OF AGE X SEX

	Age I	Age II	
Boys	341.1	309.7	Ss = 4.68
Girls	321.6	317.6	

(5) Ss. Age X Dis. Indis. =

TABLE NO.81

TOTAL SCORES OF AGE X DIS. INDIS.

	Age I	Age II
Dis.	353.1	346.9
Indis.	309.0	280.4

Ss = 3.538

(6) Ss. Sex X Dis. Indis. =

TABLE NO.82

TOTAL SCORES OF SEX X DIS.INDIS

	Boys	Girls
Dis.	363.0	337.0
Indis.	287.8	302.2

Ss = 10.43

SECOND ORDER INTERACTIONS

(1) Ss. Resi. X Age X Sex =

TABLE NO.83

TOTAL SCORES OF RESI. X AGE X SEX

	Rural		Urban	
	Age I	Age II	Age I	Age II
Boys	172.4	155.6	168.7	54.1
Girls	162.3	164.2	159.3	153.4

Ss = 0.637

(2) Ss. Resi. X Sex X Dis. - Indis. =

TABLE NO.84

TOTAL SCORES OF RESI. X SEX X DIS.INDIS.

	Rural		Urban	
	Dis.	Indis.	Dis.	Indis.
Boys	177.6	150.4	185.4	137.4
Girls	173.9	152.6	63.1	49.6

Ss = 4.885

(3) Ss. Resi. X Age X Dis. Indis. =

TABLE NO.85

TOTAL SCORES OF RESI. X AGE X DIS.INDIS.

	Rural		Urban	
	Age I	Age II	Age I	Age II
Dis.	181.0	170.5	172.1	176.4
Indis.	153.7	149.3	155.9	131.1

Ss = 7.513

(4) Ss. Age X Sex X Dis. Indis.

TABLE NO.86

TOTAL SCORES OF AGE X SEX X DIS. INDIS.

	Dis.		Indis.	
	Age I	Age II	Age I	Age II
Boys	187.0	176.0	154.1	133.7
Girls	166.1	170.9	155.5	146.7

Ss = .075

THIRD ORDER INTERACTIONS

Ss. Age X Sex X Resi. X Dis. - Indis.

TABLE NO.87

TOTAL SCORES OF AGE X SEX X RESI. X DIS. INDIS.

		Rural		Urban	
		Age Gr.I	Age Gr.II	Age.Gr.I	Age Gr.II
Dis.	Boys	94.0	83.6	93.0	92.4
	Girls	87.0	86.9	79.1	84.0
Indis.	Boys	78.4	72.0	75.7	61.7
	Girls	75.3	77.3	80.2	69.4

Ss = 0.035

Total sum of the squares = 426.20

Ss within = 306.114

TABLE NO.88

ENTIRE CHART OF THE F RATIOS OF THE SCALE IV

Source	df	Ss.Value	MSS(x) v/df.	X/within F	
1. Ss. Residence	1	2.28	2.28	1.073	-
2. Ss. Age	1	7.85	7.85	3.694	-
3. Ss. Sex	1	0.86	0.86	0.4047	-
4. Ss. Dis.-Indis.	1	75.40	75.40	35.48	**
5. Ss. Resi. X Age	1	0.179	0.179	0.084	-
6. Ss. Resi. X Sex	1	0.444	0.444	0.209	-
7. Ss. Resi. X Dis.Indis.	1	1.28	1.28	0.6023	-
8. Ss. Age X Sex	1	4.68	4.68	2.202	-
9. Ss. Age X Dis.Indis.	1	3.538	3.538	1.66	-
10.Ss. Sex X Dis.Indis.	1	10.43	10.43	4.90	*
11.Ss. Resi.X AgeXSex	1	0.637	0.637	.299	-
12.Ss. Resi. X Sex X Dis.-Indis.	1	4.885	4.885	2.30	-
13.Ss. Resi. X Age X Dis.Indis.	1	7.513	7.513	3.53	-
14.Ss. Age X Sex X Dis.Indis.	1	0.075	0.075	0.035	-
15 Ss. Age X Sex X Resi X Dis.Indis.	1	0.035	0.035	0.016	-
16.Ss. Within	144	306.114	2.125		
Total :	159				

Looking to F ratios, it is seen that, F in the case of residence, age and sex is not significant, which means that the attitudes of the two groups viz. rural-urban, older age group - younger age group and boys - girls are not significantly different.

In the main effect of dis.indis. variable , F ratio is highly significant. Thus out of four effects only one is significant while other three are not significant.

Looking to the first order interactions, the interactions between (1) Resi. X Age, (2) Age X Sex and (3) Age X Dis.Indis., first two are not significant. And the third one shows significant difference. This means that age is not an independent factor in determining the attitudes of the students towards home. Age and disciplined-indisciplined variables are interdependent.

The interactions between (1) Resi. X Age, (2) Resi. X Sex (3) Resi. X Dis. - Indis. are not significant. This indicates that residence has nothing to do with attitudes of the students towards home.

Out of the interactions between (1) Resi. X Sex, (2) Age X Sex and (3) Sex X Dis.Indis., first two are not significant. Also the main effect of sex is significant, that means, boys and girls do not differ in their attitudes towards home. Only Sex X Dis.Indis. is significant. It can be said that the difference in attitude scores between boys and girls at the first level of residence is not the same as at the other level.

The main effect of dis.indis. variable is highly significant. Out of the interactions viz. (1) Resi. X Dis.Indis., (2) Age X Dis.Indis. and (3) Sex X Dis.Indis., first is not significant and last two are significant. This means that the effect of dis.Indis. variable is independent of residence and dependent on age and sex.

The three variables taken jointly to form treatments do not influence the results.

TABLE NO.89

COMPOSITE PICTURE OF F RATIOS FOR ALL THE FOUR SCALES

Source	Scale I	Scale II	Scale III	Scale IV
1. Ss Residence	2.1	0.89	.183	1.073
2 Ss. Age	8.49**	1.66	.336	3.694
3 Ss. Sex	3.68	0.629	1.02	0.4047
4 Ss. Dis.Indis.	60.04**	32.9**	38.66**	35.48**
5 Ss. Resi. X Age	0.71	3.70	2.21	0.084
6 Ss. Resi. X Sex	3.51	1.037	2.96	0.209
7 Ss. Resi. X Dis. Indis.	1.13	0.136	.6609	.6023
8 Ss. Age X Sex	.196	0.62	.0032	2.202
9 Ss. Age X Dis.Indis.	3.51	0.204	10.10**	1.66
10 Ss. Sex X Dis.Indis.	26.36**	20.09**	6.18*	4.90*

* Significant at .05

** Significant at .01

7.15 GENERAL DISCUSSION

As the investigator is interested mainly in the main effects and first order interactions, the interpretations are done only upto the first order interactions.

Looking to the general table of F ratios in all the four scales, only the main effect dis.-indis. is highly significant in all the four scales. However, the main effect 'age' shows significance in the first scale only, i.e. Education and Educational programme. This means both disciplined and indisciplined groups differ in their attitudes towards all the four scales. F ratio in the main effect 'age' shows significance, which means both the age groups differ in their attitudes towards Education and Educational programme.

Looking to the first order interactions only Sex X Dis.Indis. interaction shows significance in all the four scales, which means dis.indis. variable is not independent of sex. However, the interaction age X dis. indis. is significant in the third scale only i.e. 'Teachers'. It means that dis.indis. variable is not independent of age in the third scale only. Perhaps it may be due to chance factor.

Looking to the results by 't' and chi-square techniques more or less the same results are obtained by the analysis of variance technique also. Thus the results of the scales were checked and cross-checked by one or other applicable techniques.

CHAPTER VII

ANALYSIS OF QUESTIONNAIRES

(Part III)

7.16. INTRODUCTION

The purpose of this part is to analyse the responses of the two questionnaires and to find out their interpretations. The interpretations were done on the basis of the statistical evidences.

After the administration of the entire tools to the contrasted groups, both the questionnaires were analysed. The responses of each statement of the questionnaires were noted.

Questionnaire I deals with politics, political parties, present government, students' unions, caste and economic differences. Questionnaire II deals with social and democratic life of the pupil in the school. The responses 'YES or 'NO of each of the statements

were noted and to find out the significant difference between the two groups, chi-square technique was applied. The following table shows only the significant chi-square values of the statements of the Questionnaire I.

TABLE NO.90

CHI-SQUARE VALUES OF THE QUESTIONNAIRE I

Statement No	Responses: Yes Dis.	Yes Indis.	No Dis.	No Indis.	χ^2	Significance
1	209	181	21	46	11.31	.01
2	188	156	42	68	9.036	.01
3(b)	195	175	23	42	6.628	.01
(c)	57	86	157	123	6.639	.01
(d)	63	90	156	127	7.193	.01
4(d)	66	94	143	119	7.053	.01
6	38	87	183	133	27.15	.01
7	47	86	178	134	17.39	.01
8	182	159	46	64	9.006	.01
15	192	169	35	54	5.44	.01
19	28	43	197	180	3.926	.05

7.17. DISCUSSION ON THE QUESTIONNAIRE I

Looking to the 'YES' responses of both the groups in the first and the second statements, greater number

of disciplined students responded 'YES'. Their chi-square values support that both the groups differ in their attitudes towards politics. It can be said here that disciplined group has favourable attitude towards politics. Disciplined group wishes to participate in politics. This goes against our hypothesis. Chi-square values of both the statements are significant beyond .01 level.

Looking to the responses and chi-square values of statements Nos. 3 b.c. and d, it can be said that disciplined group believes that by taking part in politics a student can understand political matters in a better way. Disciplined group does not agree with the statements 3 c and d. This group does not believe that a student does not observe discipline and neglects his studies by taking part in politics. This is also against our hypothesis.

From the responses of the statement No.4(d), it can be said that disciplined group does not wish to participate actively in politics but would rest satisfied merely with the discussions thereof.

The responses of the statement No.6 indicate that disciplined group does not agree that indulgence in politics has affected discipline of the students, while the other group thinks otherwise.

Looking to the statement no.7, disciplined group does not blame the political parties for spoiling the careers of the youngsters. The indisciplined group believes that political parties have affected the studies of the students.

Statement No.8 shows that disciplined group does not wish that a teacher should discuss the political matters in the class while the indisciplined group thinks it otherwise. Both the groups differ in their attitudes towards their beliefs. This agrees with our hypothesis.

The responses of statement No.15, it can be said that disciplined group is in favour of the students' unions. Students' unions are a help to other students. The indisciplined group finds students' unions not as a help to other students.

The responses of the statement No.19 indicate that the disciplined group has favourable attitude

towards present government.Disciplined group does not find fault with the present government for the cause of present unrest. While the other group thinks that the existing government is the cause of indiscipline.

In general it can be interpreted that disciplined group has favourable attitude towards politics, political parties, students' unions and existing government. Disciplined group wishes to discuss political matters so that the students may understand them well. Disciplined students have proper sense of understanding their duty. They participate in politics yet they do not neglect their studies or violate the rules of discipline.

Generally all persons believe that politics is the root cause of indiscipline but here the experimental evidence shows contrary results. It may be true that there are very few chances for the disciplined students to get involved into dirty politics are fully conscious of their responsibility. All the statements discussed here, show the significant chi-square values which means both the contrasted groups differ in their opinions towards politics and other sub-factors. Both the groups are of the same opinion about caste differences and economic

differences. Looking to the responses about the same, both the groups do not wish for caste and economic differences. The values do not show significant difference between the two groups.

7.18. QUESTIONNAIRE II

The second questionnaire pertains to social and democratic life of the pupil in the school. This questionnaire deals with students' participation in (a) games (b) cultural programme (c) school trips (d) students' unions etc. It also consists of some statements about teachers' attitudes and use of leisure hours. The following table shows the responses of both the groups and their significant chi-squares.

TABLE NO.91

CHI-SQUARE VALUES OF THE QUESTIONNAIRE II

Statement No	YES		NO		Chi-square
	Dis.	Indis.	Dis.	Indis.	
2(a)	62	86	140	107	8.072**
4(b)	158	81	133	111	44.94 **
(d)	73	96	121	100	5.101 *
6	59	80	167	138	6.21 *
10(a)	55	120	162	85	52.4 **
13(c)	26	42	162	147	9.845 **
16	198	175	30	50	5.575 *
17	174	150	44	63	5.088 *
18(e)	40	74	155	121	29.91**

** Significant at .01 * Significant at .05

7.19. DISCUSSION ON THE QUESTIONNAIRE II

Looking to the responses of Statement No.2(a) a greater number of disciplined students responded 'NO' which means disciplined students like to participate in games without finding faults with the instruments. It can be also said that indisciplined group may wish to participate in games but it finds fault with the instruments. Thus both the contrasted groups differ significantly in their attitudes towards participation in games.

The responses given in Statement No.4(b), state that disciplined group gets enough opportunities to participate in the cultural programmes while the other group gets less chances. This means disciplined group is anxious to achieve opportunities for participation in cultural programme and thus the two groups differ in their attitudes towards cultural programmes.

Looking to the responses of the Statement No.6 it can be said that indisciplined group finds extra-curricular activities of the school, insufficient and not interesting. It can be interpreted that those who wish to participate in the activities, will not try to find fault with the materials. Thus both the groups differ in their attitudes towards activities.

Looking to the responses of Statement No.10(a) disciplined group does not feel that they are getting less opportunities if they desire to participate in the students' unions. Both the groups differ here.

Looking to the responses of the Statement No.13(c), indisciplined students do not participate in the trips because of the orthodox parents and lack of monitary facilities. The disciplined group does not feel it so. Both the groups differ significantly.

In the Statement No.16, teachers' attitudes towards disciplined group is favourable while the other group has the experience otherwise. This can be interpreted that disciplined group does not find fault with the teacher.

The responses of Statement No.17 show that disciplined group gets enough chances to lodge the complaints. While the other group has dissatisfaction about it. Both the groups differ here.

Looking to the responses in the last statement, indisciplined students do not know how to pass the leisure hours in a useful way. The disciplined group understands its responsibility and thus both the groups show different opinions regarding the use of leisure time.

In short disciplined group has favourable opinion towards extra-curricular activities of the school. This group does not find fault with the teacher and students' unions. Disciplined students adjust themselves in whatever conditions prevail. Both the groups differ significantly in their attitudes. It can be said that disciplined students can well develop their social and democratic life in the school with the help of extra curricular activities.

After the statistical study of all the scales and questionnaires, it was thought worthwhile to study their interrelationships in the form of coefficients of correlations. These coefficients were calculated according to product moment formula.

Product moment 'r' between questionnaire I and Questionnaire II was found to be .213 which is significant beyond .01 level. (This means that both the questionnaires measure the same thing.)

Other coefficients of correlation are given in the following table.

The composite picture of the product moment 'r' of all the four scales and two questionnaires are given below.

TABLE NO.92

RELATIONSHIP BETWEEN QUESTIONNAIRES AND SCALES

Scale		Questionnaires	
		Politics	Social and Democratic life of the Pupil in the school
I	Education	0.397**	0.273**
II	School	0.156*	0.52**
III	Teachers	0.345**	0.214**
IV	Home	0.38**	0.260**

* .05 level of significance

** .01 level of significance

The values in the above table indicate that all the four scales and two questionnaires are inter-related. This shows that the tools constructed are reliable and all the six - scales and questionnaires measure the same thing and not anything else.

7.20. SUMMARY

This entire chapter deals with the analysis of the data by using various statistical techniques including the analysis of variance to find out whether the two contrasted groups differ in their attitudes towards the selected areas.

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CHAPTER VII

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