TABLE NO. 4.1

Mean scores, standard deviation and percentage of different groups in Mathematics

	Mean	S.D.	%
Total population	17.61	15.27	35.22%
Rural area	9.95	11.03	19.9%
Urban area	25.27	15.08	50.54%
Urban Female	17.52	16.06	35.04%
Urban male	33.02	8.76	66.04%
Rural male	10.65	12.42	21.3%
Rural Female	7.30	8.53	14.6%

TABLE NO. 4.2

Difference between Rural students and urban students

	Mean	N	S.D.	t
Rural student	9.95	100	11.03	8.19**
Urban student	25.27	100	15.08	

TABLE NO. 4.3

Difference between male and female

	Mean	N	S.D.	t
Male	21.40	110	15.07	4.07**
Female	12.98	90	14.19	

TABLE NO. 4.4

Analysis of variance among group on achievement scores

Source of variance	Sum of square	at	Mean sum of squares	Fratio
Among group	19011.67	3	6337.22	
With in group	28925.51	196	147.58	42.94**
Total variance	47937.18	199		

For dt = 3/196   F at 0.05   2.65*

F at 0.01   3.88**

obtained value of F = 42.94, more than the val
expected at 0.01 level. So the difference amo
the groups are significant. Hence the ni
hypothesis is rejected.

4.4(a) Differences between Rural Boys and Urban Boys

	Mean	N	dt		t
Rural Boys	10.65	60	59	147.58	9.52**
Urban Boys	33.02	50	49	147.58	

4.4(b) Difference between Urban girls and Urban boys

	Mean	N	dt		t
Urban Girls	17.52	50	49	147.58	
Urban Boys	33.02	50	49	147.58	6.33*

4.4(c) Difference between Rural Girls and Rural Boys

	Mean	N	dt		t
Rural Girls	7.30	40	39	147.58	1.33
Rural Boys	10.65	60	59	147.58	

4.4(d)   <u>Difference between Rural Girls and Urban Girls</u>

	Mean	N	dt	t	
Rural Girls	7.30	40	39	147.58	
Urban Girls	17.52	50	49	147.58	3.92**

4.4(e)   <u>Difference between Rural Girls and Urban Boys</u>

	Mean	N	dt	t	
Rural Girls	7.30	40	39	147.58	
urban Boys	33.02	50	49	147.58	9.87**

4.4(f)   <u>Differences between Rural Boys and Urban Girls</u>

	Mean	N	dt	t	
Rural Boys	12.18	60	59	147.58	2.27*
Urban Girls	17.52	50	49	147.58	

df = 196 (i) t = 1.97 at 0.05 level - *

(ii) t = 2.60 at 0.01 level   **

TABLE NO. 4.5

Showing product moment coefficient of correlation between the HSPQ scores and Total marks in Maths of (Rural Girls) (N = 40)

Personality Factors	Product moment correlation 'r'
A	-0.19
B	0.32*
C	-0.23
D	0.04
E	0.03
F	0.08
G	0.33*
H	0.14
I	0.14
J	0.09
O	0.29
Q_2	0.37*
Q_3	0.20
Q_4	0.26

Significant at 0.05 level   -   *

Significant at 0.01 level   -   **

TABLE NO.4.6

Showing product moment coefficiens of correlation between the HSPQ scores and total marks in maths Rural Boys (N=60)

Personality factors	Product moment correlation 'r'
A	0.22
B	0.61**
C	0.08
D	0.12
E	-0.03
F	0.04
G	0.29*
H	0.35**
I	-0.05
J	0.36**
O	0.10
Q_2	0.28*
Q_3	0.53**
Q_4	0.08

Factors having negative correlation indicates th; the particular factor is negative and those having positi· correlations indicates that particular factor is positive

Significant at 0.05 level of confidence - *

TABLE NO. 4.7

Showing product moment coefficient of correlatio

between the HSPQ scores & total marks in Maths of Urb

girls (N=50)

Personality Factors	Product moment correlation 'r'
A	0.41**
B	0.55**
C	0.47**
D	0.04
E	0.18
F	0.29*
G	0.20
H	0.19
I	0.35**
J	0.06
O	0.39**
Q_2	0.42**
Q_3	0.29*
Q_4	0.09

Significant at 0.05 level - *

Significant at 0.01 level   **

TABLE NO. 4.8

Showing product moment coefficient of correlatio between the HSPQ scores and total marks in Maths of Urba Boys (N=50)

Personality Factors	Product Moment correlation 'r'
A	0.13
B	-0.06
C	-0.11
D	0.12
E	0.08
F	0.01
G	0.22
H	0.44**
I	-0.85**
J	0.03
O	0.06
Q_2	0.05
Q_3	0.27*
Q_4	0.35**

Significant at 0.05 level - *

Significant at 0.01 level - **

TABLE NO. 4.9

Mean scores of Urban Boys and Urban Girls on HSPQ

Factors	Urban Boys	Urban Girls
A	10.02	9.4
B	5.1	4.8
C	11.5	10.44
D	9.16	9.42
E	9.74	8.14
F	10.56	9.06
G	11.94	11.8
H	10.8	9.3
I	10.58	11.92
J	9.24	8.74
O	9.94	9.68
Q_2	10.6	9.28
Q_3	11.2	10.56
Q_4	9.26	7.9

TABLE NO. 4.10

Mean scores of Rural Boys and Rural Girls on HSPQ

Factors	Rural Boys	Rural Girls
A	10.13	10.1
B	4.68	4.15
C	11.57	11.45
D	11.08	10.9
E	9.63	7.93
F	9.83	10.3
G	10.68	11.4
H	9.98	10.45
I	10.73	12.2
J	9.7	9.55
O	10.9	10.63
Q_2	10.3	10.75
Q_3	10.18	10.63
Q_4	9.57	9.45

ANALYSIS OF DATA AND RESULT

The previous chapter described the instruments employed for collection of data and the statistical procedures that were used for computing the relationship between dependent and independent variables. The aim of the present chapter is to report and discuss the results yielded by the analysis of data. the data have been subjected to various statistical analysis to arrive at a conclusion.

Result

1. **Mean scroes, standard deviation and percentage of different groups in mathematics** (Table 4·1)

In the total sample of 200 students the mean scores was 17.61 i.e. (35.44%) with S.D. 15.27. The area wise population revealed that pupils from rural area scored 9.95 marks in average which was 19.9% where as the urban area pupil scored better. The mean score was 25.2 (50.53%). Genderwise distribution of the sample indicates that urban boys scored highest 33.02 marks (66.04%) were a urban girls scored muchless 13.52 marks (35.04%). Th achievement of the rural area was too low, in there areas boys scored only 10.65 marks in average which was (21.3%) The counter part rural girls scored lowest in average i.e 7.3 marks (14.6%).

The above facts may be due to more exposer of t
urban boys towards science and technology. It seems th
the girls from rural areas were less interested in the
studies particularly in mathematics. Mathematics
presumed to be a difficult subject for the students
higher primary level due to incusion of difficult concep
In these area even the teachers feel difficulty in givi
tne correct concept to the students in mathematics.

2.   **Difference between Rural students and Urban
        students (Table No. 4.2)**

The obtained value of 't' is 8.19 which is great
than 2.60 (required at 0.01 level). The difference
significant at 0.01 level in favour of urban stude:
because the mean of urbanstudent is greater than the ru:
students.

Hence the second null hypothesis i.e. -

(i)   There is no significant difference in the m
        scores of the students from urban and rural ar
        is rejected.

3.   **Difference between Male and Female (Table No. 4**

The obtained value of 't' is 4.07 which is grea
than 2.60 (required at 0.01 level). The difference
significant at 0.01 level in favour of male because

Hence the third null hypothesis i.e.

(i)   There is no significant difference in the mean scores of male & female, is rejected.

4.   **Area and Genderwise Achievement in Mathematics of sample** [Table 44]

For studying the area and genderwise achievement of the sample ANOVA Test was used. When it is observed that the value of 'F' ratio is significant at 0.01 level then the scheffe's 't' is calculated for different groups.

(a)   **Difference in achievement between rural boys and urban boys Table No.(4.4a)**

The obtained value of t is 9.52 which is greater than 2.60 (required at 0.01 level). The difference is significant at 0.01 level in favour of urban boys because the mean of urban boys is greater than the rural boys. Hence the null hypothesis is rejected.

(b)   **Difference in achievement between urban girls and urban boys (Table No. 4.4b)**

The obtained value of t is 6.33 which is greater than 2.60 (required at 0.01 level). The difference is significant at 0.01 level in favour of urban boys because the mean of urban boys is greater than that of urban girls. Hence the null hypothesis is rejected.

(c)   Difference in the achievement of rural girls and
       rural boys (Table No. 4.4c)

The obtained value of f is 1.33 which is less than
1.96 (required at 0.05 level). Hence the difference is
statistical insignificant. Though the mean scores of rural
boys   is   greater   than   the   rural   girls,   there   is   no
difference between the two groups. Hence the null hypothesis
is accepted.

(d)   Difference in the achievement of rural girls and
       urban girls (Table No. 4.4d)

The obtained value of 't' is 3.92 which is greater
than   2.60   (required   at   0.01   level).   The   difference   is
significant at 0.01 level in favour of urban girls, because
the mean of urban girls is greater than that of the rural
girls. Hence the null hypothesis is rejected.

(e)   Difference in the achievement of rural girls and
       urban boys (Table No. 4.4e)

The obtained value of f is 9.87 which is greater
2.60 required at 0.01 level. The difference is significant
at 0.01 level in favour of urban boys because the mean
urban boys is grater than that of rural girls. Hence the
hypothesis is rejected.

(f)   Difference in achievement of rural boys and urba
        girls (Table No. 4.4f)

        The obtained value of 'f' is 2.27 which is great

than 1.97 required at 0.05 level in favour of urban girl

Because the mean of urban girls is greater than that of t

5.   **RELATIONSHIP BETWEEN PERSONALITY AND ACHIEVEMEN**

      IN MATHEMATICS

(a)   Relationship between personality traits and
       achievement in maths of Rural Girsl (Table-*4.5*

It is evident from the table that out of personality factors only 3 factors B, G & Q_2 are positiv and significantly correlated at 0.05 level.

This indicate that the rural girls who are n intelligent (B^+), Conscientious (G^+) and self-suffici (Q_2^+). Contributes to better achievement in mathematics.

So one may say that the academic achievement Maths of rural girls are significantly correlated v factors B,G & Q_2 and rest of the personality factors not significantly contributing towards the variance in achievement.

(b)   Relationship between personality traits and
       achievement in maths of Rural Boys (Table - *4.6*

According to the table, coefficient of correla between 14 factors and the achievement scores in the r boys shows that out of 14 factors only 6 factors B, G J, Q_2 & Q_3 are having significant correlations.

The factors B, H, J & Q_3 are positively significantly correlated at 0.01 level. This indicate

rural boys who are more intelligent (B^+) Adventurous (H
circumspect individualism (J^+) and Controlled (Q_3^+) tend
achieve more.

The factors G & Q_2 are positively and significan
correlated to achievement scores at 0.05 level and reve
that achievement in maths subject is more in those stud
who are conscientious (G^+) and self-sufficient (Q_2^+).

So one may say that the academic achievement
maths of rural boys are significantly correlated w
factors B, H, I, Q_3, G & Q_2 & rest of the personal
factors are not significantly contributing towards
variance in the achievement.

Hence from the above two findings it is revea
that the *null* hypothesis i.e.

There is no correlation between different tra
of personality and achievement in mathematics
rural pupil, is rejected.

(c)   Relationship between personality traits and
        achievement in maths of urban girls (Table- 4.7

It is clear from the table that out of
personality factors only 8 factors A,B,C,I,O,Q_2,Q_3 an

The factors A,B,C,I,O, and Q_2 are positively significantly correlated at .01 level of confidence. T indicate that urban girls who are warm hearted (A^+), m Intelligent (B^+), emotionally stable (C^+), Tender min (I^+), Apprehensive (O^+) and self-sufficient ($Q_2{}^+$) and t to achieve more. The factors Q_3 and F are positively significantly correlated to achievement scores at 0 level and reveals that achievement in maths subject is m in those student who are enthustastic (F^+) and control ($Q_3{}^+$).

So one may say that the achievement in maths urban girls are significantly. Correlated with fact A,B,C,F,I,O,Q_2 and Q_3 and rest of the personality fact are not significantly contributing towards the variance the achievement.

(d)   <u>Relationship between personality traits and</u>
        <u>achievement in maths of urban boys (Table - 4·8</u>

It is evident from the table that out of personality factors only 4 factors H,I,Q_3 & Q_4 are hav significant correlation.

The factors H and Q_4 are positively significantly correlated at 0.01 level of confidence. T indicate that urban boys who are adventurous (H^+) and Te ($Q_4{}^+$)

The factor Q_3 is positively and significantl[y] correlated at 0.05 level and reveal that achievement [in] maths subject is more in those student who are controlle[d] (Q_3^{I+}).

The factor (I^-) is negatively and significantl[y] correlated at 0.01 level which indicate that the student[s] who are tough-minded (I^-) have better chances of gettin[g] high scores. Hence from the above two findings of urba[n] student it is revealed that the *null* hypothesis. *ie*

(i)   There is no correlation between different trai[t] of personality and achievement in mathematics [of] urban pupil, is rejected.

6.   **The explanation of the objectives third and fourth i.e.**

To study the personality factors of rural a[nd] urban pupil are as follows:

(a)   Personality factors of rural pupil

Difference in the mean scores of rural boys a[nd] rural girls on H.S.P.Q. (Table - 4.9)

When the raw scores of rural boys and rural gir[ls] were compared it was found that the rural boys scored mo[re] on factors B,C, ,D,E,J,O and Q_4 than girls. But on fact[or] F,G,H,I,Q_2 and Q_3 rural girls score more than rural boys [by] 0.47, 0.72, 0.47, 1.47, 0.45 and 0.45 respectively and bo[th] scored same on factor A i.e. 10.1

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(b)   <u>Personality factors of urban pupil</u>

Difference in the mean scores of urban boys an
urban girls on H.S.P.Q. (Table -4·10)

When the raw scores of urban boys and urban girl
were compared it was found that the urban boys scored mor
on factors A,B,C,E,F,G,H,J,O,Q_2, Q_3 and Q_4 than urba
girls. But on factor D and I the urban girls scored mor
than urban boys by 0.26 and 1.34 respectively.

DISCUSSION

Significant correlations between personality traits and academic achievement were found. The result thus obtained are reported in the preceding chapter have been discussed in the following section.

2) Difference in achievement between Rural & Urban student

Since the value of f 8.19 exceeds 2.60, the null hypothesis is rejected at the 0.01 level of significance. It indicate that there is 99% probability that the difference is due to experimental treatment rather than to sampling error. Hence we conclude that we have 99% confident that our decision to reject the null hypothesis is correct.

3) Difference in achievement between male & female

Since the value of t '4.67' exceeds 2.60, the null hypothesis is rejected at the 0.01 level of significance. It indicate that, there is 99% probability that the difference is due to experimental treatment rather than to sampling error. Hence we conclude that we have 99% confident that our decision to reject the null hypothesis is

4)   Area and genderwise achievement of the sample

(a)   Difference in achievement between rural boys and
        urban boys.

Since the value of t 9.52 exceeds 2.60, the null
hypothesis is rejected at the 0.01 level of significant. It
indicate that there is 99% probability that the difference
is due to experimental treatment rather than to sampling
error. Hence we conclude that we have 99% confident that
our decision to reject the null hypothesis is correct.

(b)   Difference in achievement between urban girls and
        urban boys.

Since the value of t, 6.33 exceeds 2.60 the null
hypothesis is rejected at the 0.01 level of significance.
It indicate that there is 99% probability that the
difference is due to experimental rather than to sampling
error. Hence we conclude that we have 99% confidence that
our decision to reject the null hypothesis is correct.

(c)   Difference between rural girls and rural boys

Since the value of t, 1.33 do not excced 1.96 the
null hypothesis is accepted. Though the mean scores of
rural boys is greater than the rural girls, there is no
difference between the two groups this is due to sampling

(d)   <u>Difference in achievement of rural girls and urban</u>

           <u>girls.</u>

Since the value of t 3.92 exceeds 2.60 the null hypothesis is rejected at the 0.01 level of significance It indicate that there is 99% probability that the difference is due to experimental rather than to sampling error. Hence we conclude that we have 99% confident that our decision to reject the *null* hypothesis is correct.

(e)   <u>Difference in achievement of rural girls and urba</u>

           <u>boys</u>

Since the value of t 9.87 exceeds 2.60. The null hypothesis is rejected at the 0.01 level of significance It indicate that there is 99% probability that th difference is due to experimental rather than to samplin error. Hence we conclude that we have 99% confident tha our decision to reject the *null* hypothesis is correct.

(f)   <u>Difference in achievement of rural boys and urban</u>

           <u>girls</u>

Since the value of t 2.27 exceeds 1.97 the null hypothesis is rejected to the 0.05 level of significance It indicate that there is 95% probability that th difference is due to experimental rather than to samplir error. Hence we conclude that we have 95% confident tha our decision to reject the *null* hypothesis is correct.

5.   **Relationship between personality traits and**

achievement in maths.

In the finding of cattell and Eber (1957), cattell (1965), cattell and Butcher (1968) and cattell and cattell (1969) eight factors out of 14 factors contributes towards academic achievement. these factors are A^+, B^+, C^+, D^-, H^+, I^-, O^- and Q_2^+.

(a)   Rural student.

The result of the present study is that out of 14 factors only 6 factors contributes towards the achievement in maths of rural pupil. These factors are B^+, Q_2^+, H^+, G^+, J^+ & Q_3^+.

when the result of the present study is compared with the above findings it is observed that the factors B^+, H^+ & Q_2^+ are common in both hence we say that the factors, B^+, H^+ & Q_2^+ which contributes towards the academic achievement also contributes to the achievement in maths. Hence we say that the student who is more intelligent (B^+ adventurous and socially bold (H^+) and prefers his own decisions (Q_2^+) will learn faster and achieve better.

There are other factors also which are not common with the above studies, they are G^+ (Conscientious), J

rural area student. Hence we say that the factors G^+, J^+ & $Q_3{}^+$ of rural students also contributes towards the achievement in maths.

(b)   Urban students

In case of urban student it is found that out of 14 personality factors only 10 factors contributes towards the achievement in maths. These factors are A^+, B^+, C^+, H^+, I^-, O^+, $Q_3{}^+$, Q_{4+}. F^+.

When these result is compared with the results of cuttell and Eber (1957), Cattell (1965) Cattell and Butcher (1968), and, Cattell and cattell (1969). It is observed that the factors, A^+, B^+, C^+, H^+, I^- are common in both the findings. Hence we say that the factors A^+, B^+, C^+, H^+ & I^- which contributes towards the academic achievement also contributes to the achievement in mathematics.

Hence we say that the students who is more warr hearted, adoptable and participating in the class roor (A^+), msore intelligent (B^+), more emotionally balanced and less easily upset (C^+) adventurous and socially bold $(H^+$ will learn faster and achieve better.

In addition to this there is one personalit factor (I^-) which is negatively related, hinder in th

minded (I^-) will tend to learn slower and achieve lesser.

There are other factors also which are not common with the above findings they are the factor (F^+) enthusiastic, tenderminded (I^+), apprehensive (O^+) controlled (Q_3+) and tense (Q_4+) in the urban area student. Hence we say that the factors F^+, I^+, O^+, Q_3+, Q_4+ of urban students also contributes towards the achievement in maths.

Cattell and Butcher (1961) in a study on 124 rural and 153 urban children of High School range have also found that affectothymia(A^+) Intelligence (B^+), Self-sufficiency (Q_2+) and super-ago-strength(G^+), show significant and positive correlation with academic achievement.

Hence we concluded that the personality factors which are contributing towards the achievement in maths of rural students are B^+, Q_2+, H^+, G^+, I^+ & Q_3+

Similarly in case of urban students are A^+, B^+, C^+, H^+, I^-, F^+, I^+, O^+, Q_3+ and Q_4+.

the factors which are common to both the areas are B^+, H^+, I^+ and Q_3+ and the uncommon factors are A^+, C^+, I^-, F^+, O^+, Q_4+, Q_2+, G^+, and J^+.

These difference in personality factors of rural and urban students is due to age, ability geographical area, class room, organisation, class-size, teaching

methods, teachers personality socio economic and cultural condition and educational differences which have led to considerable fluction.

6.   **Mean Scores of the rural and urban students**

When the raw scores of urban girls and boys were compared it was found that the urban boys scored more on factors A,B,C,E,F,G,H,J,O,Q_2,Q_3 and Q_4 and urban girls scored more on factors D and I.

Similarly when the raw scores of rural girls and boys were compared, it was found that the rural boys scored more on factors B,C,D,E,I,O and Q_4 and the rural girls scored more on factors F,G,H,I, Q_2 and Q_3.

Both rural boys and girls scored same in factor 'A'. Achievement is the result of several factors, even an individual may score higher on one faíter it will not have its impact on achievement scores. It is supported by facto: A. Students who are warm hearted, outgoing and participating (A$^+$) may find it difficult to concentrate o studies. they may not have time and energy left on thei disposal for serious study, due to their over engagement i social activities.

There results would imply, therefore, that i schools are to ensure the optional development of student

they cannot ignore the influence of personality factors upon achievement. the major conclusion may be drawn with same confidence. First, it is dangerous to assure wide generality in predicting about academic achievement through personality testing, age, ability, sex, geographical area, class-room organisation and teacher's personality may all affect relationship between personality and academic achievement. Nevertheless, the second conclusion does indicate the existence of some overall pattern, in this confused research area on the basis of which it is possible