CHAPTER IV

ANALYSIS AND INTERPRETATION

4.1 INTRODUCTION

The data for this study had been collected through the tools which were mentioned in the preceding chapter and were coded with the help of the scoring keys. Linear standard scores were computed for the marks collected for academic achievement.

The coded data were transformed into punch cards as per the card design exhibited in Appendix 'H'.

The selection of three major variables in the study propels the investigator to subdivide this chapter into three sections. In each section, one variable has been presented along with related objectives and hypotheses and is attempted to analyse with suitable statistical technique. The results were interpreted and discussed in the light of the previous research findings and existing theories. Discussion on result has been presented in the forth-coming chapter.

4.2 SECTION A : PEER INFLUENCE.

The purpose of this section is to test the effect of area of institution i.e., urban-rural and nature of institution i.e., boys-girls-coeducational on peer influence. It also attempts to find out the significant difference in interaction of area and nature of institution on peer influence. The analysis is done by applying the statistical technique - analysis of variance. As it is very rare to get equal cell size sample in ▪▪▪ non experimental research, a (2x3) factorial design analysis of variance with unequal cell size has been selected for the same (Dayton, 1970).

If the obtained F-value is found to be significant, it is concluded that the groups differ significantly. But in the case of more than two groups, a significant F-value cannot confirm which two groups differ, for determining which, an additional test is required. Here in this study, t-test has been applied after getting significant F-value for more than two groups. The second part of the objective I is to be explore the effects of two control variables namely intelligence and socio-economic status of students on the scores of peer influence.

The median split approach was used to divide the scores of intelligence and socio-economic status. This approach bisects the scores into two equal halves i.e., high median group and low median group. Thus four major groups have been formed for analysis viz., high intelligence and low intelligence group; high economic status and low socio-economic status group.

As the equal cell size is also not available here, a (2x2 = intelligence x SES) factorial design analysis of variance with unequal cell size is computed to test the selected hypotheses. Two levels of two way analysis of variance make the possibility of using t-test redundant.

4.2.1 Effects of Area of Institution, Nature of Institution and their Interaction on Peer Influence

(a) Hypotheses :

(i) Mean peer influence score of the group belonging to rural schools does not differ significantly from that of urban schools.

ii) Mean peer influence scores of the groups belonging to boys, girls and co-educational schools do not differ significantly.

iii) There is no significant interaction effect between area of institution and nature of institution on peer influence of the students.

Table 4.1

Summary of Analysis of Variance for Peer Influence

Source	df	SS	MSS	F	Level of significance
Area of Institution (A)	1	2614.17	2614.17	32.25	***
Nature of Institution (B)	2	1599.28	799.64	9.86	***
A x B	2	18.89	9.44	0.12	
Error	815	66064.12	81.06		
Total	820				

*** P $<$ .001

Table 4.2

Mean and Standard Deviations of Peer Influence Scores with respect to Area of Institution

Area of Institution	N	Mean	Standard Deviation
Urban	388	17.10	9.47
Rural	433	20.74	8.71

The analysis of variance Table 4.1 shows that the obtained F-value for the area of institution is 32.25 which is significant at 0.001 level with df of 1/815. It indicates that the mean peer influence score of subjects belonging to urban area differs significantly from those belonging to rural area. From Table 4.2, it also appears that the mean peer influence score of the students belonging to rural area (M = 20.74) is higher than that in urban area (M = 17.10). It signifies that peer influence was significantly higher in case of rural students than the urban students.

In the light of these findings, the null hypothesis viz., mean peer influence score of the groups belonging to rural schools does not differ significantly from that of urban schools is rejected. It may, therefore, be said that the area which the students hail from, has got impact on their peer influence.

The F-value for the nature of institution (9.86), which is again significant at 0.001 level with df 2/815. It implies that the mean influence score of subjects belonging to boys, girls and co-educational schools differ significantly.

Since evidence exists that there lies differences among boys, girls and co-educational schools regarding peer influence, t-test has been used in order to test the difference between two groups. In accordance with three groups, three hypotheses are formulated.

i) Mean peer influence score of the group belonging to boys schools does not differ significantly from that of girls schools.

(ii) Mean peer influence score of the group belonging to boys schools does not differ significantly from that of co-educational schools.

(iii) Mean peer influence score of the group belonging to girls schools does not differ significantly from that of co-educational schools.

In order to test the above hypotheses, t-values have been computed and results are shown in Table 4.3.

Table 4.3
Mean and t-values for Peer Influence with respect to Nature of Institution.

Nature of Institution	N	M	SD	Boys	Girls	Co-ed
Boys	292	20.78	9.26		4.38***	2.78**
Girls	235	17.32	8.83			1.67
Co-educational	294	18.64	9.30			

** P < .01
*** P < .001

From Table 4.3 it is observed that the t-value for boys and girls institution is 4.38, which is significant at 0.001 level with df of 525. It reflects that the mean peer influence score of boys institution differs significantly from that of girls institution. The mean influence score of boys institution is significantly higher than that of girls institution. Thus the peer influence was found to be significantly higher in boys than in girls.

This table also presents that t-value between boys and co-educational school group is 2.78 which is significant at 0.001 level of significance with df of 584. It indicates that the mean peer influence score of boys institution also differs significantly from that of coeducational institution. The peer influence score was found to be significantly higher in boys school than in coeducational school.

The obtained t-value between girls and coeducational school group is 1.67 which is found to be not significant at any acceptable level of significance. Therefore, mean peer influence score of the group belonging to girls school does not differ significantly from that of the coeducational school.

These findings may be indicative of the fact that the nature of institution affects the peer influence of the students.

From Table 4.2 it is also evident that peer influence is strongest (M = 20.78) in boys school group while least in girls school group (M = 17.32). One interesting finding of the study is that girls school peer group is found to be most homogeneous in nature (SD = 8.83). More heterogeneity is found in the mixed peer group i.e., peer group in co-educational schools (SD = 9.3).

Effort is also made to study the effect of interaction of area and nature of institution on peer influence. AOV Table 4.1 sets out, that F-value for the interaction of area and nature of institution (0.116) is not significant at any acceptable level of significance, which has warranted the researcher in rejecting the null hypothesis viz., there is no significant interaction effect between area of institution and nature of institution on peer influence of

the students. Therefore, it is retained. The finding implies that the interaction between rural and urban as well as boys, girls and co-educational schools does not exercise any significant effect on peer influence of the students.

It is interesting to note that while, independently both the factors have a significant effect, jointly they do not produce any effect on peer influence of the students.

A probable reason for this non-significant two factor interaction (Area x Nature) could be the further categorization of variables in terms of their levels, thus reducing the sample size in each group.

4.2.2 Effects of Intelligence, Socio-economic Status and their Interaction on Peer Influence.

Hypotheses :

i) Mean peer influence score of the students belonging to high intelligence group does not differ significantly from that of the low-intelligence group.

ii) Mean peer influence score of the students belonging to high socio-economic status group does not differ significantly from that of the low socio-economic status group.

iii) There is no significant interaction effect between intelligence and socio-economic status on peer influence of the students.

Table 4.4.

Summary of Analysis of Variance for Peer Influence.

Source	df	SS	MSS	F	Level of significance
INT (A)	1	0.61	0.61	0.01	
SES (B)	1	293.16	293.16	3.41	
A x B	1	220.06	220.06	2.56	
Error	817	70156.97	85.87		
Total	820				

Table 4.5

Two Way Analysis of Variance : Cell means.

		INT		
		A_1	A_2	
SES	B_1	N = 253 X = 18.76	N = 141 X = 17.62	$X_{B_1} = 18.35$
	B_2	N = 144 X = 18.93	N = 283 X = 19.96	$X_{B_2} = 19.62$
		$X_{A_1} = 18.82$	$X_{A_1} = 19.18$	

Table 4.4 shows that the obtained F-value for intelligence is 0.01 which is not significant at any acceptable level of significance. It indicates that mean peer influence score of the students belonging to high intelligence group does not differ significantly from that of the low intelligence group.

The calculated F-value for socio-economic status 3.41 is not significant at any acceptable level of significance. The result sets out that there is no significant difference between high socio-economic status group and low socio-economic status group regarding peer influence of the students.

The analysis of variance Table 4.4 also shows that the F-value for interaction between intelligence and socio-economic status for peer influence is 2.56, which is found to be not significant at any acceptable level of significance.

In the light of the above findings all the three null hypotheses are accepted as these data do not provide evidence of significant main effects due to intelligence and socio-economic status and no significant effect due to the interaction between the two.

4.3 SECTION B : EDUCATIONAL ASPIRATION

In this section, the effect of area of institution and nature of institution on educational aspiration of students has been tested and analysed through analysis of variance technique. The other two variables - intelligence and socio-economic status considered as control variable in the design of the study, have also been taken in the second factorial design analysis of variance.

The median split approach was also used here in order to divide the scores of intelligence and socio-economic status. Thus four groups have been formed for analysis viz., high intelligence and low intelligence; high socio-economic status and low socio economic status. As the equal cell size is also not available here, a factorial design analysis of variance with unequal cell size is computed to test the selected hypotheses.

The two designs of analysis of variance for this section are as follows : a 2 x 3 (area x nature of institution) and a 2 x 2 (intelligence x socio-economic status) factorial design analysis of variance with unequal cell size. If the computed F is found to be significant, a separate t-test is required in case of more than two factors.

4.3.1 Effects of Area of Institution, Nature of Institution and their Interaction on Educational Aspiration.

Taking into consideration the area of institution and nature of institution and its effect on educational aspiration of the students, the following hypotheses have been formulated and tested through two-way analysis of variance.

Hypotheses :

i) Mean educational aspiration score of the group belonging to rural schools does not differ significantly from that of urban schools.

ii) Mean educational aspiration interaction scores of the groups belonging to boys, girls and co-educational schools do not differ significantly.

iii) There is no significant effect between area of institution and nature of institution on educational aspirations of the students.

Table 4.6

Summary of Analysis of Variance for Educational Aspiration.

Source	df	SS	MSS	F	Level of significance
Area of Institution (A)	1	496.65	496.65	89.16	***
Nature of Institution (B)	2	31.04	15.52	2.79	
A x B	2	17.54	8.77	1.57	
Error	815	4543.58	5.57		
Total	820				

*** P $\angle$ 0.001

Table 4.7

Two Way Analysis of Variance : Cell Means.

Nature of Institution	Area of Institution A_1	Area of Institution A_2	
B_1	N = 138 $\bar{X}$ = 6.85	N = 154 $\bar{X}$ = 5.43	$\bar{X}_{B_1}$ = 6.10
B_2	N = 144 $\bar{X}$ = 6.38	N = 121 $\bar{X}$ = 5.10	$\bar{X}_{B_2}$ = 5.72
B_3	N = 136 $\bar{X}$ = 6.73	N = 158 $\bar{X}$ = 4.73	$\bar{X}_{B_3}$ = 5.65
	$\bar{X}_{A_1}$ = 6.67	$\bar{X}_{A_2}$ = 5.08	

The analysis of variance Table 4.6 shows that the obtained F-value for the area of institution (89.16) is significant at 0.001 level with df 1/815. This indicates that educational aspirations of the students belonging to rural schools differ significantly from those of the students of urban schools.

The calculated F-value for nature of institution (2.79) is found to be not significant at any acceptable level of significance. The result thus shows that there is no significant difference among students of boys, girls and co-educational institutions in the field of educational aspiration.

As regards interaction effect between area and nature of institution (A x B = area x nature), the obtained F-value (1.57) is not significant at any acceptable level of significance.

In the light of the above findings the null hypothesis ($H_0$1 = mean educational aspiration scores of the group belonging to rural schools does not differ significantly from that of urban schools) is rejected while the other two null hypotheses ($H_0$2, $H_0$3) are retained. In other words the data do not lend evidence in rejection of the $H_0$2 and $H_0$3.

4.3.2 Effects of Intelligence, Socio-economic Status and their Interaction on Educational Aspiration.

Hypotheses :

i) Mean educational aspiration score of the students belonging to high-intelligence group does not differ significantly from that of the low-intelligence group.

ii) Mean-educational aspiration score of the students belonging to high socio-economic status group does not differ significantly from that of the low socio-economic status group.

iii) There is no significant interaction effect between intelligence and socio-economic status on educational aspiration of the students.

Table 4.8

Summary of Analysis of Variance for Educational Aspiration.

Source	df	SS	MSS	F	Level of significance
INT (A)	1	455.44	455.44	87.4	***
SES (B)	1	154.26	154.26	29.6	***
A x B	1	0.65	0.65	0.12	
Error	817	4257.14	5.21		
Total	820				

***P < .001

Table 4.9

Two Way Analysis of Variance : Cell means.

		INT		
		A_1	A_2	
SES	B_1	N = 253 X = 7.09	N = 141 X = 5.59	$\bar{X}_{B_1}$ = 6.56
	B_2	N = 144 $\bar{X}$ = 6.24	N = 283 $\bar{X}$ = 4.62	$\bar{X}_{B_2}$ = 5.17
		$\bar{X}_{A_1}$ = 6.78	$\bar{X}_{A_2}$ = 4.94	

The analysis of variance table 4.8 shows that the obtained F-value for intelligence (87.4) is significant at 0.001 level with df of 1/817. This means educational aspirations of the students belonging to high intelligence group differs significantly from those of low intelligence group.

The calculated F-value for socio-economic status (29.6) is also significant at 0.001 level with df of 1/817. The result sets out that there lies significant difference between high socio-economic status and low socio-edonomic status groups regarding educational aspiration.

Regarding interaction effect between intelligence and socio-economic status (A x B = intelligence x Socio economic status), the obtained F-value is found to be not significant. Furthermore the negligible F-value indicates almost absence of any interaction effect on educational aspiration.

In the light of the above findings the first two null hypotheses are rejected while the third one is retained.

It can be supported by the evidence that intelligence and socio-economic status have significant impact on educational aspiration of the students. Further to state, while independently both of them do have impact on educational aspiration, jointly they do not contribute any variation. Thus it shows that the effect of the two levels of variables can be generalizable without considering the other variable.

4.4 SECTION C : ACADEMIC ACHIEVEMENT

The third objective of this study is to establish a multiple regression equation for academic achievement in relation to intelligence, socio-economic status, peer influence and educational aspiration.

The impact of explanatory variables on dependent variable can be examined with the help of the multiple regression analysis and multiple coefficient. The results of multiple regression analysis fit well into a prediction framework and prediction is really a special case of explanation. Because, scientific explanation consists in specifying the relations between empirical events. On the other way, explanation is also a prediction.

Hypothesis :

All the four variables considered in the study do not predict the criterion level of Academic Achievement to the same extent.

The formulated hypothesis demands that multiple regression analysis should be used for two major purposes :

i) Setting up of an equation in the explanatory variables that gives the best prediction of the values of dependent variable and

ii) to estimate the variables in order of their importance.

The values of the constants and partial regression coefficients of the function were estimated with the help of computer, (360 IBM, M.S.University). The empirical results of the multiple regression analysis are presented in the forthcoming part.

The variables chosen for the regression analysis are given below in the order as they are used in data analysis.

1.	Intelligence	(INT)	X_1
2.	Socio-economic status	(SES)	X_2
3.	Peer Influence	(PI)	X_3
4.	Educational Aspiration	(EA)	X_4
5.	Academic Achievement	(Ac Ach)	Y

4.4.1 Construction of Regression Equation for the Total Sample (N = 797).

The number of observations for the first regression equation is 797. Although, the initial sample was 821, after the collection of examination results it comes down to 797 on which the regression analysis has been computed.

To start with multiple regression analysis, the intercorrelation has been computed for the five variables (X_1 X_2 X_3 X_4 Y), the results of which are furnished in Table 4.10.

Table 4.10

Correlation Matrix (5x5).

Variable Code	X_1	X_2	X_3	X_4	Y
INT (X_1)	-	0.446**	-0.041	0.419**	0.716**
SES (X_2)		-	-0.071*	0.330**	0.484**
PI (X_3)			-	-0.034	-0.096*
EA (X_4)				-	0.475**
Ac Ach (Y)					-

* P < .05
** P < .01

Table 4.10 reveals that out of 10 correlations 6 are significant at 0.01 level and 2 are significant at 0.05 level of significance. It also shows that correlation coefficients ranging from 0.72 to 0.07, avoid the problem of multicollinearity. Then Means and Standard Deviations have been computed for all the variables.

Variable	Mean	SD
X_1	51.380	16.482
X_2	27.885	8.452
X_3	19.055	9.238
X_4	5.846	2.5
Y	49.903	10.011

In Table 4.11, the regression estimates of Academic Achievement on explanatory variables are stated.

Table 4.11

Regression Estimates of Academic Achievement on Explanatory Variables.

Estimator	Estimate	Error	T-Statistic
b_1	0.341	0.016	20.591***
b_2	0.201	0.031	6.460***
b_3	-0.059	0.025	-2.342*
b_4	0.724	0.104	6.988***
b_0	23.633	1.069	22.111***

Standard Error of the Estimate = 6.536

* P $\leq$ .05
*** P $\leq$ .001

In the regression estimates of Table 4.11, the t-value shows that, intelligence (b_1), SES (b_2), Educational Aspiration (b_4) the partial regression coefficients of these variables are significant at 0.001 level. Moreover they are bearing positive impacts on academic achievement of the students. On the contrary, the partial regression coefficient of peer influence (b_3), bearing negative impact, is significant at 0.05 level.

This explains that the three explanatory variables viz., intelligence, socio-economic status and educational aspiration have highly significant influence on dependent variable i.e., academic achievement. In the same line, it can be inferred that peer influence has negative impact and moderately significant influence on academic achievement.

Then, Y has been computed by employing the following multiple regression equation.

$$Y = a + \sum_{i=1}^{m} bi\ X_i, \quad \text{where,}$$

Y = dependent V
a = constant term
b_i = regression coefficient
X_i = explanatory V

The set-up regression equation of Academic Achievement is shown in Table 4.12.

Table 4.12
Set-up Regression Equation of Ac Ach on Explanatory Varia-bles.

Explanatory Variable	Dependent Variable	Multiple Regression Equation	R^2	$\bar{R}^2$	R	F
INT(X_1)+SES(X_2) +PI(X_3)+EA(X_4)	Ac Ach	$Y=23.633+0.341X_1 +0.201X_2-0.059X_3 +0.724X_4$	0.5759	0.5738	0.7589	268.901*** with df(4,792)

*** P $<$ .001

The multiple regression equation suggests that academic achievement increases by 0.341, against each additional unit of intelligence, by 0.201 against socio-economic status, by 0.724 against educational aspiration. It also suggests that for each additional unit of peer influence, it decreases by 0.059.

Goodness of fit - From the fitted regression equation, the predicted value Y can be obtained for each of the students by substituting their respective X_1 X_2 X_3 and X_4 scores. But in general these fitted values differ from the corresponding values of Y in the data set. The deviation (Y_r - Y_r) measures the failure

of the x's to predict Y which is also defined as residuals (e_r; where r = 1 2 3 ..... n).

The set of residuals helps in measuring the goodness of fit of the regression line to the data. The term $\sum(Y_r - \bar{Y})^2$ is called the total sum of squares (TSS), the term $\sum e_r^2$ is the residual sum of squares (RSS). The term $\sum(\hat{Y}_r - \bar{Y})^2$ which equals the sum of squares of the fitted values of Y around their mean is called the explained or regression sum of squares (ESS).

Therefore it can be stated as

$$TSS = ESS + RSS$$

$$\text{or } 1 = ESS/TSS + RSS/TSS$$

Thus it is seen that ESS/TSS is a measure of goodness of fit and the ratio is equal to the square of the usual correlation coefficient (R)

$$R^2 = \frac{ESS}{TSS}$$

In the regression analysis for the total sample, the computed goodness of fit = 0.5759.

F-test : To test the overall significance of the estimated regression line, that is whether Y is linearly related to all the explanatory variables, F-test is necessary. In this case, F-test of the null hypothesis $H_0 : b_1 = b_2 = b_3 = b_4 = 0$ is found to be helpful.

There is an intimate relationship between the coefficient of determination (R^2) and the F-test used in the analysis of variance as

$$F = \frac{ESS/(K-1)}{RSS/(N-K)}$$

Thus, F-test, which is a measure of overall significance of the estimated regression, is also a test of significance of R^2.

In the regression analysis for the total sample, the F-value 268.901 with df (4,792) is highly significant at 0.001 level. Therefore, the null hypothesis is rejected and it is inferred that all the four variables are related to Y in this data. Result also suggests that $\hat{Y}$ is not deviating much from Y. That is, given the values X_1 X_2 X_3 and X_4, a reliable measure of academic achievement can be estimated with the help of the regression equation obtained.

Relative importance of different X variables : As stated earlier, multiple regression analysis is used in this study to answer the question which X variables are most important in determining Y.

When expressed in terms of scores, partial regression coefficients are usually called beta weight (β) or standardised partial coefficients, which have been sometimes used as measures of relative importance, the X's being ranked in order of the size of these coefficients (ignoring sign).

Therefore, in the present study, the standardised partial coefficients have been computed to serve as measures of the relative importance of the four explanatory variables. The variables are ranked according to the magnitude of the coefficients (β).

Variables	Beta weight	Rank
INT (X_1)	0.562 (β_1)	I
EA (X_4)	0.181 (β_4)	II
SES (X_2)	0.170 (β_2)	III
PI (X_3)	-0.054 (β_3)	IV

Percentage accountability of variables for variance: R^2 may be expressed in terms of the beta weights and the zero order r's.

$$R_c^2 (1\ 2\ 3.....n) = \beta_1\ r\ c1 + \beta_2\ r\ c2 + ...+\beta_n r\ cn$$

in which (β) stands for beta weights C equals for the criterion and r's are the correlations between C and explanatory variables 1 2 ..... n.

Substituting for the β's and r's in the present analysis

$$R_5^2 (1\ 2\ 3\ 4) = \beta_1\ r_{51} + \beta_2\ r_{52} + \beta_3\ r_{53} + \beta_4\ r_{54}$$

$$\begin{aligned} R_5^2 (1\ 2\ 3\ 4) &= 0.56222 \times 0.71609 + 0.16989 \times 0.48397 \\ &\quad +(-0.05434)(-0.09582) + 0.18093 \times 0.47458 \\ &= 0.4026 + 0.0822 + 0,0052 + 0.0858 \\ &= 0.5758 \end{aligned}$$

$$R_5 (1\ 2\ 3\ 4) = 0.7589$$

From $R_5^2 (1\ 2\ 3\ 4)$, it may be assessed that the four explanatory variables account for 57.58% of the variance of the criterion. Moreover it also shows that 40.26% is the contribution of intelligence to the variance of academic achievement, 8.22% is the contribution of socio-economic status, 8.58% of educational aspiration and 0.52% of peer influence. The remaining 42.42% of the variance of the criterion must be attributed to factors not measured in the study. It is to be

noted that although variance accounted for peer influence is negative as it is negligible, the total variance becomes positive.

Multiple R and the adjusted R^2 ($\bar{R}^2$) : The multiple R shows how accurately the scores from a given combination of variables represent the actual values of the criterion, when independent variables are combined in the "best" linear equation. R is the maximum correlation obtainable from a linear equation connecting earned and predicted scores.

In this analysis, the estimated multiple R is 0.76 which is significant at 0.001 level. As N is large enough ($N > 500$) and R is high, it is decided not to compute SE_R. It is also observed from the result that difference between R^2 and $\bar{R}^2$ (0.002) is negligibly small, which strengthens the overall significance of the regression equation.

From the results presented, it may be inferred therefore, that the four explanatory variables do not predict the criterion to the same magnitude and they do not account for the variance of the criterion to the same extent.

4.4.2 Construction of Regression Equation for Urban Group (N=373)

The number of observations for the second regression equation is 373.

The (5 x 5) correlation matrix is given in Table 4.13.

Table 4.13
Correlation Matrix (5 x 5).

Variable Code	X_1	X_2	X_3	X_4	Y
INT (X_1)	-	0.324**	0.109*	0.319**	0.558**
SES (X_2)		-	0.038	0.254**	0.380**
PI (X_3)			-	0.069	0.043
EA (X_4)				-	0.388**
Ac Ach (Y)					-

* P $<$ .05
** P $<$ .01

Table 4.13 shows that out of 10 correlations 6 are significant at 0.01 level and 1 is significant at 0.05 level of significance. It also reveals that coefficients range from 0.56 to 0.10.

Stated below are the means and standard deviations for all the variables :

Variable	Mean	SD
X_1	59.424	14.012
X_2	30.912	9.143
X_3	17.182	9.574
X_4	6.681	2.209
Y	55.302	8.694

Table 4.14 sets out the regression estimates of Academic Achievement on explanatory variables.

Table 4.14

Regression Estimates of Academic Achievement on Explanatory Variables.

Estimator	Estimate	Std Error	T-statistic
b_1	0.270	0.028	9.731***
b_2	0.179	0.041	4.325***
b_3	-0.023	0.037	-0.621
b_4	0.801	0.171	4.677***
b_0	28.782	1.842	15.626***

Standard Error of the Estimate - 6.816

***P $<$ .001

From t-values in Table 4.14, it is observed that partial regression coefficients of Intelligence (b_1), SES (b_2), EA (b_4) are significant at 0.001 level, bearing positive impact. On the other hand, the t-value for partial regression coefficient of peer influence (b_3) shows negative impact which is not significant at any level.

The result implies that for urban group, the three explanatory variables viz., intelligence, socio-economic status and educational aspiration have highly significant influence on their academic achievement. Again it also shows that peer influence although bearing negative impact does not possess any significant influence on academic achievement.

Then, Y has been computed by employing the following multiple regression equation.

$$Y = a + \sum_{i=1}^{m} b_i X_1, \quad \text{where,}$$

Y = dependent V
a = constant term
b_i = regression coefficient
X_i = explanatory V.

Presented in Table 4.15 is the regression equation of Academic Achievement.

Table 4.15

Set-up Regression Equation of Ac Ach on Explanatory Variables.

Explanatory variable	Dependent variable	Multiple Regression Equation	R^2	$\bar{R}^2$	R	F
INT(X_1)+SES(X_2) +PI(X_3)+EA(X_4)	Ac Ach	$Y=28.782+0.270X_1 +0.179X_2-0.023X_3 +0.801X_4$	0.3920	0.3854	0.6262	59.318*** with df(4,368)

*** P < .001

The multiple regression equation for urban group suggests that academic achievement of the students increases by 0.270 against each additional unit of intelligence, by 0.179 against each additional unit of socio-economic status and 0.801 against educational aspiration.

It also shows that for each additional unit of peer influence it decreases by 0.023.

The computed goodness of fit, $R^2 = 0.392$ for the second regression.

For testing the null hypothesis

$$H_0 : b_1 = b_2 = b_3 = b_4 = 0$$

and the significance of R^2, F-value has been derived from AOV table. For urban group, the F-value 59.318 with df (4,368) is highly significant at 0.001 level .

Therefore, the null hypothesis is rejected and it is inferred that all the four variables are related to Y in this data. Result also shows that $\hat{Y}$ is not deviating much from Y. That,is, given the values, X_1 X_2 X_3 and X_4, a reliable measure of academic achievement can be estimated with the help of the regression equation obtained.

For estimating the relative importance of different X variables beta weights have been computed and ranked according to the magnitude of the coefficients.

Variable	Beta weight	Rank
INT (X_1)	0.434	I
EA (X_4)	0.204	II
SES (X_2)	0.189	III
PI (X_3)	-0.025	IV

For estimating the percentage accountability of variables for total variance, R_5 (1 2 3 4) has been computed from beta weights and zero order correlation.

$$R_5^2 (1\ 2\ 3\ 4) = 0.4345 \times 0.5578 + 0.1886 \times 0.3802 + 0.2036 \times 0.3882 + (-0.0254)\ 0.043$$

$$= 0.2424 + 0.0717 + 0.079 - 0.001$$

$$= 0.3921$$

$$R_5(1\ 2\ 3\ 4) = 0.6261$$

The R^2_5 (1 2 3 4) value of 0.3921 shows that the four explanatory variables account for 39.21% of the variance of the criterion. Moreover it also gives the picture that 24.24% is the contribution of intelligence to the variance of academic achievement for the students of urban group, 7.17% contribution of socio-economic status, 7.9% of educational aspiration and only 0.1% contribution from peer influence which is negative. The remaining 60.79% of the variance of the criterion must be attributed to factors not measured in the study.

The estimated R value of 0.63 is significant at 0.001 level of significance. As N is fairly large ($N > 200$) and R is high, there is no need to compute SE_R here also. The difference between R^2 and $\bar{R}^2$ 0.007) is negligibly small, which indicates the overall significance of the regression equation.

The results set-out that the four explanatory variables do not predict the criterion to the same magnitude and they do not account for the variance of the criterion to the same extent.

4.4.2 (b) Construction of Regression Equation for Rural group (N = 424).

Rural group consists of 424 observations, which are used for the third regression equation.

The intercorrelation of the variables is presented in Table 4.16.

Table 4.16
Correlation Matrix (5x5)

Variable Code	X_1	X_2	X_3	X_4	Y
INT (X_1)	-	0.388**	0.002	0.332**	0.693**
SES (X_2)		-	-0.068	0.260**	0.403**
PI (X_3)			-	-0.009	-0.042
EA (X_4)				-	0.385**
Ac Ach (Y)					-

** P < .01

It is observed from Table 4.16 that out of 10 correlations 6 are significant at 0.01 level of significance. Moreover coefficients are ranging from 0.69 to 0.26 which avoids the problem of multi-collinearity.

Given below are the Means and Standard Deviations for all the variables.

Variable	Mean	SD
X_1	44.304	15.209
X_2	25.222	6.762
X_3	20.703	8.612
X_4	5.111	2.513
Y	45.154	8.591

Table 4.17 presents the regression estimates of Academic Achievement on explanatory variables for the rural group.

Table 4.17

Regression Estimates of Academic Achievement on Explanatory Variables.

Estimator	Estimate	Std Error	T-statistic
b_1	0.334	0.021	15.600***
& b_2	0.166	0.047	3.523**
b_3	-0.033	0.034	- 0.968
b_4	0.529	0.124	4.278***
b_0	24.140	1.442	16.744***

Standard Error of the Estimate = 5.957

*** P $\angle$ .001.

The calculated t-values in Table 4.17 shows that except peer influence (b_3), partial regression coefficients of all other variables are highly significant at 0.001 level of significance. Added with, they are showing positive impact on academic achievement of the rural students. Bearing negative impact, the coefficient for peer influence is not significant at any level.

In congruence of the results of the urban group, the three explanatory variables possess highly significant influence on dependent variable. Again peer influence shows negligible negative impact on academic achievement.

Then, Y has been computed with the aid of multiple regression equation - $Y = a + \sum_{i=1}^{m} bi\ X_i$.

Table 4.18 presents the regression equation of Academic Achievement for rural group.

Table 4.18

Set-up Regression Equation of Ac Ach on Explanatory Variables.

Explanatory variable	Dependent variable	Multiple Regression Equation	R^2	$\bar{R}^2$	R	F
INT(X_1)+SES(X_2) +PI(X_3)+EA(X_4)	Ac Ach	$Y=24.140+0.334X_1 +0.166X_2-0.034X_3 +0.529X_4$	0.5237	0.5191	0.7237	115.177*** with df(4,419)

*** P < .001

The multiple regression equation for rural group sets out that academic achievement of student increases by 0.334 against each additional unit of intelligence, by 0.166 against socio-economic status and 0.529 against each additional unit of educational aspiration. It also shows that against each additional unit of peer influence, it

tends to decrease by 0.033. The computed goodness of fit, $R^2 = 0.5237$ is for the third regression, that is, for the rural group.

In order to test the significance of R^2 and the null hypothesis.

$$H_0 : b_1 = b_2 = b_3 = b_4 = 0$$

F-value has been derived from AOV table. The F-value 115.177 with df (4,419) is highly significant at 0.001 level.

Therefore, the null hypothesis is rejected and it is inferred that all the four variables are related to Y in this data. As R^2 is also highly significant, it can be said that $\hat{Y}$ is not deviating much from Y. That implies, given the values X_1 X_2 X_3 and X_4, a reliable measure of academic achievement can be estimated with the help of the regression equation obtained.

For estimating the relative importance of different X variables, beta weights have been computed and ranked according to the magnitude of the coefficients.

Variable	Beta weight	Rank
INT (X_1)	0.591	I
EA (X_4)	0.155	II
SES (X_2)	0.131	III
PI (X_3)	-0.033	IV

For estimating the percentage accountability of variables for total variance, $R^2_5(1\ 2\ 3\ 4)$ has been computed from beta weights and zero order correlations.

$$R^2_{5(1234)} = 0.5913 \times 0.6934 + 0.1306 \times 0.4027 + (-0.0327)\ (-0.0415) + 0.1547 \times 0.3854$$
$$= 0.41 + 0.0526 + 0.001 + 0.0596$$
$$= 0.5223$$

$$R_{5\ (1234)} = 0.7236$$

The $R^2_{5(1234)}$ value of 0.5223 shows that the four explanatory variables account for 52.23% of the variance of the criterion. It also suggests that 41% of intelligence, 5.26% of socio-economic status, 5.96% of educational aspiration; 0.01% of peer influence contribute to the total variation accounted in the regression equation.

The remaining 47.77% of the variance of the criterion must be attributed to factors not measured in the study. The estimated R value of 0.72 is significant at 0.001 level of significance. As the subsample is fairly large ($N > 200$) and R is high, the computation of SE_R is also omitted here. The difference between R^2 and $\bar{R}^2$ (0.005) is negligibly small, which signifies the overall significance of the regression equation.

It can be assessed from the result that the four explanatory variables do not predict the criterion to the same magnitude and they do not account for the variance of the criterion to the same extent.

From the regression analysis for urban group, it is clear that all variables do not predict in the same manner. The highest prediction can be made from intelligence (24.24%) while lowest prediction from peer influence (0.1%). In total 39.21% of the total variation in academic achievement can be made from the four explanatory variables.

From the regression analysis for rural group, it is evident that all variables do not predict in the same manner. The highest prediction can be made from intelligence (41%) whereas vanishingly small contribution can be made from peer influence (0.01%). As a whole, 52.23% of the variation in academic achievement can be made from the four explanatory variables taken in the study for rural group.

4.4.3 (a) Construction of Regression Equation for Boys group (N = 279).

Boys group comprises of 279 students, on which the fourth regression equation is computed.

Table 4.19 demonstrates the correlation matrix of the data.

Table 4.19
Correlation Matrix (5 x 5)

Variable Code	X_1	X_2	X_3	X_4	X_5
INT (X_1)	-	0.515**	-0.079	0.455**	0.693**
SES (X_2)		-	-0.086	0.388**	0.561**
PI (X_3)			-	-0.077	-0.162
EA (X_4)				-	0.477**
Ac Ach (Y)					-

** P $<$ .01

Table 4.19 shows 6 correlation coefficients are significant at 0.01 level of significance. It also reveals that coefficients range from 0.69 to 0.39.

The means and standard Deviations of all the variables are stated below :

Variable	Mean	SD
X_1	54.552	16.859
X_2	27.878	8.208
X_3	21.090	9.210
X_4	6.143	2.506
Y	50.944	10.055

Table 4.20 sets out the regression estimates of Academic Achievement on explanatory variables for boys group.

Table 4.20.

Regression Estimates of Academic Achievement on Explanatory Variables.

Estimator	Estimate	Std Error	T-statistic
b_1	0.292	0.029	9.955^{***}
b_2	0.291	0.058	5.006^{***}
b_3	-0.111	0.044	-2.546^{*}
b_4	0.647	0.183	3.533^{***}
b_0	25.281	1.919	13.175^{***}

Standard Error of the estimate = 6.573.

* P $\angle$ .05

** P $\angle$ .001

From Table 4.20, it is observed that t-values associated with partial regression coefficients of the explanatory variables viz., intelligence, socio-economic status and educational aspiration are highly significant at 0.001 level. As they also show positive impact, it can be derived that these three variables have highly significant influence on academic achievement of the students of boys schools.

On the other hand, the variable, peer influence demonstrates negative impact on academic achievement. t-value associated with it also shows it's significance at 0.05 level only. This explains that peer influence has moderately negative influence on academic achievement.

Y, has been computed with the help of multiple regression equation and Table 4.21 offers the regression equation of Academic Achievement for boys group.

Table 4.21

Set-up Regression Equation of Ac Ach on Explanatory Variables.

Explanatory variable	Dependent variable	Multiple Regression Equation	R^2	$\bar{R}^2$	R	F
$INT(X_1)+SES(X_2)+PI(X_3)+EA(X_4)$	Ac Ach	$Y=25.281+0.292X_1+0.291X_2-0.111X_3+0.647X_4$	0.5659	0.5596	0.7523	89.314*** with df(4,274)

*** $P < .001$

For the regression equation of boys group, the computed goodness of fit, $R^2 = 0.5659$.

In order to test the significance of R^2 and the null hypothesis

$$H_0 : b_1 = b_2 = b_3 = b_4 = 0$$

F-test has done. The F-value 89.314 with df (4,274) is highly significant at 0.001 level.

Therefore, the null hypothesis is rejected and it is inferred that all the four variables are related to Y in this data. As R^2 is also highly significant, it can be said that $\hat{Y}$ is not deviating much from Y. That implies, given the values X_1, X_2 X_3 and X_4, a reliable measure of academic achievement can be estimated with the help of the regression equation obtained.

For estimating the relative importance of different X variables, beta weights have been computed and ranked according to the magnitude of the coefficients.

Variable	Beta weight	Rank
INT (X_1)	0.489	I
SES (X_2)	0.238	II
EA (X_4)	0.161	III
PI (X_3)	-0.102	IV

For estimating the percentage accountability of variables for total variance $R^2_{5(1234)}$ has been computed from beta weights and zero order correlations.

$$R^2_{5(1234)} = 0.48912 \times 0.69312 + 0.23773 \times 0.56109 + (-0.10189)(-0.16235) + 0.16136 \times 0.47708$$
$$= 0.3390 + 0.1333 + 0.0165 + 0.0769$$
$$= 0.5661$$

$$R_{5\,(1234)} = 0.7522$$

The $R^2_{5(1234)}$ value of 0.5661 shows that the four explanatory variables account for 56.61% of the variance of the criterion. It also indicates that 33.9% accounted for intelligence, 13.33% for socio-economic status, 1.65% for peer influence and 7.69% for educational aspiration, to the variance of academic achievement for the students of boys school.

The remaining 43.39% of the variance of the criterion must be attributed to factors not measured in the study.

The estimated R value of 0.75 is highly significant at 0.001 level of significance. As N is fairly large ($N > 200$) and R is high, computation of SE_R is also avoided here. The negligible difference between R^2 and $\bar{R}^2$ (0.006) also suggests the overall significance of the regression equation.

The results demonstrate the fact, that the four explanatory variables do not predict the criterion to the same magnitude and they do not account for the variance of the criterion to the same extent.

4.4.3 (b) Construction of Regression Equation for Girls group ($N = 231$).

The number of observations for the fifth regression equation is 231.

The (5x5) correlation matrix was furnished below.

Table 4.22
Correlation Matrix (5x5).

Variable Code	X_1	X_2	X_3	X_4	X_5
INT (X_1)	-	0.435**	-0.025	0.342**	0.636**
SES (X_2)		-	-0.038	0.228*	0.432**
PI (X_3)			-	-0.228*	-0.041
EA (X_4)				-	0.412**
Ac Ach (Y)					-

* P $<$0.05; ** P $<$0.01.

Table 4.22 reveals that out of 10 correlations 5 are significant at 0.01 level and 2 are significant at 0.05 level of significance. It also shows the range of coefficients from 0.63 to 0.23.

Given below, are the Means and Standard Deviations for all the variables :

Variable	Mean	SD
X_1	47.749	15.622
X_2	28.195	8.521
X_3	17.169	8.923
X_4	5.701	2.464
Y	48.895	9.354

Table 4.23 demonstrates the regression estimates of Academic Achievement on explanatory variables for girls group.

Table 4.23

Regression Estimates of Academic Achievement on Explanatory Variables.

Estimator	Estimate	Std Error	T-statistic
b_1	0.293	0.034	8.750***
b_2	0.189	0.059	3.194**
b_3	0.027	0.052	0.525
b_4	0.799	0.202	3.962***
b_0	24.530	2.133	11.498***

Standard Error of the estimate = 6.859

** P < .01

*** P <.001

In the regression estimates of Table 4.23, calculated t-values show that partial regression coefficients of intelligence(b_1) and educational aspiration (b_4) are highly significant at 0.001 level of significance. Therefore it signifies that these two variables have higher impact on academic achievement of the students of girls school.

It also shows that socio economic status (b_2) has high impact on academic achievement, as the t-value is significant at 0.01 level.

That implies that SES has got moderately high influence on dependent variable. The last variable (b_3) is not significant at any level of significance although it is bearing negligible positive impact.

Y, has been computed in the same manner in the previous regression and the regression equation is shown in Table 4.24.

Table 4.24

Set-up Regression Equation of Ac Ach on Explanatory Variables.

Explanatory variable	Dependent variable	Multiple Regression Equation	R^2	$\bar{R}^2$	R	F
$INT(X_1)+SES(X_2)$ $PI(X_3)+EA(X_4)$	Ac Ach	$Y=24.5295+0.293X_1$ $+0.189X_2+0.027X_3$ $+0.799X_4$	0.4717	0.4624	0.6868	50.451*** with df(4,226)

*** P $<$ .001

The multiple regression equation for girls school group suggests that academic achievement of the students increases by 0.293 against each additional unit of intelligence, by 0.189 against socio-economic status, by 0.027 against peer influence and by 0.799 against educational aspiration.

For the regression equation of girls group, the computed goodness of fit, $R^2 = 0.4717$.

In order to test the significance of R^2 and the null hypothesis.

$$H_0 : B_1 = b_2 = b_3 = b_4 = 0,$$

F-test is done. The F-value 50.451 with df (4,226) is highly significant at 0.001 level.

Therefore, the null hypothesis is rejected and it is inferred that all the four variables are related to in this data. As R^2 is also highly significant, it can be said that $\hat{Y}$ is not deviating much from Y. That implies, given the values X_1 X_2 X_3 and X_4, a reliable measure of academic achievement can be estimated with the help of the regression equation obtained.

For estimating the relative importance of different X variables beta weights have been computed and ranked according to the magnitude of the coefficients.

Variable	Beta weight	Rank
INT (X_1)	0.490	I
EA (X_4)	0.210	II
SES (X_2)	0.172	III
PI (X_3)	0.026	IV

Foe estimating the percentage accountability of variables for total variance $R^2_{5(1234)}$ has been computed from beta weights and zero order correlations.

$$\begin{aligned} R^2_{5(1234)} &= 0.48985 \times 0.63623 + 0.17228 \times 0.43235 \\ &\quad + 0.02613\ (-0.04059) \\ &\quad + 0.21053 \times 0.41157 \\ &= 0.3116 + 0.0745 - 0.0011 + 0.0866 \\ &= 0.4738 \end{aligned}$$

$$R_{5(1234)} = 0.6868$$

The $R^2_{5(1234)}$ value of 0.4738 shows that the four explanatory variables account for 47.38% of the variance of the criterion. It also indicates that 31.16% accounted for

intelligence, 7.45% for socio economic status, 8.66% for educational aspiration. Result also shows that peer influence is accounted in a negative way in a very negligible contribution (0.11%) to the variance accounted.

The remaining 52.62% of the total variance of the criterion must be attributed to factors not measured in the study.

The estimated R value of 0.69 is significant at 0.001 level of significance. As the sub sample is fairly large ($N > 200$) and R is high, the computation of SE_R is also omitted here. The difference between R^2 and $\bar{R}^2$ (0.009) is vanishingly small, which signifies the overall significance of the regression equation.

It can be inferred from the result that the four explanatory variables do not predict the criterion to the same magnitude and they do not account for the variance of the criterion to the same extent.

4.4.3 (c) Construction of Regression Equation for Co-educational group (N = 287).

There are 287 observations in co-educational group on which the sixth regression equation has been computed.

Table 4.25 has put the correlation matrix (x x 5) for the data.

Table 4.25
Correlation Matrix (5 x 5)

Variable Code	X_1	X_2	X_3	X_4	Y
INT (X_1)	-	0.412**	-0.099	0.429*	0.792**
SES (X_2)		-	-0.080	0.359**	0.460**
PI (X_3)			-	0.048	-0.116
EA (X_4)				-	0.510**
Ac Ach (Y)					-

** P $<$ .01

Table 4.25 shows that out of 10 correlations 6 are significant at 0.01 level of significance and the range of coefficients are found to be from 0.79 to 0.35.

Then, Means and Standard Deviations have been computed for the variables.

Variable	Mean	SD
X_1	51.220	16.219
X_2	27.641	8.649
X_3	18.596	9.160
X_4	5.672	2.505
Y	49.703	10.410

In Table 4.26, the regression estimates of academic achievement on four explanatory variables are presented.

Table 4.26

Regression Estimates of Academic Achievement on Explanatory Variables.

Estimator	Estimate	Std Error	T-statistic
b_1	0.422	0.025	16.598***
b_2	0.142	0.046	3.089**
b_3	-0.057	0.039	- 1.464
b_4	0.780	0.161	4.849***
b_0	20.798	1.630	12.762***

Standard Error of the Estimate = 5.964

** P $<$.01

*** P $<$.001

In estimating the partial regression coefficients on explanatory variables for the coeducational group, the calculated t-values in Table 4.26 indicates that coefficients of intelligence and educational aspirations are significant at 0.001 level of significance. It also shows that coefficient of socio-economic status is significant at 0.01 level while coefficient of peer influence is not significant at any level of significance.

The results demonstrate that in predicting academic achievement, intelligence and educational aspiration have got higher positive impact for the ~~a~~ coeducational group. Second, socio-economic status also shows high positive

impact while peer influence has been shown negligible negative impact on academic achievement.

Like the other equations, then Y has been computed by employing the following multiple regression equation.

$$Y = a + \sum_{i=1}^{m} b_i \, x \, i$$

Table 4.27 demonstrates the regression equation of Academic Achievement for coeducational group.

Table 4.27

Set-up Regression Equation of Ac Ach on Explanatory Variables.

Explanatory Variable	Dependent variable	Multiple Regression Equation	R^2	$\bar{R}^2$	R	F
INT(X_1)+SES(X_2) +PI(X_3)+EA(X_4)	Ac Ach	$Y=20.798+0.422X_1 +0.142X_2-0.057X_3 +0.780X_4$	0.6763	0.6717	0.8224	147.319*** with df(4,282)

*** P / .001

The multiple regression equation for coeducational school group suggests that academic achievement of the students increases by 0.422 against each additional unit of intelligence, by 0.142 against socio-economic status, by 0.780 against educational aspiration. The equation also suggests that academic achievement decreases by 0.057 against each additional unit of peer influence.

The computed goodness of fit, R^2 is 0.6763 for the regression equation of coeducational group.

In order to test the significance of R^2 and the null hypothesis -$H_0 : b_1 = b_2 = b_3 = b_4 = 0$, F-test is done. The F-value, 147.319 with df (4,282) is highly significant at 0.001 level.

Therefore, the null hypothesis is rejected and it is inferred that all the four variables are related to in this data. As R^2 is also highly significant, it can be said that $\hat{Y}$ is not deviating much from Y. That indicates, given the values X_1 X_2 X_3 and X_4, a reliable measure of academic achievement can be estimated with the help of the regression equation obtained.

For estimating the relative importance of different X variables, beta weights have been computed and ranked according to the magnitude of the coefficients.

Variable	Beta weight	Rank
INT (X_1)	0.658	I
EA (X_4)	0.188	II
SES (X_2)	0.118	III
PI (X_3)	-0.050	IV

$R^2_{5(1234)}$ has been computed from beta weights and zero order correlations for estimating the percentage accountability of variables for total variance.

$$R^2_{5(1234)} = 0.65752 \times 0.79164 + 0.11803 \times 0.46043 + (0.5021)(-0.011557) + 0.18767 \times 0.50961$$

$$= 0.52505 + 0.0543 + 0.0058 + 0.0956$$

$$R_{5(1234)} = 0.8224$$

The $R^2_{5(1234)}$ value of 0.6762 indicates that the four explanatory variables accounted for over 67.62% of the variation in academic achievement. It can be also derived from $R^2_{5(1234)}$ that 52.05% accounted for intelligence, 5.43% for socio-economic status, 9.56% for educational aspiration and a vanishingly small 0.58% for peer influence.

The remaining 32.38% of the total variance of the criterion must be attributed to factors not measured in the study.

The estimated R value of 0.82 is highly significant at 0.001 level of significance. As the sub sample is fairly large ($N > 200$) and R is satisfactorily high, the computation of SE_R is also excluded here. Although $\bar{R}^2$ dips slightly from R^2 (0.005), it is still very high. It confirms the overall significance of the regression equation.

It can be inferred from the result that the four explanatory variables do not predict the criterion to the same magnitude and they also do not account for the variance of the criterion to the same extent.

Like the other three regression analysis done already, this regression equation also provides the fact that all variables do not predict in the same manner in case of the boys school group. The highest prediction can be made from intelligence (33.9%) while lowest from peer influence (1.65%).

In general, only 56.61% of the variation in academic achievement can be made from the explanatory variables taken in the study for the students of boys schools.

From the regression analysis for girls school group, it is also evident that all variables do not predict in the same manner. The highest prediction can be made from intelligence (31.16%) and lowest from peer influence (-0.11%).

As a whole 47.38% of the variation in academic achievement can be made from the four explanatory variables taken in the study for girls school group.

From the regression analysis for coeducational group, it is evidenced that all variables do not predict to the same extent. The highest prediction can be made from intelligence (52%) and lowest and negligible from peer influence (0.58%).

Overall, 67.62% of the variation in academic achievement can be made from the four explanatory variables taken in the study for coeducational school group.

In general, from all the six regression analyses it is observed that highest variation has been accounted for coeducational group (67.62%) while lowest for urban group (39.21%).