CHAPTER -IV

ANALYSIS AND INTERPRETATION

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This chapter offers a systematic investigation and explanation of the data collected for this research work. Analysis involves the calculation of suitable measurements and the identification of patterns of correlation among different data sets. Interpretation helps in deriving meaningful insights from statistical results. The statistical techniques adopted in this study for data analysis are percentages, means, standard deviations, independent samples t- test, ANOVA, Pearson's correlation and regression. The findings of the study are presented objective wise, along with the results of their corresponding hypotheses testing.

4.1 Findings related to Objective 1

Objective 1: To find out the school climate, scientific reasoning, procrastination tendency and parent autonomy support and Academic achievement levels of senior secondary school students in Physics.

4.1.1 Findings related to Objective 1 of School Climate Levels

Table 4.1. Descriptive Statistics of School climate scores

N	Mean	Std. Deviation	Kurtosis	Skewness
560	215.69	26.223	-.214	.192

Table 4.2 Percentage count for School Climate levels of the total sample

Sr. No.	Range of Raw Score	School Climate levels	N	Percentage (%)
1	270 & above	Extremely High	08	1.42
2	249 to 269	High	55	9.82
3	229 to 248	Above Average	111	19.82
4	203 to 228	Average	220	39.28
5	184 to 202	Below Average	109	19.46
6	162 to 183	Low	44	7.85
7	161 & below	Extremely Low	13	2.35
		Total	560	100 %

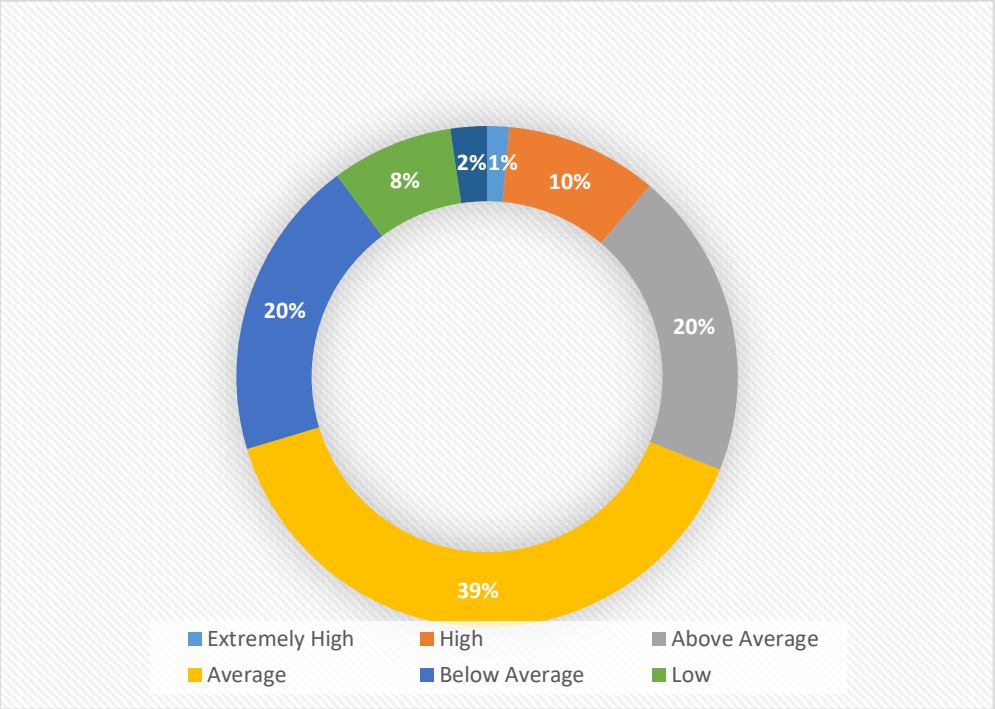

Figure 4.1 Pie chart showing the percentages for School Climate levels

The above pie chart shows that majority of the students find their school climate Average, followed by Extremely high, Above average, High, Low, Below average and Extremely low.

4.1.2 Findings related to Objective 1 of Scientific Reasoning Levels

Table 4.3. Descriptive Statistics of Scientific Reasoning scores

N	Mean	Std. Deviation	Kurtosis	Skewness
560	7.05	2.19	0.46	1.01

Table 4.4. Percentage count for Scientific Reasoning levels of the total sample

Sr. No.	Range of Raw Score	School Climate levels	N	Percentage (%)
1	12 & above	Extremely High	24	4.28
2	10 & 11	High	58	10.36
3	Only 9	Above Average	55	9.82
4	6 to 8	Average	229	40.89
5	Only 5	Below Average	194	33.75
6	Only 4	Low	05	0.90
7	3 and below	Extremely Low	NIL	NIL
		Total	560	100%

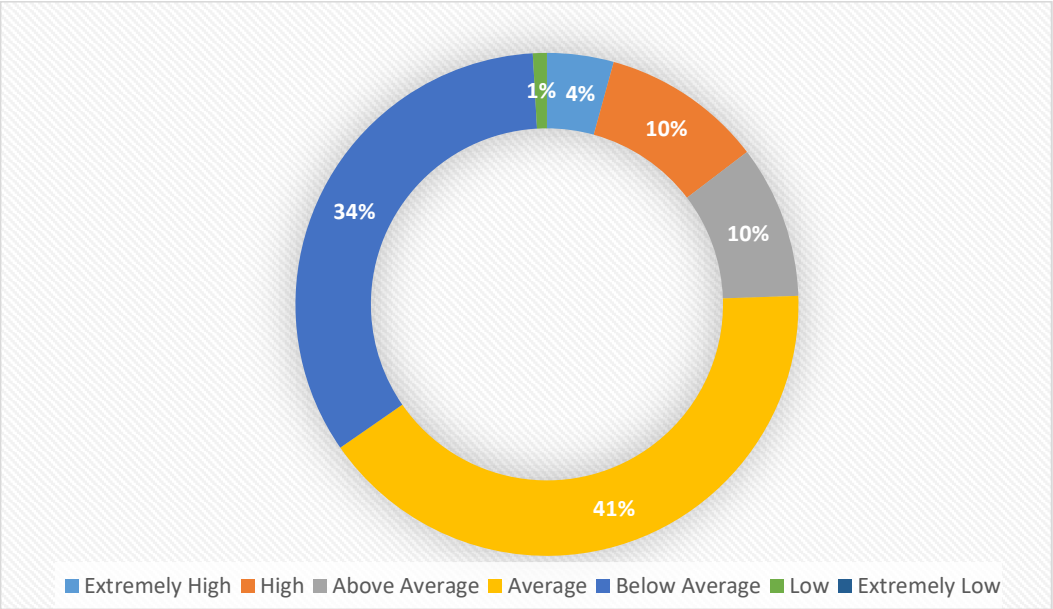

Figure 4.2. Pie chart showing the percentages for Scientific Reasoning levels

The above pie chart shows that majority of the students have Average Scientific reasoning, followed by Below average, Above average, High, Extremely high and Low. There were no students in the Extremely low category.

4.1.3 Findings related to Objective 1 of Procrastination Tendency Levels

Table 4.5 Descriptive Statistics of Procrastination tendency scores

N	Mean	Std. Deviation	Kurtosis	Skewness
560	63.62	7.18	-0.11	0.08

Table 4.6 Percentage count for Procrastination tendency levels of the total sample

Sr. No.	Range of Raw Score	School Climate levels	N	Percentage (%)
1	79 & above	Extremely High	09	1.61%
2	73 to 78	High	52	9.29%
3	68 to 72	Above Average	110	19.64%
4	61 to 67	Average	190	33.93%
5	55 to 60	Below Average	149	26.61%
6	50 to 54	Low	38	6.79%
7	49 & below	Extremely Low	12	2.14%
		Total	560	100%

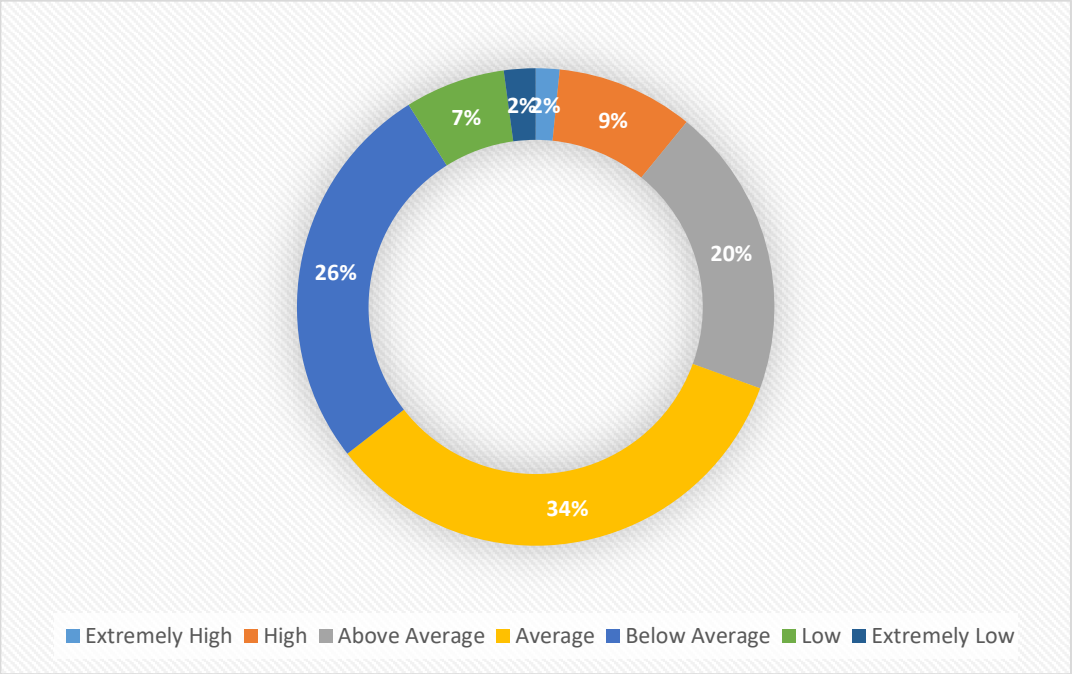

Figure 4.3. Pie chart showing the percentages for Procrastination tendency levels

The above pie chart shows that majority of the students have Average level of Procrastination tendency, followed by Extremely high, Above average, High, Low, Below average and Extremely low levels.

4.1.4 Findings related to Objective 1 of Parent Autonomy Support Levels

Table 4.7 Descriptive Statistics of Parent autonomy support scores

N	Mean	Std. Deviation	Kurtosis	Skewness
560	55.64	12.55	-0.20	-0.35

Table 4.8 Percentage count for Parent autonomy support levels of the total sample

Sr. No.	Range of Raw Score	School Climate levels	N	Percentage (%)
1	82 & above	Extremely High	04	0.71%
2	72 to 81	High	56	10.00%
3	63 to 71	Above Average	99	17.68%
4	50 to 62	Average	234	41.79%
5	40 to 49	Below Average	93	16.61%
6	31 to 39	Low	57	10.18%
7	30 & below	Extremely Low	17	3.04%
		Total	560	100%

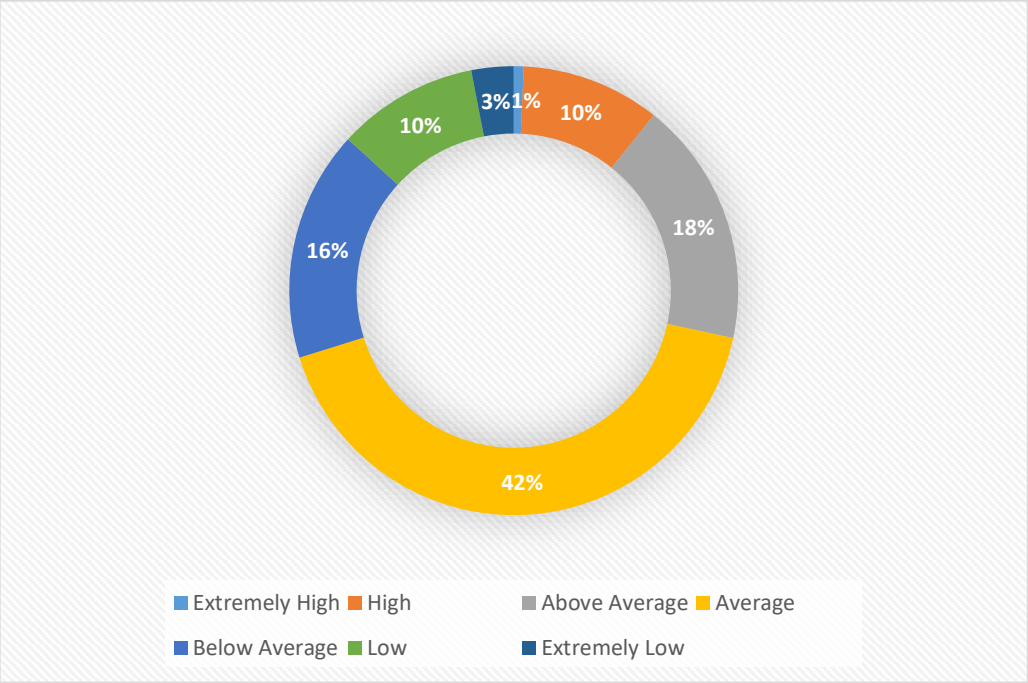

Figure 4.4 Pie chart showing the percentages for Parent autonomy support levels

The above pie chart shows that majority of the students receive Average Parent autonomy support, followed by Above average, Extremely high, Below average, High, Low, Extremely low and Extremely high levels.

4.1.5 Findings related to Objective 1 of Academic achievement

Table 4.9 Descriptive Statistics of Academic achievement scores

N	Mean	Std. Deviation	Kurtosis	Skewness
560	34.64	5.12	-0.09	0.09

Table 4.10 Percentage count for Academic achievement levels of the total sample

Sr. No.	Range of Raw Score	School Climate levels	N	Percentage (%)
1	45 & above	Extremely High	15	2.68%
2	42 to 44	High	52	9.29%
3	38 to 41	Above Average	93	16.61%
4	33 to 37	Average	181	32.32%
5	29 to 32	Below Average	164	29.29%
6	25 to 28	Low	55	9.82%
7	24 & below	Extremely Low	NIL	0%
		Total	560	100%

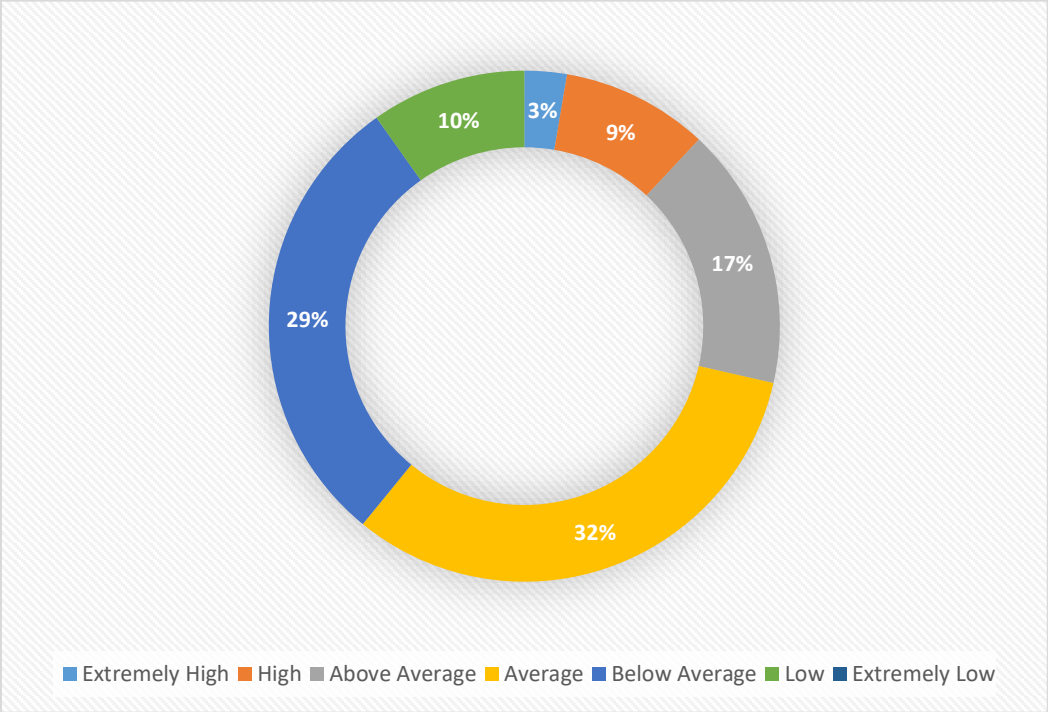

Figure 4.5 Pie chart showing the percentages for Academic achievement levels

The above pie chart shows that majority of the students have Average Academic achievement, followed by Below average, Above average, Low, High, and Extremely high levels. There are no students in the Extremely low category.

4.2 Findings related to Objective 2

Objective 2: To study and compare school climate, scientific reasoning, procrastination tendency and parent autonomy support of senior secondary school students in relation to their gender, locality and type of institution.

4.2.1 Findings related to Objective 2 comparison of Variable School Climate with respect to Gender

$H_0$1: There is no significant difference in the overall mean scores of school climate with respect to male and female.

Table 4.11: Group Statistic of School Climate with respect to Gender

Variable	Gender	N	Mean	Std. Deviation	Std. Error Mean
SCHOOL CLIMATE	Male	209	211.46	29.651	2.051
	Female	351	218.20	23.638	1.262

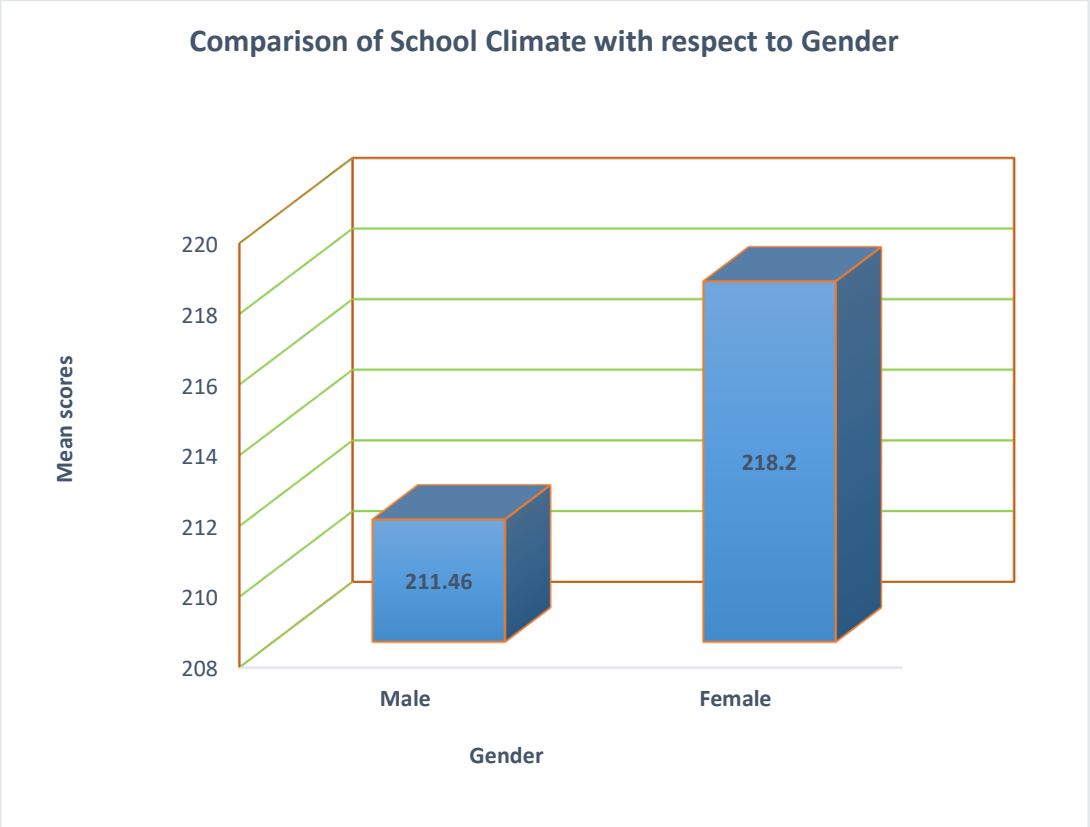

Figure 4. 6 showing comparison of School Climate with respect to Gender

Table 4.12: Independent sample t-test for School Climate with respect to Gender

Variable	df	p-value	Mean difference	Std. Error difference	t
SCHOOL CLIMATE	558	0.005	6.735	2.408	2.797

Tables 4.11 and 4.12 show that the mean school climate score of male students is 211.46 and the mean school climate score of female students is 218.20 with standard deviation of 23.638 and 29.651 respectively. The mean difference in the school climate scores of male and female student is 6.735 and the p-value of 0.005 is lesser than 0.05 at 5% level of significance. Thus, $H_0$1 was not accepted. Hence it may be interpreted that male students have significantly higher scores than female students.

4.2.2 Findings related to Objective 2 comparison of Variable School Climate dimension wise with respect to Gender.

$H_0$2: There is no significant difference in the mean scores of rules and norms dimension 1 of school climate with respect to male and female.

$H_0$3: There is no significant difference in the mean scores of sense of physical and socio emotional Security dimension 2 of school climate with respect to male and female.

$H_0$4: There is no significant difference in the mean scores of support for learning dimension 3 of school climate with respect to male and female.

$H_0$5: There is no significant difference in the mean scores of interpersonal relationship dimension 4 of school climate with respect to male and female.

$H_0$6: There is no significant difference in the mean scores of School connectedness dimension 5 of school climate with respect to male and female.

Table: 4.13 Group Statistic of 5 dimensions of School Climate with respect to Gender

Variable	Gender	Dimension	N	Mean	Std. Deviation	Std. Error Mean
SCHOOL CLIMATE	Male	Rules and norms	209	35.08	5.323	0.368
		Sense of physical and socio emotional Security	209	34.67	5.813	0.402
		Support for learning	209	41.23	7.710	0.533
		Interpersonal relationship	209	64.38	11.712	0.810
		School connectedness	209	36.10	6.897	0.477
	Female	Rules and norms	351	34.84	5.984	0.319
		Sense of physical and socio emotional Security	351	36.07	5.575	0.298
		Support for learning	351	42.91	6.409	0.342
		Interpersonal relationship	351	66.93	8.518	0.455
		School connectedness	351	37.45	5.842	0.312

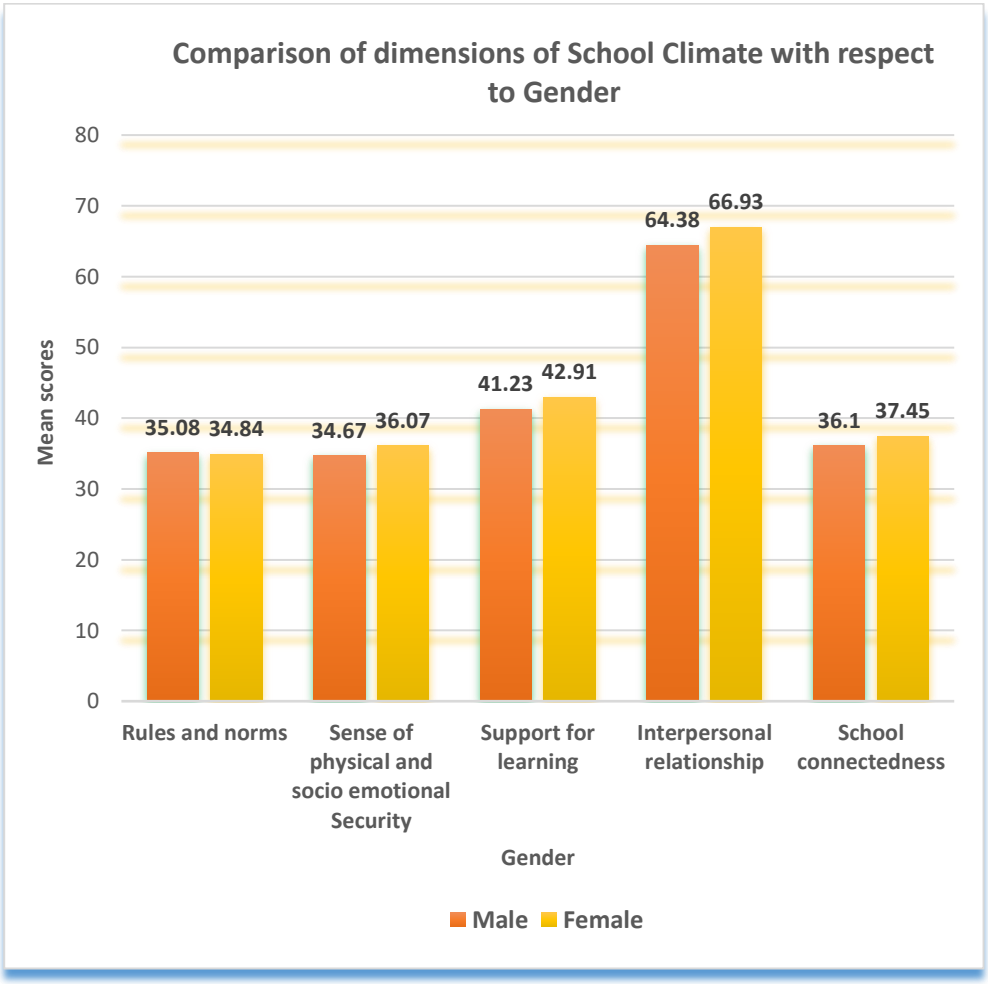

Figure 4. 7 showing Comparison of dimensions of School Climate with respect to Gender

Table 4.14: Independent sample t-test for 5 dimensions of school climate with respect to gender

Variable	Dimensions	df	p-Value	Mean Difference	Std. Error Difference	T
SCHOOL CLIMATE	Rules and norms	558	.632	-.241	0.502	0.480
	Sense of physical and socio emotional Security	558	.005	.495	0.426	2.826
	Support for learning	376.496	.008	1.679	0.634	2.650
	Interpersonal relationship	339.655	.006	2.546	0.929	2.741
	School connectedness	382.244	.018	1.353	0.570	2.373

Table 4.13 shows the mean scores of all the dimensions of school climate with respect to gender. The mean score of male students for dimension 1 i.e. rules and norms is 35.08, for dimension 2 i.e. Sense of physical and socio emotional Security is 34.67, for dimension 3 i.e. support for learning is 41.23, for dimension 4 i.e. interpersonal relationship is 64.38 and for dimension 5 i.e. School connectedness is 36.10. On the other hand, the mean score of female students for dimension 1 i.e. rules and norms is 34.84, for dimension 2 i.e. Sense of physical and socio emotional Security is 36.07, for dimension 3 i.e. support for learning is 42.91, for dimension 4 i.e. interpersonal relationship is 66.93 and for dimension 5 i.e. School connectedness is 37.45.

Table 4.14 present the independent samples t-test results for all dimensions of School climate. The p-values for dimensions 2, 3, 4 and 5 are lesser than 0.05 at the 5% level of significance. Thus, $H_0$3, $H_0$4, $H_0$5, and $H_0$6 were not accepted. Hence it may be interpreted that there is significant difference between the male and female student with regard to the given four dimensions of school climate scores, with females scoring significantly higher than males. However, the t-test result for dimension 1, i.e. Rules and norms shows a different result. Here, the p-value of 0.632 for dimension 1 is higher than 0.05 at the 5% level of significance. Thus $H_0$2 is accepted. Hence it may be interpreted that there is no significant difference in rules and norms scores between male and female students.

4.2.3 Findings related to Objective 2 comparison of Variable Scientific Reasoning with respect to Gender.

$H_0$7: There is no significant difference in the mean scores of scientific reasoning with respect to male and female.

Table 4.15: Group Statistic of Scientific reasoning with respect to gender

Variable	Gender	N	Mean	Std. Deviation	Std. Error Mean
SCIENTIFIC REASONING	Male	209	7.60	2.454	0.170
	Female	351	6.72	1.952	0.104

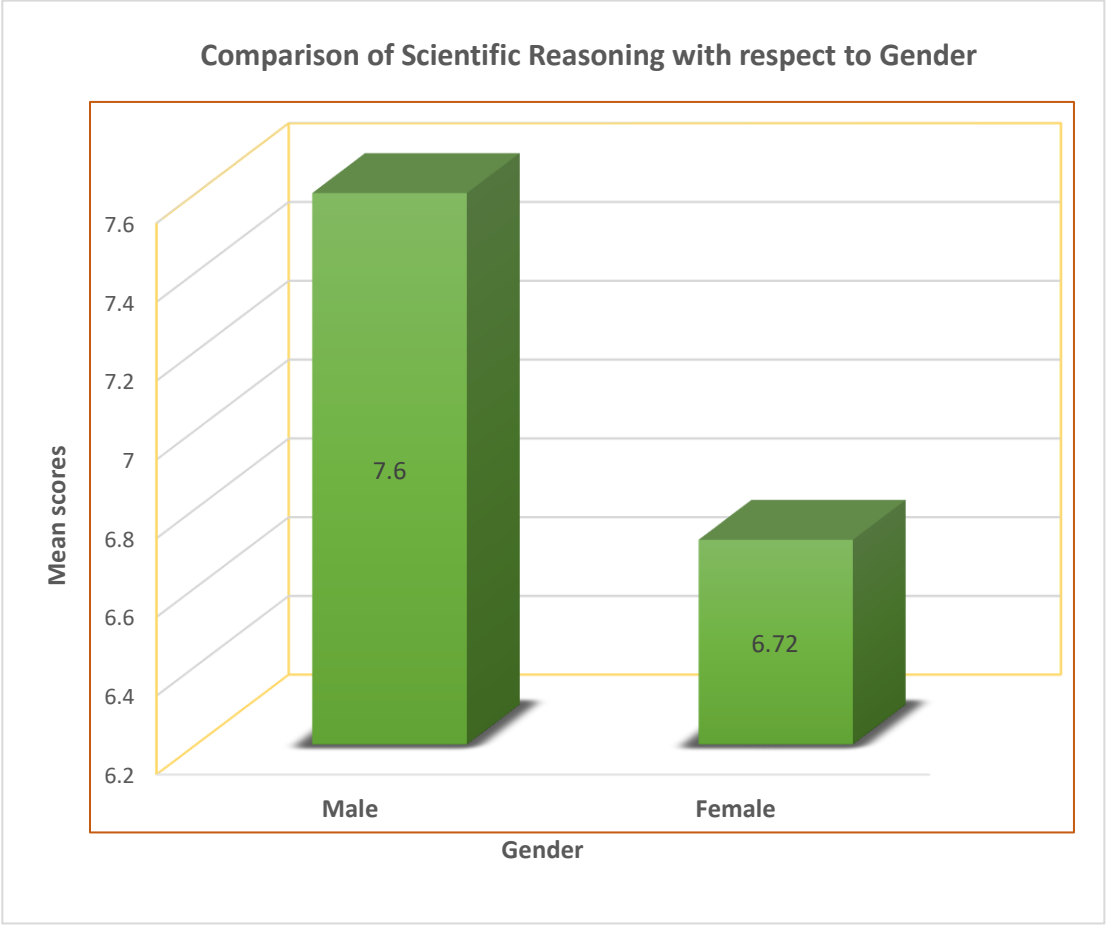

Figure 4. 8 showing comparison of Scientific reasoning with respect to Gender

Table 4.16: Independent sample t-test for Scientific reasoning with respect to gender

Variable	df	p-value	Mean Difference	Std. Error Difference	t
SCIENTIFIC REASONING	558	0.000	-0.880	0.199	4.420

Table 4.15 and 4.16 shows the mean scientific reasoning score of male students is 7.60 and the mean scientific reasoning score of female students is 6.72 with standard deviation of 2.454 and 1.952 respectively. In table 4.21 it can be seen that the p-value of 0.000 is lesser than 0.05 at the 5% level of significance. Thus, $H_0 7$ was not accepted. Hence it may be interpreted that the male and female students differed significantly from each other with regard to their scientific reasoning score and the male students have significantly show higher scientific reasoning than the female students.

4.2.4 Findings related to Objective 2 comparison of Variable Procrastination Tendency with respect to Gender.

H08: There is no significant difference in the overall mean scores of procrastination tendency with respect to male and female.

Table 4.17: Group Statistic of Procrastination Tendency with respect to Gender

Variable	Gender	N	Mean	Std. Deviation	Std. Error Mean
PROCRASTINATION TENDENCY	Male	209	62.56	7.723	0.534
	Female	351	64.25	6.780	0.362

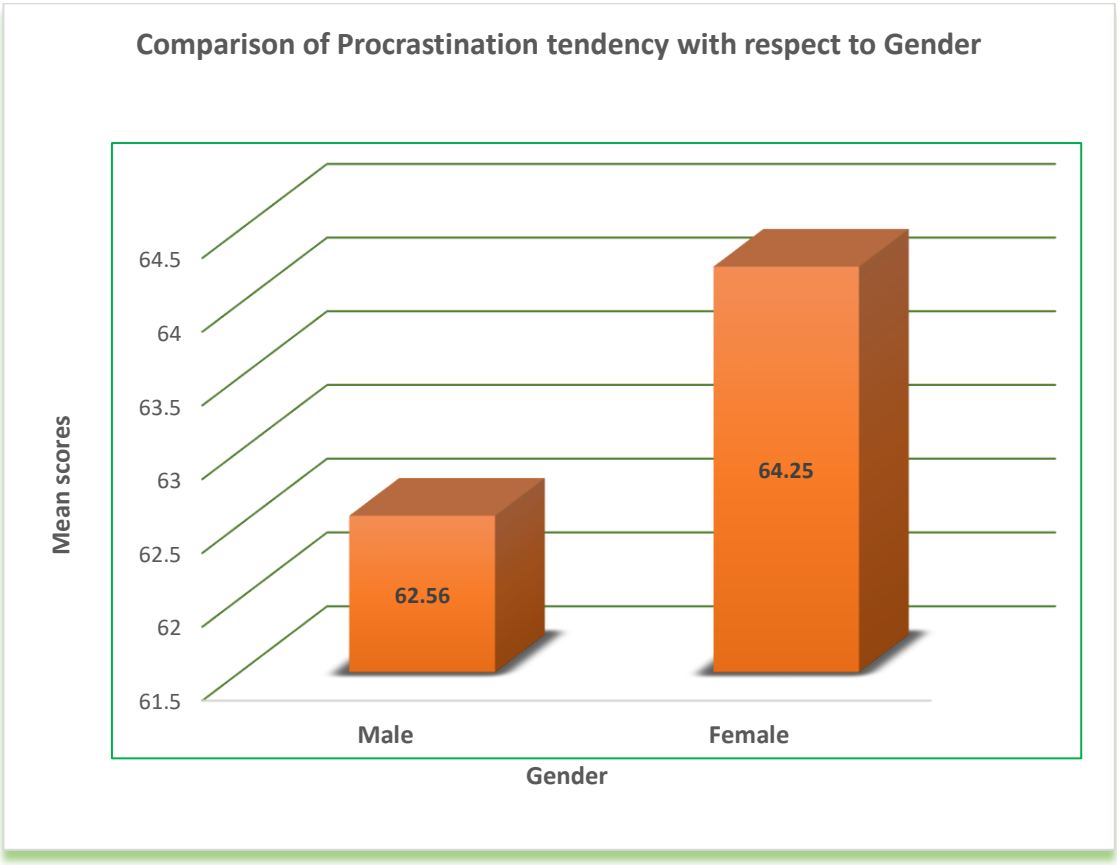

Figure 4. 9 showing comparison of Procrastination tendency with respect to Gender

Table 4.18: Independent sample t-test for Procrastination Tendency with respect to Gender

Variable	df	p-value	Mean Difference	Std. Error Difference	t
PROCRASTINATION TENDENCY	558	0.009	1.685	0.645	2.612

Table 4.17 and 4.18 shows the mean procrastination tendency scores of male students is 62.56 and that of females is 64.25 with standard deviation of 7.723 and 6.780 respectively. In Table 4.23 it can be seen that the p-value of 0.009 is lesser than 0.05 at the 5% level of significance. Thus, $H_0$8 was not accepted. Hence it may be interpreted that the male and female students differed significantly from each other with regard to their procrastination tendency scores, with females scoring significantly higher than males.

4.2.5 Findings related to Objective 2 comparison of Variable Procrastination Tendency dimension wise with respect to Gender.

$H_0$9: There is no significant difference in the mean scores of good planning dimension 1 of procrastination tendency with respect to male and female.

$H_0$10: There is no significant difference in the mean scores of delaying dimension 2 of procrastination tendency with respect to male and female.

$H_0$11: There is no significant difference in the mean scores of doing things in last minute dimension 3 of procrastination tendency with respect to male and female.

$H_0$12: There is no significant difference in the mean scores of good time management dimension 4 of procrastination tendency with respect to male and female.

$H_0$13: There is no significant difference in the mean scores of poor time management dimension 5 of procrastination tendency with respect to male and female.

Table 4.19: Group Statistic of dimensions of Procrastination Tendency scores with respect to Gender.

Variable	Gender	Dimension	N	Mean	Std. Deviation	Std. Error Mean
PROCRASTINATION TENDENCY	Male	Good planning	209	17.09	3.792	0.262
		Delaying	209	14.25	3.748	0.259
		Doing things in last minute	209	5.59	2.129	0.147
		Good time management	209	13.41	3.260	0.225
		Poor time management	209	12.22	2.776	0.192
	Female	Good planning	351	17.27	3.357	0.179
		Delaying	351	14.53	3.451	0.184
		Doing things in last minute	351	5.30	2.045	0.109
		Good time management	351	14.13	3.082	0.165
		Poor time management	351	13.01	2.721	0.145

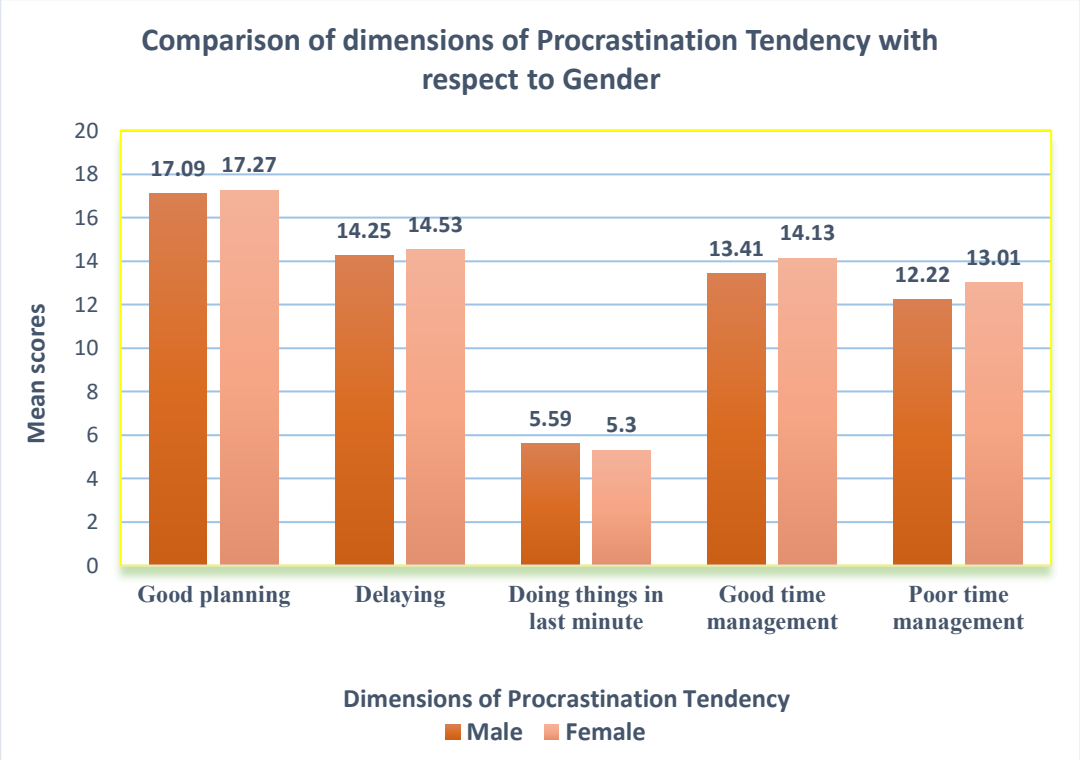

Figure 4. 10 showing comparison of dimensions of Procrastination Tendency with respect to Gender

Table 4.20: Independent sample t-test for dimensions of Procrastination Tendency with respect to Gender

Variable	Dimensions	df	p-value	Mean Difference	Std. Error Difference	t
PROCRASTINATION TENDENCY	Good planning	558	.572	.180	0.318	0.566
	Delaying	558	.375	.276	0.311	0.887
	Doing things in last minute	558	.102	-.297	0.181	1.637
	Good time management	558	.008	.727	0.275	2.643
	Poor time management	558	.001	.799	0.240	3.335

Table 4.19 shows the mean scores of all the dimensions of Procrastination tendency with respect to gender. The mean score of male students for dimension 1 i.e. Good planning is 17.09, for dimension 2 i.e. Delaying is 14.25, for dimension 3 i.e. Doing things in last minute is 5.59, for dimension 4 i.e. Good time management is 13.41 and for dimension 5 i.e. Poor time management is 12.22. On the other hand, the mean score of female students for dimension 1 i.e. Good planning is 17.27, for dimension 2 i.e. Delaying is 14.53, for dimension 3 i.e. Doing things in last minute is 5.30, for dimension 4 i.e. Good time management is 14.13 and for dimension 5 i.e. Poor time management is 13.01.

Table 4.20 present the independent samples t-test results for all dimensions of Procrastination tendency. The p-values for dimensions 1, 2 and 3 is higher than 0.05 at the 5% level of significance. Thus, $H_0$9, $H_0$10, and $H_0$11 is accepted. Hence it may be interpreted that there is no significant difference between the male and female student with regard to the given three dimensions of procrastination tendency scores. However, the t-test results for dimensions 4 and 5 shows that the p-values are lower than 0.05 at the 5% level of significance. Thus $H_0$12 and $H_0$13 was not accepted. Hence it may be interpreted that there is significant difference between male and

female students with regard to dimensions 4 and 5, with the females scoring higher than males in both.

4.2.6 Findings related to Objective 2 comparison of Variable Procrastination Tendency dimension wise with respect to Gender.

$H_0$14: There is no significant difference in the mean scores of autonomy support dimension 1 of parent autonomy support with respect to male and female.

$H_0$15: There is no significant difference in the mean scores of psychological control dimension 2 of parent autonomy support with respect to male and female.

Table 4.21: Group Statistic of dimensions Parent Autonomy Support with respect to Gender

Variable	Gender	Dimensions	N	Mean	Std. Deviation	Std. Error Mean
PARENT AUTONOMY SUPPORT	Male	Autonomy Support	209	55.38	13.134	0.909
		Psychological Control	209	40.56	10.068	0.696
	Female	Autonomy Support	351	56.15	12.688	0.677
		Psychological Control	351	38.24	12.605	0.673

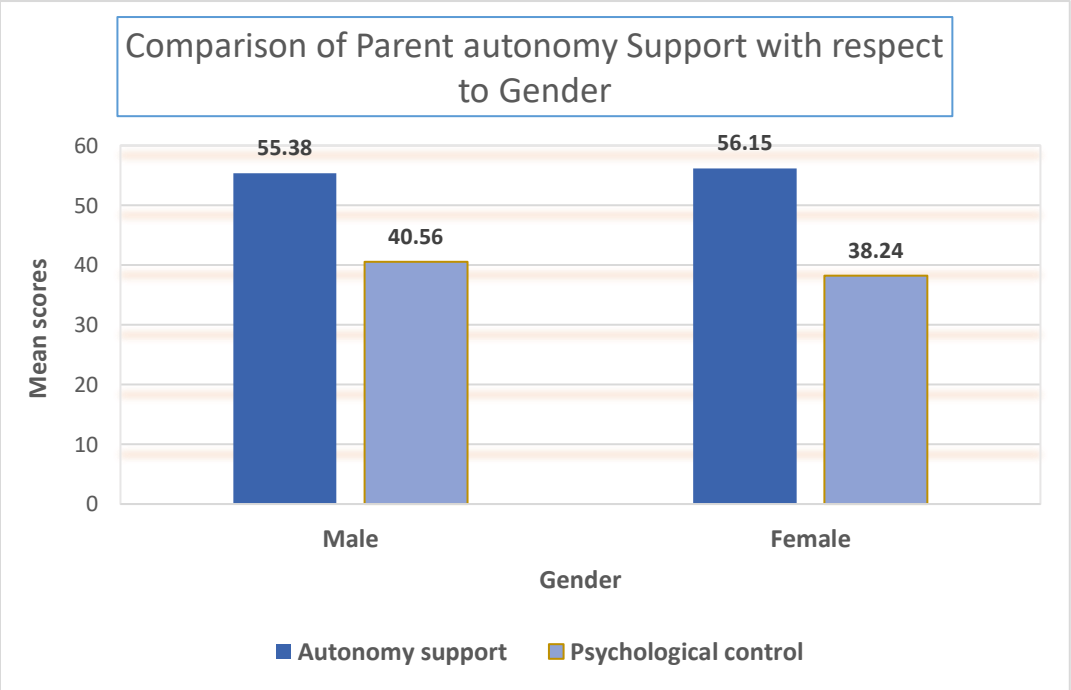

Figure 4. 11 showing Comparison of Parent autonomy support with respect to Gender

Table 4.22: Independent sample t-test for dimensions Parent Autonomy Support with respect to Gender

Variable	Dimensions	df	p-value	Mean Difference	Std. Error Difference	t
PARENT AUTONOMY SUPPORT	Autonomy Support	558	0.492	0.773	1.123	0.688
	Psychological Control	558	0.017	-2.323	0.968	2.399

Table 4.21 shows the mean scores of male students for autonomy support and psychological control. The mean score for autonomy support is 55.38 and for psychological control is 40.56 with standard deviations of 13.13 and 10.06 respectively. On the other hand, mean scores of female students for autonomy support is 56.15 and for psychological control is 38.24 with standard deviations of 56.15 and 38.24 respectively. In Table 4.22 it can be seen that the p-value of 0.492 for Autonomy support is higher than 0.05 at the 5% level of significance, while the p-value of 0.017 for psychological control is lesser than 0.05 at the 5% level of significance. Thus, $H_0$14 was accepted and $H_0$15 was not accepted. Hence it may be interpreted that there is significant difference in the perceptions of Autonomy control of parents, with females scoring higher, while there is no significant difference in the perceptions of psychological control of parents with regard to gender.

4.2.7 Findings related to Objective 2 comparison of Variable Academic Achievement with respect to Gender.

$H_0$16: There is no significant difference in the mean scores of Academic Achievement with respect to Gender.

Table 4.23: Group Statistic of Academic achievement scores with respect to gender

Variable	Gender	N	Mean	Std. Deviation	Std. Error Mean
ACADEMIC ACHIEVEMENT	Male	209	34.41	5.31	0.36
	Female	351	34.83	4.88	0.26

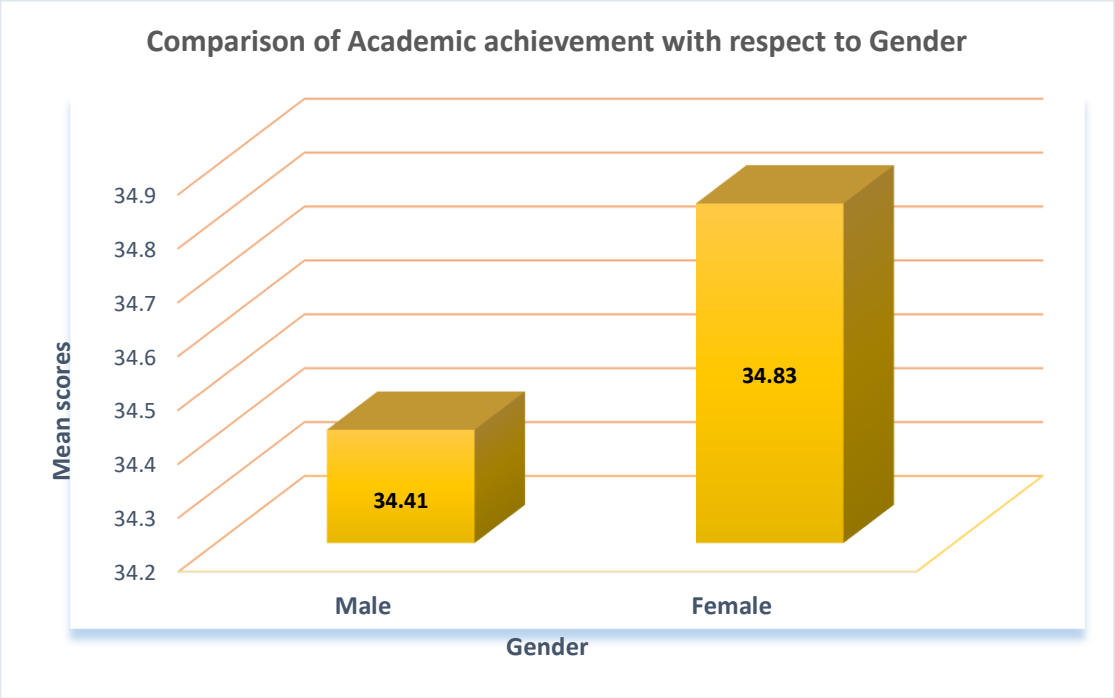

Figure 4. 12 showing Comparison of Academic Achievement with respect to Gender

Table 4.24: Independent sample t-test for Academic achievement scores with respect to gender

Variable	df	p-value	Mean Difference	Std. Error Difference	t
ACADEMIC ACHIEVEMENT	558	0.34	0.42	0.44	0.91

Table 4.23 and 4.24 shows the mean Academic achievement scores of male students is 34.41 and that of females is 34.83 with standard deviation of 5.31 and 4.88 respectively. In Table 4.29 it can be seen that the p-value of 0.34 is higher than 0.05 at the 5% level of significance. Thus, $H_0$16 was accepted. Hence it may be interpreted that the male and female students do not differ significantly from each other with regard to their academic achievement scores.

4.2.8 Findings related to Objective 2 Comparison of variable School Climate with respect to Locality

$H_0$17: There is no significant difference in the overall mean scores of school climate with respect to urban and rural.

Table 4.25: Group Statistic of School Climate with respect to Locality

Variable	Gender	N	Mean	Std. Deviation	Std. Error Mean
SCHOOL CLIMATE	Rural	316	217.24	27.801	1.564
	Urban	244	213.67	23.932	1.532

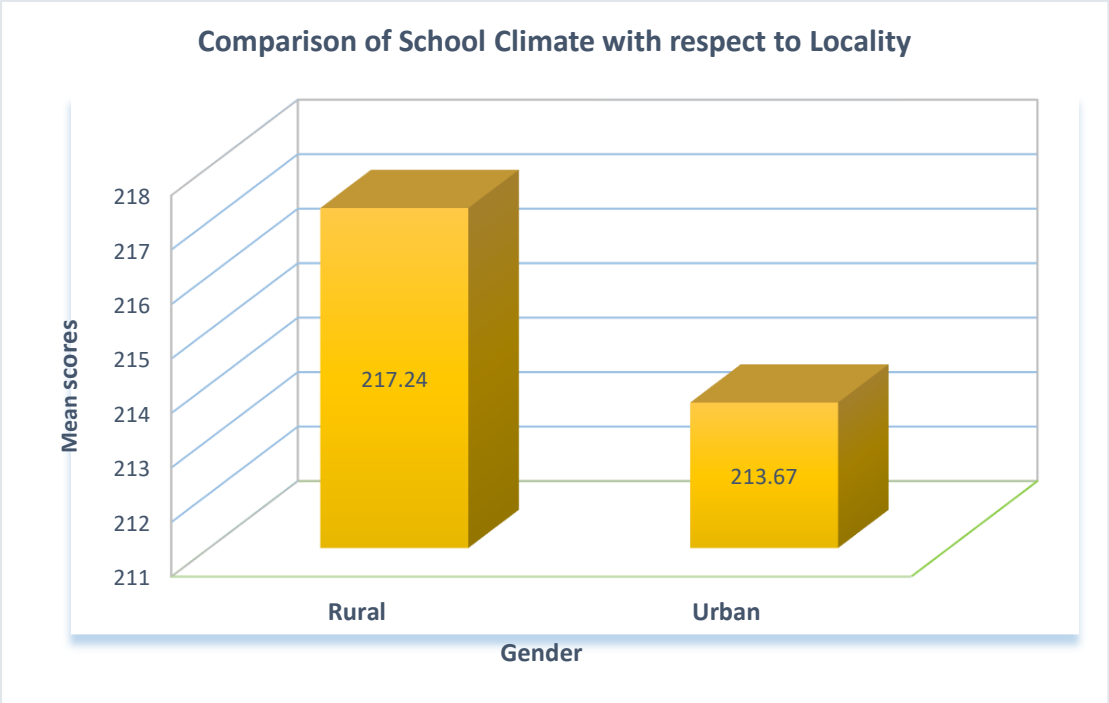

Figure 4. 13 showing comparison of School Climate with respect to Locality

Table 4.26: Independent sample t-test for School Climate with respect to Locality

Variable	df	p-value	Mean difference	Std. Error difference	t
SCHOOL CLIMATE	558	0.104	3.568	2.189	1.630

Table 4.25 and 4.26 shows that the mean school climate score of students from rural locality is 217.24 and the mean school climate score of students from urban locality is 213.67 with standard deviation of 27.801 and 23.932 respectively. Table 4.29 shows that the p-value of 0.104 is higher than 0.05 at the 5% level of significance. Thus, $H_0$17 was accepted. Hence it may be interpreted that the students from rural and urban

locality do not differ significantly from each other with regard to their school climate score.

4.2.9 Findings related to Objective 2 Comparison of variable School Climate dimension wise with respect to Locality

$H_0$18: There is no significant difference in the mean scores of rules and norms dimension 1 of school climate with respect to urban and rural.

$H_0$19: There is no significant difference in the mean scores of sense of physical and socio emotional Security dimension 2 of school climate with respect to urban and rural.

$H_0$20: There is no significant difference in the mean scores of support for learning dimension 3 of school climate with respect to urban and rural.

$H_0$21: There is no significant difference in the mean scores of interpersonal relationship dimension 4 of school climate with respect to urban and rural.

$H_0$22: There is no significant difference in the mean scores of School connectedness dimension 5 of school climate with respect to urban and rural.

Table 4.27: Group Statistic of dimensions of School Climate with respect to Locality

Variable	Locality	Dimension	N	Mean	Std. Deviation	Std. Error Mean
SCHOOL CLIMATE	Rural	Rules and norms	316	34.99	5.987	.337
		Sense of physical and socio emotional Security	316	35.86	5.958	.335
		support for learning	316	42.83	7.125	.401
		interpersonal relationship	316	66.02	10.068	.566
		School connectedness	316	37.54	6.670	.375
	Urban	Rules and norms	244	34.85	5.420	.347

		Sense of physical and socio emotional Security	244	35.14	5.331	.341
		support for learning	244	41.57	6.699	.429
		interpersonal relationship	244	65.93	9.696	.621
		School connectedness	244	36.18	5.670	.363

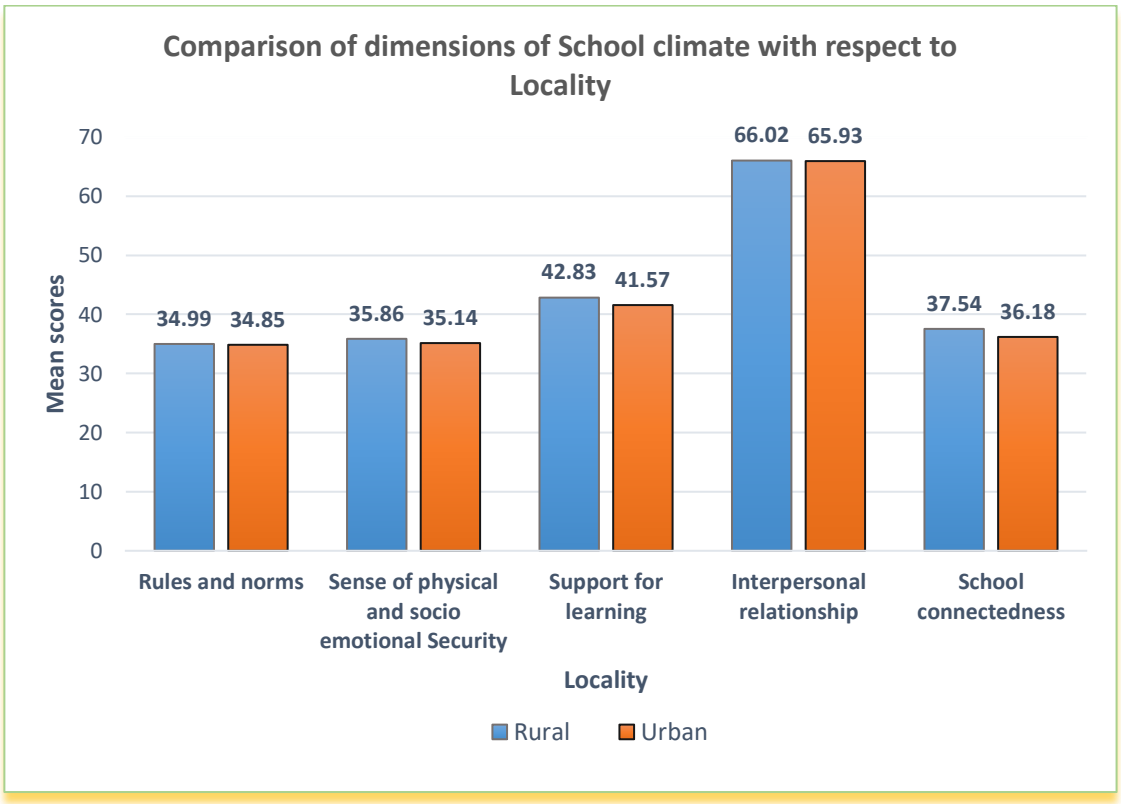

Figure 4. 14 showing comparison of dimensions of School climate with respect to Locality

Table: 4.28: Independent sample t-test for dimension of School Climate with respect to Locality

Variable	Dimensions	df	p-value	Mean Difference	Std. Error Difference	t
SCHOOL CLIMATE	Rules and norms	558	.767	.145	.490	0.297
	Sense of physical and socio emotional Security	558	.134	.729	.485	1.502

	Support for learning	558	.034	1.255	.592	2.122
	Interpersonal relationship	558	.919	.085	.844	0.101
	School connectedness	552.820	.010	1.354	.522	2.593

Table 4.27 shows the mean scores of all the dimensions of school climate with respect to gender. The mean score of rural students for dimension 1 i.e. rules and norms is 34.99, for dimension 2 i.e. Sense of physical and socio emotional Security is 35.86, for dimension 3 i.e. support for learning is 42.83, for dimension 4 i.e. interpersonal relationship is 66.02 and for dimension 5 i.e. School connectedness is 37.54. On the other hand, the mean score of female students for dimension 1 i.e. rules and norms is 34.85, for dimension 2 i.e. Sense of physical and socio emotional Security is 35.14, for dimension 3 i.e. support for learning is 41.57, for dimension 4 i.e. interpersonal relationship is 65.93 and for dimension 5 i.e. School connectedness is 36.18.

Table 4.28 present the independent samples t-test results for all dimensions of School climate. The p-values for dimensions 1, 2 and 4 are higher than 0.05 at the 5% level of significance. Thus, $H_0$18, $H_0$19, and $H_0$21 are accepted, implying that students from rural and urban locality do not differ significantly with regard to rules and norms, Sense of physical and socio emotional Security and interpersonal relationship. On the other hand, the p-values for dimensions 3 and 5 are lower than 0.05 at the 5% level of significance. Thus, $H_0$20 and $H_0$22 was not accepted. Hence it may be interpreted that there is significant difference between the students from rural and urban locality with regard to the given two dimensions of school climate, with the students from rural locality scoring higher than students from urban locality.

4.2.10 Findings related to Objective 2 Comparison of variable Scientific Reasoning with respect to Locality.

$H_0$23: There is no significant difference in the mean scores of Scientific Reasoning with respect to Locality.

Table 4.29: Group Statistic of Scientific Reasoning with respect to Locality

Variable	Locality	N	Mean	Std. Deviation	Std. Error Mean
SCIENTIFIC REASONING	Rural	316	6.97	2.090	.118
	Urban	244	7.15	2.319	.148

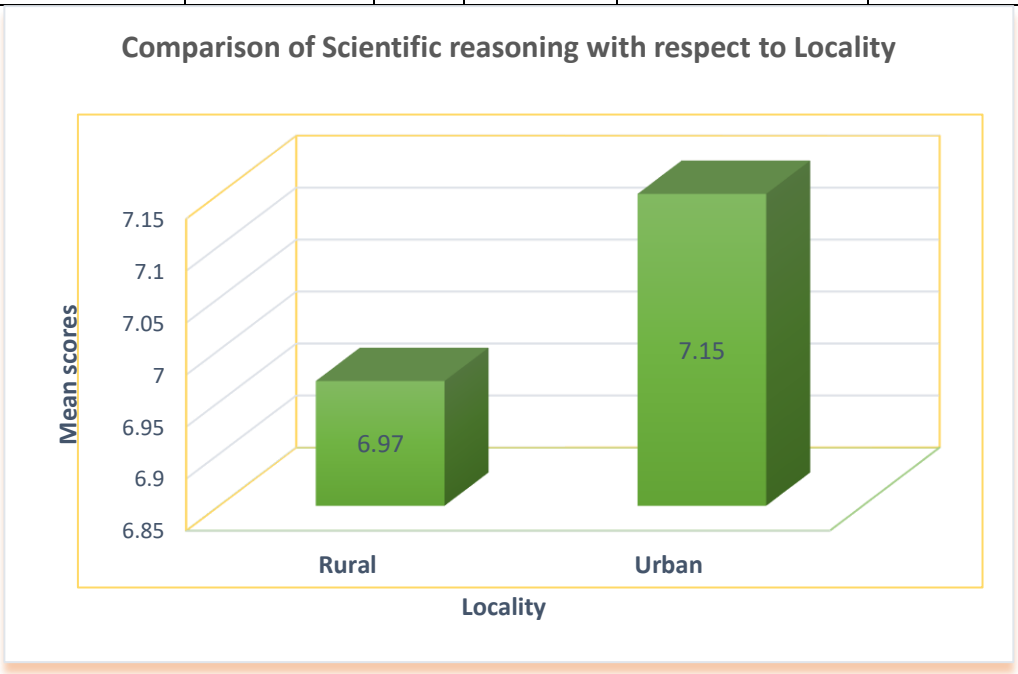

Figure 4. 15 showing comparison of Scientific reasoning with respect to Locality

Table 4.30: Independent sample t-test for Scientific Reasoning with respect to Gender

Variable	df	p-value	Mean Difference	Std. Error Difference	t
SCIENTIFIC REASONING	558	0.338	-0.179	.187	-0.959

Table 4.29 and 4.30 shows the mean scientific reasoning score of male student is 6.97 and the mean scientific reasoning score of female student is 7.15 with standard deviation of 2.09 and 2.319 respectively. In Table 4.33 it can be seen that the p-value of 0.338 is higher than 0.05 at the 5% level of significance. Thus, $H_0 23$ was accepted. Hence it may be interpreted that the students from rural and urban locality do not differ significantly from each other with regard to their scientific reasoning score.

4.2.11 Findings related to Objective 2 Comparison of variable Procrastination Tendency with respect to Locality.

$H_0$24: There is no significant difference in the overall mean scores of procrastination tendency of with respect to urban and rural.

Table 4.31: Group Statistic of Procrastination Tendency with respect to Locality

Variable	Locality	N	Mean	Std. Deviation	Std. Error Mean
PROCRASTINATION TENDENCY	Rural	316	64.20	6.722	.378
	Urban	244	62.86	7.694	.493

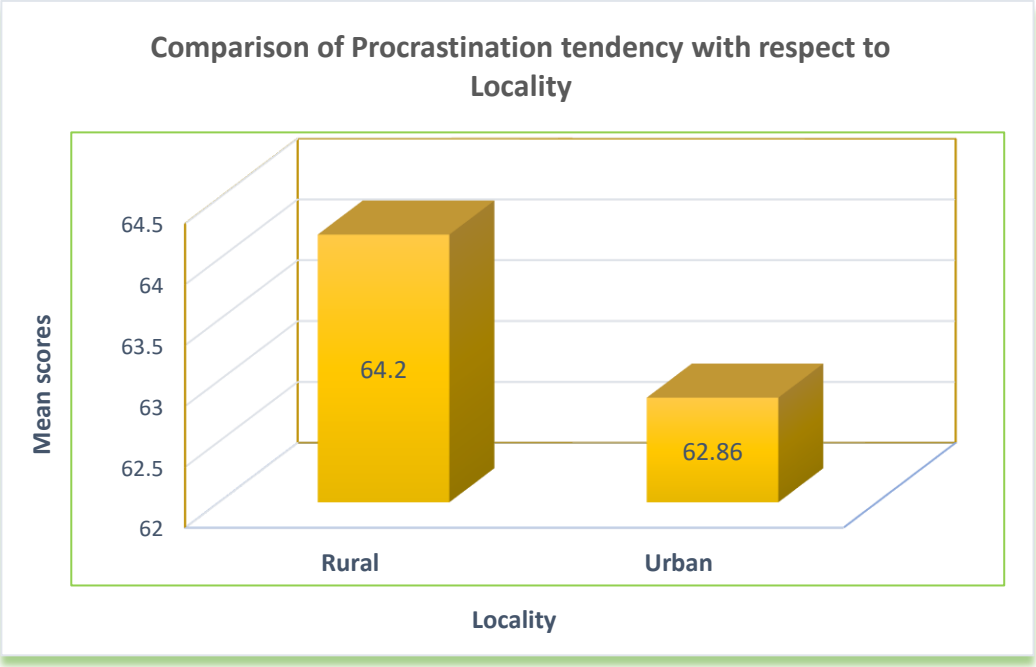

Figure 4. 16 showing Comparison of Procrastination tendency with respect to Locality

Table 4.32: Independent sample t-test for Procrastination Tendency with respect to Locality

Variable	df	p-value	Mean difference	Std. Error difference	t
PROCRASTINATION TENDENCY	558	.030	1.331	.610	2.181

Table 4.31 and 4.32 shows the mean procrastination tendency scores of students from rural locality is 64.20 and from urban locality is 62.86 with standard deviation of 6.72 and 7.69 respectively. In Table 4.35 it can be seen that the p-value of 0.030 is lesser than 0.05 at the 5% level of significance. Thus, $H_0$24 was not accepted. Hence it may be interpreted that the students from rural and urban locality differ significantly from each other with regard to their procrastination tendency score, with the students from rural locality showing significantly showing higher scores than students from urban locality.

4.2.12 Findings related to Objective 2 Comparison of variable dimensions of Procrastination Tendency with respect to Locality.

$H_0$25: There is no significant difference in the mean scores of good planning dimension 1 of procrastination tendency with respect to urban and rural.

$H_0$26: There is no significant difference in the mean scores of delaying dimension 2 of procrastination tendency with respect to urban and rural.

$H_0$27: There is no significant difference in the mean scores of doing things in last minute dimension 3 of procrastination tendency with respect to urban and rural.

$H_0$28: There is no significant difference in the mean scores of good time management dimension 4 of procrastination tendency with respect to urban and rural.

$H_0$29: There is no significant difference in the mean scores of poor time management dimension 5 of procrastination tendency with respect to urban and rural.

Table 4.33: Group Statistic of dimensions of Procrastination Tendency with respect to Locality

Variable	Gender	Dimension	N	Mean	Std. Deviation	Std. Error Mean
PROCRASTINATION TENDENCY	Rural	Good planning	316	17.72	3.476	.196
		Delaying	316	14.35	3.220	.181
		Doing things in last minute	316	5.36	2.115	.119
		Good time	316	14.21	3.126	.176

		management				
		Poor time management	316	12.57	2.721	.153
	Urban	Good planning	244	16.54	3.481	.223
		Delaying	244	14.53	3.970	.254
		Doing things in last minute	244	5.47	2.035	.130
		Good time management	244	13.41	3.168	.203
		Poor time management	244	12.91	2.818	.180

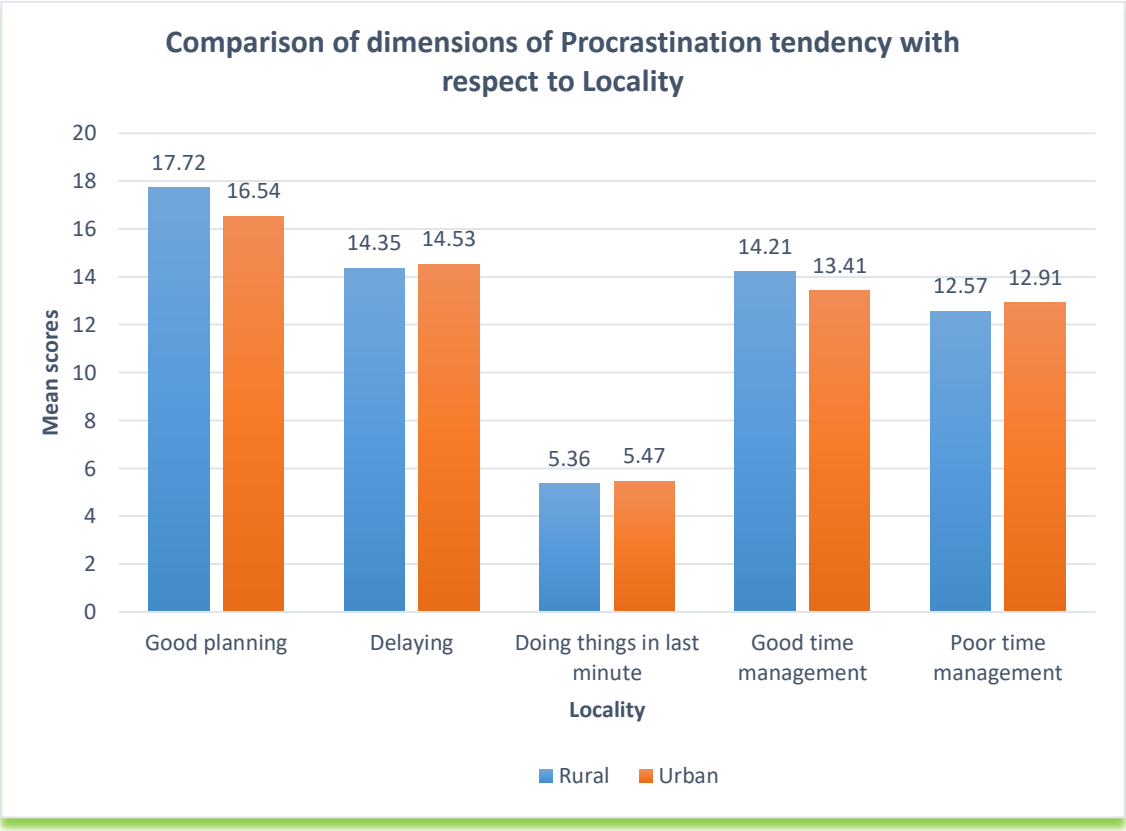

Figure 4. 17 showing comparison of dimensions of Procrastination tendency with respect to Locality

Table 4.34: Independent sample t-test for dimensions of Procrastination Tendency with respect to Locality

Variable	Dimensions	df	p-value	Mean Difference	Std. Error Difference	t
PROCRASTINATION TENDENCY	Good planning	558	.000	1.174	.296	3.961
	Delaying	558	.563	-.181	.312	0.579
	Doing things in last minute	558	.522	-.114	.177	0.641
	Good time management	558	.003	.795	.268	2.966
	Poor time management	558	.145	-.343	.236	1.458

Table 4.33 shows the mean scores of all the dimensions of Procrastination tendency with respect to gender. The mean score of students from rural locality for dimension 1 i.e. Good planning is 17.72, for dimension 2 i.e. Delaying is 14.35, for dimension 3 i.e. Doing things in last minute is 5.36, for dimension 4 i.e. Good time management is 14.21 and for dimension 5 i.e. Poor time management is 12.57. On the other hand, the mean score of students from urban locality for dimension 1 i.e. Good planning is 16.54, for dimension 2 i.e. Delaying is 14.53, for dimension 3 i.e. Doing things in last minute is 5.47, for dimension 4 i.e. Good time management is 13.41 and for dimension 5 i.e. Poor time management is 12.91.

Table 4.34 present the independent samples t-test results for all dimensions of Procrastination tendency. The p-values for dimensions 2, 3 and 5 is higher than 0.05 at the 5% level of significance. Thus $H_0$26, $H_0$27, and $H_0$29 are accepted. Hence it may be interpreted that the students from rural and urban locality do not differ significantly with regard to procrastination tendency scores of delaying, doing things in last minute, and poor time management. However, the t-test results for dimensions 1 and 4 shows that the p-values are lower than 0.05 at the 5% level of significance. Thus, $H_0$25 and $H_0$28 was not accepted. Hence it may be interpreted that there is significant difference between the students from rural and urban locality with regard to given two dimensions of procrastination scores, with the students from rural locality showing significantly higher scores than students from urban locality.

4.2.13 Findings related to Objective 2 Comparison of variable Parent Autonomy Support dimension wise with respect to Locality.

$H_0$30: There is no significant difference in the mean scores of autonomy support dimension 1 of parent autonomy support with respect to urban and rural.

$H_0$31: There is no significant difference in the mean scores of psychological control dimension 2 of parent autonomy support with respect to urban and rural.

Table 4.35: Group Statistic of dimensions of Parent Autonomy Support with respect to Locality.

Variable	Locality	Dimensions	N	Mean	Std. Deviation	Std. Error Mean
PARENT AUTONOMY SUPPORT	Rural	Autonomy Support	316	55.40	13.492	.759
		Psychological Control	316	41.34	11.804	.664
	Urban	Autonomy Support	244	56.46	11.969	.766
		Psychological Control	244	36.21	11.092	.710

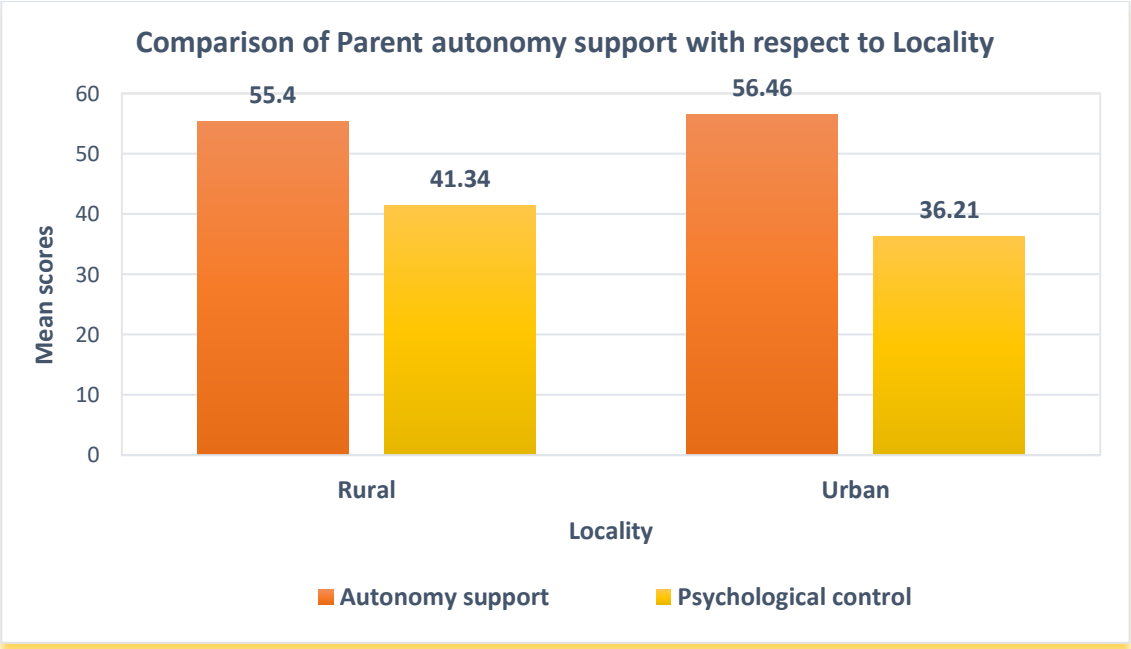

Figure 4. 18 showing comparison of Parent autonomy support with respect to Locality

Table 4.36: Independent sample t-test for dimensions of Parent Autonomy Support with respect to Locality

Variable	Dimension	df	p-value	Mean Difference	Std. Error Difference	t
PARENT AUTONOMY SUPPORT	Autonomy Support	547.322	.327	-1.057	1.078	-0.980
	Psychological Control	558	.000	5.122	.980	5.227

Table 4.35 and 4.36 shows the mean scores of students from rural locality for autonomy support and psychological control. The mean score for autonomy support is 55.40 and for psychological control is 41.34 with standard deviations of 13.49 and 11.80 respectively. On the other hand, mean scores of students from urban locality for autonomy support is 56.46 and for psychological control is 36.21 with standard deviations of 11.96 and 11.09 respectively. In Table 4.39 it can be seen that the p-value of 0.327 for autonomy support is higher than 0.05 at the 5% level of significance, while the p-value of 0.000 for psychological control is lesser than 0.05 at the 5% level of significance. Thus, $H_0$30 was accepted and $H_0$31 was not accepted. Hence it may be interpreted that there is no significant difference in the perceptions of autonomy control of parents, while there is significant difference in the perceptions of psychological control of parents, with students from urban locality scoring higher than students from rural locality.

4.2.14 Findings related to Objective 2 Comparison of variable Academic Achievement with respect to Locality.

$H_0$32: There is no significant difference in the mean scores of Academic Achievement with respect to urban and rural.

Table 4.37: Group Statistic of Academic Achievement scores with respect to Locality

Variable	Gender	N	Mean	Std. Deviation	Std. Error Mean
ACADEMIC ACHIEVEMENT	Rural	316	34.93	4.96	0.279
	Urban	244	34.33	5.14	0.329

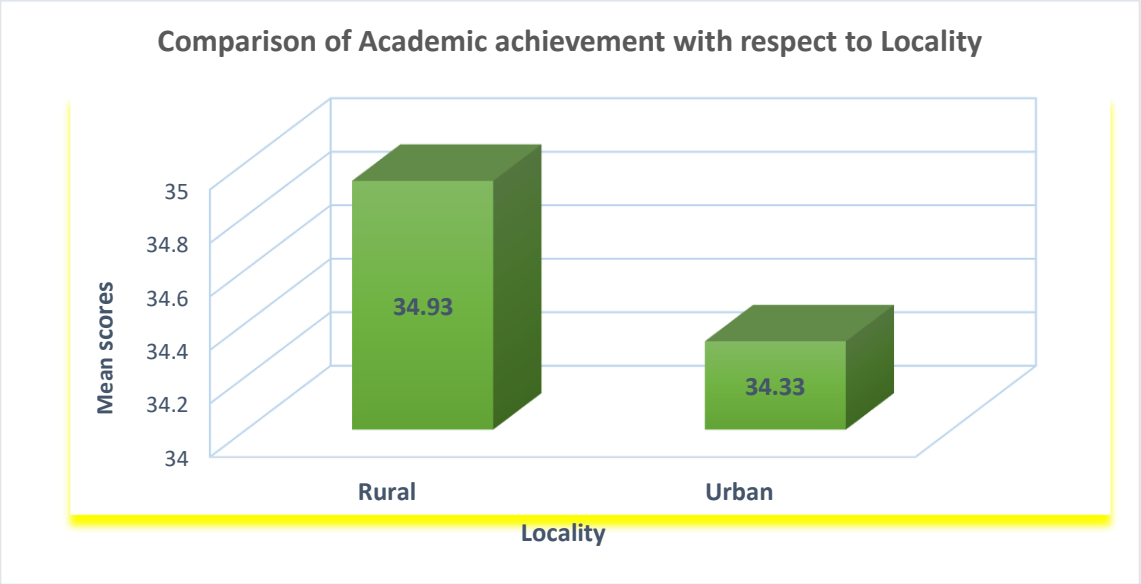

Figure 4. 19 showing comparison of Academic achievement with respect to Locality

Table 4.38: Independent sample t-test for Academic Achievement scores with respect to Locality

Variable	df	p-value	Mean Difference	Std. Error Difference	t
ACADEMIC ACHIEVEMENT	558	0.159	0.60	0.43	1.41

Table 4.37 and 4.38 shows the mean Academic achievement scores of rural students is 34.93 and that of urban students is 34.33 with standard deviation of 4.96 and 5.14 respectively. In Table 4.41 it can be seen that the p-value of 0.159 is higher than 0.05 at the 5% level of significance. Thus, $H_0$32 was accepted. Hence it may be interpreted that the rural and urban students do not differ significantly from each other with regard to their academic achievement scores.

4.2.15 Findings related to Objective 2 Comparison of variable School Climate with respect to Type of Institution.

$H_0$33: There is no significant difference in the overall mean scores of school climate with respect to government and private.

Table 4.39: Group Statistic of School Climate with respect to Type of Institution

Variable	Type of Institution	N	Mean	Std. Deviation	Std. Error Mean
SCHOOL CLIMATE	Private	239	223.19	28.226	1.826
	Government	321	210.10	23.135	1.291

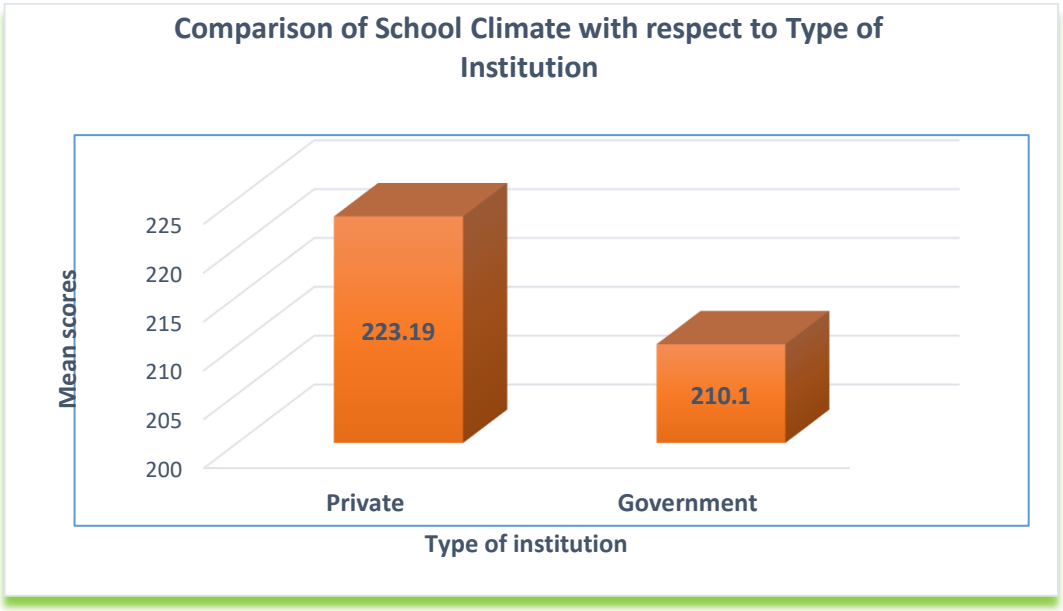

Figure 4. 20 showing Comparison of School Climate with respect to Type of Institution

Table 4.40: Independent sample t-test for School Climate with respect to Type of Institution

Variable	df	p-value	Mean Difference	Std. Error Difference	t
SCHOOL CLIMATE	558	.000	13.096	2.236	5.856

Table 4.39 and 4.40 shows that the mean school climate score of students from private schools is 223.19 and the mean school climate score of students from urban locality is 210.10 with standard deviation of 28.22 and 23.13 respectively. Table 4.43 shows that the p-value of 0.000 is lower than 0.05 at the 5% level of significance. Thus, $H_0$33 was not accepted. Hence it may be interpreted that the students from rural and urban locality differ significantly from each other with regard to their school climate score, with students from private schools scoring higher than government school students.

4.2.16 Findings related to Objective 2 Comparison of variable School Climate dimension wise with respect to respect to Type of Institution.

$H_0$34: There is no significant difference in the mean scores of rules and norms dimension 1 of school climate with respect to government and private.

$H_0$35: There is no significant difference in the mean scores of sense of physical and socio emotional Security dimension 2 of school climate with respect to government and private.

$H_0$36: There is no significant difference in the mean scores of support for learning dimension 3 of school climate with respect to government and private.

$H_0$37: There is no significant difference in the mean scores of interpersonal relationship dimension 4 of school climate with respect to government and private.

$H_0$38: There is no significant difference in the mean scores of School connectedness dimension 5 of school climate with respect to government and private.

Table 4.41: Group Statistic of 5 dimensions of School Climate with respect to Type of Institution

Variable	Types of Institution	Dimension	N	Mean	Std. Deviation	Std. Error Mean
SCHOOL CLIMATE	Private	Rules and norms	239	36.23	5.573	.360
		Sense of physical and socio emotional Security	239	37.10	6.314	.408
		Support for learning	239	43.90	7.267	.470
		Interpersonal relationship	239	67.23	10.269	.664
		School connectedness	239	38.74	6.773	.438
	Government	Rules and norms	321	33.96	5.684	.317
		Sense of physical and socio emotional Security	321	34.39	4.895	.273
		Support for learning	321	41.08	6.485	.362
		Interpersonal relationship	321	65.05	9.524	.532
		School connectedness	321	35.62	5.542	.309

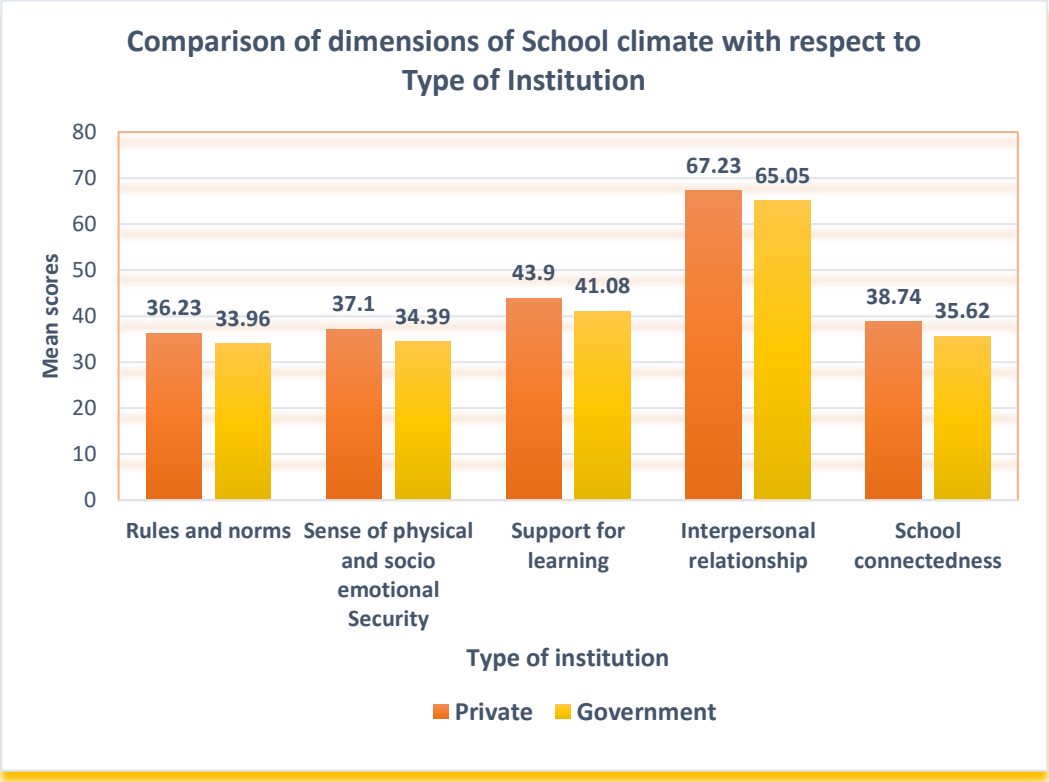

Figure 4. 21 showing Comparison of dimensions of School climate with respect to Type of Institution

Table 4.42: Independent sample t-test for dimension of School Climate with respect to Types of Institution

Variable	Dimensions	df	p-value	Mean Difference	Std. Error Difference	t
SCHOOL CLIMATE	Rules and norms	518.206	.000	2.268	.480	4.722
	Sense of physical and socio emotional Security	434.012	.000	2.711	.491	5.517
	Support for learning	478.735	.000	2.814	.593	4.744
	Interpersonal relationship	490.766	.011	2.183	.851	2.566
	School connectedness	451.075	.000	3.120	.536	5.817

Table 4.41 shows the mean scores of all the dimensions of school climate with respect to type of institution. The mean score of rural students for dimension 1 i.e. rules and norms is 36.23, for dimension 2 i.e. Sense of physical and socio emotional Security is 37.10, for dimension 3 i.e. support for learning is 43.90, for dimension 4 i.e. interpersonal relationship is 67.23 and for dimension 5 i.e. School connectedness is 38.74. On the other hand, the mean score of female students for dimension 1 i.e. rules and norms is 33.96, for dimension 2 i.e. Sense of physical and socio emotional Security is 34.39, for dimension 3 i.e. support for learning is 41.08, for dimension 4 i.e. interpersonal relationship is 65.05 and for dimension 5 i.e. School connectedness is 35.62.

Table 4.42 present the independent samples t-test results for all dimensions of School climate. The p-values for all dimensions of school climate are found to be higher than 0.05 at the 5% level of significance. Thus, $H_0$34, $H_0$35, $H_0$36, $H_0$37 and $H_0$38 are all accepted, implying that private and government school students differ significantly with regard to all the dimensions of school climate, with the students from private schools scoring higher than students from urban schools.

4.2.17 Findings related to Objective 2 Comparison of variable Scientific Reasoning with respect to respect to Type of Institution.

$H_0$39: There is no significant difference in the mean scores of scientific reasoning with respect to government and private.

Table 4.43: Group Statistic of Scientific Reasoning with respect to Types of Institution

Variable	Types of Institution	N	Mean	Std. Deviation	Std. Error Mean
SCIENTIFIC REASONING	Private	239	6.90	2.261	0.146
	Government	321	7.16	2.137	0.119

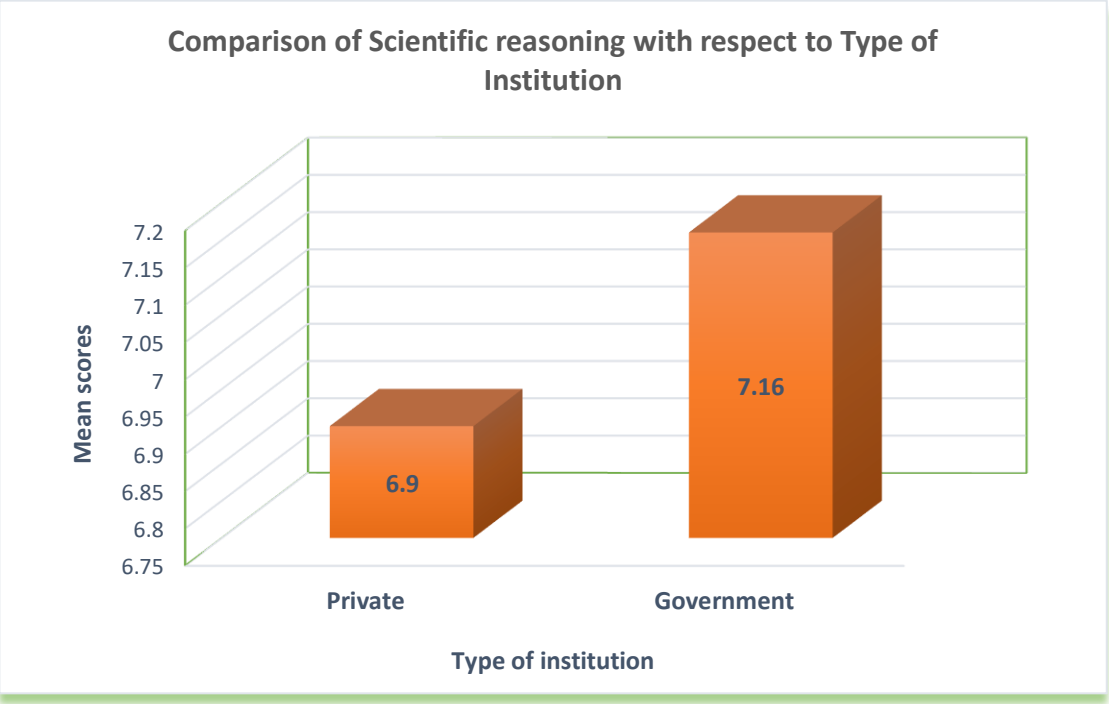

Figure 4. 22 showing Comparison of Scientific reasoning with respect to Type of Institution

Table 4.44: Independent sample t-test for Scientific Reasoning with respect to Types of Institution

Variables	df	p-value	Mean Difference	Std. Error Difference	t
SCIENTIFIC REASONING	558	0.160	-0.263	0.187	-1.408

Table 4.43 and 4.44 shows the mean scientific reasoning score of private school students is 6.90 and the mean scientific reasoning score of government school students is 7.16 with standard deviation of 2.26 and 2.13 respectively. In Table 4.47 it can be seen that the p-value of 0.160 is higher than 0.05 at the 5% level of significance. Thus, $H_0$39 was accepted. Hence it may be interpreted that the students from rural and urban locality do not differ significantly from each other with regard to their scientific reasoning score.

4.2.18 Findings related to Objective 2 Comparison of variable Procrastination Tendency with respect to respect to Type of Institution.

$H_0$40: There is no significant difference in the overall mean scores of procrastination tendency of with respect to government and private.

Table 4.45: Group Statistic of Procrastination Tendency scores with respect to Types of Institution

Variable	Types of Institution	N	Mean	Std. Deviation	Std. Error Mean
PROCRASTINATION TENDENCY	Private	239	64.45	7.449	.482
	Government	321	62.99	6.930	.387

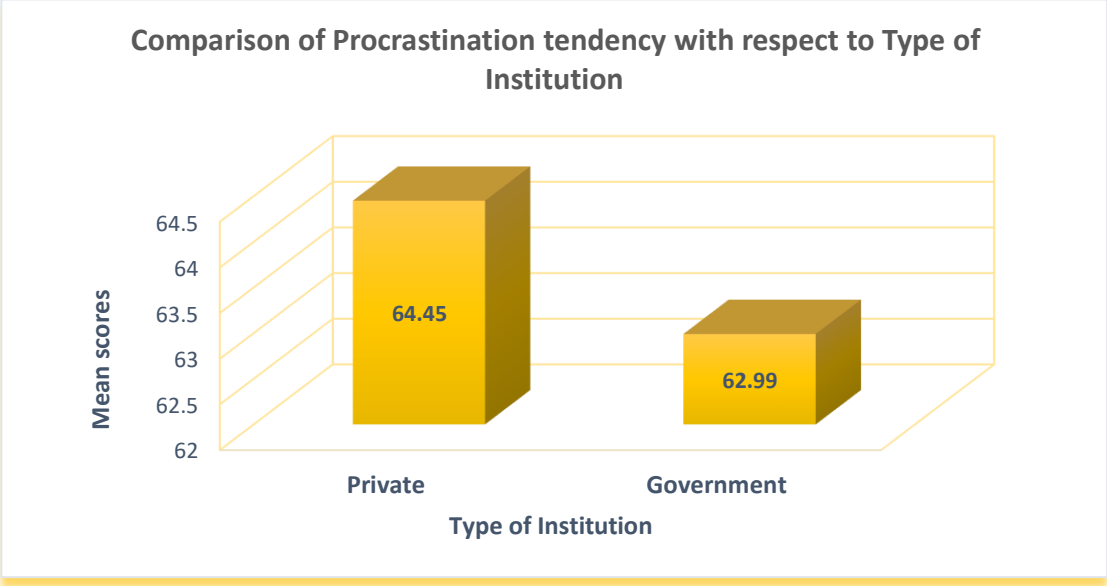

Figure 4. 23 showing Comparison of Procrastination tendency with respect to Type of Institution

Table 4.46: Independent sample t-test for Procrastination Tendency scores with respect to Types of Institution

Variables	df	p-value	Mean Difference	Std. Error Difference	t
PROCRASTINATION TENDENCY	491.674	.019	1.458	.618	2.360

Table 4.45 and 4.46 shows the mean procrastination tendency scores of private school students is 64.45 and government school students is 62.99 with standard deviation of 7.44 and 6.93 respectively. In Table 4.49 it can be seen that the p-value of 0.019 is lesser than 0.05 at the 5% level of significance. Thus, $H_0$40 was not accepted. Hence it may be interpreted that the students from private and government schools differ significantly from each other with regard to their procrastination tendency score, with the students from private schools showing significantly showing higher scores than students from government schools.

4.2.19 Findings related to Objective 2 Comparison of variable Procrastination Tendency dimension wise with respect to respect to Type of Institution.

$H_0$41: There is no significant difference in the mean scores of good planning dimension 1 of procrastination tendency with respect to government and private.

$H_0$42: There is no significant difference in the mean scores of delaying dimension 2 of procrastination tendency with respect to government and private.

$H_0$43: There is no significant difference in the mean scores of doing things in last minute dimension 3 of procrastination tendency with respect to government and private.

$H_0$44: There is no significant difference in the mean scores of good time management dimension 4 of procrastination tendency with respect to government and private.

$H_0$45: There is no significant difference in the mean scores of poor time management dimension 5 of procrastination tendency with respect to government and private.

Table 4.47: Group Statistic of dimensions of Procrastination Tendency with respect to Type of Institution

Variable	Types of Institution	Dimension	N	Mean	Std. Deviation	Std. Error Mean
PROCRASTINATION TENDENCY	Private	good planning	239	17.88	3.675	.238
		delaying	239	13.86	3.426	.222
		doing things in last minute	239	5.47	2.064	.133
		good time management	239	14.33	2.914	.189
		poor time management	239	12.91	2.473	.160
	Government	good planning	321	16.70	3.325	.186
		delaying	321	14.85	3.611	.202
		doing things in last minute	321	5.36	2.093	.117
		good time management	321	13.51	3.303	.184
		poor time management	321	12.57	2.961	.165

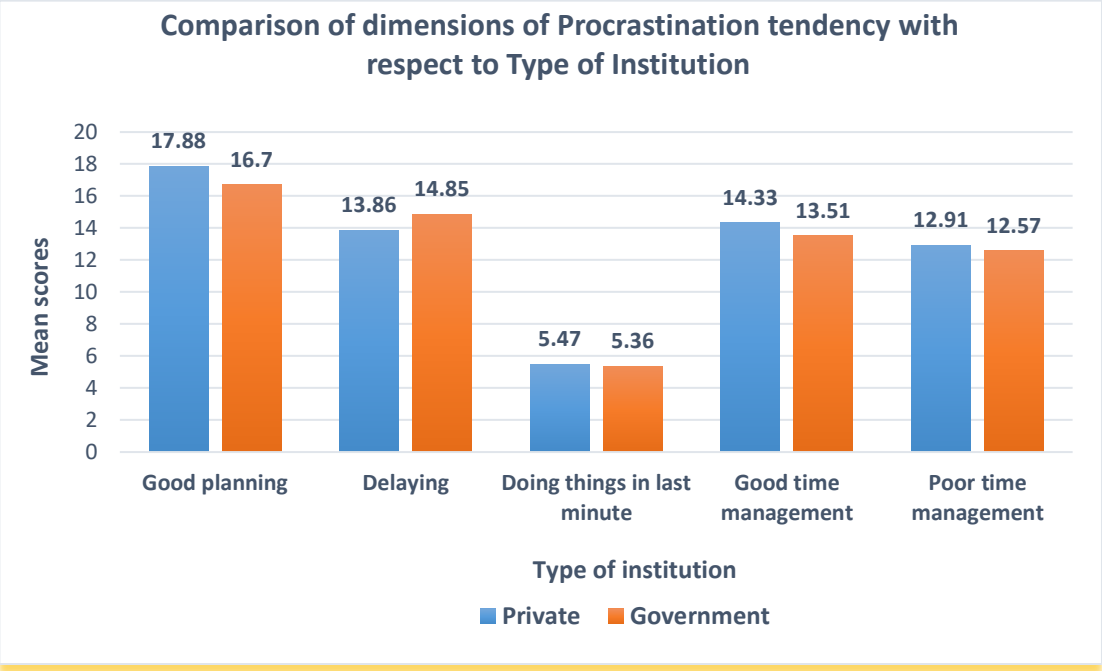

Figure 4.24 showing Comparison of dimensions of Procrastination tendency with respect to Type of Institution

Table 4.48: Independent sample t-test for Procrastination Tendency with respect to Type of Institution

Variable	Dimensions	df	p-value	Mean Difference	Std. Error Difference	t
PROCRASTINATION TENDENCY	Good planning	483.082	.000	1.178	.302	3.906
	Delaying	558	.001	-.993	.302	-3.289
	Doing things in last minute	558	.520	.115	.178	0.644
	Good time management	558	.002	.824	.269	3.068
	Poor time management	550.642	.146	.335	.230	1.455

Table 4.47 shows the mean scores of all the dimensions of Procrastination tendency with respect to type of institution. The mean score of students from private schools for dimension 1 i.e. Good planning is 17.88, for dimension 2 i.e. Delaying is 13.86, for dimension 3 i.e. Doing things in last minute is 5.47, for dimension 4 i.e. Good time management is 14.33 and for dimension 5 i.e. Poor time management is 12.99. On the other hand, the mean score of students from government schools for dimension 1 i.e. Good planning is 16.70, for dimension 2 i.e. Delaying is 14.85, for dimension 3 i.e.

Doing things in last minute is 5.36, for dimension 4 i.e. Good time management is 13.51 and for dimension 5 i.e. Poor time management is 12.57.

Table 4.48 present the independent samples t-test results for all dimensions of Procrastination tendency. The p-values for dimensions 3 and 5 is higher than 0.05 at the 5% level of significance. Thus $H_0$43 and $H_0$45 are accepted. Hence it may be interpreted that the students from private and government schools do not differ significantly with regard to procrastination tendency scores of doing things in last minute and poor time management. However, the t-test results for dimensions 1, 2 and 3 shows that the p-values are lower than 0.05 at the 5% level of significance. Thus, $H_0$41, $H_0$42 and $H_0$44 was not accepted. Hence it may be interpreted that there is significant difference between the students from private and government schools with regard to good planning, delaying and good time management dimensions, with the students from private schools showing significantly higher scores than students from government schools in good planning and good time management while government school students are scoring higher than private school students in delaying dimension.

4.2.20 Findings related to Objective 2 Comparison of variable Parent Autonomy Support dimension wise with respect to respect to Type of Institution.

$H_0$46: There is no significant difference in the mean scores of autonomy support dimension 1 of parent autonomy support with respect to government and private.

$H_0$47: There is no significant difference in the mean scores of psychological control dimension 2 of parent autonomy support with respect to government and private.

Table 4.49: Group Statistic of dimensions of Parent Autonomy Support with respect to Types of Institution

Variable	Types of Institution	Dimensions	N	Mean	Std. Deviation	Std. Error Mean
PARENT AUTONOMY SUPPORT	Private	Autonomy Support	239	56.29	13.662	.884
		Psychological Control	239	39.77	11.400	.737
	Government	Autonomy Support	321	55.55	12.222	.682
		Psychological Control	321	38.61	12.027	.671

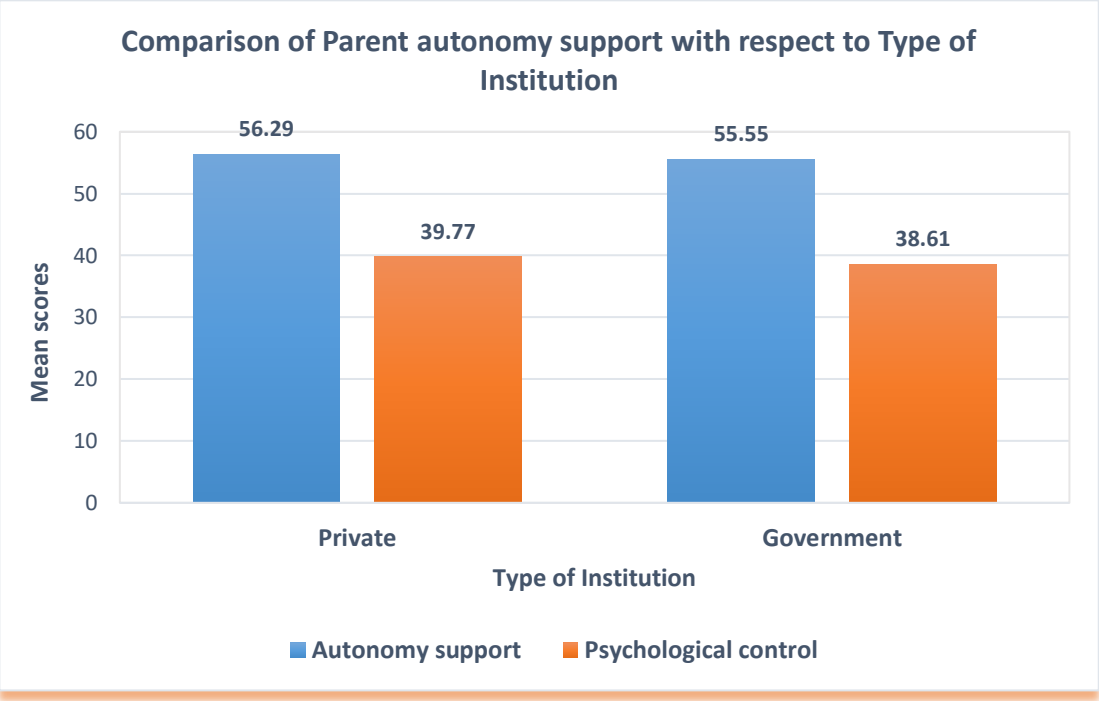

Figure 4. 25 showing Comparison of Parent autonomy support with respect to Type of Institution

Table 4.50: Independent sample t-test for dimensions of Parent Autonomy Support with respect to Types of Institution

Variable	Dimensions	df	p-value	Mean Difference	Std. Error Difference	t
PARENT AUTONOMY SUPPORT	Autonomy Support	558	0.506	0.744	1.116	0.666
	Psychological Control	558	0.248	1.162	1.005	1.157

Table 4.49 shows the mean scores of private school students for autonomy support and psychological control. The mean score for autonomy support is 56.29 and for psychological control is 39.77 with standard deviations of 13.66 and 11.40 respectively. On the other hand, mean scores of government school students for autonomy support is 55.55 and for psychological control is 38.61 with standard deviations of 12.22 and 12.02 respectively. In Table 4.50 it can be seen that the p-values of 0.327 for Autonomy support and p-value of 0.248 for psychological control are both higher than 0.05 at the 5% level of significance, Thus, $H_0$46 and $H_0$47 are

both accepted. Hence it may be interpreted that there is no significant difference in the perceptions of autonomy control and psychological control of parents with respect to type of institution.

4.2.21 Findings related to Objective 2 Comparison of variable Academic Achievement with respect to respect to Type of Institution.

$H_0$48: There is no significant difference in the mean scores of academic achievement with respect to private and government.

Table 4.51: Group Statistic of Academic Achievement scores with respect to Type of Institution

Variable	Gender	N	Mean	Std. Deviation	Std. Error Mean
ACADEMIC ACHIEVEMENT	Private	316	35.61	4.94	0.320
	Government	244	33.97	5.01	0.280

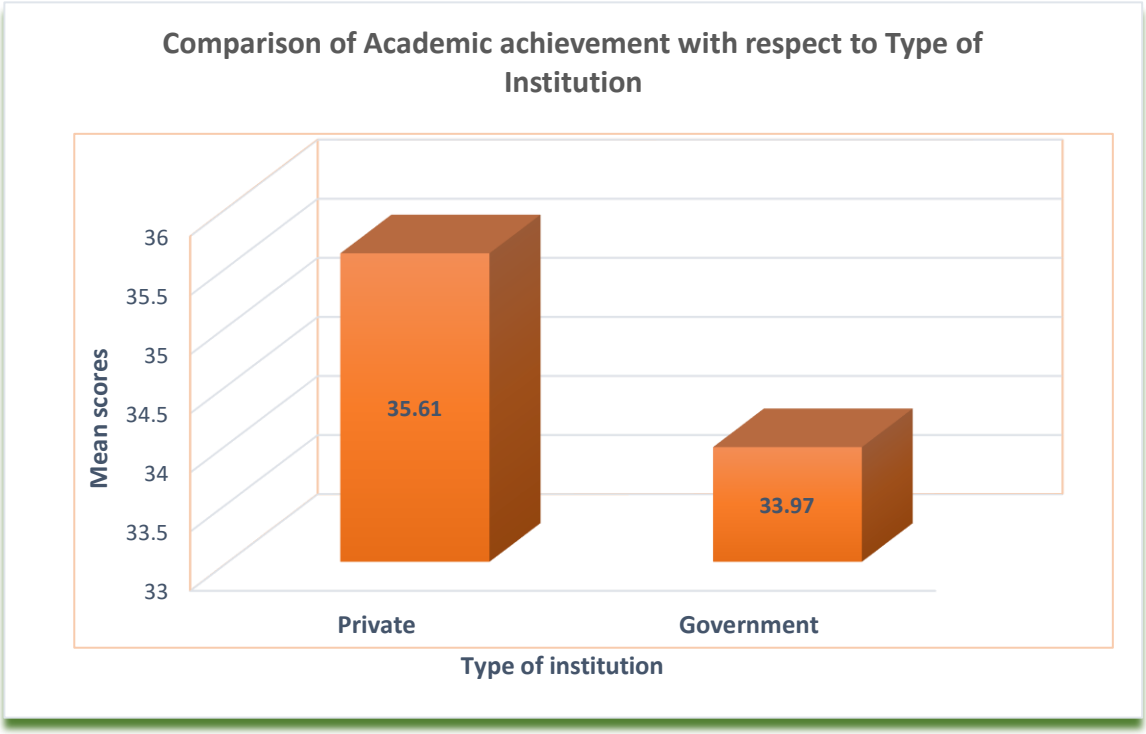

Figure 4. 26 showing Comparison of Academic achievement with respect to Type of Institution

Table 4.52: Independent sample t-test for Academic achievement scores with respect to type of institution

Variable	df	p-value	Mean Difference	Std. Error Difference	t
ACADEMIC ACHIEVEMENT	558	0.000	1.64	0.426	3.85

Table 4.51 and 4.52 shows the mean Academic achievement scores of private school students is 35.61 and that of urban students is 33.97 with standard deviation of 4.94 and 5.01 respectively. In Table 4.55 it can be seen that the p-value of 0.000 is lower than 0.05 at the 5% level of significance. Thus, $H_0$48 was not accepted. Hence it may be interpreted that there is significant difference in Academic achievement scores with regard to type of institution, with private school students scoring significantly higher than government school students.

4.3 Findings related to Objective 3

Objective 3: To study the relationship between school climate and academic achievement, scientific reasoning and academic achievement, procrastination tendency and academic achievement and parent autonomy support and academic achievement in Physics of senior secondary school students.

4.3.1 Findings related to Objective 3 relationship between variable School Climate and Academic Achievement.

$H_0$49: There is no significant relationship between school climate and academic achievement of senior secondary schools.

Table 4.53 Relationship between School Climate and Academic achievement

Variable	N	Pearson Correlation	Sig. (2-Tailed)
ACADEMIC ACHIEVEMENT – SCHOOL CLIMATE	560	0.137	0.001

Table 4.53 examines the correlation between school climate and academic achievement of senior secondary schools. Pearson Correlation was performed at a 5% significance level. According to Best & Kahn (2006), correlation coefficients between

0.2-0.4 are considered as low correlation, between 0.4-0.6 as moderate correlation and between 0.6-0.8 as substantial correlation. The calculated p-values are below 0.05; therefore, the null hypothesis, “There is no significant relationship between school climate and academic achievement in senior secondary schools,” is rejected. Thus, it might be understood as there is a low correlation between school climate and academic achievement, as the correlation coefficient is 0.137.

4.3.2 Findings related to Objective 3 relationship between variable Scientific Reasoning and Academic Achievement.

$H_0$50: There is no significant relationship between scientific reasoning and academic achievement of senior secondary schools.

Table 4.54 Relationship between Scientific Reasoning and Academic Achievement

Variable	N	Pearson Correlation	Sig. (2-Tailed)
ACADEMIC ACHIEVEMENT – SCIENTIFIC REASONING	560	0.135	0.001

Table 4.54 examines the correlation between scientific reasoning and academic achievement among senior secondary school students. Pearson Correlation was performed at a 5% significance level. The calculated p-values are below 0.05; therefore, the null hypothesis, "There is no significant relationship between scientific reasoning and academic achievement in senior secondary schools," is rejected. Thus, it may be inferred that there is a low correlation between scientific reasoning and academic achievement, as the correlation coefficient is 0.135.

4.3.3 Findings related to Objective 3 relationship between variable Procrastination Tendency and Academic Achievement.

$H_0$51: There is no significant relationship between procrastination tendency and academic achievement of senior secondary schools.

Table 4.55 Relationship between Procrastination Tendency and Academic Achievement

Variable	N	Pearson Correlation	Sig. (2-Tailed)
ACADEMIC ACHIEVEMENT – PROCRASTINATION	560	0.114	0.007

Table 4.55 examines the correlation between procrastination tendency and academic performance among senior secondary school students. Pearson Correlation was performed at a 5% significance level. The calculated p-values are less than 0.05; therefore, the null hypothesis, "There is no significant relationship between procrastination tendency and academic achievement of senior secondary school students," is rejected. Thus, it can be read that there is a poor relationship between procrastination tendency and academic achievement, as the correlation coefficient is 0.114.

4.3.4 Findings related to Objective 3 relationship between variable Autonomy Support dimension 1 of Parent Autonomy Support and Academic Achievement.

$H_0$52: There is no significant relationship between autonomy support dimension 1 of parental autonomy support and academic achievement of senior secondary schools.

Table 4.56 Relationship between Autonomy Support dimension 1 of Parent Autonomy Support and Academic Achievement

Variable	N	Pearson Correlation	Sig. (2-Tailed)
ACADEMIC ACHIEVEMENT – AUTONOMY SUPPORT	560	0.090	0.033

Table 4.56 examines the correlation between dimension 1 of parent autonomy support and the academic achievement of senior secondary school students. Pearson Correlation was performed at a 5% significance level. The obtained p-values are less than 0.05; therefore, the null hypothesis, “There is no significant relationship between autonomy support dimension 1 of parent autonomy support and academic achievement of senior secondary schools,” is rejected. The association between dimension 1 of parent autonomy support and academic achievement is low, as indicated by a correlation coefficient of 0.090.

4.3.5 Findings related to Objective 3 relationship between variable Psychological Control dimension 2 of Parent Autonomy Support and Academic Achievement.

$H_0$53: There is no significant relationship between psychological control dimension 2 of parent autonomy support and academic achievement of senior secondary schools.

Table 4.57 Relationship between Psychological Control dimension 2 of Parent Autonomy Support and Academic Achievement

Variable	N	Pearson Correlation	Sig. (2-Tailed)
ACADEMIC ACHIEVEMENT – PSYCHOLOGICAL CONTROL	560	0.059	0.162

Table 4.57 examines the correlation between the psychological control dimension 2 of parental autonomy support and the academic achievement of senior secondary school students. Pearson Correlation was performed at a 5% significance level. The obtained p-values above 0.05; therefore, the null hypothesis, "There is no significant relationship between psychological control dimension 2 of parent autonomy support and academic achievement of senior secondary schools," is accepted. A significant modest positive association of 0.059 occurs between dimension 2 of psychological control in parent autonomy support and academic achievement.

4.4 Findings related to Objective 4

Objective 4: To study the joint contribution of School climate, scientific reasoning, procrastination tendency, parent autonomy support on academic achievement in Physics of senior secondary school students.

4.3.1 Findings related to Objective 4 Joint Contribution of School Climate, Scientific Reasoning, Procrastination Tendency, Parent Autonomy Support on Academic Achievement

$H_0$54: There is no joint contribution of school climate, scientific reasoning, procrastination tendency, parent autonomy support on academic achievement in physics of senior secondary school students.

Some of the major assumptions of regression are checked below-

1. Assumptions of Collinearity

Table 4.58 showing Collinearity

Predicator Variables		Correlations			Collinearity Statistics	
		Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)					
	Scientific_Reasoning	.135	.161	.159	.957	1.045
	School_Climate	.137	.081	.079	.679	1.472
	Procrastination Tendency	.114	.099	.097	.921	1.086
	Autonomy_Support	.090	.044	.043	.855	1.170
	Psychological_Control	-.059	-.041	-.039	.793	1.262
a. Dependent Variable: Academic Achievement						

2. Assumption of Normality of Residuals

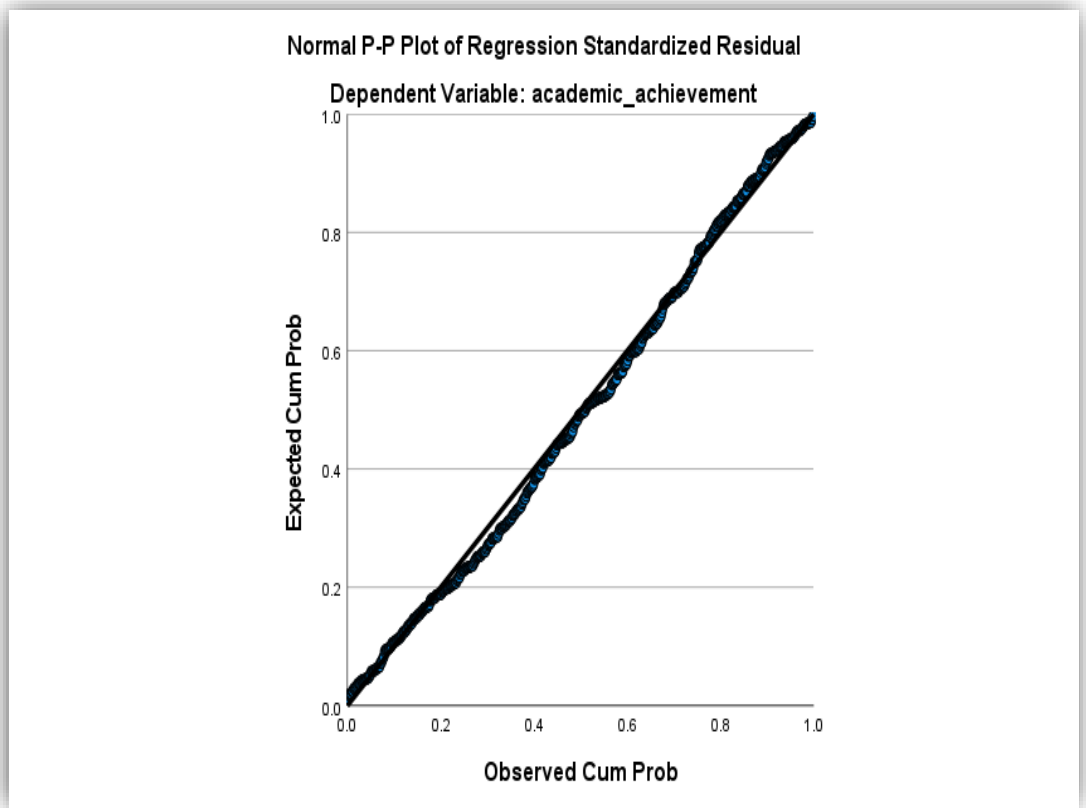

Figure 4. 27 showing Normality of Residuals

3. Assumption of Homoscedasticity

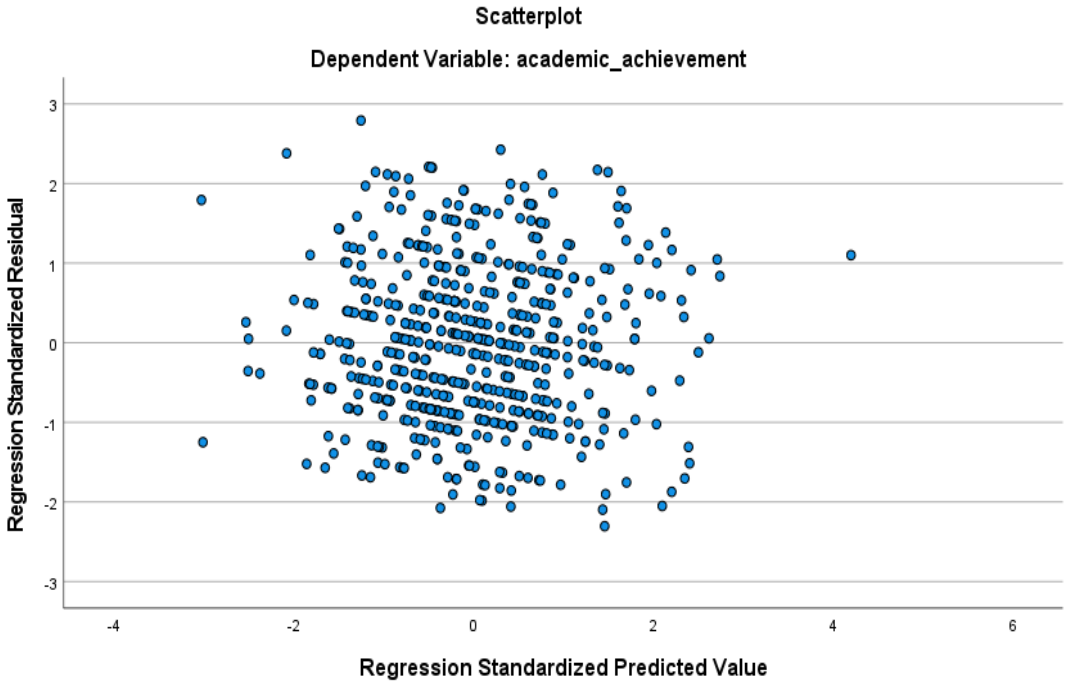

Figure 4. 28 showing Figure Homoscedasticity

From the above figures it can be seen that the major assumptions of regression are met.in addition to the assumptions screening was also done to check for influential cases and after not getting any cases influencing the model a regression analysis was run.

4. Regression Model Summary

Table 4.59 showing Regression Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.231[a]	.053	.045	4.93586	.053	6.233	5	554	.000
a. Predictors: (Constant), Psychological Control, Autonomy_Support, Procrastination Tendency, Scientific_Reasoning, School_Climate									
b. Dependent Variable: Academic_Achievement									

By looking at the model summary, it can be interpreted that the model explains a significant amount of variance, total variance explained is 5.3% which is although

small but is significant at .000 level. Also the adjusted R square is .045 which is not too different from R square= .053 denoting generalizability of the model.

5. Regression model Fit

Table 4.60 showing Regression model Fit

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	759.293	5	151.859	6.233	.000[b]
	Residual	13496.928	554	24.363		
	Total	14256.221	559			

a. Dependent Variable: academic_achievement

b. Predictors: (Constant), Psychology_Control, Autonomy_Support, Procrastination Tendency, Scientific_Reasoning, School_Climate

From the above table it can be observed that the model fits the data well. The model found to be significant, F 6.233 (3), P= .001

6. Regression Coefficients

Table 4.61 showing Regression Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	23.199	2.812		8.250	.000
	Scientific_Reasoning	.373	.097	.162	3.840	.000
	School_Climate	.019	.010	.096	1.910	.057
	Procrastination	.071	.030	.101	2.352	.019
	Autonomy_Support	.019	.018	.047	1.047	.296
	Psychology_Control	-.019	.020	-.044	-.954	.340

a. Dependent Variable: Academic_Achievement

A multiple regression was done to find out the influence of multiple predictors. Looking at the above table it can be interpreted that both scientific reasoning, b= .373, t= 3.840, P<.001 and procrastination tendency b=.071, t=2.352, P<.019, significantly predicted academic achievement. The beta values indicated that as scientific reasoning and procrastination tendency increases academic achievement increases also. Other predictors like school climate, autonomy support and psychological control did not significantly predict academic achievement. By looking at the standardized coefficient betas it can be interpreted that scientific reasoning is the most significant predictor, β= .162, followed by procrastination tendency. Thus, the hypothesis $H_0$54 is rejected.