Chapter - 5
RESULTS AND DISCUSSION

The purpose of the present study was to examine the role of classroom environment along with its various dimensions, locale and sex on academic achievement of the student. To realize the main objective the sample for the present study was taken from government schools of Chhattisgarh State. The obtained data were analyzed by applying coefficient of correlation, stepwise multiple regression analysis technique using the statistical package for social science (SPSS) 16th version. In the present study independent variables are classroom environment with its nine sub dimensions namely involvement, affiliation, teacher support, task orientation, competition, order and organization, rule clarity, teacher control and innovation, locale and sex and the academic achievement (i.e. overall marks obtained by the student and subject wise marks) comprised as the dependent variable. Among independent variables locale and sex were in categories, but for the purpose of the present analysis they were treated as dummy variables and scoring has been done accordingly as below-

<table>
<thead>
<tr>
<th>Variables</th>
<th>Scoring</th>
<th>Dummy Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Locale</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urban</td>
<td>-1</td>
<td>Ruralness</td>
</tr>
<tr>
<td>Rural</td>
<td>-2</td>
<td></td>
</tr>
<tr>
<td>sex</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>-1</td>
<td>Femininity</td>
</tr>
<tr>
<td>Female</td>
<td>-2</td>
<td></td>
</tr>
</tbody>
</table>

After dummy variable scoring, they have been considered as metric variables and scores were treated as on rating scales. Stepwise multiple regression analysis technique was employed to examine the role of independent variables to determine dependent variable.

The problem and hypotheses undertaken for the present study and obtained results are discussed in the light of existing literature are as under:
Results of descriptive statistics regarding academic achievement

Mean value and S.D. obtained on overall marks (academic achievement) for rural, urban, male female and for total are shown in table 3 and fig. 1.

Table 3
Average academic achievement scores for rural, urban, male, female and for total.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban</td>
<td>229.02</td>
<td>66.05</td>
</tr>
<tr>
<td>Rural</td>
<td>244.57</td>
<td>63.91</td>
</tr>
<tr>
<td>Male</td>
<td>238.97</td>
<td>70.84</td>
</tr>
<tr>
<td>Female</td>
<td>237.41</td>
<td>59.0</td>
</tr>
<tr>
<td>Total</td>
<td>238.15</td>
<td>65.18</td>
</tr>
</tbody>
</table>

It is observed from table 3 and figure 1 that overall average academic achievement scores of students in rural area is higher than urban area while gender difference is negligible.
Subject wise average academic achievement scores of total, urban and rural area are mentioned in Table 4 and Fig. 2.

Table-4
Subject wise average academic achievement scores of total, urban and rural area.

<table>
<thead>
<tr>
<th>Academic achievement Subject wise</th>
<th>Total Mean</th>
<th>S.D.</th>
<th>Urban Mean</th>
<th>S.D.</th>
<th>Rural Mean</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hindi</td>
<td>42.46</td>
<td>16.27</td>
<td>43.20</td>
<td>16.63</td>
<td>41.96</td>
<td>16.02</td>
</tr>
<tr>
<td>English</td>
<td>39.13</td>
<td>12.12</td>
<td>37.09</td>
<td>10.63</td>
<td>40.55</td>
<td>12.88</td>
</tr>
<tr>
<td>Sanskrit</td>
<td>43.24</td>
<td>15.92</td>
<td>42.08</td>
<td>15.40</td>
<td>44.05</td>
<td>16.25</td>
</tr>
<tr>
<td>Math</td>
<td>30.31</td>
<td>9.81</td>
<td>27.66</td>
<td>9.63</td>
<td>32.15</td>
<td>9.53</td>
</tr>
<tr>
<td>Science</td>
<td>45.00</td>
<td>9.71</td>
<td>42.92</td>
<td>10.28</td>
<td>46.53</td>
<td>9.01</td>
</tr>
<tr>
<td>Social Science</td>
<td>38.19</td>
<td>12.80</td>
<td>36.32</td>
<td>13.26</td>
<td>39.51</td>
<td>12.32</td>
</tr>
</tbody>
</table>

![Fig. 2: Subject wise average academic achievement scores of Total, Urban and Rural area](image)

It is observed from table 4 and figure 2 that mean value of science achievement is highest in rural area of Chhattisgarh region following the language subjects i.e., Hindi, Sanskrit and English respectively, while mean value of mathematic achievement scores is lowest. In urban areas students were showing high
scores in Hindi language only while students residing in rural areas were showing higher achievement than urban students in all subjects excepting Hindi subject.

Subject wise average achievement scores of male and female students (Total) are mentioned in Table 5 and Fig. 3.

**Table-5**

**Subject wise average achievement scores of male and female students (Total)**

<table>
<thead>
<tr>
<th>Academic achievement</th>
<th>Male</th>
<th></th>
<th></th>
<th>Female</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>S.D.</td>
<td>Mean</td>
<td>S.D.</td>
<td></td>
</tr>
<tr>
<td>Hindi</td>
<td>41.79</td>
<td>16.48</td>
<td>43.07</td>
<td>16.07</td>
<td></td>
</tr>
<tr>
<td>English</td>
<td>39.59</td>
<td>13.04</td>
<td>38.71</td>
<td>11.22</td>
<td></td>
</tr>
<tr>
<td>Sanskrit</td>
<td>42.51</td>
<td>16.54</td>
<td>43.91</td>
<td>15.32</td>
<td></td>
</tr>
<tr>
<td>Math</td>
<td>30.79</td>
<td>11.38</td>
<td>29.87</td>
<td>8.1</td>
<td></td>
</tr>
<tr>
<td>Science</td>
<td>45.72</td>
<td>10.62</td>
<td>44.43</td>
<td>8.77</td>
<td></td>
</tr>
<tr>
<td>Social science</td>
<td>38.73</td>
<td>13.41</td>
<td>37.70</td>
<td>12.21</td>
<td></td>
</tr>
</tbody>
</table>

**Fig. 3 : Subject wise average achievement scores of male and female students (Total)**
Table 5 and figure 3 indicate that females showed high scores in Hindi and Sanskrit language while males were showing high scores in English language Mathematics, Science and Social Science subjects in Chhattisgarh region.

Subject wise average academic achievement scores for locale and sex are mentioned in Table 6 and Fig. 4 and Fig. 5.

Table 6

Subject wise average achievement scores for locale and sex

<table>
<thead>
<tr>
<th>Subjects</th>
<th>Urban</th>
<th>Rural</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
</tr>
<tr>
<td>Hindi</td>
<td>40.46</td>
<td>45.68</td>
</tr>
<tr>
<td>English</td>
<td>36.48</td>
<td>37.652</td>
</tr>
<tr>
<td>Sanskrit</td>
<td>40.03</td>
<td>43.94</td>
</tr>
<tr>
<td>Math</td>
<td>26.973</td>
<td>28.299</td>
</tr>
<tr>
<td>Science</td>
<td>43.24</td>
<td>42.622</td>
</tr>
<tr>
<td>Social science</td>
<td>35.62</td>
<td>36.96</td>
</tr>
</tbody>
</table>

Fig. 4 : Subject wise average achievement scores (Urban)
It is observed from table 6 figure 4 that in urban area mean value of female achievement is higher in all subjects than male student excepting science subjects. These results also supported by some other previous researches, which found that females are outperforming males at all levels of the school system, (Alton Lee & Praat, 2001; House of Representatives Standing Committee on Education and Training, 2002; Mullis et al., 2003; Office for Standards in Education, 2003) Student’s gender strongly affects their academic performance, with girls performing better in the subjects of Mathematics, and English as well as cumulatively. Girls usually show more efforts leading towards better grades at school (Ceballo, Mc Loyd & Toyokawa, 2004). In rural area this trend was seen opposite (fig. 5). Rural male student achievement is higher than female students with respect to all subjects. This may be due to their domestic involvement and their social discouragement and gender discrimination in rural areas.
Coefficient of correlation for academic achievement in relation to classroom environment for total, rural, urban, male, female are mentioned in Table 7 and shown in Fig. 6,7,8,9,10 respectively.

**Table 7**

Coefficient of correlation for academic achievement in relation to classroom environment for total, rural, urban, male, female.

<table>
<thead>
<tr>
<th>Variable</th>
<th>I</th>
<th>Aff</th>
<th>TS</th>
<th>TO</th>
<th>C</th>
<th>O&amp;O</th>
<th>RC</th>
<th>C</th>
<th>Inn</th>
<th>Locale</th>
<th>Sex</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aca. ach. (Total)</td>
<td>.252**</td>
<td>.282**</td>
<td>.162**</td>
<td>.260**</td>
<td>.212**</td>
<td>.198**</td>
<td>.215**</td>
<td>.214**</td>
<td>.024</td>
<td>.077*</td>
<td>-.012</td>
</tr>
<tr>
<td>Aca. ach. (Rural)</td>
<td>.279**</td>
<td>.344**</td>
<td>.159*</td>
<td>.323**</td>
<td>.278**</td>
<td>.291**</td>
<td>.253**</td>
<td>.234**</td>
<td>.018</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aca.ach. (Urban)</td>
<td>.235**</td>
<td>.185**</td>
<td>.191**</td>
<td>.160**</td>
<td>.107*</td>
<td>.106*</td>
<td>.140*</td>
<td>.201**</td>
<td>.170**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aca.ach. (Male)</td>
<td>.181**</td>
<td>.236**</td>
<td>.268**</td>
<td>.188**</td>
<td>.183**</td>
<td>.119*</td>
<td>.149**</td>
<td>.140**</td>
<td>.225**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aca.ach. (Female)</td>
<td>.327**</td>
<td>.332**</td>
<td>.131**</td>
<td>.332**</td>
<td>.243**</td>
<td>.304**</td>
<td>.289**</td>
<td>.287**</td>
<td>.020</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**P < .01   *P < .05**
Fig. 7: Coefficient of correlation for academic achievement and classroom environment (Rural)

Fig. 8: Coefficient of correlation for academic achievement and classroom environment (Urban)
It is observed from table 7 and figure 6 showing coefficient of correlation that students academic achievement results were significantly related in a positive direction with all the dimensions of classroom environment namely involvement (I), affiliation (Aff.), teacher support (TS), task orientation (TO), competition (C), order and organization (O & O), rule clarity (RC), teacher control (TC) and innovation (Inn). Results showed that among correlated variables to academic achievement affiliation has the highest correlation (r = .282) with academic achievement, followed
by task orientation, involvement, rule clarity, teacher control, competition, order and organization, teacher support, innovation and locale (ruralness) respectively. While sex (femininity) has the negative relationship with the achievement but the relationship was not found significant. For rural area results indicated that among correlated variables to academic achievement affiliation has the highest correlation ($r = .344$) and after that task orientation $r = .323$, whereas innovation ($r = .081$) has the lowest correlation.

Result also showed that in rural area coefficient of correlations were seen higher than urban area for all sub dimensions, i.e., involvement, affiliation, task orientation, competition, order and organization, rule clarity, teacher control dimensions, except teacher support and innovation. Table also indicated that females showing high correlation for all sub dimensions of classroom environment except teacher support and innovation sub dimension than males, coefficient of correlation for these two dimensions were high in males. Findings supported by the study of Huang (2003) indicated that girls perceived their classroom learning environments more positively than boys did. Girls were more involved, more affiliated and more cooperative with classmates than boys were.

**Role of classroom environment and overall academic achievement**

The first problem of the present study was to investigate the role of classroom environment in academic achievement of the students. It was hypothesized that classroom environment (along with its dimensions i.e. involvement, affiliation, teacher support, task orientation, competition, order organization, rule clarity, teacher control and innovation) would contribute significantly to academic achievement of the student.

Stepwise multiple regression analysis for overall academic achievement scores (Total) are mentioned in Table 8 and shown in Fig. 11.
Table 8
Stepwise multiple regression analysis for overall academic achievement scores (Total)

<table>
<thead>
<tr>
<th>Predictor variables</th>
<th>R</th>
<th>$R^2$</th>
<th>$R^2$ square change</th>
<th>F change</th>
<th>Unstd. b Coeff.</th>
<th>Std. $\beta$ Coeff.</th>
<th>t</th>
<th>Explained variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td></td>
<td></td>
<td></td>
<td>129.649</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Affiliation</td>
<td>.282a</td>
<td>.079</td>
<td>.079</td>
<td>81.516</td>
<td>1.799</td>
<td>.175</td>
<td>4.598</td>
<td>7.9%</td>
</tr>
<tr>
<td>Task Orientation</td>
<td>.307</td>
<td>.094</td>
<td>.015</td>
<td>15.506</td>
<td>1.265</td>
<td>.118</td>
<td>3.061</td>
<td>1.5%</td>
</tr>
<tr>
<td>Teacher Control</td>
<td>.318</td>
<td>.101</td>
<td>.007</td>
<td>7.146</td>
<td>1.213</td>
<td>.098</td>
<td>2.826</td>
<td>.7%</td>
</tr>
<tr>
<td>Locale</td>
<td>.328</td>
<td>.108</td>
<td>.007</td>
<td>6.887</td>
<td>7.766</td>
<td>.081</td>
<td>2.624</td>
<td>.7%</td>
</tr>
</tbody>
</table>

R = .328, $R^2 = .108$, F = 28.401, P < .01

Results of stepwise multiple regression analysis for academic achievement reveals that the model of regression analysis is significant, as the $R^2$ square = .108, F = 28.401, p < .01 indicates the strength of model. It is observed that 10.8% variance of I. V. taken in total is contributed significantly in the variation of the criterion variable academic achievement. The affiliation, task orientation, teacher control sub

![Fig. 11: Explained Variance in Academic Achievement of students' by significant variable (Total)](image)
dimensions of classroom environment and locale emerges out to be significant predictors contributing significantly in the variation of criterion variable academic achievement whereas the other remaining variables i.e., involvement, teacher support, competition, order and organization, rule clarity and innovation were not found to be significant in explaining variance of academic achievement. The beta coefficient of significant variables indicated that the affiliation sub dimension of classroom environment was the most important predictor emerged out and explained alone 7.9% of variance in students’ academic achievement. Affiliation assesses the level of friendship student feel for each other i.e., the extent to which they help each other with home work, get to know each other easily and working together. The second significant variable was the task orientation with beta coefficient of .118 and it had explained 1.5% of variance of achievement. Task orientation measures the extent to which it is important to complete the activities that have been planned. The third significant variable was teacher control with beta coefficient of .098 and had explained .7% of variance of achievement. It measures how strict the teacher is in enforcing the rules and the severity of the punishment for rule infractions. The number of rules and the ease of students getting in trouble are considered. The fourth significant variable was locale with beta coefficient of .081 and it had explained .7% of variance of achievement. The findings of this study supported by the findings of earlier researches viz. Anderson et al., (2004); Chua, (2004); Davis, (2004); which found that there was a significant relationship between students’ perceptions of classroom environment i.e., involvement, affiliation, teacher support, task orientation, order and organization, and rule clarity and their outcomes. Lau Shiao Wei (2011) found affiliation as the most important dimension of classroom environment, Welberg and Haertel’s (1981) found that student outcomes were enhanced in classes with greater affiliation and task orientation. Goh and Khine (2002) have mentioned that a good teacher student relationship is superior to the creation and maintenance of a positive classroom. Eshel and Kohavi (2003) found that academic achievement would be highest when student and teacher control is high, and would be lowest when both of them are low. Kiany (2011) studied high school students’ perceptions of teacher control orientations and their English achievement and found that teacher control had a statistically significant effect on student outcomes. In the present study role of locale was found to be significant and it shows that ruralness may enhance academic achievement. This finding does not support the findings of earlier researches by
Nagaraju et al (2003); Usha, (2007); Joshi, and Shrivastava, (2009) which found that the achievement of the pupils from urban areas was better than the achievement of pupils from rural areas. Some of the studies give contradictory findings that there is no significant difference in the academic performance of students from rural and urban environment by Alokan, Funmilola, Bosede, Arijesuyo and Amos Emiloju (2013); Wobmann (2010). This may be due to the educational awareness of people from rural area performing better than urban area. One of the reasons may be the sample of the present study which was taken only from government schools. We know that in urban area every parent wants their ward should be educated from reputed school. They have many options for their schooling, private schooling of children became as status symbol for parents. In such conditions in urban area only those parents belongs to low socio economic status send their ward in government school, in contrast in rural area parents have no such options.

**Results regarding subject wise academic achievement scores (Total)**

To find out the best predictors for subject wise achievement, subject wise multiple regression analysis was carried out. Table 8 showed analysis of the data for Hindi subject the multiple co relational co-efficient was found to be .320 which was highly significant, P < .01) its R square was .102 which indicated that the significant variables included in the present analysis contributed 10.2% variance in the Hindi subject achievement scores of the students. The beta coefficient of significant variables indicated that the teacher support and involvement sub dimensions of classroom environment were the most important dimensions emerged out and explained 7.0% and 1.9% of variation of Hindi achievement respectively. For English subject the multiple co relational co-efficient was found to be .323 which was highly significant (F = 27.46, P < .01) its R square was .105 which indicated that the significant variables included in the present analysis contributed 10.5% variance in the English achievement scores of the students. The beta coefficient of significant variables indicated that the affiliation, teacher support, competition sub dimensions of classroom environment and locale (ruralness) were the most important variable emerged out and explained 6.8%, 2.2%, 0.6% and 0.8% variation of English achievement respectively. For achievement of Sanskrit subject the multiple co relational co-efficient was found to be .331 which was highly significant (F = 28.91, P < .01) its R square was .109 which indicated that the significant variables included in the present analysis contributed 10.9% variance of Sanskrit achievement scores of
the students. The beta coefficient of significant variables indicated that the teacher support, task orientation, affiliation sub dimensions of classroom environment and femininity (sex) were the most important variable emerged out and explained 7.9% and 1.9%, 0.6% and 0.5% of variation of Sanskrit achievement respectively. For achievement of Mathematics subject model of regression analysis is significant as the R square =.088, F= 22.675, p<. 01, which indicates strength of the model, its R square value= .088 which indicated that significant variables included in the present analysis contributed 8.8%of variance in academic achievement. Analysis showed that b coefficient for three factors namely affiliation, teacher support, and teacher control was found to be significant and had explained 4.3%, 1.2% and 0.6% of variance of mathematics achievement respectively, whereas the other remaining variables were found to be insignificant in explaining variance of mathematics achievement. For achievement of science subject regression model is significant with R= .229, R² = .084, F= 21.54. Beta coefficient for affiliation, teacher support and teacher control was found to be significant and had explained 5.2%, 0.9% and 0.5% of variance. For social science subject the model is significant with R= .321, R² = 10.3, F= 27.04, P<=.01 which indicates the strength of model. Its R square value .103 indicated that significant variables included in the present analysis contributed 10.3% of variance in academic achievement. Teacher support emerged out as most significant predictor for their achievement and explained 6.9% of variance for social science achievement. Table 9 showed that teacher support sub dimension of classroom environment was the most important predictor emerged out significantly for achievement of all subjects and explained. 7.0%,( Hindi), 2.2% (English), 7.9% (Sanskrit),1.2% (Mathematics),9% (Science) and 6.9% of variance of Social Science achievement. Teacher support measures the amount of help, concern and friendship the teacher directs toward the students. Student perception of teacher support have been associated with greater feelings of school belonging (Ma, 2003, Osterman, 2000) and greater school engagement and motivation as well as better academic performance (Birch & Ladd, 1998) positive teacher-student relationship were associated with better school performance (Chiaki Konishi, 2010). Affiliation was the second important dimension emerged out as significant factor and explained 6.8% (English), 6% (Sanskrit), 4.3% (Mathematics), 5.2% (Science) and 1.9% of Social Science achievement.
Results regarding Stepwise multiple regression for subject wise achievement are presented in Table-9 and Explained variance in subject wise achievement of students’ by significant variable are shown in Fig. 12a, 12b, 12c, 12d, 12e, 12f respectively.

Table - 9

Stepwise multiple regression analysis for subject wise achievement (Total)

<table>
<thead>
<tr>
<th>Significant Variable</th>
<th>Hindi</th>
<th>English</th>
<th>Sanskrit</th>
<th>Math</th>
<th>Science</th>
<th>Social Science</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>0.320</td>
<td>0.131</td>
<td>1.9%</td>
<td>0.274</td>
<td>0.144</td>
<td>6.8%</td>
</tr>
<tr>
<td>A</td>
<td>0.323</td>
<td>0.144</td>
<td>6.8%</td>
<td>0.263</td>
<td>0.105</td>
<td>6.6%</td>
</tr>
<tr>
<td>TS</td>
<td>0.583</td>
<td>0.174</td>
<td>7.0%</td>
<td>0.384</td>
<td>0.154</td>
<td>2.2%</td>
</tr>
<tr>
<td>TO</td>
<td>.314</td>
<td>.102</td>
<td>.7%</td>
<td>.155</td>
<td>.083</td>
<td>.6%</td>
</tr>
<tr>
<td>C</td>
<td>.234</td>
<td>.091</td>
<td>.6%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>O&amp;O</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TC</td>
<td>.314</td>
<td>.102</td>
<td>.7%</td>
<td>.155</td>
<td>.083</td>
<td>.6%</td>
</tr>
<tr>
<td>Inn.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>2.523</td>
<td>.077</td>
<td>.6%</td>
<td>2.329</td>
<td>.073</td>
<td>.5%</td>
</tr>
<tr>
<td>Locale</td>
<td>1.635</td>
<td>.092</td>
<td>.8%</td>
<td>2.408</td>
<td>.167</td>
<td>2.7%</td>
</tr>
</tbody>
</table>

R=.320, R2=10.2
F=26.885, P<.01

R=.323, R2=10.5
F=27.46, P<.01

R=.331, R2=10.9
F=28.91, P<.01

R=.296, R2=8.8
F=22.675, P<.01

R=.229, R2=8.4
F=21.54, P<.01

R=.321, R2=10.3
F=27.04, P<.01

b = b Coefficient   β = β Coefficient   Exp. Vari. = Explained Variance
Fig. 12(a)-Explained variance by significant variable for Hindi subject achievement (Total)

- Involvement: 1.90%
- Teacher support: 7.00%
- Teacher Control: 0.70%
- Femininity: 0.60%

Fig. 12(b)-Explained variance by significant variable for English subject achievement (Total)

- Affiliation: 6.80%
- Teacher support: 2.20%
- Competition: 0.80%
- Locale: 0.60%

Fig. 12(c)-Explained variance by significant variable for Sanskrit subject achievement (Total)

- Affiliation: 7.90%
- Teacher support: 1.90%
- Task Orientation: 0.60%
- Sex: 0.50%
Fig. 12(d)-Explained variance by significant variable for Mathematics subject achievement (Total)

- Affiliation: 4.30%
- Teacher support: 2.70%
- Teacher Control: 0.60%
- Locale: 1.20%

Fig. 12(e)-Explained variance by significant variable for Science subject achievement (Total)

- Involvement: 5.20%
- Affiliation: 1.70%
- Rule Clarity: 0.50%
- Sex: 0.90%

Fig. 12(f)-Explained variance by significant variable for Social Science subject achievement (Total)

- Affiliation: 6.90%
- Teacher support: 1.90%
- Teacher Control: 0.70%
- Locale: 0.70%
Findings of Wei Elias & (2011) supported these results that affiliation is the most important dimension of classroom environment for their achievement, Welberg and Haertel’s (1981) found that student outcomes were enhanced in classes with greater affiliation and task orientation.

Results also showed that teacher control dimension was important for mathematics, science and social science achievements. Role of femininity was found to be significant for Hindi and Sanskrit subjects while role of ruralness was found to be significant for English, Mathematics, Science and Social Science subjects. It showed that in government schools of Chhattisgarh achievement of Hindi and Sanskrit subjects increased with femininity, while achievement of English, Mathematics, Science, Social Science subjects was increased with ruralness because of rural awareness in education.

Thus, we find that the hypotheses stating that classroom environment along with its various dimensions i.e. involvement, affiliation teacher support, task orientation, competition, order and organization, rule clarity, teacher control and innovation, would contribute significantly to academic achievement of the students were accepted.

Role of Locale and overall Academic Achievement

The second problem of the study was to see the role of locale in academic achievement. The results of coefficient of correlation showed that locale has the significant positive correlation with academic achievement of the students. Results of multiple regression analysis showed that locale play significant role to determine academic achievement with beta coefficient. 081 and it had explained .7% of variance of achievement. Results also indicated that in male students locale plays the significant role to predict academic achievement with beta coefficient of .187 and it had explained 2.7% of variance of academic achievement. For female student locale was not found as significant predictor.

Role of Locale and subject wise achievement- In order to investigate the role of locale and subject wise achievement, it was found significant for English, Mathematics, Science and Social Science subjects. It showed that achievement of English, Mathematics, Science and Social Science subjects was increased with ruralness because of rural awareness in education. It may be concluded that ruralness
may enhance academic achievement. In the present study role of locale was found to be significant and it shows that ruralness may enhance academic achievement, this finding does not supported the findings of earlier researches by Joshi, and Shrivastava, (2009); Nagaraju et al (2003); Usha, (2007) which found that the achievement of the pupils from urban areas was better than the achievement of pupils from rural areas. Some of the studies give contradictory findings that there is no significant difference in the academic performance of students from rural and urban environment by Alokan, Funmilola Bosede and Arijesuyo, Amos Emiloju (2013) Wobmann (2010). This may be due to the educational awareness of people from rural area performing better than urban area. One of the reasons may be the sample of the present study as it was mentioned earlier in chapter four that the sample of the study which was taken only from state government schools. We know that in urban area every parent wants their ward should be educated from a reputed school. They have many options for their schooling, private schooling of children became as status symbol for parents. In such conditions in urban area only those parents belong to low socio economic status send their ward in government school. In contrast parents belong to rural area have no such options.

In male students role of locale was found significant for English, Mathematics, Science and Social Science subjects and it had explained 2.9% variance of English achievement, 7.9% variance of mathematic achievement, 3.0% variance of science achievement and 2.9% variance of social science achievement.

In female students role of locale was found to be significant for Hindi, Mathematics and Science achievement with Beta Coefficient -.099, .096 and .105 respectively, it explained 0.8% variance of Hindi achievement, 0.9% variance of Mathematics achievement and 1.0% variance of Science achievement. Here the negative nature of beta coefficient for Hindi subject indicated that the achievement of Hindi became less favorable with the increase in ruralness. This shows that ruralness is less favorable for Hindi achievement in female students this may be due to the effect of local language.

**Overall academic achievement of rural student**- To find out the best predictors of academic achievement in rural areas separate regression analysis for rural students
was carried out. Results regarding stepwise multiple regression analysis of academic achievement of rural students were presented in table 10 and figure 13.

Table 10

**Stepwise multiple regression analysis for overall academic achievement of rural students**

<table>
<thead>
<tr>
<th>Predictor variable</th>
<th>R</th>
<th>R²</th>
<th>R square change</th>
<th>F change</th>
<th>Unstd. b coeff.</th>
<th>Std. β Coeff.</th>
<th>t</th>
<th>Explained Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td></td>
<td></td>
<td></td>
<td>141.440</td>
<td></td>
<td></td>
<td>18.839</td>
<td></td>
</tr>
<tr>
<td>Affiliation</td>
<td>.344a</td>
<td>.119</td>
<td>.119</td>
<td>74.777</td>
<td>1.789</td>
<td>.195</td>
<td>3.784</td>
<td>11.9%</td>
</tr>
<tr>
<td>Task Orientation</td>
<td>.375b</td>
<td>.141</td>
<td>.022</td>
<td>14.291</td>
<td>1.601</td>
<td>.160</td>
<td>3.220</td>
<td>2.2%</td>
</tr>
<tr>
<td>Competition</td>
<td>.386c</td>
<td>.149</td>
<td>.008</td>
<td>5.281</td>
<td>1.339</td>
<td>.107</td>
<td>2.298</td>
<td>.8%</td>
</tr>
</tbody>
</table>

R = .386,  \( R^2 = .149 \),  F = 32.279,  P < .01

D. V. : Academic achievement

Fig. 13 : Explained Variance in Academic Achievement of students' by significant variable (Rural)
It is observed from Table-10 that model of regression analysis for academic achievement of rural students was found to be significant as the $R = .386$, $R^2 = .149$, $F = 32.279$, $P<.01$ which indicated significant strength of the model. Model shows that the significant variables included in the present analysis contributed to 14.9% of variance in determining the academic achievement of the rural students. The affiliation, task orientation and competition, sub dimension of classroom environment emerge out to be significant predictors contributing significantly in the variation of criterion variable. Table also shows that in rural area affiliation task orientation and competitions factors were having significant role to determine achievement whereas it was insignificant in urban area. This indicated that the increase in the affiliation, task orientation and competition increased the academic achievement of the rural students.

Subject wise academic achievement of rural students

Results showed that in rural students teacher support was the most important factor emerged out as significant predictor for subject wise achievements. beta coefficient showed that it had explained alone 9.5% variance of Hindi achievement, 10.0% variance of English achievement, 9.3% variance of Sanskrit achievement, 5.9% variance of math achievement 2.1% of variance of science achievement and 10.3% variance of social science achievement.

Affiliation was the Second important factor emerged out as significant predictor for English, Sanskrit, Science and Social Science achievement and explained 2.4% variance of English achievement, 2.7% variance of Sanskrit achievement 9.4% variance of science achievement and 2.3% variance of Social science achievement. Competition dimension was found to be significant predictor for English and math Achievement and Explained 1.0% variance of English achievement and 1.8% variance of math achievement. Result also shows that for Mathematic subject sex has the significant role with beta coefficient of -.101and had explained 1.0% of variance of Math achievement. Here the negative nature indicated that the achievement of mathematic became less favorable with the increase in femininity. This shows that if subject will be feminine the achievement of mathematics will be lower.
Results regarding Stepwise multiple regression for subject wise achievement of rural students’ are presented in Table-11 and Explained variance in subject wise achievement of students’ by significant variable are shown in Fig. 14a, 14b, 14c, 14d, 14e, 14f respectively.

**Table-11**

**Stepwise multiple regression for subject wise achievement (Rural)**

<table>
<thead>
<tr>
<th>Sig.va.</th>
<th>Hindi</th>
<th>English</th>
<th>Sanskrit</th>
<th>Math</th>
<th>Science</th>
<th>Social Science</th>
</tr>
</thead>
<tbody>
<tr>
<td>(CONSTANT)</td>
<td>18.286</td>
<td>20.345</td>
<td>24.774</td>
<td>34.340</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I</td>
<td>.670</td>
<td>.212</td>
<td>.95%</td>
<td>.508</td>
<td>.201</td>
<td>10%</td>
</tr>
<tr>
<td>TS</td>
<td>.464</td>
<td>.185</td>
<td>2.5%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TO</td>
<td>.298</td>
<td>.118</td>
<td>1.0%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>O&amp;O</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inn.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Locale</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

R = .347  
R2 = .120  
F = 37.939  
P < .01

R = .371  
R2 = .138  
F = 29.398  
P < .01

R = .359  
R2 = .129.9  
F = 27.406  
P < .01

R = .276  
R2 = .86  
F = 22.94  
P < .01

R = .338  
R2 = .115  
F = 35.883  
P < .01

R = .355  
R2 = .126  
F = 39.909  
P < .01

b = b Coefficient  β = β Coefficient  Exp. Vari. = Explained Variance
Fig. 14(a)-Explained variance by significant variable for Hindi subject achievement (Rural)

Teacher support: 21%
Task Orientation: 9.50%

Fig. 14(b)-Explained variance by significant variable for English subject achievement (Rural)

Affiliation: 1.00%
Teacher support: 10.00%
Competition: 2.40%

Fig. 14(c)-Explained variance by significant variable for Sanskrit subject achievement (Rural)

Involvement: 1.00%
Affiliation: 2.70%
Teacher support: 9.30%
Fig. 14(d) - Explained variance by significant variable for Mathematics subject achievement (Rural)

- Teacher support: 5.90%
- Competition: 1.80%
- Sex: 1.00%

Fig. 14(e) - Explained variance by significant variable for Science subject achievement (Rural)

- Affiliation: 9.40%
- Teacher support: 2.10%

Fig. 14(f) - Explained variance by significant variable for Social Science subject achievement (Rural)

- Affiliation: 10.30%
- Teacher support: 2.30%
Overall academic achievement of urban students: Results regarding Stepwise multiple regression for overall academic achievement of urban students’ are presented in Table-12 and Explained variance in overall achievement of students’ by significant variable are shown in Fig. 15.

Table-12
Stepwise multiple regression analysis of academic achievement (urban)

<table>
<thead>
<tr>
<th>Predictor variable</th>
<th>R</th>
<th>R2</th>
<th>R square change</th>
<th>F change</th>
<th>Unstd. b. Coeff.</th>
<th>Std. β Coeff.</th>
<th>t</th>
<th>Explained variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>1</td>
<td>.055</td>
<td>.055</td>
<td>107.03</td>
<td>5.257</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Involvement</td>
<td>.235a</td>
<td>.055</td>
<td>.055</td>
<td>22.679</td>
<td>2.176</td>
<td>0.205</td>
<td>4.004</td>
<td>5.50%</td>
</tr>
<tr>
<td>Teacher Control</td>
<td>.273b</td>
<td>.074</td>
<td>.019</td>
<td>7.886</td>
<td>2.048</td>
<td>0.152</td>
<td>2.986</td>
<td>1.90%</td>
</tr>
<tr>
<td>Sex</td>
<td>.301c</td>
<td>.091</td>
<td>.016</td>
<td>6.916</td>
<td>17.019</td>
<td>0.129</td>
<td>2.63</td>
<td>1.60%</td>
</tr>
</tbody>
</table>

R = .301, R² = .091, F = 12.786, P < .01
D.V. : Academic achievement

Fig. 15 : Explained Variance in Academic Achievement of students' by significant variable (Urban)
Results regarding Stepwise multiple regression for subject wise achievement of urban students’ are presented in Table-13 and Explained variance in subject wise achievement of students’ by significant variable are shown in Fig. 16a, 16b, 16c, 16d, 16e, 16f respectively.

Table -13

Stepwise multiple regression for subject wise achievement (urban )

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
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<th></th>
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</tr>
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<tbody>
<tr>
<td>(CONSTANT)</td>
<td>9.144</td>
<td>.2535</td>
<td>20.22</td>
<td>17.503</td>
<td>36.808</td>
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<td></td>
</tr>
<tr>
<td>I</td>
<td>.522</td>
<td>.195</td>
<td>4.9%</td>
<td>.263</td>
<td>.154</td>
<td>3.5%</td>
<td>.457</td>
<td>.184</td>
<td>6.4%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>.264</td>
<td>.149</td>
<td>3.4%</td>
<td>.264</td>
<td>.149</td>
<td>3.4%</td>
<td>.407</td>
<td>.190</td>
<td>5.3%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TS</td>
<td>.544</td>
<td>.159</td>
<td>2.1%</td>
<td>.544</td>
<td>.159</td>
<td>2.1%</td>
<td>.407</td>
<td>.190</td>
<td>5.3%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TO</td>
<td>.264</td>
<td>.149</td>
<td>3.4%</td>
<td>.264</td>
<td>.149</td>
<td>3.4%</td>
<td>.407</td>
<td>.190</td>
<td>5.3%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>.264</td>
<td>.149</td>
<td>3.4%</td>
<td>.264</td>
<td>.149</td>
<td>3.4%</td>
<td>.407</td>
<td>.190</td>
<td>5.3%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>O&amp;O</td>
<td>.264</td>
<td>.149</td>
<td>3.4%</td>
<td>.264</td>
<td>.149</td>
<td>3.4%</td>
<td>.407</td>
<td>.190</td>
<td>5.3%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TC</td>
<td>.544</td>
<td>.159</td>
<td>2.1%</td>
<td>.544</td>
<td>.159</td>
<td>2.1%</td>
<td>.407</td>
<td>.190</td>
<td>5.3%</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Inn.</td>
<td>.264</td>
<td>.149</td>
<td>3.4%</td>
<td>.264</td>
<td>.149</td>
<td>3.4%</td>
<td>.407</td>
<td>.190</td>
<td>5.3%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>6.44</td>
<td>.194</td>
<td>3.3%</td>
<td>.264</td>
<td>.149</td>
<td>3.4%</td>
<td>.407</td>
<td>.190</td>
<td>5.3%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Locale</td>
<td>.264</td>
<td>.149</td>
<td>3.4%</td>
<td>.264</td>
<td>.149</td>
<td>3.4%</td>
<td>.407</td>
<td>.190</td>
<td>5.3%</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\[ R = .327, R^2 = .107, F = 15.35, P < .01 \]
\[ R = .327, R^2 = .107, F = 15.35, P < .01 \]

\[ b = b \text{ Coefficient} \]
\[ \beta = \beta \text{ Coefficient} \]
\[ \text{Exp. Vari.} = \text{Explained Variance} \]
Fig. 16(a)-Explained variance by significant variable for Hindi subject achievement (Urban)

Involvement: 4.90%
Teacher Control: 2.40%
Sex: 3.30%

Fig. 16(b)-Explained variance by significant variable for English subject achievement (Urban)

Involvement: 27%
Teacher Control: 3.50%

Fig. 16(c) - Explained variance by significant variable for Sanskrit subject achievement (Urban)

Involvement: 6.40%
Teacher Support: 2.10%
Fig. 16(d)-Explained variance by significant variable for Mathematics subject achievement (Urban)

Fig. 16(e)-Explained variance by significant variable for Science subject achievement (Urban)

Fig. 16(f)-Explained variance by significant variable for Social Science subject achievement (Urban)
In urban students the model of regression analysis showed multiple co-relational coefficient for urban students was found to be .301 which was significant with F=12.786, p<.01) R square.091 which indicated that significant variables included in the present analysis contributed to 9.1% of variance in determining the achievement of the students. In urban area involvement, teacher control sub dimension of classroom environment and sex emerge out to be significant predictors contributing significantly in the variation of criterion variable. It shows that the increase in the involvement and teacher control increased the achievement of urban students. In urban area femininity has the significant role to determine achievement; it indicates that in urban area achievement increases with femininity.

**Subject wise academic achievement of urban students**

Table 14 showed that in urban area teacher control emerged out as significant predictor for subject wise achievements. beta co-efficient showed that It had explained alone 2.4% variance of Hindi achievement, 1.3% variance of English achievement, 1.0% variance of math achievement 2.3% of variance of science achievement and 1.6% variance of social science achievement. Results also point out that in urban area involvement factor emerged out as significant predictor for language subject’s i. e. Hindi, English, Sanskrit and it had explained 4.9%, variance of Hindi achievement, 3.5.0% variance of English achievement and 6.4% variance of Sanskrit achievement while for mathematics, science and social science teacher control factor emerged out as significant predictor for subject wise achievements. Data also reveal that in urban area femininity has the significant role for Hindi achievement and it had explained 3.3% variance of Hindi achievement this shows that the achievement of Hindi increases with femininity in urban area.

Thus we find that the hypotheses stating that locale would contribute significantly to academic achievement of the students was accepted.

**Role of sex and overall Academic achievement**

Another problem of the present study was to see the role of sex in academic achievement. Result of coefficient of correlation shows that sex has the negative correlation with academic achievement of the students but it was not found
significant. Results of stepwise multiple regression analysis showed that role of sex was not found significant for total population findings confirm by earlier researchers. (Arigbabu & Mji 2004; Bilesanmi-Awoderu, 2006; David & Stanley, 2000; Din, Ming, & Esther, 2004; Fakeye (2010); Freedman, 2002; Gupta, Sharma and Gupta (2012); Pandey and Ahmad (2008); Sungur and Tekkaya, 2003; Tella et al. (2010) etc.). Which found no significant difference in academic achievement of students with respect to gender.

Result also point out that in urban areas femininity has the significant role to determine academic achievement with beta coefficient of .129 and it had explained 1.6% of variance of academic achievement of urban students while trend was opposite for rural areas. Possible reason may be due to the parental awareness about female child education. Findings supported by earlier researchers (Alton Lee & Praat 2001; House of Representatives Standing Committee on Education and Training, 2002; Mullis et al., 2003; Office for Standards in Education, 2003).

In rural areas role of femininity was not seen significant. This may be due to the, social evils i.e. gender discrimination, lack of motivation from parents, responsibilities of house hold work in early age, lack of awareness of parents, lack of interest about female child education, and mentality of early marriage, femininity was not associated with achievement in rural area.

**Role of sex and subject wise Academic achievement**

In order to investigate the role of sex and subject wise achievement it was found to be significant for Hindi and Sanskrit subjects only and it had explained .6% and .5% of variance in achievement of respective subject. In urban area role of sex was found to be significant for Hindi subject only. In rural area femininity has the negative role for mathematic achievement. It may be said that if subject will be feminine the achievement of mathematic will be lower in rural area while in urban area if subject will be feminine achievement of Hindi will be enhance.

**Academic achievement of male students**

Results regarding stepwise multiple regression analysis of academic achievement of male students were presented in Table 14 and figure 17.
To find out the best predictors in male students for academic achievement, the separate stepwise multiple regression analysis for academic achievement of male students was carried out. Table showed analysis of the data that the multiple correlational coefficient was found to be .361 which was highly significant ($F=16.73$, $P<.000$) its $R^2$ was .130, which indicated that the significant variables included in the present analysis contributed 13.9% variance in the achievement scores of the students. The teacher support, affiliation, competition sub dimension of classroom environment and locale emerge out to be significant predictors contributing significantly in the variation of criterion variable academic achievement. Whereas remaining variables were found to be insignificant in explaining variance of achievement scores of the students.
Results regarding Stepwise multiple regression for subject wise achievement of male students’ are presented in Table-15 and Explained variance in subject wise achievement of students’ by significant variable are shown in Fig. 18a, 18b, 18c, 18d, 18e, 18f respectively.

Table -15
Stepwise multiple regression for subject wise achievement (male)

<table>
<thead>
<tr>
<th>Sig.va.</th>
<th>Hindi</th>
<th>English</th>
<th>Sanskrit</th>
<th>Math</th>
<th>Science</th>
<th>Social science</th>
</tr>
</thead>
<tbody>
<tr>
<td>(CONSTANT)</td>
<td>22.551</td>
<td>13.872</td>
<td>11.199</td>
<td>6.017</td>
<td>24.944</td>
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<td>I</td>
<td>.359</td>
<td>.129</td>
<td>1.7%</td>
<td>.199</td>
<td>.104</td>
<td>3.6%</td>
</tr>
<tr>
<td>TS</td>
<td>.569</td>
<td>.162</td>
<td>4.9%</td>
<td>.561</td>
<td>.202</td>
<td>6.7%</td>
</tr>
<tr>
<td>C</td>
<td>.428</td>
<td>.145</td>
<td>1.9%</td>
<td>.294</td>
<td>.114</td>
<td>1.4%</td>
</tr>
<tr>
<td>O&amp;O</td>
<td></td>
<td></td>
<td></td>
<td>.319</td>
<td>.112</td>
<td>1.2%</td>
</tr>
<tr>
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<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Inn.</td>
<td>.510</td>
<td>.124</td>
<td>1.2%</td>
<td>.429</td>
<td>.104</td>
<td>.8%</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Locale</td>
<td>4.989</td>
<td>.188</td>
<td>2.9%</td>
<td>6.496</td>
<td>.281</td>
<td>7.9%</td>
</tr>
<tr>
<td>R</td>
<td>.246</td>
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<td></td>
<td>.341</td>
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</tr>
<tr>
<td>R2</td>
<td>.061</td>
<td></td>
<td></td>
<td>.116</td>
<td></td>
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<tr>
<td>P&lt;.01</td>
<td></td>
<td></td>
<td></td>
<td>P&lt;.01</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

b = b Coefficient  β = β Coefficient  Exp. Vari. = Explained Variance
Fig. 18(a)-Explained variance by significant variable for Hindi subject achievement (Male)

- Teacher support: 4.90%
- Innovation: 1.20%

Fig. 18(b)-Explained variance by significant variable for English subject achievement (Male)

- Teacher support: 6.70%
- Competition: 2.90%
- Locale: 1.90%

Fig. 18(c)-Explained variance by significant variable for Sanskrit subject achievement (Male)

- Affiliation: 9%
- Teacher support: 18%
- Innovation: 73%
Fig. 18(d)- Explained variance by significant variable for Mathematics subject achievement (Male)

- Affiliation: 58%
- Teacher support: 26%
- Competition: 6%
- Locale: 10%

Fig. 18(e)- Explained variance by significant variable for Science subject achievement (Male)

- Affiliation: 34%
- Teacher support: 19%
- Competition: 47%
- Locale: 1.00%

Fig. 18(f)- Explained variance by significant variable for Social Science subject achievement (Male)

- Affiliation: 47%
- Innovation: 34%
- Locale: 19%
Subject wise academic achievement of male students

For male student teacher support was the most important factor and it had emerged out as significant predictor for achievement of all subjects. beta co-efficient showed that It had explained alone 4.9% variance of Hindi achievement, 6.7.0% variance of English achievement, 6.9% variance of Sanskrit achievement, 0.8% variance of math achievement, 4.1% of variance of science achievement and 5.5% variance of social science achievement. Affiliation was the second important factor emerged out as significant predictor for Sanskrit, math, Science and Social Science achievement and explained 1.7% variance of Sanskrit achievement, 3.6% variance of math achievement and 1.0% variance of science achievement and 2.1% variance of social science achievement. Affiliation was the second important variable which play important role for subjects such as Sanskrit, Math Science and Social Science and explained significant variance in these subjects. Competition emerged out as significant predictor for Math, English and science subject and it had explained 1.4% variance of math achievement, 1.9% variance of English achievement and 1.9% variance of science achievement. Results of the study also supported by Gneezy, Niederle And Rustichini (2003) in which he found that, as we increase the competitiveness of the environment, a significant increase in performance for men, but not for women. This result shows significant gender gap in performance. Lam, Yim, Law, & Cheung (2004) studied the effects of competition on achievement motivation in Chinese classrooms and found that competition had a positive impact on performance goals and learning motivation in the classroom

Result also shows that locale has the significant role for predicting English Math, Science and Social Science achievement of male students and it had explained 2.9% variance of English achievement, 7.9% variance of mathematic achievement, 3.0% variance of science achievement and 2.9% variance of social science achievement. This shows that male students of rural area tend to achieve higher in English, Math, Science and Social Science while trend was opposite for urban male students

Academic achievement of female students

Results regarding stepwise multiple regression analysis of academic achievement of female students were presented in Table 16 and figure 19.
Table 16-
Stepwise multiple regression analysis of academic achievement (Female)

<table>
<thead>
<tr>
<th>Predictor variable</th>
<th>R</th>
<th>R2</th>
<th>R square change</th>
<th>F change</th>
<th>Unstd. b Coeff.</th>
<th>Std. β Coeff.</th>
<th>t</th>
<th>Explained variance</th>
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</thead>
<tbody>
<tr>
<td>constant</td>
<td></td>
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<tr>
<td>Task Orientation</td>
<td>.332a</td>
<td>.110</td>
<td>.110</td>
<td>61.319</td>
<td>1.354</td>
<td>.149</td>
<td>2.585</td>
<td>11%</td>
</tr>
<tr>
<td>Affiliation</td>
<td>.369b</td>
<td>.136</td>
<td>.026</td>
<td>14.651</td>
<td>1.357</td>
<td>.153</td>
<td>2.696</td>
<td>2.6%</td>
</tr>
<tr>
<td>Innovation</td>
<td>.383c</td>
<td>.147</td>
<td>.011</td>
<td>6.402</td>
<td>1.236</td>
<td>.143</td>
<td>2.530</td>
<td>1.1%</td>
</tr>
</tbody>
</table>

R=.383, R²=.147, F=28.304, P<.001

D. V. : Academic achievement

![Fig. 19: Explained Variance in Academic Achievement of students' by significant variable (Female)](image)

Results of stepwise multiple regression analysis for female students- table showed analysis of the data that the multiple co relational co-efficient was found to be .383 which was highly significant (F=28.304, P<.000) its R square was .147,
Results regarding Stepwise multiple regression for subject wise achievement of female students’ are presented in Table-17 and Explained variance in subject wise achievement of students’ by significant variable are shown in Fig. 19a, 18b, 18c, 18d, 18e, 18f respectively.

Table - 17

Stepwise multiple regression for subject wise achievement (Female)

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<tbody>
<tr>
<td>I</td>
<td>.368</td>
<td>.158</td>
<td>10.0%</td>
<td>.280</td>
<td>.126</td>
<td>0.9%</td>
<td>.181</td>
<td>1.3%</td>
<td>.272</td>
<td>.109</td>
<td>6.6%</td>
<td>.310</td>
<td>.171</td>
<td>2.1%</td>
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<tr>
<td>A</td>
<td>.375</td>
<td>.225</td>
<td>9.8%</td>
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<td>.181</td>
<td>1.3%</td>
<td>.272</td>
<td>.109</td>
<td>.484</td>
<td>.197</td>
<td>8.3%</td>
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<tr>
<td>TS</td>
<td>.560</td>
<td>.173</td>
<td>2.7%</td>
<td>.448</td>
<td>.145</td>
<td>2.3%</td>
<td>.182</td>
<td>1.3%</td>
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<td>TO</td>
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<td>10.6%</td>
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<tr>
<td>C</td>
<td>.262</td>
<td>.155</td>
<td>1.6%</td>
<td></td>
<td>.156</td>
<td>.101</td>
<td>0.8%</td>
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<tr>
<td>TC</td>
<td>.323</td>
<td>.114</td>
<td>1.0%</td>
<td></td>
<td></td>
<td>.156</td>
<td>.101</td>
<td>0.8%</td>
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<td>Inn.</td>
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<tr>
<td>Gender</td>
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<tr>
<td>Locale</td>
<td>-1.772</td>
<td>.090</td>
<td>0.8%</td>
<td></td>
<td>.960</td>
<td>.096</td>
<td>0.9%</td>
<td>1.138</td>
<td>.105</td>
<td>1.0%</td>
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</tbody>
</table>

R = .381
R2 = .145
F = 20.842
P<.01

R = .338
R2 = .114
F = 31.706
P<.01

R = .370
R2 = .137
F = 26.091
P<.01

R = .285
R2 = .081
F = 14.562
P<.01

R = .289
R2 = .083
F = 14.949
P<.01

R = .322
R2 = .104
F = 28.546
P<.01

b = b Coefficient  β = β Coefficient  Exp. Vari. = Explained Variance
Fig. 20(a)-Explained variance by significant variable for Hindi subject achievement (Female)

- Involvement: 10.00%
- Teacher support: 2.70%
- Teacher Control: 0.80%
- Locale: 1.00%

Fig. 20(b)-Explained variance by significant variable for English subject achievement (Female)

- Affiliation: 9.80%
- Rule Clarity: 1.60%

Fig. 20(c)-Explained variance by significant variable for Sanskrit subject achievement (Female)

- Involvement: 77%
- Teacher support: 17%
- Task Orientation: 6%
Fig. 20(d)-Explained variance by significant variable for Mathematics subject achievement (Female)

- Affiliation: 5.90%
- Task Orientation: 0.90%
- Locale: 1.30%

Fig. 20(e)-Explained variance by significant variable for Science subject achievement (Female)

- Affiliation: 6.60%
- Teacher Control: 0.80%
- Locale: 1.00%

Fig. 20(f) - Explained variance by significant variable for Social Science subject achievement (Female)

- Affiliation: 8.30%
- Teacher support: 2.10%
which indicated that the significant variables included in the present analysis contributed 14.7% variance in the achievement scores of the students. The task orientation, affiliation, and involvement sub dimension of classroom environment emerge out to be significant predictors contributing significantly in the variation of criterion variable academic achievement. Whereas remaining variables were found to be insignificant in explaining variance of achievement scores of the students. Beta Coefficient of significant variables indicated that the task orientation was the most important variables emerged out with a value of .149 and it had explained alone 11.0%of variance of achievement.

**Subject wise academic achievement of female students**

In female student’s affiliation and Task Orientation dimension were more important. Affiliation dimension was significant for predicting English, math, science and Social Science achievement. Beta coefficient of affiliation dimension shows that it explained 9.8% variance of English achievement, 1.3% variance of mathematic achievement, 6.6% variance of science achievement and 2.1% variance of social science achievement while task orientation dimension was significant for Sanskrit and math subjects and it had explained 10.6% variance of Sanskrit achievement and 5.9% variance of mathematic achievement. Teacher support dimension emerge out significant for Hindi, Sanskrit, and social science and it explained 2.7% variance of Hindi achievement, 2.3% variance of Sanskrit achievement and 8.3% variance of social science achievement. Findings also shows that locale is the significant factor for Hindi, Math and science, achievement with Beta Coefficient -.099, .096 and .105 respectively, it explained 0.8% variance of Hindi achievement, 0.9% variance of math achievement and 1.0% variance of science achievement. Here the negative nature of beta coefficient for Hindi subject indicated that the achievement of Hindi became less favorable with the increase in ruralness. This shows that ruralness is less favorable for Hindi achievement in female students. Educational statistics have indicated that females are outperforming males at all levels of the school system, attaining more school and post-school qualifications, and attending university in higher numbers (Alton Lee & Praat 2001; House of Representatives Standing Committee on Education and Training, 2002; Mullis et al., 2003; Office for Standards in Education, 2003). A gap between the achievement of boys and girls has been found, with girls
showing better performance than boys in certain instances (Chambers & Schreiber, 2004). Previous research has shown that student gender is a significant predictor of classroom environment perceptions. A consistent pattern of girls perceiving the classroom environment more positively than boys is evident (e.g. Fraser & Chionh, 2000; Lawrenz, 1987). Two relatively recent studies on the effect of gender confirm this view. Fisher, den Brok, and Rickards’s (2006), Koul and Fisher (2006). Research on gender differences in classroom environment perceptions was also conducted in various countries (Fisher, Fraser & Rickards, 1997; Fisher, Rickards, Goh, & Wong, 1997; Fraser, Giddings & Mc Robbie, 1995; Henderson, Fisher & Fraser, 2000; Wong & Fraser, 1997). Owens and Straton (1980) found that girls preferred cooperation more than boys but boys preferred competition and individualization more than girls. Overall, these studies have shown that girls generally hold more favorable perceptions of their classroom learning environments than boys in the same classes.

Thus we find that the hypothesis stating that sex has the significant role to determine academic achievement of the students was accepted only for urban area and rejected for rural area.

From the above discussion it may be concluded that classroom environment was found positively related to students’ academic achievement. Since it shows that there was a positive correlation, it can be concluded that the more conducive classroom environment as perceived by the students, the better their academic achievement would be. Affiliation, teacher support and teacher control were the most important dimension of classroom environment which emerged out as significant predictor for academic achievement of the students of Chhattisgarh. For subject wise achievement teacher support and affiliation dimension were emerged out significant predictor for all subjects i.e. Hindi, English, Mathematics, Science, Social Science whereas teacher control dimension was emerged out as significant predictor for Math, Science and Social Science subjects., Role of Locale was also proved to significantly influence academic achievement of the students. Role of femininity was found to significant only for urban area.