CHAPTER V
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CHAPTER - V

RESULTS INTERPRETATION AND DISCUSSION

5.00 INTRODUCTION

The effectiveness of an investigation largely depends on its explicit presentation, thorough discussion and critical interpretation. The data that was collected, analysed and processed has been subjected to statistical treatment that resulted into findings. The present chapter therefore, deals with these ‘Results, Discussions and their interpretation’. These results have been presented systematically in the sequence of hypothesis formulated in Chapter III. These hypothesis have been grouped under three categories namely –

A. Correlational Hypothesis
B. Interactional Hypothesis
C. Differential Hypothesis.

5.10 RESULTS AND INTERPRETATION ON CORRELATIONAL HYPOTHESES

(A) CORRELATION BETWEEN SA & DAT :

Correlational Hypotheses deal with (a) Correlation between Scholastic Attainment and DAT, (b) Correlation between Scholastic Attainment and SAT, (c) Correlation between Scholastic Attainment and Interest Patterns of SC and ST pupils studying in class IX of the Higher Secondary Schools.

H₁ (C) “Scholastic Achievement would be significantly and positively correlate with various types of Aptitudes (DAT & SAT)”.

Co-efficient of Correlation between Scholastic Attainment in English, Hindi, Maths, Science, Social Science and Composite Scholastic Attainment and Differential Aptitude of Grade IX, Scheduled Caste and Scheduled Tribe pupils are displayed in the following tables.
### Table 5.01

The inter-correlation values between Scholastic Attainment and Differential Aptitudes (DAT) of the Scheduled Caste and Scheduled Tribe Pupils Studying in Grade IX of the Higher Secondary Schools.

<table>
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<tr>
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<th>NA</th>
<th>VR</th>
<th>MR</th>
<th>LU-gr</th>
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<td>.070+</td>
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<td>r</td>
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<td>.106**</td>
<td>.137**</td>
<td>.273**</td>
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Inference ** P < .01, * P < .05, + P > .05

The present study was intended to examine the relationship between Scholastic Attainment in English, Hindi, Maths, Science and Social Science and Differential Aptitudes of IX Grade Scheduled Caste and Scheduled Tribe pupils. Data collected were analysed in terms of coefficient of correlation computed by Pearson Product Moment Method. A perusal of the results presented in the table 5.01 reveals the correlations between Scholastic Attainment in English, Hindi, Maths, Science, Social Science Composite Scholastic Attainment and the
dimensions of Differential Aptitude (DAT) as well as Composite Differential Aptitude.

Interpreting the significant $P < .01$ positive relationship between Scholastic Attainment in English, Hindi, Maths, Science, Social Science Composite Scholastic Attainment and Components of DAT i.e. AR, NA, VR, LU-gr and Composite DAT. The coefficient of Correlation between AR and English, Hindi, Maths, Science, Social Science and Composite Scholastic Attainment are $(r = .348, .272, .299, .361, .389, .353)$ $df = 518$ $P < .01$ level.

The coefficient of correlation between NA and Scholastic Attainment in English, Hindi, Maths, Science, Social Science and Composite Scholastic Attainment are $(r = .245, .150, .357, .281, .225, .273)$ $df = 518$, $P < .01$. Correlation between VR and all the subjects is highly significant beyond .01 level i.e. $(r = .247, .246, .343, .282, .213 & .260)$ respectively. Further between LU-gr) and Scholastic Attainment, the correlation in English, Hindi, Science, Composite Scholastic Attainment are $(r = .192, .172, .214, .123)$ respectively which is highly significant at .01 level, $df = 518$ whereas in Maths and Social Science $(r = .089 & .097)$ which is significant at .05 level. Similarly the correlation between Composite Differential Aptitude and Scholastic Attainment in English, Hindi, Maths, Science, Social Science and Composite Scholastic Attainment the relationship is highly significant beyond .01 level $(r = .359, .326, .501, .418, .307$ and $.399)$ respectively $P < .01$.

Interpreting the significant $P < .01$ positive relationship between SR and Scholastic Attainment in Maths, Science, Social Science and Composite Scholastic Attainment $(r = .138, .126, .123$ and $.106)$ respectively, and between CSA and Scholastic Attainment in English $(r = .156)$, Maths $(r = .305)$, and Comp. Scholastic Attainment $(r = .137)$ which is significant beyond .01 level whereas with Science $(r=.101)$, significant at .05 level. In Language usage (spelling) the correlation is highly significant beyond .01 level with English $(r = .163)$, Hindi $(r = .216)$ whereas with Maths, Science, Social Science and Composite Scholastic Attainment there is no relationship with LU-sp. The above dimensions of DAT show high positive relationship with Scholastic Attainments except ‘Mechanical Reasoning’
A significant and positive relationship between Scholastic Attainment (SA) and dimensions of differential Aptitudes points out that with the increase in the marks in different subjects i.e. English, Hindi, Maths, Science and Social Science, there occurred a corresponding increase in the scores in various dimensions of differential Aptitude i.e. CSA, NA, VR, Lu-gr and Composite DAT. A close analysis of the results as presented in Table 5.01 reveals that out of 54 indices of correlations 41 indices of Correlation have been found to be Correlated. 38 of them positively Correlated at .01 level of confidence, 3 have been observed moderately significant at .05 level and the remaining 13 coefficients have been found insignificantly correlated. Out of 13 insignificant relationships, 9 indices have shown a positive trend whereas 4 coefficients have indicated a negative relationship. The entire analysis of relationship has been tabulated as under.

<table>
<thead>
<tr>
<th>Relationship</th>
<th>Significant</th>
<th>Insignificant</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>P &lt; .01</td>
<td>P &lt; .05</td>
<td>P &gt; .05</td>
</tr>
<tr>
<td>Trend</td>
<td>+</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td>N</td>
<td>38</td>
<td>3</td>
<td>9</td>
</tr>
<tr>
<td>Total</td>
<td>38</td>
<td>3</td>
<td>13</td>
</tr>
</tbody>
</table>

It is evident from this global analysis (Table 5.01) of results that an hypothesis $H_1$ (C) could be retained to the extent of 80% of its occurrences in verbal aptitude and has a probability to be rejected to the extent of only 20%, whereas in case of Non-verbal Aptitude the hypothesis $H_1$ (C) could be retained to the extent of 44.4% and rejected to the extent of 55.6%. On the basis of the above result the Nonverbal Dimensions of DAT i.e. AR and SR is completely rejected and accepted for MR. The Hypothesis $H_1$ (C) is completely retained in case of Ver. Aptitude for NA, VR, Lu-gr and Comp. DAT.
Table 5.02
The Inter-correlation values between Scholastic Attainment and Differential Aptitude (DAT) of the Scheduled Caste pupils studying in Grade IX of the Higher Secondary Schools.

<table>
<thead>
<tr>
<th></th>
<th>AR</th>
<th>SR</th>
<th>CSA</th>
<th>NA</th>
<th>VR</th>
<th>MR</th>
<th>LU-gr</th>
<th>LU-sp</th>
<th>Comp. DAT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eng.</td>
<td>r .223**</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.513**</td>
</tr>
<tr>
<td>Hindi</td>
<td>r .161**</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.311**</td>
</tr>
<tr>
<td>Maths</td>
<td>r .172**</td>
<td>.005</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.521**</td>
</tr>
<tr>
<td>Sci.</td>
<td>R .278**</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.812**</td>
</tr>
<tr>
<td>Soc.Sc</td>
<td>R .316**</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.419**</td>
</tr>
<tr>
<td>Comp.</td>
<td>r .216**</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.427**</td>
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Inference ** P < .01, * P < .05, + P > .05

Highly significant and positive relationship exists between Scholastic Attainment and the dimensions of DAT, i.e. AR, CSA, NA, LU-gr, and Composite Differential Aptitude. The relation between English and AR (r = .223), CSA (r=.332), NA (r = .336), LU-gr (r = .332), and LU-sp (r = .295) Comp. DAT (r=.513), df = .258, P < .01. Between Hindi and AR (r = .161), CSA (r = .211), NA (r=.242), VR (r = .177), LU-gr (r = .239), LU-sp (r = .311) and Comp.DAT (r=.387) P < .01. Between Maths and AR (r = .172), CSA (r = .564), NA (r = .410), VR (r = .279) composite DAT (r = .521) P < .01 except in LU-gr it is not significant.

Similarly between Science and AR (r = .278), CSA (r = .341), NA (r = .414), VR (r = .225), LU-gr (r = .266), Comp. DAT (r = .520). Between Social Science and AR (r = .316), CSA (r = .249), NA (r = .327), LU-gr (r = .168), Comp. DAT (r=.419) P < .01. Between Composite Scholastic Attainment and AR (r= .216), CSA (r = .400), NA (r= .355), LU-gr (r = .153), Comp. DAT (r= .427) respectively.
It shows a highly significant positive correlation beyond .01 level. Whereas MR shows negative relationship with Scholastic Attainment in all the school subjects presented in the above table. Similarly SR shows positive significant relationship with Maths (r = .146, P < .01), Science (r = .125, P < .05) and Social Science (r = .121, P < .05) df = .258, whereas LU (sp) show highly positive relationship with English (r = .295, P < .01) and Hindi (r = .311, P < .01), df = .258. The entire analysis of relationship has been tabulated as under.

<table>
<thead>
<tr>
<th>Relationship</th>
<th>Significant</th>
<th>Insignificant</th>
<th>Total</th>
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<tr>
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<td>P &lt; .05</td>
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<tr>
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On the basis of the above result Hypothesis H1 (C) is completely retained for CSA, NA, LU-gr & Comp.DAT. Partially retained for SR, VR, MR and LU-sp and rejected for AR.

Table 5.03

Inter-Correlation on Scholastic Achievement and DAT of the ST pupils studying in Grade IX of the Higher Secondary Schools.

<table>
<thead>
<tr>
<th></th>
<th>AR</th>
<th>SR</th>
<th>CSA</th>
<th>NA</th>
<th>VR</th>
<th>MR</th>
<th>Lu-gr</th>
<th>Lu-sp</th>
<th>Comp. DAT</th>
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<tr>
<td>English</td>
<td>R</td>
<td>0.471**</td>
<td>0.055</td>
<td>0.141*</td>
<td>0.181**</td>
<td>0.239**</td>
<td>0.089</td>
<td>0.006</td>
<td>0.009</td>
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<tr>
<td></td>
<td>Sig</td>
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<td>0.374</td>
<td>0.023</td>
<td>0.003</td>
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<td>0.151</td>
<td>0.920</td>
<td>0.887</td>
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<td>0.002</td>
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<td>0.106</td>
<td>0.166*</td>
<td>0.337**</td>
<td>0.026</td>
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<td>0.415**</td>
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<td>0.047</td>
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<td>0.070</td>
<td>0.001</td>
<td>0.135</td>
<td>0.056</td>
<td>0.448</td>
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Inference ** P < .01, * P < .05, + P > .05
It is evident from the table 5.03 that the Coefficient of Correlation between Scholastic Attainment and Differential Aptitudes of the Scheduled Tribes have been computed of which the inter correlation between Scholastic Attainment in English, Hindi, Maths, Science, Social Science Composite Scholastic Attainment and DAT i.e. Abstract Reasoning, Verbal Reasoning, Composite Differential Aptitude have been found positive and highly significant beyond .01 level of confidence. The coefficient of correlation between AR, VR, Comp.DAT, and English is(r = .417, .239, & .253); Hindi is (r = .380, .319 and .324); Maths is (r = .411, .406 & .507); Science is (r = .436, .337 & .414). Social Science is(r = .460, .321 & .348) and Composite Scholastic Attainment is (r = .474, .415 and .453) respectively df = 258, P < .01).

Further NA shows highly significant positive correlation with English (r=.181), Maths (r = .357), Science (r = .166) and Composite Scholastic Attainment (r= .199), df = 258, P < .01. Whereas LU-gr does not show any relationship with Scholastic Attainment except Science (r = .189), P < .01 level and Comp. SAT (r=.119), P < .05 level. Similarly MR does not show any relationship with Scholastic Attainment except with Maths (r = .189) P < .01. Further SR shows Positive and Significant Correlation with Maths and Composite Scholastic Attainment (r = .137 and .112, P < .05) whereas CSA with English (r = .141, P < .05) and Maths (r = .205, P < .01) respectively. The entire analysis of relationship has been tabulated as under:

<table>
<thead>
<tr>
<th>Relationship</th>
<th>Significant</th>
<th>Insignificant</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>P &lt; .01</td>
<td>P &lt; .05</td>
<td>P &gt; .05</td>
</tr>
<tr>
<td>Trend</td>
<td>+</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td>N</td>
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<td>4</td>
<td>25</td>
</tr>
<tr>
<td>Total</td>
<td>25</td>
<td>4</td>
<td>25</td>
</tr>
</tbody>
</table>

On the basis of the above results Hypothesis H₁ (C) is partially accepted. Further it is completely retained for Verbal Reasoning and Composite DAT. Whereas partially rejected for Numerical ability and completely rejected for AR, LU-sp and partially retained for SR, MR, CSA,
(B) CORRELATION BETWEEN SA & SAT:

Table 5.04

Inter-correlation between Scholastic Achievement and SAT of the SC & ST pupils studying in grade IX of the Higher Secondary Schools.

<table>
<thead>
<tr>
<th></th>
<th>EB</th>
<th>DI/IC</th>
<th>ADC</th>
<th>AI</th>
<th>ARSP</th>
<th>CT</th>
<th>AO</th>
<th>Comp. SAT</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>r</td>
<td>-.139**</td>
<td>-.242**</td>
<td>-.019+</td>
<td>-.074+</td>
<td>-.118**</td>
<td>-.091+</td>
<td>.011+</td>
</tr>
<tr>
<td></td>
<td>Sig</td>
<td>.002</td>
<td>.000</td>
<td>.661</td>
<td>.991</td>
<td>.007</td>
<td>.338</td>
<td>.799</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>520</td>
<td>520</td>
<td>520</td>
<td>520</td>
<td>520</td>
<td>520</td>
<td>520</td>
</tr>
<tr>
<td>Hindi</td>
<td>r</td>
<td>-.018+</td>
<td>-.175**</td>
<td>-.021+</td>
<td>-.059+</td>
<td>-.029+</td>
<td>-.034+</td>
<td>.122**</td>
</tr>
<tr>
<td></td>
<td>Sig</td>
<td>.688</td>
<td>.000</td>
<td>.632</td>
<td>.182</td>
<td>.505</td>
<td>.436</td>
<td>.005</td>
</tr>
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<td>N</td>
<td>520</td>
<td>520</td>
<td>520</td>
<td>520</td>
<td>520</td>
<td>520</td>
<td>520</td>
</tr>
<tr>
<td>Maths</td>
<td>r</td>
<td>-.158**</td>
<td>-.223**</td>
<td>-.059+</td>
<td>-.097*</td>
<td>-.123**</td>
<td>-.122**</td>
<td>.090*</td>
</tr>
<tr>
<td></td>
<td>Sig</td>
<td>.000</td>
<td>.000</td>
<td>.178</td>
<td>.027</td>
<td>.005</td>
<td>.005</td>
<td>.040</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>520</td>
<td>520</td>
<td>520</td>
<td>520</td>
<td>520</td>
<td>520</td>
<td>520</td>
</tr>
<tr>
<td>Science</td>
<td>r</td>
<td>-.138**</td>
<td>-.211**</td>
<td>-.050+</td>
<td>-.017+</td>
<td>-.120**</td>
<td>-.068+</td>
<td>.044+</td>
</tr>
<tr>
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<td>Sig</td>
<td>.002</td>
<td>.000</td>
<td>.260</td>
<td>.699</td>
<td>.006</td>
<td>.123</td>
<td>.318</td>
</tr>
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<td>520</td>
<td>520</td>
<td>520</td>
<td>520</td>
<td>520</td>
<td>520</td>
</tr>
<tr>
<td>Social Science</td>
<td>r</td>
<td>-.165**</td>
<td>-.111**</td>
<td>-.027+</td>
<td>-.008+</td>
<td>-.137**</td>
<td>-.107**</td>
<td>.092*</td>
</tr>
<tr>
<td></td>
<td>Sig</td>
<td>.000</td>
<td>.011</td>
<td>.535</td>
<td>.851</td>
<td>.002</td>
<td>.015</td>
<td>.041</td>
</tr>
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<td></td>
<td>N</td>
<td>520</td>
<td>520</td>
<td>520</td>
<td>520</td>
<td>520</td>
<td>520</td>
<td>520</td>
</tr>
<tr>
<td>Comp. Sch.Att</td>
<td>r</td>
<td>-.141**</td>
<td>-.225**</td>
<td>-.034+</td>
<td>-.069+</td>
<td>-.108**</td>
<td>-.108**</td>
<td>.091*</td>
</tr>
<tr>
<td></td>
<td>Sig</td>
<td>.001</td>
<td>.000</td>
<td>.442</td>
<td>.119</td>
<td>.014</td>
<td>.014</td>
<td>.040</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>520</td>
<td>520</td>
<td>520</td>
<td>520</td>
<td>520</td>
<td>520</td>
<td>520</td>
</tr>
</tbody>
</table>

Inference ** P < .01, * P < .05, + P > .05

A perusal of the results presented in the Table 5.04 reveals the correlation between Scholastic Attainment in English, Hindi, Maths, Science, Social Science, Composite Scholastic Attainment and the dimensions of Scientific Aptitude (SAT) as well as Composite Scientific Aptitude. Interpreting the significant negative relationship beyond .01 (level) between Scholastic Attainment in English, Maths, Science and Social Science. Composite Scholastic Attainment and dimensions of Scientific Aptitude i.e. Experimental Bent (EB), Detection of inconsistencies or Illogical Conclusions (DI/IC), Ability to Reason and Solve Problems (ARSP). The Coefficient of Correlation between Experimental Bent and Scholastic Attainment in English, Maths, Science, Social Science and Composite Scholastic Attainment are (r = -.139, r = -.158, r = -.138, r = -.165, r = -.141) respectively, df = 518, P < .01 level, but in Hindi there exist no relationship.

The Coefficient of Correlation between Detection of Inconsistencies and Illogical conclusion. DI/IC and Scholastic Attainment in English, Hindi, Maths,
Science, Social Science and Composite Scholastic Attainment are \( r = -0.242, -0.175, -0.223, -0.211, -0.111 \) and -225 respectively \( df = 518, P < .01 \) level. Further between Ability to Reason and Solve Problem (ARSP) and Scholastic Attainment in English, Maths, Science, Social Science and Composite Scholastic Attainment. It showed a significant negative correlation \( r = -0.118, -0.123, -0.120, -0.137, -0.108 \) respectively \( df = 518 P < .01 \) level except in Hindi. Similarly in case of Composite Scientific Aptitude and Scholastic Attainment in all the subjects shown in the above table shows a negative and significant Correlation beyond \( .01 \) level. \( r = -0.208, -0.125, -0.248, -0.230, -0.177 & -0.238 \) \( df=518 P < .01 \) level.

Similarly a negative and significant correlation between Caution and Thoroughness (CT) and Scholastic Attainment in Maths \( r = -0.122 \), Social Science \( r = -0.107 \), Composite Scholastic Attainment \( r = -0.108 \), \( df = 518, P < .01 \) level. Whereas in English \( r = -0.091 \) \( P < .05 \) level, but it shows no relationship in Hindi & Science. Similarly a positive relationship exists between AO and Scholastic Attainment in Hindi \( r = 0.122, P < .01 \) Maths \( r = .090 \) Social Science \( r = .092 \) and Composite Scholastic Attainment \( r = .091 \) \( df = 518, P < .05 \). Further in case of ADC and AI there exist no relationship with Scholastic Attainment in all the subjects as shown in the Table 5.04.

A close analysis of the results as presented in Table 5.04 reveals that out of 48 indices of Correlation, only 31 have been found significantly and negatively correlated i.e. 26 negatively at .01 level and 5 negatively and significantly correlated at .05 level. The remaining 17 coefficients have been found insignificantly and negatively correlated. 3 insignificantly and Positively correlated 14 insignificantly and negatively correlated. This negative trend of correlation reveals the inverse relationship between Scholastic Attainment (SA) and Scientific Aptitude (SAT). This points out that with the increase in the Scholastic Attainment in various school subjects there occurred a corresponding decrease in the Scientific Aptitude in its seven dimensions. The entire analysis of relationship has been tabulated as under:
On the basis of the above result the dimensions of Scientific Aptitude i.e. EB, DI/IC, ARSP, CT and Composite Scientific Aptitude show negative and significant relationship with Scholastic Attainment in all subjects except in Hindi in case of EB, ARSP & CT. But showed positive relationship between AO and Scholastic Attainment in Hindi, Maths, Social Science and Composite Scholastic Attainment and no relationship between Scholastic Attainment and ADC & AI. Hence the above Hypothesis $H_1 (C)$ is completely rejected.

**Table 5.05**

Inter-correlation between Scholastic Achievement and SAT of the SC pupils studying in grade IX of the Higher Secondary Schools.

<table>
<thead>
<tr>
<th></th>
<th>EB</th>
<th>DI/IC</th>
<th>ADC</th>
<th>AI</th>
<th>ARSP</th>
<th>Cl</th>
<th>AO</th>
<th>Comp. SAT</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>English</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>r</td>
<td>-.209**</td>
<td>-.428**</td>
<td>-.065</td>
<td>-.078</td>
<td>-.131*</td>
<td>-.174**</td>
<td>-.018</td>
<td>-.313**</td>
</tr>
<tr>
<td>Sig</td>
<td>.001</td>
<td>.000</td>
<td>.295</td>
<td>.211</td>
<td>.035</td>
<td>.005</td>
<td>.779</td>
<td>.000</td>
</tr>
<tr>
<td>N</td>
<td>260</td>
<td>260</td>
<td>260</td>
<td>260</td>
<td>260</td>
<td>260</td>
<td>260</td>
<td>260</td>
</tr>
<tr>
<td><strong>Hindi</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>r</td>
<td>.014</td>
<td>-.334**</td>
<td>-.003</td>
<td>-.063</td>
<td>.063</td>
<td>.099</td>
<td>.160**</td>
<td>-.122*</td>
</tr>
<tr>
<td>Sig</td>
<td>.827</td>
<td>.000</td>
<td>.959</td>
<td>.309</td>
<td>.313</td>
<td>.110</td>
<td>.010</td>
<td>.050</td>
</tr>
<tr>
<td>N</td>
<td>260</td>
<td>260</td>
<td>260</td>
<td>260</td>
<td>260</td>
<td>260</td>
<td>260</td>
<td>260</td>
</tr>
<tr>
<td><strong>Maths</strong></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>r</td>
<td>-.210**</td>
<td>-.345**</td>
<td>-.038</td>
<td>-.061</td>
<td>-.161**</td>
<td>-.126*</td>
<td>.127*</td>
<td>-.286**</td>
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<tr>
<td>Sig</td>
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<td>.000</td>
<td>.543</td>
<td>.329</td>
<td>.010</td>
<td>.042</td>
<td>.041</td>
<td>.000</td>
</tr>
<tr>
<td>N</td>
<td>260</td>
<td>260</td>
<td>260</td>
<td>260</td>
<td>260</td>
<td>260</td>
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<tr>
<td><strong>Science</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>r</td>
<td>-.138*</td>
<td>-.352**</td>
<td>-.119*</td>
<td>.004</td>
<td>-.104</td>
<td>-.059</td>
<td>.015</td>
<td>-.293**</td>
</tr>
<tr>
<td>Sig</td>
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<td>.000</td>
<td>.055</td>
<td>.953</td>
<td>.095</td>
<td>.347</td>
<td>.808</td>
<td>.000</td>
</tr>
<tr>
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<td>260</td>
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<td>260</td>
<td>260</td>
<td>260</td>
<td>260</td>
<td>260</td>
</tr>
<tr>
<td><strong>Social Science</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>r</td>
<td>-.129*</td>
<td>-.231**</td>
<td>.002</td>
<td>.034</td>
<td>-.084</td>
<td>-.057</td>
<td>.003</td>
<td>-.153**</td>
</tr>
<tr>
<td>Sig</td>
<td>.038</td>
<td>.000</td>
<td>.971</td>
<td>.584</td>
<td>.175</td>
<td>.358</td>
<td>.956</td>
<td>.013</td>
</tr>
<tr>
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<td>260</td>
<td>260</td>
<td>260</td>
<td>260</td>
<td>260</td>
<td>260</td>
</tr>
<tr>
<td><strong>Comp. Sch. Att</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>r</td>
<td>-.134*</td>
<td>-.386**</td>
<td>-.019</td>
<td>-.055</td>
<td>-.076</td>
<td>-.109</td>
<td>.074</td>
<td>-.272**</td>
</tr>
<tr>
<td>Sig</td>
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<td>.000</td>
<td>.759</td>
<td>.373</td>
<td>.222</td>
<td>.078</td>
<td>.232</td>
<td>.000</td>
</tr>
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<td>260</td>
<td>260</td>
<td>260</td>
<td>260</td>
<td>260</td>
<td>260</td>
</tr>
</tbody>
</table>

Inference ** $P < .01$, * $P < .05$, + $P > .05$
Inter-correlation between the Scholastic Attainment in the school subjects and Scientific Aptitude (SAT) was drawn of Scheduled Caste pupils studying in class IX of Higher Secondary School. From Table 5.05 it is clear that a negative and significant Correlation exists between Experimental Bent (EB) and Scholastic Attainment in English ($r = -.209$, $df = 258$, $P < .01$) Maths ($r = -.210$, $df = 258$, $P < .01$), Science ($r = -.138$, $df = 258$, $P < .05$) Social Science ($r = -.129$, $df = 258$, $P < .05$), Composite Scholastic Attainment ($r = -.134$, $df = 258$, $P < .05$) respectively.

Between Detection of Inconsistencies and Illogical Conclusion DIIIC and Scholastic Attainment in English ($r = -.428$), Hindi ($r = -.334$), Maths ($r = -.345$), Science ($r = -.352$) Social Science ($r = -.231$) and composite Scholastic Attainment ($r = -.386$) $df = 258$, it shows negative and highly significant correlation beyond $.01$ level.

Further Composite Scientific Aptitude also shows significant negative correlation beyond $.01$ level in English ($r = -.313$) Maths ($r = -.286$) Science ($-.293$) Social Science ($r = -.153$) and Composite Scholastic Attainment ($r = -.272$) $df = 258$, $P < .01$, whereas in Hindi ($r = -.122$, $df = 258$, $P < .05$). Scholastic Attainment does not show any relationship with A1 whereas with ADC it shows relationship in Science ($r = -.119$). Further with ARSP, CT in English ($r = -.131$, $P < .05$, $r = -.174$, $P < .01$) Maths ($r = -.161$, $P < .01$, and $r = -.126$, $P < .05$) all show negative and significant correlation.

Accuracy of Observation shows positive and significant correlation with Hindi and Maths, whereas with the rest of the subjects it does not show any relationship. On the strength of these results we conclude that significant negative relationship between different components of Scientific Aptitude and Scholastic Attainment is various subjects have been observed to the extent of 48% (i.e. 22 out of 48) 15 of them significantly and negatively correlated at $.01$ level and 7 significantly and negatively correlated at $.05$ level whereas 2 results show positive significant relationship. The remaining 24 Coefficients have been found insignificantly correlated. Out of 24 insignificant relationships 8 positive correlated
and 16 insignificantly and negatively correlated. The entire analysis of relationship has been tabulated as under.

<table>
<thead>
<tr>
<th>Relationship</th>
<th>Significant</th>
<th>Insignificant</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trend</td>
<td>P &lt; .01</td>
<td>P &lt; .05</td>
<td>P &gt; .05</td>
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<td>N</td>
<td>15</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>Total</td>
<td>16</td>
<td>8</td>
<td>24</td>
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</table>

The significant and negative trend of relationship is an indicator of inverse relationship with EB, DI/IC, Comp. SAT and Scholastic Attainment.

This shows that with increase in scholastic attainment in different subjects there occurs a decrease in Scientific Aptitude in EB, DI/IC and Comp. SAT. On the basis of the above results Hypothesis H1C has been rejected.

**Table 5.06**

**Inter-Correlation between Scholastic Achievements and SAT of the ST Pupils studying in grade IX of the Higher Secondary Schools.**

<table>
<thead>
<tr>
<th></th>
<th>EB</th>
<th>DI/IC</th>
<th>ADC</th>
<th>AI</th>
<th>ARSP</th>
<th>CT</th>
<th>AO</th>
<th>Comp. SAT</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>English</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>r</td>
<td>-.048</td>
<td>-.020</td>
<td>.028</td>
<td>-.075</td>
<td>-.096</td>
<td>.002</td>
<td>.039</td>
<td>-.086</td>
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<td>.124</td>
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<td>260</td>
<td>260</td>
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<td>260</td>
<td>260</td>
</tr>
<tr>
<td><strong>Hindi</strong></td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>r</td>
<td>-.065</td>
<td>.009</td>
<td>-.045</td>
<td>-.061</td>
<td>-.164**</td>
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<td>.008</td>
<td>.850</td>
<td>.113</td>
<td>.022</td>
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<td>260</td>
<td>260</td>
<td>260</td>
<td>260</td>
<td>260</td>
<td>260</td>
</tr>
<tr>
<td><strong>Maths</strong></td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>r</td>
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<td>-.082</td>
<td>-.078</td>
<td>-.125*</td>
<td>-.083</td>
<td>-.133*</td>
<td>.059</td>
<td>-.204**</td>
</tr>
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<td>.210</td>
<td>.043</td>
<td>.184</td>
<td>.032</td>
<td>.344</td>
<td>.001</td>
</tr>
<tr>
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<tr>
<td>r</td>
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<td>.080</td>
<td>.012</td>
<td>-.048</td>
<td>-.135*</td>
<td>-.045</td>
<td>.077</td>
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<td>-.074</td>
<td>-.039</td>
<td>-.191**</td>
<td>-.090</td>
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<td>-.067</td>
<td>-.056</td>
<td>-.091</td>
<td>-.146**</td>
<td>-.082</td>
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</tbody>
</table>

Inference ** P < .01, * P < .05, + P > .05
It is clear from the above Table 5.06 that the inter-correlation between Scholastic Attainment in English, Hindi, Maths, Science, Social Science, Composite Scholastic Attainment and SAT was drawn from Scheduled Tribe pupils studying in class IX of Higher Secondary School.

It is evident from the above Table 5.06 that negative and significant correlation exists between the Dimensions of SAT i.e. Experimental Bent and Scholastic Attainment in Science \((r = -.151)\) Social Science \((r = -.238)\) and Composite Scholastic Attainment \((r = -.161)\) \(df = 258, P < .01\), as well as between ARSP and Science \((r = -.135, P < .05)\), Social Science \((r = -.191)\), Hindi \((-.164)\) Composite Scholastic Attainment \((r = -.146)\) respectively \(df = 258, p < .01\). Further Composite SAT shows negative and significant Correlation with Hindi \((r = -0.142, P < .05)\), Maths \((r = -0.204, P < .01)\) Social Science \((r = -0.255, P < .01)\) and Composite Scholastic Attainment \((r = -0.222, P < .01)\) \(df = 258\).

Further there is no correlation of Scholastic Attainment with Detection of Inconsistency and illogical Conclusion and Ability to deduce conclusion from the data provided whereas with AI, CT and AO it shows significant and negative Correlation in Maths \((AI, r = -.125, CT, r = -.133)\) \(p < .05\) and Social Science \((AO, r = .186, P < .01)\) respectively. The entire analysis of relationship has been tabulated as under:

<table>
<thead>
<tr>
<th>Relationship</th>
<th>Significant</th>
<th>Insignificant</th>
<th>Total</th>
</tr>
</thead>
<tbody>
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<tr>
<td></td>
<td>(P &lt; .01)</td>
<td>(P &lt; .05)</td>
<td>(P &gt; .05)</td>
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</tr>
<tr>
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<td>+</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td>Total</td>
<td>11</td>
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</table>

On the basis of the above result the Hypothesis \(H_3C\) is rejected.

(C) CORRELATION BETWEEN SA & INTEREST PATTERNS

\(H_2(C)\) “Scholastic Attainments in (a) Languages (b) Social Science (c) Mathematics and (d) Science would be significantly as well as positively correlated with Interest patterns”
With a view to examine $H_2$ (C) Pearson product moment Coefficient of Correlation have been Computed on a sample of 520 Students. The results inferred from the Table 5.07 have been presented as under.

**Table 5.07**

Inter-Correlation between Scholastic Achievements and Interest Pattern of the SC & ST Pupils studying in grade IX of the Higher Secondary Schools.

<table>
<thead>
<tr>
<th></th>
<th>Fine Arts</th>
<th>Literacy</th>
<th>Scientific</th>
<th>Medical</th>
<th>Agriculture</th>
<th>Technical</th>
<th>Craft</th>
<th>Outdoor</th>
<th>Sports</th>
<th>Household</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>English</strong></td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>$r$</td>
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<td>.242</td>
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<td>.164**</td>
<td>.173**</td>
<td>.198**</td>
<td>.183**</td>
<td>.094*</td>
<td>.073</td>
<td>.281**</td>
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<td>.000</td>
<td>.000</td>
<td>.033</td>
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<td>.159**</td>
<td>.126**</td>
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<td>.152**</td>
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<td>.253**</td>
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<td>.106*</td>
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<td>.284**</td>
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<td>.188</td>
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<td>.100*</td>
<td>.280**</td>
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<td>.168</td>
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<td>.241**</td>
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</table>

Inference **P < .01, * P < .05, + P > .05**

- A significant positive relationship has been found between Scholastic Attainment in English and Medical ($r = .164$), Agri ($r = .173$), Technical($r = .198$), Craft ($r = .183$) and Household ($r = .281$), $Df = 518$ $P < .01$ as fields of Interest pattern.

- A significant positive relationship has been observed between Scholastic Attainment in Hindi and Literacy, Medical, Agriculture, Technical, Craft,
Outdoor and Household as fields of Interest \( (r = .109, .131, .159, .126, .142, .183 \text{ and } .176, P < .01, df = 518) \).

- A significant positive relationship has been found between Scholastic Attainment in Maths and Fine Arts, \( (r = .133) \), Literacy \( (r = .138) \) Scientific \( (r = .152) \), Medical \( (r = .282) \) Agriculture \( (r = .212) \), Technical \( (r = .253) \), Craft \( (r = .202) \) Household \( (r = .241) \), \( df = 518, P < .01 \), as fields of Interest pattern, whereas shows significant and moderate Correlation between Maths and outdoor \( (r = .094, df = 518, P < .05) \).

- A significant positive relationship has been estimated between Scholastic Attainment is Science and Fine Arts, Agriculture, Technical, Craft, Outdoor and Household as fields of Interest pattern \( (r = .113, .204, .224, .222, .117, .239, df = 518, P < .01) \) whereas shows significant and moderate Correlation between Science and Literacy \( (r = .107, df = 518, P < .05) \).

- A significant and positive relationship has been estimated between Scholastic Attainment in "Social Science and Fine Arts, Medical, Agriculture, Technical, Craft and Household as fields of Interest Pattern \( (r = .227, .297, .253, .284, .279 \text{ and } .233) df = 518, p < .01 \), whereas Social Science and Literacy shown moderate and significant relationship \( (r = .106, df = 518, P < .05) \).

- A significant positive relationship has been estimated between Composite Scholastic Attainment and Fine Arts, Literacy, Medical, Agriculture, Technical, Craft and Household \( (r = .185,.188,.280, .226, .249,.216,.241,df = 518, P < .01) \) whereas moderately significant positive relationship between Social Science and Scientific \( (r = .100, df = 518, P < .05) \). Positive trend in the Correlation reveals that with the increase in the Scholastic Attainment scores there occurred a corresponding increase in the Interest Pattern in various fields.

- Insignificant positive relationship was found between Scholastic Attainment in English and fields of Interest Pattern in Fine Arts \( (r = .072) \) Literacy \( (r = .024) \) Scientific \( (r = .050) \).
• Hindi and Interest in Fine Arts \((r = .066)\) and Sports \((r = .027)\).
• Science and Scientific \((r = .045)\).
• Social Science and Outdoor \((r = .188)\), Sports \((r = .060)\)
• Composite Scholastic Attainment and Fine Arts \((r = .135)\), Outdoor \((r = .168)\) Sports \((r = .044)\).

- A negative insignificant relationship has been found between Scholastic Attainment in:
  • English and Sports \((r = -.073)\)
  • Hindi and Sports \((r = -.027)\), Fine Arts \((r = -.004)\)
  • Science and Sports \((r = -.042)\) \(df = 518, P > .05\)

A close analysis of the above results as present above from Table 5.07 reveals that out of 60 indicates of Correlation none have been found to be significantly negatively Correlated .46 have been observed positively significantly Correlated (i.e. –41 positively Correlated at .01 level of Confidence and 5 positively Correlated at .05 level of confidence.

None of them have been observed significantly and negatively correlated. Remaining 14 coefficients have been bound insignificantly correlated out of 14 insignificant relationships 11 indices have shown positive trend whereas 3 coefficient have indicated negative trend. The entire analysis of relationships have been tabulated as under.

<table>
<thead>
<tr>
<th>Relationship</th>
<th>Significant</th>
<th>Insignificant</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>(P &lt; .01)</td>
<td>+</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td>(P &lt; .05)</td>
<td>-</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>(P &gt; .05)</td>
<td>+</td>
<td>-</td>
<td>+</td>
</tr>
</tbody>
</table>

<table>
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<tr>
<th>(N)</th>
<th>41</th>
<th>5</th>
<th>11</th>
<th>3</th>
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<tbody>
<tr>
<td>Total</td>
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<td>5</td>
<td>14</td>
<td>60</td>
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</tbody>
</table>

It is evident from this global analysis (Table 5.07) of results that our Hypothesis \(H_2\) could be retained only to an extent of 46/60 of its occurrence and has a probability to be rejected to the extent of a 23%. 
On the strength of these results we conclude that there is a significant and positive relationship between Scholastic Attainment and Interest Pattern to an extent of 77%. The Hypothesis H2C has been partially rejected.

**Table 5.08**

Inter-Correlation between Scholastic Achievements and Interest Pattern of the SC Pupils studying in grade IX of the Higher Secondary Schools.

<table>
<thead>
<tr>
<th></th>
<th>Fine Arts</th>
<th>Literacy</th>
<th>Scientific</th>
<th>Medical</th>
<th>Agriculture</th>
<th>Technical</th>
<th>Craft</th>
<th>Out door</th>
<th>Sports</th>
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<td>.027</td>
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<td>.095</td>
<td>.184**</td>
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</tr>
<tr>
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<td>.120</td>
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<td>.000</td>
<td>.016</td>
<td>.313</td>
</tr>
</tbody>
</table>

Inference ** P < .01, * P < .05, + P > .05

Table 5.08 reveal intercorrelation between scholastic attainment and interest pattern of SC pupils. Result show that correlation between scholastic attainment and interest in craft and household had been found to be positive and highly significant beyond .01 level. Similarly highly positive and significant relationship between scholastic attainment and technical except in Hindi. Further a significant and positive trend of correlation exist between SA in Science, Social Science and Comp. SA and Agriculture. SA in Maths, Social Science and Comp. SA and
Medical. Moderate relationship exist between Social Science and Finearts, Literacy and Outdoor, Composite SA and Literacy and Outdoor. It shows no correlationship with other dimension of Interest Pattern. On the basis of the above results Hypothesis H2 C is partially retained.

Table 5.09
Inter-Correlation between Scholastic Achievements and Interest Pattern of the ST Pupils studying in grade IX of the Higher Secondary Schools.

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<tr>
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<th>Literacy</th>
<th>Science</th>
<th>Medical</th>
<th>Agri culture</th>
<th>Technical</th>
<th>Craft</th>
<th>Outdoor</th>
<th>Sports</th>
<th>Household</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>r</td>
<td>.111</td>
<td>.066</td>
<td>.066</td>
<td>.334**</td>
<td>.249**</td>
<td>.222**</td>
<td>.164**</td>
<td>.134*</td>
<td>.082</td>
</tr>
<tr>
<td></td>
<td>Sig</td>
<td>.675</td>
<td>.291</td>
<td>.166</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.068</td>
<td>.030</td>
<td>.185</td>
</tr>
<tr>
<td>Hindi</td>
<td>r</td>
<td>.136*</td>
<td>.234**</td>
<td>.062</td>
<td>.320**</td>
<td>.193**</td>
<td>.169**</td>
<td>.106</td>
<td>.181**</td>
<td>.070</td>
</tr>
<tr>
<td></td>
<td>Sig</td>
<td>.028</td>
<td>.000</td>
<td>.318</td>
<td>.000</td>
<td>.002</td>
<td>.000</td>
<td>.087</td>
<td>.003</td>
<td>.260</td>
</tr>
<tr>
<td>Maths</td>
<td>r</td>
<td>.150**</td>
<td>.160**</td>
<td>.025</td>
<td>.368**</td>
<td>.150*</td>
<td>.197**</td>
<td>.153**</td>
<td>.106</td>
<td>-.130*</td>
</tr>
<tr>
<td></td>
<td>Sig</td>
<td>.015</td>
<td>.010</td>
<td>.688</td>
<td>.000</td>
<td>.015</td>
<td>.001</td>
<td>.014</td>
<td>.089</td>
<td>.036</td>
</tr>
<tr>
<td>Science</td>
<td>r</td>
<td>.225**</td>
<td>.190**</td>
<td>.131*</td>
<td>.358**</td>
<td>.209**</td>
<td>.221**</td>
<td>.205**</td>
<td>.157*</td>
<td>.015</td>
</tr>
<tr>
<td></td>
<td>Sig</td>
<td>.000</td>
<td>.002</td>
<td>.034</td>
<td>.000</td>
<td>.001</td>
<td>.000</td>
<td>.001</td>
<td>.011</td>
<td>.087</td>
</tr>
<tr>
<td>Social</td>
<td>r</td>
<td>.310**</td>
<td>.352**</td>
<td>.164**</td>
<td>.465**</td>
<td>.257**</td>
<td>.356**</td>
<td>.251**</td>
<td>.254**</td>
<td>.110</td>
</tr>
<tr>
<td>Science</td>
<td>Sig</td>
<td>.000</td>
<td>.000</td>
<td>.008</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.076</td>
</tr>
<tr>
<td>Comp.</td>
<td>r</td>
<td>.219**</td>
<td>.246**</td>
<td>.119</td>
<td>.438**</td>
<td>.242**</td>
<td>.258**</td>
<td>.210**</td>
<td>.143**</td>
<td>-.014</td>
</tr>
<tr>
<td>Int.</td>
<td>Sig</td>
<td>.000</td>
<td>.000</td>
<td>.055</td>
<td>.000</td>
<td>.000</td>
<td>.001</td>
<td>.002</td>
<td>.002</td>
<td>.821</td>
</tr>
</tbody>
</table>

Inference ** P < .01, * P < .05, + P > .05

Table 5.09 reveals a highly significant and positive correlationship between scholastic attainment in English, Hindi, Maths, Science & Social Science and Finearts. A highly significant and positive relationship exist between SA and Interest in Medical, Technical, Craft and Outdoor but shows no relationship between Hindi and Craft, Maths and Outdoor. There exist a moderate correlation
between English, Maths, Social Science, Comp. SA and Household. The positive trend of correlation reveals that with the increase in the marks of scholastic attainment there occurs an increase in the interest patterns. On the basis of the above result hypothesis H2C is partially rejected.

5.20 RESULTS AND INTERPRETATION ON INTERACTIONAL HYPOTHESIS

(A) INTERACTIONAL EFFECT ON SCHOLASTIC ATTAINMENT

H4 (1) “The relative effect of caste could be significantly higher on Scholastic Attainments in comparison to the effect of Sex and Locale, whereas the effect of Locale would be relatively observed as the lowest one but significant.”

Scholastic Attainment in the present study is the dependent variable. Whereas Caste (2) × Sex (2) × Locale (2) have been selected as the independent variables whose effects have been conceptualized to be studied in the present study on the dependent variable mentioned above.

ANOVA RESULTS ON SCHOLASTIC ATTAINMENT

Caste (2) × Sex (2) × Locale (2) factorial design for ANOVA has been prepared.

Caste, Sex and Locale were the independent variables, whereas Scholastic Attainment marks of the SC & ST pupil in English, Hindi, Maths, Science and Social Sciences were dependent variables. The scores were put to three ways ANOVA statistical treatment. Results obtained on Scholastic Attainment employing ANOVA with 2×2×2 factorial design has been exhibited in Table 5.10 as under: 
Table 5.10
Summary of complete ANOVA for Composite Scholastic Attainment with 2×2×2 Factorial Design.

<table>
<thead>
<tr>
<th>Source</th>
<th>Sum of squares</th>
<th>df</th>
<th>Mean squares</th>
<th>F</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caste</td>
<td>600.673</td>
<td>1</td>
<td>600.673</td>
<td>4.242</td>
<td>.040*</td>
</tr>
<tr>
<td>Sex</td>
<td>212.800</td>
<td>1</td>
<td>212.800</td>
<td>1.503</td>
<td>.221+</td>
</tr>
<tr>
<td>Locale</td>
<td>2034.643</td>
<td>1</td>
<td>2034.643</td>
<td>14.369</td>
<td>.000**</td>
</tr>
<tr>
<td>Caste &amp; Sex</td>
<td>2801.926</td>
<td>1</td>
<td>2801.926</td>
<td>19.788</td>
<td>.000**</td>
</tr>
<tr>
<td>Caste &amp; Locale</td>
<td>52.028</td>
<td>1</td>
<td>50.028</td>
<td>.353</td>
<td>.553+</td>
</tr>
<tr>
<td>Sex &amp; Locale</td>
<td>15.759</td>
<td>1</td>
<td>15.759</td>
<td>.111</td>
<td>.739+</td>
</tr>
<tr>
<td>Caste &amp; Sex &amp; Locale</td>
<td>542.864</td>
<td>1</td>
<td>542.864</td>
<td>3.834</td>
<td>.051*</td>
</tr>
<tr>
<td>Error</td>
<td>72499.282</td>
<td>512</td>
<td>141.600</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1149628.000</td>
<td>520</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Inference ** P < .01, * P < .05, + P > .05

It is evident from the Table 5.10 that two of the three main effects that is Caste (F = 4.242, df= 1, 512; P < .05) and Locale (F = 14.369, df= 1, 512; P < .01) have been found to have a significant effect on the Scholastic Attainment. Whereas the effect of Sex on Scholastic Attainment has been found to be insignificant. Among all the main effects Locale has shown the highest significant effect on Scholastic Attainment. The highest interaction has been observed in favour of the joint interaction of the two independent variables, namely (Caste & Sex) to the extent of F = 19.788 (df = 1,512; P < .01) no significant effect has been estimated in favour of the joint interaction of Caste & Locale, Sex & Locale. Whereas the lowest interaction has been estimated in favour of the joint interaction of all the three independent variables, namely, (Caste×Sex×Locale) to the extent of F = 3.834 (df = 1, 512; P < .05).

In the light of these conclusions we retain our Hypothesis H4 i so far as the significant interaction of Caste and Locale are concerned and we reject it so for as
interaction of Sex on Scholastic Attainment is concerned. Further the Hypothesis had also been retained so far as a joint interaction of (Caste and Sex) on Scholastic Attainment is concerned and it has been rejected so far as joint interaction of (Caste×Locale) and (Sex×Locale) is concerned. The combined interaction of (Caste×Sex×Locale) have been found significantly effective. It is thus evident that the Scholastic Attainment is significantly determined by Caste and Locale but relatively the former has a feeble effective than the later.

(B) INTERACTIONAL EFFECT ON DIFFERENTIAL APTITUDE

H5 (1) “The scores on various Aptitudes would be most significantly interacted by caste and would show least effect by Locale whereas Sex would indicate relatively and moderately significant effect on various Aptitudes”.

Table 5.11

The summary of ANOVA with 2×2×2 factorial design on DAT of the pupil.

<table>
<thead>
<tr>
<th>Source</th>
<th>Sum of squares</th>
<th>Df</th>
<th>Mean squares</th>
<th>F</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caste</td>
<td>862.960</td>
<td>1</td>
<td>862.960</td>
<td>30.087</td>
<td>.000 **</td>
</tr>
<tr>
<td>Sex</td>
<td>17.428</td>
<td>1</td>
<td>17.428</td>
<td>.608</td>
<td>.436 +</td>
</tr>
<tr>
<td>Locale</td>
<td>520.859</td>
<td>1</td>
<td>520.859</td>
<td>18.159</td>
<td>.000 **</td>
</tr>
<tr>
<td>Caste &amp; Sex</td>
<td>30.700</td>
<td>1</td>
<td>30.700</td>
<td>1.070</td>
<td>.30 +</td>
</tr>
<tr>
<td>Sex &amp; Locale</td>
<td>22.583</td>
<td>1</td>
<td>22.583</td>
<td>.787</td>
<td>.375+</td>
</tr>
<tr>
<td>Caste &amp; Sex &amp;</td>
<td>80.737</td>
<td>1</td>
<td>80.737</td>
<td>2.815</td>
<td>.094 +</td>
</tr>
<tr>
<td>Locale</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Error</td>
<td>14685.503</td>
<td>512</td>
<td>28.683</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>938781.000</td>
<td>520</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Inference ** P < .01, * P < .05, + P > .05

ANOVA results show that the main effects of treatment Caste and Locale are highly significant. The factors of Caste and Locale yield a Mean squares value of 862.960 and 520.859 respectively, which is highly significant beyond .01 level of confidence. (F = 30.087 and 18.159, df = 1, 512, P < .01) which reveals that the Differential Aptitude of pupils differ significantly Caste wise and Locale wise. The F ratio for the main effect of sex was not found significant even at .05 level of confidence. (F = .436, df = 1, 512, P > .05). This may lead to the conclusion that
Differential Aptitude of pupils sex wise was not statistically different from each other. The combined interaction of Caste×Sex, Caste×Locale, Sex×Locale as well as Caste×Sex×Locale have not been found significantly effective. It is thus evident that the Differential Aptitude is significantly determined by Caste and Locale, but relatively the latter has the feeble effect than the former.

(C) INTERACTIONAL EFFECT ON SCIENTIFIC APTITUDE

Table 5.12

The summary of ANOVA with 2×2×2 factorial design on SAT of the pupil.

<table>
<thead>
<tr>
<th>Source</th>
<th>Sum of squares</th>
<th>Df</th>
<th>Mean squares</th>
<th>F</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caste</td>
<td>551.653</td>
<td>1</td>
<td>551.653</td>
<td>13.803</td>
<td>.000**</td>
</tr>
<tr>
<td>Sex</td>
<td>133.538</td>
<td>1</td>
<td>133.538</td>
<td>3.341</td>
<td>.068+</td>
</tr>
<tr>
<td>Locale</td>
<td>55.526</td>
<td>1</td>
<td>55.526</td>
<td>1.389</td>
<td>.239+</td>
</tr>
<tr>
<td>Caste &amp; Sex</td>
<td>1766.115</td>
<td>1</td>
<td>1766.115</td>
<td>44.189</td>
<td>.000**</td>
</tr>
<tr>
<td>Caste &amp; Locale</td>
<td>79.077</td>
<td>1</td>
<td>79.077</td>
<td>1.979</td>
<td>.160+</td>
</tr>
<tr>
<td>Sex &amp; Locale</td>
<td>509.311</td>
<td>1</td>
<td>509.311</td>
<td>12.743</td>
<td>.000**</td>
</tr>
<tr>
<td>Caste &amp; Sex &amp; Locale</td>
<td>100.975</td>
<td>1</td>
<td>100.975</td>
<td>2.526</td>
<td>.133+</td>
</tr>
<tr>
<td>Error</td>
<td>20463.159</td>
<td>512</td>
<td>39.967</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Inference ** P < .01, * P < .05, + P > .05

To put to test this Hypothesis ANOVA with 2 (Caste) × 2 (Sex) × 2 (Locale) factorial design was set up. A close inspection of the Table 5.12 reveals that the F-ratio for the main effect of Caste was found to be highly significant (F = 13.803, df = 1, 512, P < .01) which reveals that the Differential Aptitude of SC & ST pupils differ significantly from each other. The F-ration for the main effect of Sex and Locale was not found significant even at .05 level of confidence (F = 3.341 & 1.389, df = 1, 512). This may lead to the conclusion that the Differential Aptitudes of IX grade pupil at two levels of Sex (male and female) and at two levels of Locale (Rural and Urban) were not statistically different from each other.

The two order interaction effect of Caste and Sex was found to be significant beyond .01 level (F = 44.189. df = 1,512 P < .01) this may lead to the conclusion
that the interaction between Caste and Sex is highly significant beyond .01 level. Similarly the interaction effect of Sex and Locale was also found to be significant beyond .01 level ($F = 12.743$, $df = 1,512$, $P < .01$). This may lead to the conclusion that the interaction between Caste and Sex, as well as Sex and Locale is found highly significant beyond .01 level. It indicates that the Differential Aptitude test for IX grade pupils at two levels of Caste (SC & ST) and at two levels of Sex (boys and girls), similarly at two levels of Locale (Rural and Urban) were statistically different from each other, but the interaction between Caste and Locale was not found statistically significant.

Further the three order interaction effect of $(\text{Caste})^2 \times (\text{Sex})^2 \times (\text{Locale})^2$ was not found to be significant even at .05 level of confidence. This may lead to the conclusion that the interaction between Caste, Sex and Locale is not significant. It indicates that the Differential Aptitude of IX grade pupils at two levels of Caste, Sex and Locale were not statistically different from each other. On the strength of these results the above hypothesis $H_8$ has been partially retained.

We therefore conclude that Caste has shown very significant Interactions with Scientific Aptitude of the pupils; whereas Sex and Locale did not. It is therefore inferred that castes are significant determinants of Scientific Aptitudes.

(D) **INTERACTIONAL EFFECT ON INTEREST PATTERN**

$H_6$ (I) The Interest Pattern would be significantly governed by the Sex differences, whereas it would have least effect of Locale.

Interest Pattern in the present study is the dependent variable, whereas Caste $(2) \times \text{Sex} (2) \times \text{Locale} (2)$ have been selected as the independent variable, whose effect have been conceptualized to be studied in the present study on the dependent variable.

The scores were put to three ways ANOVA statistical treatment. Results obtained on Interest Pattern explaining ANOVA with $2 \times 2 \times 2$ factional design have been exhibited in Table 5.13 as under.
Table 5.13

The summary of ANOVA with 2x2x2 factorial design on Interest Pattern of the pupil.

<table>
<thead>
<tr>
<th>Source</th>
<th>Sum of squares</th>
<th>df</th>
<th>Mean squares</th>
<th>F</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caste</td>
<td>118.402</td>
<td>1</td>
<td>118.402</td>
<td>10.46</td>
<td>P &lt;.01 **</td>
</tr>
<tr>
<td>Sex</td>
<td>630.</td>
<td>1</td>
<td>630.</td>
<td>51.352</td>
<td>P &lt;.01 **</td>
</tr>
<tr>
<td>Locale</td>
<td>59.693</td>
<td>1</td>
<td>59.693</td>
<td>4.83</td>
<td>P &lt;.01 **</td>
</tr>
<tr>
<td>Caste &amp; Sex</td>
<td>33.6669</td>
<td>1</td>
<td>33.6669</td>
<td>2.887</td>
<td>P &lt;.05 *</td>
</tr>
<tr>
<td>Caste &amp; Locale</td>
<td>47.238</td>
<td>1</td>
<td>47.238</td>
<td>3.680</td>
<td>P &gt;.05  +</td>
</tr>
<tr>
<td>Sex &amp; Locale</td>
<td>52.1524</td>
<td>1</td>
<td>52.1524</td>
<td>4.323</td>
<td>P &gt;.05  +</td>
</tr>
<tr>
<td>Caste &amp; Sex &amp; Locale</td>
<td>33.659</td>
<td>1</td>
<td>33.659</td>
<td>2.626</td>
<td>P &lt;.05 *</td>
</tr>
<tr>
<td>Error</td>
<td>5920.963</td>
<td>512</td>
<td>5920.963</td>
<td>11.587</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>88756.260</td>
<td>520</td>
<td>88756.260</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corr. Total</td>
<td>6706.873</td>
<td>519</td>
<td>6706.873</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Inference ** P < .01, * P < .05, + P > .05

It is evident from the Table 5.13 that two of the three main effects that is Caste (F = 10.46, df = 1,512; P < .01) and Sex (F = 51.352, df = 1,512; P < .01) have been found to have a highly significant effect on the Interest Pattern. Whereas Locale have been found to have at moderate significant effect (F = 4.83, df = 1,512; P < .05) on Interest Pattern. Among all the main effects, Sex has shown the highest significant effect on Interest Pattern and Locale the least. Further the moderate interaction has been observed in favour of the joint interaction of two independent variable namely Sex x Locale to an extent of (F = 4.323, df = 1,512; P < .05).

This may lead to the conclusion that the interaction between Sex and Locale is found moderately significant at .01 level. It indicates that the Interest Pattern for IX grade pupils at two levels of Locale (Rural and Urban) and at two levels of Sex (Boys and Girls) were statistically different from each other, but the interaction between Caste and Sex and Caste and Locale was not found statistically significant. Further the three order interaction was not found to be significant even at .05 level of confidence. It indicates that the Interest Pattern of IX grade pupils at
Tables 5.14 to 5.25, present the six-fold Differential studies as mentioned above from (a) to (f). The Differential Hypothesis indicating Sex Differences have been formulated as under -

**Hypothesis H7 (D) (1) “The Scholastic Attainment of Boys and Girls would show significant differences in all the four major school subjects namely Languages (English & Hindi), Maths, Science, Social Science as well as on the Composite Scholastic Attainment.”**

Statistical Differential in terms of mean, SD and t values have been computed for each of the above mentioned six aspects of the differential studies sequentially presented as under.

(a) *Intra social group inter sex differential on the scholastic attainment of the higher secondary schools.*

**Table 5.14**

Statistical Differentials on Scholastic Attainment of SC & ST boys and girls studying in grade IX of Higher Secondary Schools.

<table>
<thead>
<tr>
<th>Caste</th>
<th>SC &amp; ST Boys</th>
<th>SC &amp; ST Girls</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td>N  M   SD</td>
<td>N  M   SD</td>
</tr>
<tr>
<td>Schol. Att.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>English</td>
<td>280 45.08 13.30</td>
<td>240 44.78 13.45</td>
</tr>
<tr>
<td>Hindi</td>
<td>280 49.62 10.73</td>
<td>240 51.05 12.11</td>
</tr>
<tr>
<td>Maths</td>
<td>280 46.27 20.28</td>
<td>240 40.88 17.16</td>
</tr>
<tr>
<td>Science</td>
<td>280 44.12 14.79</td>
<td>240 42.95 12.79</td>
</tr>
<tr>
<td>Soc. Sci</td>
<td>280 47.00 13.79</td>
<td>240 41.16 12.89</td>
</tr>
<tr>
<td>Comp. Schol.</td>
<td>280 46.31 12.64</td>
<td>240 44.20 12.15</td>
</tr>
</tbody>
</table>

Inference **P < .01, * P < .05, + P > .05**

A close inspection of the Table 5.14 reveals that Boys have scored significantly higher than the Girls in Maths and Social Science. The Mean scores in Maths (M = 46.27 & 40.88) whereas the Mean scores in Social Science of SC & ST boys and girls are (47.00 & 41.16) respectively. Whereas there exists no significant difference in the Scholastic Attainment in the rest of the subjects, though the Mean
scores of Boys are higher than the Girls, except in Hindi, where the Mean scores of Girls is greater than Boys. On the basis of the above hypothesis $H_7(D)$ (1) is partially retained. It is therefore concluded that (1) The boys have significantly excelled the Girls in their Scholastic Attainment in Maths and Social Science. Besides these two cases there exists no significant Inter Sex difference between SC & ST pupils in other subjects.

For estimating the Intra Social Group and Inter Sex Differences on the Scholastic Attainments. The data obtained on 260 Scheduled Castes and 260 Scheduled Tribe consisting of 140 Boys and 120 Girls in each of the two social groups, studying in grade IX of the HSS, were systematically analysed and processed; and the differences between the boys and girls of each social group were computed.

Table 5.15 exhibits statistical Intra-Social group Inter-Sex differentials on the Scholastic Attainments of the HSS.

**Table 5.15**

Statistical Sex Differentials on Scholastic Attainment of Scheduled Caste and Scheduled Tribe Pupils of Higher Secondary Schools.

<table>
<thead>
<tr>
<th>Caste</th>
<th>Sex</th>
<th>Boys</th>
<th>Scheduled Caste</th>
<th>Girls</th>
<th>t value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Schol. Att.</td>
<td>N</td>
<td>M</td>
<td>SD</td>
<td>N</td>
</tr>
<tr>
<td>English</td>
<td></td>
<td>140</td>
<td>41.61</td>
<td>11.55</td>
<td>120</td>
</tr>
<tr>
<td>Hindi</td>
<td></td>
<td>140</td>
<td>46.16</td>
<td>9.64</td>
<td>120</td>
</tr>
<tr>
<td>Maths</td>
<td></td>
<td>140</td>
<td>44.20</td>
<td>17.84</td>
<td>120</td>
</tr>
<tr>
<td>Science</td>
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<td>140</td>
<td>39.92</td>
<td>12.84</td>
<td>120</td>
</tr>
<tr>
<td>Soc. Sci</td>
<td></td>
<td>140</td>
<td>42.43</td>
<td>11.17</td>
<td>120</td>
</tr>
<tr>
<td>Comp.</td>
<td></td>
<td>140</td>
<td>42.65</td>
<td>10.37</td>
<td>120</td>
</tr>
<tr>
<td>Schol. Att</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Inference ** $P < .01$, * $P < .05$, + $P > .05$, df = 258
Caste | Scheduled Tribe
--- | ---
Sex | Boys | Girls
Schol. Att. | N | M | SD | N | M | SD | t value
English | 140 | 48.56 | 14.05 | 120 | 41.30 | 10.02 | 4.87 **
Hindi | 140 | 53.07 | 10.69 | 120 | 48.25 | 10.96 | 5.59 **
Maths | 140 | 48.34 | 22.34 | 120 | 37.26 | 13.34 | 4.90 **
Science | 140 | 48.33 | 15.43 | 120 | 40.78 | 11.08 | 4.57 **
Soc. Sci | 140 | 51.57 | 14.66 | 120 | 41.40 | 10.45 | 6.56 **
Comp. Schol. Att | 140 | 49.98 | 13.65 | 120 | 42.03 | 9.80 | 5.48 **

Inference ** P < .01, * P < .05, + P > .05, df = 258

A close inspection of the Table 5.15 reveals that a highly significant Sex difference has been consistently observed in case of Scheduled Tribes Social group in all the subjects. Boys have scored significantly higher than the girls. The Mean scores in Eng. (M = 48.50), Hindi (M = 53.07), Maths (M = 48.34) Science (M=48.33), Social Science (M = 51.57) and Composite Scholastic Attainment (M=49.98) of ST boys were found significantly higher (t = 4.87, 3.59) in languages, Maths (t = 4.94), Science (t = 4.57), Social Science (t = 6.56) and Composite Scholastic Attainment (t = 5.48) than those of the ST girls their Mean scores in English (M = 41.30), Hindi (M = 48.25), Maths (M = 37.26), Science (M= 40.78), Social Science (M = 41.40), and Composite Scholastic Attainment (M = 42.03) df = 258, P < .01 respectively.

Further a consistent result indicating superiority of the Scheduled Caste Girls (M = 48.17, 53.85, 45.13, 46.37) over the Scheduled Caste Boys (M = 41.64, 46.16, 39.92, 42.65) respectively has also been estimated in English, Hindi, Science and Composite Scholastic Attainment; however, there existed no significant difference between the Scheduled Caste Boys (M = 44.20, 42.43) and Girls (M = 44.50, 40.93) in Maths and Social Science. On the strength of these results Hypothesis H_2(D) (1) has been accepted to a large extent and it is concluded that:

- There existed Sex difference between boys and girls in English, Hindi, Science and Composite Scholastic Attainment in case of Scheduled Caste Girls excelling Boys.
• The Scheduled Tribe Boys excelled the Tribal Girls in all the subjects.
• These results indicate that the Scheduled Caste and Scheduled Tribe Girls the Boys differ significantly in all the subjects except Maths, and Social Science in case of Scheduled Caste Boys and Girls.

Hypothesis H7 (D) (2) There would be significant sex difference in the scores on various Aptitudes indicating boys excelling girls in all Aptitude counts.

(b) Intra social group inter sex differential on the SAT and DAT of the higher secondary schools.

For estimating the Intra-Social Group and Inter-Sex differences on the SAT and DAT, the data obtained on 260 Scheduled Caste and 260 Scheduled Tribe pupils consisting of 140 boys and 120 girls in each of the two social groups studying at grade IX of the Higher Secondary Schools, were systematically analysed and processed, and the differences between boys and girls of each social group were computed. Table 5.16 to 5.19 exhibits statistical Intra-Social group and Inter-Sex differentials on SAT and DAT pupils.

Table 5.16

Statistical Differentials in terms of Sex on SAT and its seven components of the SC & ST pupils studying in grade IX of the Higher Secondary School.

<table>
<thead>
<tr>
<th>Caste</th>
<th>SC &amp; ST</th>
<th>SC &amp; ST</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Boys</td>
<td>Girls</td>
</tr>
<tr>
<td>SAT</td>
<td>N</td>
<td>M</td>
</tr>
<tr>
<td>EB</td>
<td>280</td>
<td>47.00</td>
</tr>
<tr>
<td>DIIIC</td>
<td>280</td>
<td>42.88</td>
</tr>
<tr>
<td>ADC</td>
<td>280</td>
<td>49.87</td>
</tr>
<tr>
<td>AI</td>
<td>280</td>
<td>32.17</td>
</tr>
<tr>
<td>ARSP</td>
<td>280</td>
<td>49.55</td>
</tr>
<tr>
<td>CT</td>
<td>280</td>
<td>91.42</td>
</tr>
<tr>
<td>AO</td>
<td>280</td>
<td>40.39</td>
</tr>
<tr>
<td>Comp. DAT</td>
<td>280</td>
<td>40.39</td>
</tr>
</tbody>
</table>

Inference ** P < .01, * P < .05, + P > .05
Table 5.16 showing a global view of Statistical differentials of Sex on SAT and its seven components of the SC & ST pupils, reveal that a highly significant Sex Differentials exists between boys and girls in EB \( (t = 6.39) \), DI/IC \( (t = 4.36) \), ARSP \( (t = 3.31) \), and CT \( (t = 4.33) \). The Mean scores of Girls exceed the Boys, except in DI/IC. Whereas it does not show any significant difference in the rest of the dimensions of SAT.

**Table 5.17**

Intra-Social group Inter-Sex differences: Statistical Sex Differentials on SAT and its seven components of Scheduled Caste and Scheduled Tribe Pupils of Higher Secondary Schools

<table>
<thead>
<tr>
<th>Caste</th>
<th>Sex</th>
<th>Boys</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th>t value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SAT</td>
<td></td>
<td>N</td>
<td>M</td>
<td>SD</td>
<td>N</td>
<td>M</td>
</tr>
<tr>
<td></td>
<td>EB</td>
<td></td>
<td>140</td>
<td>45.57</td>
<td>21.60</td>
<td>120</td>
<td>56.50</td>
</tr>
<tr>
<td></td>
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<tr>
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<td>ADC</td>
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<td>140</td>
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<td>9.93</td>
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<td>37.13</td>
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<tr>
<td></td>
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<td></td>
<td>140</td>
<td>54.46</td>
<td>15.36</td>
<td>120</td>
<td>42.45</td>
</tr>
<tr>
<td></td>
<td>ARSP</td>
<td></td>
<td>140</td>
<td>33.58</td>
<td>9.95</td>
<td>120</td>
<td>37.01</td>
</tr>
<tr>
<td></td>
<td>CT</td>
<td></td>
<td>140</td>
<td>52.50</td>
<td>13.17</td>
<td>120</td>
<td>57.08</td>
</tr>
<tr>
<td></td>
<td>AO</td>
<td></td>
<td>140</td>
<td>90.00</td>
<td>30.10</td>
<td>120</td>
<td>98.00</td>
</tr>
<tr>
<td></td>
<td>Comp.</td>
<td></td>
<td>140</td>
<td>41.27</td>
<td>6.03</td>
<td>120</td>
<td>38.44</td>
</tr>
</tbody>
</table>

Inference ** P < .01, * P < .05, + P > .05, df = 258
A close inspection of the Table 5.17 reveals that a highly significant Sex difference has been observed in case of both the social groups in EB, DI/IC, AI, CT, and Composite Scientific Aptitude. The girls of ST groups have scored significantly higher than the Boys. The Mean scores of the ST Girls (M = EB 56.76, AI –59.59, ARlSP –36.44, CI –53.28, Composite SAT –43.57 were found to be significantly higher (t = 3.75, 6.89, 3.81, 4.04 and 5.64, df = 258, P < .01 respectively) than those of the ST Boys (M = 48.42, 44.67, 44.67, 44.28, 30.76, 46.60 and 39.51). except in case of DI/IC the Mean score of the Boys (M = 44.67) exceeded that of the Girls (M = 39.14) t = 3.50, df = 258. 

Further, a consistent result indicating superiority of Scheduled Caste Girls (M = 56.50, 57.08, 98.00) over the Scheduled Caste Boys (M = 45.57, 52.50, 90.00) respectively has been estimated on EB, CT and AO and the difference between the Mean were found to be highly significant beyond .01 level (t = 3.74, 2.71 & 3.93, df = 258, P < .01).

Another consistent result indicating superiority of Scheduled Caste Boys (M=41.09, 54.46, 41.27) respectively over the Scheduled Caste Girls (M = 35.75, 42.45, 38.44) has been recorded on DI/IC, AI and Composite Scientific Aptitude (t= 2.81, 5.4, 3.17, df = 258, P < .01) has been found significant beyond .01 level. Further the Scheduled Caste Boys (M = 40.52) excelled the Scheduled Caste Girls
(M = 7.13) ADC beyond .05 level (t = 2.45, df = 258). Further no significant difference between the Scheduled Caste Boys (M = 33.58) and Girls (M = 37.01) has been found (t = 1.58, df = 258, P > .05). ARSP, ADC from the data provided in favour of Scheduled Tribe Boys (M = 39.23 and Girls 40.98) (t = 1.33, P > .01), although the Mean scores of girls exceeded the boys. On the strength of these results Hypothesis H7 (D) (2) has been retained and partially rejected in regards to ARSP for Scheduled Caste and ADC from the data provided to Scheduled Tribes.

**Table 5.18**

Statistical Differential in terms of Sex on DAT and its Components of the SC and ST pupils studying in Grade IX of the Higher Secondary Schools.

<table>
<thead>
<tr>
<th>Caste</th>
<th>SC &amp; ST Boys</th>
<th>SC &amp; ST Girls</th>
<th>t value</th>
</tr>
</thead>
<tbody>
<tr>
<td>DAT</td>
<td>N  M  SD</td>
<td>N  M  SD</td>
<td></td>
</tr>
<tr>
<td>AR</td>
<td>280 45.15 9.64</td>
<td>240 40.94 9.93</td>
<td>4.01 **</td>
</tr>
<tr>
<td>SR</td>
<td>280 36.34 12.65</td>
<td>240 35.14 11.18</td>
<td>1.14 +</td>
</tr>
<tr>
<td>CSA</td>
<td>280 44.85 8.21</td>
<td>240 53.17 8.73</td>
<td>11.13 **</td>
</tr>
<tr>
<td>NA</td>
<td>280 30.89 9.09</td>
<td>240 29.52 7.61</td>
<td>1.87 +</td>
</tr>
<tr>
<td>VR</td>
<td>280 48.76 22.67</td>
<td>240 49.42 19.31</td>
<td>.360 +</td>
</tr>
<tr>
<td>MR</td>
<td>280 39.64 11.75</td>
<td>240 35.04 13.28</td>
<td>4.15 **</td>
</tr>
<tr>
<td>LU-gr</td>
<td>280 45.07 10.20</td>
<td>240 41.62 7.092</td>
<td>4.32 **</td>
</tr>
<tr>
<td>LU-sp</td>
<td>280 49.79 13.08</td>
<td>240 48.12 11.13</td>
<td>1.57 +</td>
</tr>
<tr>
<td>Comp.</td>
<td>280 42.59 6.21</td>
<td>240 41.63 5.31</td>
<td>1.88 +</td>
</tr>
</tbody>
</table>

Inference ** P < .01, * P < .05, + P > .05

A global view of Sex Differential of DAT and its Components of SC and ST pupils show that there exists a highly significant difference between SC & ST Boys and Girls in MR (t = 4.15, P < .01) AR (t = 4.01), LU-gr (t = 4.32) and CSA (t = 11.13, P < .01). The Mean scores of Boys is greater than the Girls except in CSA. Further there exists no significant difference between SC & ST boys and girls in the remaining Dimensions of DAT.
(c) **Intra-Social Group and Inter-Sex Differences on the DAT of grade IX of Higher Secondary Schools.**

For estimating the Intra-Social Group and Inter-Sex differences on the DAT, the data obtained on 260 Scheduled Castes and 260 Scheduled Tribes pupils consisting of 140 boys and 120 girls in each of the two social groups studying in grade IX of the HSS, were systematically analysed and processed and the differences between the boys and the girls of each social group were computed. Table 5.19 exhibits statistical Intra-Social group Inter-Sex differential on the DAT of the HSS.

**Table 5.19**

Intra-Social group Inter-Sex differences: Statistical Sex Differentials on DAT and its seven components of Scheduled Caste and Scheduled Tribe Pupils studying in Grade IX of Higher Secondary Schools.

<table>
<thead>
<tr>
<th>Caste</th>
<th>Sex</th>
<th>Boys</th>
<th>Scheduled Caste</th>
<th>Girls</th>
<th>t value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>N</td>
<td>M</td>
<td>SD</td>
<td>N</td>
</tr>
<tr>
<td>DAT</td>
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<td></td>
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</tr>
<tr>
<td>AR</td>
<td></td>
<td>140</td>
<td>40.97</td>
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<td>120</td>
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<tr>
<td>SR</td>
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<td>31.73</td>
<td>7.60</td>
<td>120</td>
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<tr>
<td>CSA</td>
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<td>140</td>
<td>61.48</td>
<td>22.63</td>
<td>120</td>
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<tr>
<td>NA</td>
<td></td>
<td>140</td>
<td>33.91</td>
<td>8.66</td>
<td>120</td>
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<td>VR</td>
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<td>140</td>
<td>42.88</td>
<td>9.86</td>
<td>120</td>
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<tr>
<td>MR</td>
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<td>47.51</td>
<td>8.97</td>
<td>120</td>
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<tr>
<td>LU-gr</td>
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<td>48.27</td>
<td>16.29</td>
<td>120</td>
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<td>LU-sp</td>
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<td>140</td>
<td>48.79</td>
<td>7.87</td>
<td>120</td>
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<tr>
<td>Comp. DAT</td>
<td>140</td>
<td>44.12</td>
<td>5.08</td>
<td>120</td>
<td>43.24</td>
</tr>
</tbody>
</table>

Inference **P < .01, *P < .05, +P > .05**
A close inspection of Table 5.19 reveals that a highly significant Sex difference has been consistently observed in case of both the social groups in AR and MR. Boys from both the Social Groups have scored significantly higher than the Girls. In AR the Mean Scores of the SC (M = 40.97) and ST (42.27) boys were found significantly higher (t = 3.47, df = 258, P < .01 and t = 3.48, df = 258, P < .01 respectively) than those of the SC (M = 35.48) and ST (M = 36.06) girls. Similarly in MR the SC (M = 47.51) and ST (M = 47.55) boys excelled the SC (M = 41.68) and ST (M = 40.94) girls significantly (t = 5.39, df = 258, P < .01 and t = 7.10, df = 258, P < .01) respectively.

The difference between the SC boys (M = 31.73), and girls (M = 28.03) has also been found highly significant (t = 3.93, df = 258, P < .01) in favour of the former, in SR. Similarly for NA the SC boys (M = 33.91) excelled the SC girls (M = 29.61) significantly (t = 3.46, df = 258, P < .01). Whereas the SC girls (M = 54.40) excelled the SC boys (M = 48.79) in LU-sp significantly (t = 5.29, df = 258, P < .01). Further the ST (M = 45.31 & 47.55) boys excelled the ST (M = 41.44 & 40.94) girls significantly (t = 3.74 & 3.22, df = 258, P > .01). Whereas as the ST (M = 34.13 & 42.24) girls excelled the ST (M = 30.09 & 35.91) boys highly significantly (t = 3.54 & 3.74, df = 258, P < .01).
On the basis of the above result Hypothesis H7(D) (2) is partially retained and it is concluded that

- SC and ST boys excelled highly significantly than the SC and ST girls in AR and MR.
- SC boys excelled the SC girls in AR, SR, NA & MR, whereas SC girls excelled SC boys in LU-sp
- ST boys excelled the ST girls in AR, VR & MR whereas ST girls excelled ST boys in CSA, NA and LU-gr.

H7 (D) (3) The Interest patterns of the boys would be significantly different from those of the girls.

*Intra-Social Group and Inter-Sex Differences on the Interest Patterns of grade IX of Higher Secondary Schools.*

**Table 5.20**

Statistical Differentials in terms of Sex on Interest Pattern of SC and ST pupils studying in Grade of the Higher Secondary Schools.

<table>
<thead>
<tr>
<th>Caste</th>
<th>Interest Pattern</th>
<th>N</th>
<th>M</th>
<th>SD</th>
<th>N</th>
<th>M</th>
<th>SD</th>
<th>t value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Boys</td>
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</tr>
</tbody>
</table>

Inference ** P < .01, * P < .05, + P > .05
Table 5.20 showing a global view of the Statistical Differentials of Sex on Interest Pattern of the SC and ST pupil reveal that a highly significant Sex Differentials exist between boys and girls in Fine Arts (t = 4.74), Literacy (t = 5.47), Scientific (t = 6.88), Medical (t = 9.37), Agriculture (t = 8.18), Technical (t = 11.14), Craft (t = 5.51), Outdoor (t = 3.42), Sports (t = 4.75) P < .01, df = 518. The Mean scores of the boys exceed the girls, whereas it does not show any significant difference in Household Interest. On the strength these results the Statistical Differentials in terms of Sex on Interest Patterns of SC and ST pupil have been accepted except in Household Interest.

**H7 (D) (3) Intra-Social Group Inter-Sex Differences on Interest Pattern of Grade IX of Higher Secondary Schools.**

Table 5.21

Intra-Social Group Inter-Sex Differences: Statistical Sex differentials on Interest Pattern of Scheduled Caste and Scheduled Tribe Pupils of Higher Secondary Schools.

<table>
<thead>
<tr>
<th>Caste</th>
<th>Sex</th>
<th>Scheduled Caste</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Interest Pattern</td>
<td>Boys</td>
<td>Girls</td>
<td></td>
<td>t value</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>M</td>
<td>SD</td>
<td></td>
<td>N</td>
</tr>
<tr>
<td>Fine Arts</td>
<td>140</td>
<td>13.76</td>
<td>2.73</td>
<td>120</td>
<td>12.23</td>
</tr>
<tr>
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<td>12.55</td>
<td>2.57</td>
<td>120</td>
<td>11.63</td>
</tr>
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<td>3.65</td>
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<td>11.40</td>
<td>1.91</td>
<td>120</td>
<td>11.90</td>
</tr>
</tbody>
</table>

Inference **P < .01, * P < .05, + P > .05**
A close inspection of the Table 5.21 reveals that a highly significant Sex difference has been observed in case of both the social groups (SC as well as ST). The boys of SC have scored significantly higher than the girls. The Mean score of SC boys (M = Fine Arts: 13.76, Literacy + 2.55, Scientific –15.45, Medical – 15.36, Agriculture – 12.76, Technical – 14.40, Craft – 12.55, Outdoor – 12.76, and Sports – 11.60) were found to be significantly higher than those of SC girls (M=12.23 Fine Arts, 11.63 – Literacy, 12.11 – Scientific, 12.06 – Medical, 11.04 – Agriculture, 11.06 – Technical, 10.94 – Craft, 11.74 – Outdoor, and 12.10 – Sports respectively. t = 3.31, 2.40, 7.24, 6.77, 4.66, 7.45, 3.76, 2.49 and 5.30 respectively, df = 258, P < .01 level; however there exists no significant difference between SC boys and girls with respect to interest in Houshold.

On the strength of these results Hypothesis H7 (D) (3) has been accepted to a large extent and it is concluded that there existed Sex difference between SC boys and SC girls in all the dimensions of Interest Pattern except Household. SC and ST boys excelling the SC and ST girls.

Table 5.22

(d) Inter social group and Intra-Sex Differential: Statistical Differential in the Scholastic Attainment of Scheduled Caste and Scheduled Tribe Pupils of Higher Secondary School.

<table>
<thead>
<tr>
<th>Sex</th>
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<th>t value</th>
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<tr>
<td>SA</td>
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<tr>
<td>Hindi</td>
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<td>46.16</td>
<td>9.64</td>
<td>140</td>
</tr>
<tr>
<td>Maths</td>
<td>140</td>
<td>44.20</td>
<td>17.84</td>
<td>140</td>
</tr>
<tr>
<td>Science</td>
<td>140</td>
<td>39.92</td>
<td>12.84</td>
<td>140</td>
</tr>
<tr>
<td>Social</td>
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</tr>
<tr>
<td>Comp. SA</td>
<td>140</td>
<td>42.65</td>
<td>10.37</td>
<td>140</td>
</tr>
</tbody>
</table>

Inference ** P < .01, * P < .05, + P > .05

<table>
<thead>
<tr>
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<th>Girls</th>
<th>SC</th>
<th>ST</th>
<th>t value</th>
</tr>
</thead>
<tbody>
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<td></td>
</tr>
<tr>
<td>English</td>
<td>120</td>
<td>48.17</td>
<td>15.46</td>
<td>120</td>
</tr>
<tr>
<td>Hindi</td>
<td>120</td>
<td>53.85</td>
<td>12.59</td>
<td>120</td>
</tr>
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<td>Comp. SA</td>
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<td>13.83</td>
<td>120</td>
</tr>
</tbody>
</table>

Inference ** P < .01, * P < .05, + P > .05
An inspection of Table 5.22 indicates that the ST boys have been found significantly excelling the SC boys in Scholastic Attainment in English, Hindi, Science, Social Science and Composite Scholastic Attainment. The ST boys have scored in English \( (M = 48.56) \), Hindi \( (M = 53.07) \), Science \( (M = 48.33) \) Social Science \( (M = 51.57) \), and Composite Scholastic Attainment \( (M = 49.98) \) which have been estimated significantly higher beyond .01 level than their counterpart SC boys, have scored in English \( (M = 41.61) \), Hindi \( (M = 46.16) \), Science \( (M = 39.92) \), Social Science \( (M = 42.43) \), and Composite Scholastic Attainment \( (M = 42.65) \). Their t Values being \((t = 4.54, 5.71, 4.97, 5.89 & 5.09)\) respectively. Similarly the SC girls excelled in their Scholastic Attainment in English \( (M = 48.17) \), Hindi \( (M = 53.85) \) Maths \( (M = 44.50) \), Science \( (M = 45.13) \) and Composite Scholastic Attainment \( (M = 46.37) \) beyond .01 level to the ST girls their Mean value in English \( (M = 41.30) \) Hindi \( (M = 48.25) \), Maths \( (M = 37.26) \), Science \( (M = 40.78) \), and Composite Scholastic Attainment \( (M = 42.03) \) respectively. Their t Values being \((t = 4.08, 3.68, 3.35, 2.68 \text{ and } 2.81)\) respectively.

On the strength of these results Hypothesis \( H_7 (D) \) in regards to Inter-Social group and Intra-Sex differences have been accepted to a large extent. It is therefore concluded that:

- The ST boys have significantly excelled the SC boys in their Scholastic Attainment in all subjects except Maths.
- The SC girls have significantly excelled the ST girls in their Scholastic Attainment in all subjects except in Social Science.

(e) **Inter-Social Group Intra-Sex Differences on the SAT and DAT of the Higher Secondary Schools.**

Data collected from the Scheduled Caste and Scheduled Tribe pupils in the SAT and DAT of the higher Secondary Schools were systematically analysed in terms of their sex differences. The size of the sample boys in each of the two social groups was 280 whereas that of the girls was 240. Statistical Differentials indicating Mean, SDs and t values were computed and the results, so obtained as Inter-Social group sex differences have presented in Table 5.23.
Table 5.23

Inter-Social Group Intra-Sex Differences: Statistical Differentials SAT and its seven Components of SC and ST pupils of Higher Secondary Schools.

<table>
<thead>
<tr>
<th>Sex</th>
<th>Caste</th>
<th>SC</th>
<th>ST</th>
<th>t value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>N</td>
<td>M</td>
<td>SD</td>
</tr>
</tbody>
</table>
| SAT | EB    | 140| 45.57| 21.16 | 140| 48.42| 19.35| 1.16+
|     | DI/IC | 140| 41.09| 17.17 | 140| 44.67| 14.23| 1.90+
|     | ADC   | 140| 40.52| 9.93  | 140| 39.23| 11.50| 1.00+
|     | AI    | 140| 54.46| 15.36 | 140| 44.28| 18.80| 1.90+
|     | ARSP  | 140| 33.58| 9.95  | 140| 30.76| 8.49 | 2.56*
|     | CT    | 140| 52.50| 13.17 | 140| 46.60| 15.92| 3.37**
|     | AO    | 140| 90.00| 30.10 | 140| 92.85| 25.84|.853+
|     | Comp. | 140| 41.27| 6.03  | 140| 39.51| 5.44 | 2.56*

Inference ** P < .01, * P < .05, + P > .05

<table>
<thead>
<tr>
<th>Sex</th>
<th>Caste</th>
<th>SC</th>
<th>ST</th>
<th>t value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>N</td>
<td>M</td>
<td>SD</td>
</tr>
</tbody>
</table>
| SAT | EB    | 120| 56.50| 25.09 | 120| 56.76| 16.58|.092+
|     | DI/IC | 120| 35.75| 13.67 | 120| 39.14| 11.37| 2.09*
|     | ADC   | 120| 37.13| 12.07 | 120| 40.98| 9.63 | 2.75**
|     | AI    | 120| 42.45| 19.60 | 120| 59.59| 17.01| 7.26**
|     | ARSP  | 120| 37.01| 21.95 | 120| 36.44| 14.30| .238+
|     | CT    | 120| 57.08| 13.82 | 120| 53.28| 10.50| 2.40*
|     | AO    | 120| 95.00| .02   | 120| 87.87| 32.80| 4.13**
|     | Comp. | 120| 38.44| 8.00  | 120| 43.57| 6.07 | 5.60**

Inference ** P < .01, * P < .05, + P > .05

An inspection of Table 5.23 indicates that the SC boys have been found significantly excelling the ST boys of Higher Secondary Schools only in four of the eight components i.e. AI, ARSP, CT & Composite SAT. The SC boys have scored in AI (M = 54.46), ARSP (M = 33.58), CT (M = 52.50) and Composite SAT (M =
41.27) which have been estimated significantly higher beyond .01 level of confidence except in case of ARSP which shows .05 level of confidence, than the respective (Means = 44.28, 30.76, 46.60, and 39.51) scored by ST boys, their t values being 4.95, (P < .01) 2.56 (P < .05), 3.37 (P < .01) 2.56 (P < .01) respectively. Besides these four significant Intra-Sex differences of the SC and ST boys, no other differences between the Means of the remaining four dimensions of the SAT (i.e. EB, DI/IC, ADC and AO) has been found significant.

The Intra-sex differences between the SC & ST girls have been recorded highly significant (P < .01) in ADC, AI, AO and Composite SAT, their respective t values being 2.75, 7.26, 4.13 and 5.60. The ST girls (M = 40.98 (ADC), 59.59 (AI) & 43.57 (Comp.SAT) have excelled the SC girls (M = 37.13, 42.45 and 38.44). The Intra-Sex differences between the SC and ST girls have been recorded moderately significant (P < .05) only in ADC and CT, their respective t values being 2.09 and 2.40, df = 238. Further the ST girls M = 39.14 have excelled the SC girls in DI/IC and the SC girls in CT. In the rest two dimensions of SAT i.e EB & ARSP there existed no significant Intra-Sex differences between the SC & ST girls.

On the strength of these results Hypothesis H7(D) (2) in regard to Inter-Social Group Intra-Sex difference has been accepted to a large extent in case of SC and ST boys and rejected to a large extent in case of SC and ST girls. It is therefore concluded that:

- The SC boys have significantly excelled the ST boys in their AT, ARSP, CT and Composite SAT. Besides these four components there existed no significant differences between SC & ST boys in the remaining four components of the SAT.

- The ST girls have shown moderately significant Intra-Sex differences in comparison to their counterpart SC girls in DI/IC and highly significant difference in ADC, AI and Composite SAT whereas SC have shown moderately significant Intra-Sex difference in Caution and Thoroughness and highly significant difference in AO.
Table 5.24

Inter-Social Group Intra-Sex Differences: Statistical Sex Differentials on DAT and its seven Components of SC and ST pupils of the Higher Secondary Schools.

<table>
<thead>
<tr>
<th>Caste</th>
<th>SC</th>
<th></th>
<th></th>
<th>ST</th>
<th></th>
<th></th>
<th>t value</th>
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<td>M</td>
<td>SD</td>
<td>N</td>
<td>M</td>
<td>SD</td>
<td></td>
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<td>8.58</td>
<td>.113+</td>
</tr>
<tr>
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<td>61.52</td>
<td>22.55</td>
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<td>30.10</td>
<td>10.32</td>
<td>15.03**</td>
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<td>140</td>
<td>35.99</td>
<td>13.94</td>
<td>1.51+</td>
</tr>
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<td>10.52</td>
<td>140</td>
<td>45.38</td>
<td>11.57</td>
<td>2.00**</td>
</tr>
<tr>
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<td>140</td>
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<td>8.96</td>
<td>140</td>
<td>47.57</td>
<td>9.99</td>
<td>.06+</td>
</tr>
<tr>
<td>LU-gr</td>
<td>140</td>
<td>48.31</td>
<td>16.24</td>
<td>140</td>
<td>42.64</td>
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<td>5.67**</td>
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<tr>
<td>LU-sp</td>
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<td>8.07</td>
<td>140</td>
<td>51.27</td>
<td>8.67</td>
<td>2.51*</td>
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<tr>
<td>Comp.</td>
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<td>44.09</td>
<td>5.13</td>
<td>140</td>
<td>40.93</td>
<td>6.27</td>
<td>4.62**</td>
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Inference ** P < .01, * P < .05, + P > .05

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<th>t value</th>
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<td>7.78</td>
<td>3.14**</td>
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</table>

Inference ** P < .01, * P < .05, + P > .05
An inspection of Table 5.24 indicates that the Intra-Sex differences between SC and ST boys have been found highly significant in CSA ($t = 15.03$), LU-gr ($t = 5.67$), and Composite DAT ($t = 4.62$), $df = 278$, $P < .01$ whereas they have shown moderate level of significant difference in VR ($t = 2.00$), and LU-sp ($t = 2.51$), $df = 278$, $P < .05$ respectively. The SC and ST boys did not show any significant difference in AR, SR, NA, MR ($t = .786, .113, 1.5 & .06$) respectively, ($df = 278, P > .05$). The SC girls ($M = 65.46, 43.26, \text{and} 43.62$) scored significantly higher ($t = 20.35, 5.36 \text{and} 3.14$) $df = 238, P < .01$ than the ST girls ($M = 34.93, 40.04, \text{and} 39.94$) in CSA, LU-sp and Composite DAT, whereas a moderate level of superiority of SC girls ($M = 41.98$) over the ST girls ($M = 39.47$) in case of VR, and superiority of ST girls ($M = 30.13$) over SC girls ($M = 28.01$) in case of SR. Further the ST girls scored significantly higher beyond .01 level in NA ($t = 8.19$) $df = 238, P < .01$ level. Besides these the SC & ST girls did not show any significant difference on the remaining three components of the DAT. On the strength of these results Hypothesis $H^7(D)(2)$ has been rejected to a large extent in case of SC and ST boys and moderately rejected in case of SC and ST girls.

(f) **Inter-Social Group Intra-Sex differences on Interest Pattern of the Higher Secondary Schools.**

The data collected from the SC and ST sample pupils were analysed in terms of their six differences. Thus the scores obtained from 280 boys and 240 girls from each of the two social groups i.e. SC and ST samples, were processed from their means, SDs and $t$ values and the results so obtained have been presented in Table 5.25.
### Table 5.25

**Inter-Social Group Intra-sex Differences: Statistical Sex-Differentials on Interest Patterns of Scheduled Castes and Scheduled Tribe Pupils of Higher Secondary Schools.**

<table>
<thead>
<tr>
<th>Sex</th>
<th>Caste</th>
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<th>ST</th>
<th></th>
<th>t value</th>
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<td>SD</td>
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<td>M</td>
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<td></td>
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<td>140</td>
<td>11.40</td>
<td>1.91</td>
<td>140</td>
<td>11.76</td>
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</tbody>
</table>

Inference ** P < .01, * P < .05, + P > .05

<table>
<thead>
<tr>
<th>Sex</th>
<th>Girls</th>
<th>Caste</th>
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<th>ST</th>
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<td>SD</td>
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<td>M</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fine Arts</td>
<td>120</td>
<td>12.23</td>
<td>4.60</td>
<td>120</td>
<td>12.35</td>
<td>4.75</td>
</tr>
<tr>
<td></td>
<td>Literacy</td>
<td>120</td>
<td>11.63</td>
<td>3.56</td>
<td>120</td>
<td>10.90</td>
<td>3.10</td>
</tr>
<tr>
<td></td>
<td>Scientific</td>
<td>120</td>
<td>12.11</td>
<td>3.76</td>
<td>120</td>
<td>12.39</td>
<td>3.45</td>
</tr>
<tr>
<td></td>
<td>Medical</td>
<td>120</td>
<td>12.06</td>
<td>4.49</td>
<td>120</td>
<td>11.33</td>
<td>3.99</td>
</tr>
<tr>
<td></td>
<td>Agriculture</td>
<td>120</td>
<td>11.04</td>
<td>3.15</td>
<td>120</td>
<td>10.86</td>
<td>3.49</td>
</tr>
<tr>
<td></td>
<td>Technical</td>
<td>120</td>
<td>11.06</td>
<td>3.90</td>
<td>120</td>
<td>9.79</td>
<td>4.17</td>
</tr>
<tr>
<td></td>
<td>Craft</td>
<td>120</td>
<td>10.94</td>
<td>3.99</td>
<td>120</td>
<td>10.98</td>
<td>4.06</td>
</tr>
<tr>
<td></td>
<td>Outdoor</td>
<td>120</td>
<td>11.74</td>
<td>3.14</td>
<td>120</td>
<td>11.52</td>
<td>3.17</td>
</tr>
<tr>
<td></td>
<td>Sports</td>
<td>120</td>
<td>12.10</td>
<td>3.62</td>
<td>120</td>
<td>12.40</td>
<td>3.62</td>
</tr>
<tr>
<td></td>
<td>Household</td>
<td>120</td>
<td>11.90</td>
<td>2.83</td>
<td>120</td>
<td>12.05</td>
<td>3.58</td>
</tr>
</tbody>
</table>

Inference ** P < .01, * P < .05, + P > .05
An inspection of the Table 5.25 indicates that the SC boys have been found significantly excelling the ST boys in Scientific ($t = 4.71$, $P < .01$), Medical ($t = 2.29$, $P < .05$), Agriculture ($t = 2.35$, $P < .05$), Technical ($t = 2.09$, $P < .05$), and Sports ($t = 2.99$, $P < .01$). Besides these the remaining dimensions of Interest Pattern did not show any caste difference. The Intra Sex difference between SC and ST girls have been recorded moderately significant ($P < .05$) only in Technical Interests, their $t$ value being 2.44, the SC girls excelled the SC boys. In the rest of the dimensions of the Interest Pattern, there existed no significant difference caste differences. On the strength of these results Hypothesis H7 (D) (3) has been partially retained.

(B) **LOCALE DIFFERENCES : RURAL / URBAN**

Territorial variation on scholastic attainment

H8 (D) (1) The scores on Scholastic Achievement by Rural pupils would be significantly inferior to those belonging to Urban Pupils. However Rural boys would score on all counts significantly higher than urban boys but the scores of Rural Girls would be significantly inferior to the Urban girls.

Table 5.26

Statistical differentials in terms of Locale on Scholastic Achievements of the SC & ST Pupils studying in grade IX of the Higher Secondary Schools.

<table>
<thead>
<tr>
<th>Locale</th>
<th>Rural</th>
<th>Urban</th>
<th>t value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>English</td>
<td>275</td>
<td>40.73</td>
<td>10.73</td>
</tr>
<tr>
<td>Hindi</td>
<td>275</td>
<td>46.40</td>
<td>9.15</td>
</tr>
<tr>
<td>Maths</td>
<td>275</td>
<td>39.17</td>
<td>14.50</td>
</tr>
<tr>
<td>Science</td>
<td>275</td>
<td>39.97</td>
<td>11.17</td>
</tr>
<tr>
<td>Social Science</td>
<td>275</td>
<td>40.94</td>
<td>10.25</td>
</tr>
<tr>
<td>Comp. SA</td>
<td>275</td>
<td>41.74</td>
<td>9.80</td>
</tr>
</tbody>
</table>

Inference ** $P < .01$, * $P < .05$, + $P > .05$
A global view of Table 5.26 showing Locale view of SC and ST pupils reveals that the Urban pupils have been found to display consistently significantly higher Mean than those of the Rural pupils in all the Subjects beyond .01 level of confidence namely English ($t = 8.31$), Hindi ($t = 9.16$) Maths ($t = 6.14$), Science ($t= 6.71$), Social Science ($t = 6.25$) and Composite Scholastic Attainment ($t = 7.56$). Thus the results lead to complete acceptance of the Hypothesis $H_8$ (D) (1). It is therefore concluded that Urban pupils have displayed consistently higher Mean in all the Subjects than the Rural Pupils.

In order to verify Hypothesis $H_8$ (D) (1) Mean, SD and $t$ Values have been computed. The results obtained there upon have been presented in Table 5.27. The results indicates that there occurred revealing Territorial Differences among the Boys as well as girls studying in Urban and Rural Higher Secondary Schools.

**Table 5.27**

Statistical Territorial Differentials: Scholastic Attainment of Scheduled Caste and Scheduled Tribe Pupils Studying in Rural and Urban Higher Secondary Schools.

<table>
<thead>
<tr>
<th>Caste Locale</th>
<th>SCHEDULED CASTE</th>
<th>RURAL</th>
<th>M</th>
<th>SD</th>
<th>N</th>
<th>M</th>
<th>SD</th>
<th>t value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>SCHEDULED CASTE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>RURAL</td>
<td>M</td>
<td>SD</td>
<td>N</td>
<td>M</td>
<td>SD</td>
<td>t value</td>
<td></td>
</tr>
<tr>
<td>SA</td>
<td>English</td>
<td>135</td>
<td>38.29</td>
<td>10.29</td>
<td>125</td>
<td>45.33</td>
<td>11.83</td>
<td>5.13**</td>
</tr>
<tr>
<td></td>
<td>Hindi</td>
<td>135</td>
<td>43.58</td>
<td>8.50</td>
<td>125</td>
<td>49.06</td>
<td>10.07</td>
<td>4.76**</td>
</tr>
<tr>
<td></td>
<td>Maths</td>
<td>135</td>
<td>41.86</td>
<td>16.41</td>
<td>125</td>
<td>46.81</td>
<td>19.11</td>
<td>2.25*</td>
</tr>
<tr>
<td></td>
<td>Science</td>
<td>135</td>
<td>37.87</td>
<td>12.11</td>
<td>125</td>
<td>42.21</td>
<td>13.34</td>
<td>2.76**</td>
</tr>
<tr>
<td></td>
<td>Social Science</td>
<td>135</td>
<td>39.37</td>
<td>9.74</td>
<td>125</td>
<td>45.86</td>
<td>11.74</td>
<td>4.87**</td>
</tr>
<tr>
<td></td>
<td>Comp. Sch. att.</td>
<td>135</td>
<td>39.81</td>
<td>8.68</td>
<td>125</td>
<td>45.83</td>
<td>11.22</td>
<td>3.88**</td>
</tr>
</tbody>
</table>

Inference ** $P < .01$, * $P < .05$, + $P > .05$
### Caste SCHEDULED TRIBE

<table>
<thead>
<tr>
<th>Locale</th>
<th>RURAL</th>
<th>URBAN</th>
<th>t value</th>
</tr>
</thead>
<tbody>
<tr>
<td>SA</td>
<td>N</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>English</td>
<td>140</td>
<td>42.69</td>
<td>11.54</td>
</tr>
<tr>
<td>Hindi</td>
<td>140</td>
<td>48.71</td>
<td>10.22</td>
</tr>
<tr>
<td>Maths</td>
<td>140</td>
<td>39.73</td>
<td>15.80</td>
</tr>
<tr>
<td>Science</td>
<td>140</td>
<td>42.61</td>
<td>11.52</td>
</tr>
<tr>
<td>Social</td>
<td>140</td>
<td>45.33</td>
<td>11.24</td>
</tr>
<tr>
<td>Science</td>
<td>140</td>
<td>43.89</td>
<td>10.23</td>
</tr>
</tbody>
</table>

Inference: **P < .01, *P < .05, +P > .05

The SC Urban Pupils have been found to display consistently significantly higher Means than those of the SC Rural pupils in all the subjects beyond .01 level, namely English (t = 5.13), Hindi (t = 4.76), Science (t = 2.76), Social Science (t = 4.87) and composite Scholastic Attainment (t = 3.88) df = 258, P < .01, whereas Maths (t = 2.25, df = 258, P < .05). Further the ST pupil from Urban area have significantly excelled the ST from Rural area in their Scholastic Attainment namely in English (t = 3.96), Hindi (t = 3.94), Maths (t = 3.44), Science (t = 3.04) and Composite Scholastic Attainment (t = 3.70) df = 258, P < .01) whereas in Social Science (t = 2.10, df = 258, P < .05). These results lead to complete acceptance of the Hypothesis. It is therefore concluded that:

- SC Urban Pupils have displayed consistently higher Mean in all the subjects than those of SC Rural Pupil.
- ST Urban Pupils have displayed consistently higher Mean in all the subjects than those of ST Rural Pupil.

Hence the Urban pupils have excelled the Rural pupils in their Scholastic Attainment in both SC and ST. In order to verify Hypothesis H₈ (D) (1) Mean, SD and t values have been computed. The results obtained there upon have been presented in Table 5.28.
Table 5.28

Statistical Territorial Differentials: Scholastic Attainment of Boys and Girls studying in Rural and Urban Higher Secondary School.

<table>
<thead>
<tr>
<th>Sex</th>
<th>Locale</th>
<th>Boys</th>
<th>Urban</th>
<th>t value</th>
<th>Girls</th>
<th>Urban</th>
<th>t value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>M</td>
<td>SD</td>
<td>N</td>
<td>M</td>
<td>SD</td>
<td>N</td>
</tr>
<tr>
<td>SA</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>English</td>
<td>150</td>
<td>41.87</td>
<td>12.64</td>
<td>130</td>
<td>48.01</td>
<td>12.25</td>
<td>3.98**</td>
</tr>
<tr>
<td>Hindi</td>
<td>150</td>
<td>45.87</td>
<td>8.83</td>
<td>130</td>
<td>53.15</td>
<td>11.20</td>
<td>6.06**</td>
</tr>
<tr>
<td>Maths</td>
<td>150</td>
<td>41.65</td>
<td>16.26</td>
<td>130</td>
<td>50.85</td>
<td>22.57</td>
<td>3.9**</td>
</tr>
<tr>
<td>Science</td>
<td>150</td>
<td>40.89</td>
<td>7.27</td>
<td>130</td>
<td>47.15</td>
<td>15.48</td>
<td>4.34**</td>
</tr>
<tr>
<td>Social Science</td>
<td>150</td>
<td>42.20</td>
<td>10.83</td>
<td>130</td>
<td>51.65</td>
<td>14.70</td>
<td>6.13**</td>
</tr>
<tr>
<td>Comp. SA</td>
<td>150</td>
<td>41.90</td>
<td>9.93</td>
<td>130</td>
<td>50.50</td>
<td>13.50</td>
<td>6.09**</td>
</tr>
</tbody>
</table>

Inference ** P < .01, * P < .05, + P > .05

Table 5.28 reveals that the Urban Boys have been found to display consistently significantly higher Means than those of Rural Boys in all the subjects beyond .01 level, without any exception, namely English (t = 3.98), Hindi (t = 6.01), Maths (t = 3.93), Science (t = 4.34), Social Science (t = 6.13) and Composite Scholastic Attainment (t = 6.09), df = 278, P < .01, respectively. The Girls from Urban area have significantly excelled those of the Rural Girls in all the subjects beyond .01 level. They are English (t = 5.17), Hindi (t = 7.17), Maths (t = 4.31), Science (t = 5.70), Social Science (t = 3.46), and Composite Scholastic Attainment (t = 4.11), df = 238, P < .01, respectively. These results lead to the complete rejection of the former part and acceptance of the latter part of the Hypothesis. It is therefore concluded that:

- Rural Boys have displayed consistently lower means in all the subjects than those of the Urban Boys.
- Rural Girls have significantly lower Means in all the subjects than the Urban Girls. Hence Boys as well as the Girls from the Urban area have excelled the boys and girls from the Rural area in their Scholastic Attainment.
**H₈ (D) (2)** The Scores on various Aptitude Tests by Rural pupils would be significantly inferior to those belonging to Urban pupil. However Rural boys would score on all counts significantly higher than urban boys but the scores of Rural Girls would be significantly inferior to the Urban girls.

**Table 5.29**

Statistical differentials in terms of Locale on SAT and its seven components of the SC & ST pupils studying in grade IX of the Higher Secondary Schools.

<table>
<thead>
<tr>
<th>Locale</th>
<th>Rural</th>
<th>Urban</th>
<th>t value</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAT</td>
<td>N</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>EB</td>
<td>280</td>
<td>49.20</td>
<td>18.80</td>
</tr>
<tr>
<td>DI/IC</td>
<td>280</td>
<td>41.99</td>
<td>14.44</td>
</tr>
<tr>
<td>ADC</td>
<td>280</td>
<td>40.24</td>
<td>10.19</td>
</tr>
<tr>
<td>AI</td>
<td>280</td>
<td>53.38</td>
<td>18.92</td>
</tr>
<tr>
<td>ARSP</td>
<td>280</td>
<td>33.31</td>
<td>13.39</td>
</tr>
<tr>
<td>CT</td>
<td>280</td>
<td>51.63</td>
<td>13.59</td>
</tr>
<tr>
<td>AO</td>
<td>280</td>
<td>92.44</td>
<td>26.48</td>
</tr>
<tr>
<td>Comp. SAT</td>
<td>280</td>
<td>40.84</td>
<td>6.36</td>
</tr>
</tbody>
</table>

Inference **P < .01, *P < .05, +P > .05

Global view of the Table 5.29 showing Locale differences indicates that there exists a highly significant difference between Urban and Rural SC and ST pupils in the components of Scientific Aptitudes namely EB (t = 2.69), DI/IC (t = 2.87), AI (t = 3.11), df = 518, P < .01 level. The Mean value of Urban pupil is greater in EB (M = 54.41). Whereas the Mean value of Rural pupil is greater in DI/IC (M = 41.99), and AI (M = 53.38) whereas of Urban (M = 38.29 and 46.21) respectively. Further there exist no significant difference between Rural and Urban pupil in the rest of the dimensions of SAT. On the basis of the above results the above Hypothesis is completely rejected except in case of EB. It is therefore concluded that the SC and ST Urban pupil have significantly excelled the Rural pupil in EB. Whereas the SC and ST Rural pupil have scored higher Means than Urban pupil in DI/IC and AI.
### Table 5.30
Statistical Territorial Differentials: SAT of SC and ST pupil studying in Rural and Urban Higher Secondary Schools.

<table>
<thead>
<tr>
<th>Caste</th>
<th>Scheduled Caste</th>
<th>Rural</th>
<th>Urban</th>
<th>t value</th>
<th>Scheduled Caste</th>
<th>Rural</th>
<th>Urban</th>
<th>t value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>N</td>
<td>M</td>
<td>SD</td>
<td></td>
<td>N</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>SAT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EB</td>
<td></td>
<td>135</td>
<td>48.09</td>
<td>21.63</td>
<td>125</td>
<td>53.17</td>
<td>23.91</td>
<td>1.72+</td>
</tr>
<tr>
<td>DI/IC</td>
<td></td>
<td>135</td>
<td>42.04</td>
<td>16.88</td>
<td>125</td>
<td>35.15</td>
<td>13.98</td>
<td>3.60**</td>
</tr>
<tr>
<td>ADC</td>
<td></td>
<td>135</td>
<td>38.97</td>
<td>11.09</td>
<td>125</td>
<td>38.93</td>
<td>11.11</td>
<td>0.029+</td>
</tr>
<tr>
<td>AI</td>
<td></td>
<td>135</td>
<td>47.29</td>
<td>18.09</td>
<td>125</td>
<td>50.57</td>
<td>18.66</td>
<td>1.44+</td>
</tr>
<tr>
<td>ARSP</td>
<td></td>
<td>135</td>
<td>35.35</td>
<td>17.63</td>
<td>125</td>
<td>34.98</td>
<td>15.68</td>
<td>1.79+</td>
</tr>
<tr>
<td>CT</td>
<td></td>
<td>135</td>
<td>57.06</td>
<td>12.50</td>
<td>125</td>
<td>52.13</td>
<td>14.33</td>
<td>2.96**</td>
</tr>
<tr>
<td>AO</td>
<td></td>
<td>135</td>
<td>92.36</td>
<td>26.65</td>
<td>125</td>
<td>96.89</td>
<td>17.40</td>
<td>1.62+</td>
</tr>
<tr>
<td>Comp. SAT</td>
<td></td>
<td>135</td>
<td>40.66</td>
<td>7.64</td>
<td>125</td>
<td>39.86</td>
<td>6.62</td>
<td>0.90+</td>
</tr>
</tbody>
</table>

Inference ** P < .01, * P < .05, + P > .05

Table 5.30 indicates that the SC pupils studying in Rural area differ significantly than SC pupils studying in Urban area in DI/IC (t = 3.60) and CT (t = 2.96) df = 258 P < .01 respectively, as components of SAT. Whereas there exists no significant difference between SC Rural and Urban pupils in the other dimension of SAT. Further the ST rural pupils excel the ST Urban pupils in AI (t = 427, df = 258, P < .01) whereas there exists no significant difference between ST Rural and Urban pupils in the other dimensions of SAT. On the strength of these results Hypothesis H8 (D) (2) in Table 5.30 with regards to ST as well as SC Rural and Urban pupils have been completely rejected.

### Table 5.31
Statistical Territorial Differentials: SAT of Boys and Girls studying in Rural and Urban Higher Secondary Schools.

<table>
<thead>
<tr>
<th>Sex</th>
<th>Boys</th>
<th>Girls</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Rural</td>
<td>Urban</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>M</td>
</tr>
<tr>
<td>SAT</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EB</td>
<td>150</td>
<td>41.60</td>
</tr>
<tr>
<td>DI/IC</td>
<td>150</td>
<td>43.68</td>
</tr>
<tr>
<td>ADC</td>
<td>150</td>
<td>45.85</td>
</tr>
<tr>
<td>AI</td>
<td>150</td>
<td>41.43</td>
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<tr>
<td>ARSP</td>
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<tr>
<td>CT</td>
<td>150</td>
<td>32.03</td>
</tr>
<tr>
<td>AO</td>
<td>150</td>
<td>50.53</td>
</tr>
<tr>
<td>Comp. SAT</td>
<td>150</td>
<td>88.65</td>
</tr>
</tbody>
</table>

Inference ** P < .01, * P < .05, + P > .05
Table 5.31 indicates that the SC and ST boys studying in the higher secondary schools located in the urban and rural areas differed significantly in all the components of Scientific Aptitudes except in DI/IC. The Urban Boys have significantly excelled the Rural Boys beyond .01 levels in EB (t = 4.67), AI (t = 3.77), CI (t = 11.28), AO (t = 19.15), df = 278, P < .01. Whereas the Rural Boys have significantly excelled the Urban Boys in ADC (t = 4.63) ARSP (t = 10.39), Comp. SAT (t = 17.87), df = 278, P < .01. Further there exist a significant difference between Rural and Urban SC and ST girls in all the seven components of Scientific Aptitude except in ADC from the DAT provided. Table 5.31 further reveals that the Urban Girls have significantly excelled the Rural Girls in EB (t= 7.56), AI (t = 6.01), CT (t = 13.14) AO (t = 14.30), df = 238, P < .01. Whereas the Rural Girls have significantly excelled the Urban Girls in DI/IC (t = 9.11), ARSP (t = 9.55), Comp.SAT (t = 32.09), df = 238, P < .01, respectively. On the strength of these results Hypothesis H8 (D) (2) Table 5.31 (b) in regards to SC and ST boys as well as girls studying in Rural and Urban area has been partially accepted and partially rejected. It is therefore concluded that:

- The Urban boys have significantly excelled the Rural Boys in EB, AI, CI and AO whereas the Rural Boys scored higher Mean than Urban Boys in ADC, ARSP and Comp.SAT.

- The SC and ST girls studying in Urban area have shown higher Mean in EB, AI, CT, AO whereas the Rural girls exceeded the Urban girls in DI/IC, ARSP and Comp. SAT.

No significant difference was observed between Rural and Urban SC and ST girls.
Table 5.32

Statistical Differential in terms of Locale on DAT and its seven components of the SC and ST pupils studying in grade IX of Higher Secondary Schools.

<table>
<thead>
<tr>
<th>Locale</th>
<th>Rural</th>
<th>Urban</th>
<th>t value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>AR</td>
<td>290</td>
<td>40.67</td>
<td>9.25</td>
</tr>
<tr>
<td>SR</td>
<td>290</td>
<td>34.08</td>
<td>10.78</td>
</tr>
<tr>
<td>CSA</td>
<td>290</td>
<td>47.80</td>
<td>9.06</td>
</tr>
<tr>
<td>NA</td>
<td>290</td>
<td>29.17</td>
<td>7.93</td>
</tr>
<tr>
<td>VR</td>
<td>290</td>
<td>46.89</td>
<td>20.41</td>
</tr>
<tr>
<td>MR</td>
<td>290</td>
<td>36.98</td>
<td>11.55</td>
</tr>
<tr>
<td>LU-gr</td>
<td>290</td>
<td>44.08</td>
<td>9.57</td>
</tr>
<tr>
<td>LU-sp</td>
<td>290</td>
<td>48.26</td>
<td>12.12</td>
</tr>
<tr>
<td>Com. DAT</td>
<td>290</td>
<td>40.84</td>
<td>5.04</td>
</tr>
</tbody>
</table>

Inference ** P < .01, * P < .05, + P > .05

A global view of DAT of SC and ST pupils studying in the Higher Secondary Schools located in the Rural and Urban areas differed significantly in all the components of Differential Aptitude except MR, LU-gr and Lu-sp. The Urban pupils have significantly excelled the Rural pupils beyond .01 level in SR (t = 3.61), NA (t = 3.29) VR (t = 2.63) AR (t = 6.74) components of DAT (t = 5.80, P < .01), whereas CSA (t = 2.42, df = 518, P < .05). On the strength of the above result, Hypothesis has been completely accepted except it shows no significant difference between Rural and Urban. It is therefore concluded that: The Urban pupils have significantly excelled the Rural in the dimensions of DAT except in LU-sp, LU-gr it shows no significant difference.
Table 5.33


<table>
<thead>
<tr>
<th>Caste</th>
<th>Locale</th>
<th>Rural</th>
<th>Scheduled Caste</th>
<th>Urban</th>
<th>SC</th>
<th>ST</th>
<th>Scheduled Tribe</th>
<th>Urban</th>
<th>t value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>M</td>
<td>SD</td>
<td>N</td>
<td>M</td>
<td>SD</td>
<td>N</td>
<td>M</td>
<td></td>
</tr>
<tr>
<td>AR</td>
<td>135</td>
<td>37.34</td>
<td>13.14</td>
<td>125</td>
<td>39.46</td>
<td>13.40</td>
<td>1.25+</td>
<td>140</td>
<td>36.50</td>
</tr>
<tr>
<td>SR</td>
<td>135</td>
<td>29.99</td>
<td>7.86</td>
<td>125</td>
<td>30.00</td>
<td>7.86</td>
<td>.01+</td>
<td>140</td>
<td>31.73</td>
</tr>
<tr>
<td>CSA</td>
<td>135</td>
<td>63.31</td>
<td>18.11</td>
<td>125</td>
<td>63.37</td>
<td>19.59</td>
<td>.02+</td>
<td>140</td>
<td>31.48</td>
</tr>
<tr>
<td>NA</td>
<td>135</td>
<td>31.12</td>
<td>9.03</td>
<td>125</td>
<td>32.78</td>
<td>11.19</td>
<td>1.31+</td>
<td>140</td>
<td>36.25</td>
</tr>
<tr>
<td>VR</td>
<td>135</td>
<td>41.33</td>
<td>8.79</td>
<td>125</td>
<td>43.45</td>
<td>12.41</td>
<td>1.59+</td>
<td>140</td>
<td>40.37</td>
</tr>
<tr>
<td>MR</td>
<td>135</td>
<td>44.72</td>
<td>9.36</td>
<td>125</td>
<td>44.93</td>
<td>9.12</td>
<td>1.64+</td>
<td>140</td>
<td>44.26</td>
</tr>
<tr>
<td>LU-gr</td>
<td>135</td>
<td>47.92</td>
<td>14.57</td>
<td>125</td>
<td>49.03</td>
<td>14.70</td>
<td>.616+</td>
<td>140</td>
<td>45.11</td>
</tr>
<tr>
<td>LU-sp</td>
<td>135</td>
<td>50.03</td>
<td>9.85</td>
<td>125</td>
<td>52.79</td>
<td>8.07</td>
<td>2.48*</td>
<td>140</td>
<td>51.16</td>
</tr>
<tr>
<td>Comp.DAT</td>
<td>135</td>
<td>43.04</td>
<td>5.30</td>
<td>125</td>
<td>44.38</td>
<td>5.20</td>
<td>2.09*</td>
<td>140</td>
<td>39.52</td>
</tr>
</tbody>
</table>

Inference ** P < .01, * P < .05, + P > .05

An inspection of Table 5.32 reveals that the SC Urban pupils have shown significantly higher Mean on LU-sp (M = 52.79) and composite DAT (M = 4438) than the SC Rural pupils (M = 50.03 & 43.04) (t = 2.48 & 2.09, df = 238, P < .01), however it shows no difference in their Means in the rest of the dimension of DAT. An inspection of the Table 5.32 further reveals that the ST Urban pupil show significantly higher Means on AR (M = 42.62) VR (M = 46.82), NA (M = 40.89) and Composite DAT (M = 42.08) than the ST Rural pupil in AR (M = 36.50), VR (M = 40.37), NA (M = 36.25) and Composite DAT (M = 39.52) respectively (t = 3.15, 2.52, 4.92 & 3.48, df = 238, P < .01) respectively however show no difference in their Means in the remaining dimensions of DAT.

On the strength of their results Hypothesis H8 (D) (2) is partially retained and it is concluded that:

- The SC Urban pupils have significantly excelled the SC Rural pupils only in LU-sp and Comp.DAT.
- The ST Urban pupils have significantly excelled the Rural Pupils in AR, VR, NA and Comp.DAT.
### Table 5.34

Statistical Territorial Differentials on DAT of Boys and Girls Studying in Rural and Urban Higher Secondary School.

| Sex | Boys | | | | | | Girls | | | |
|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|
|     | Rural | Urban | t value | Rural | Urban | t value |
|     | N    | M    | SD   | N    | M    | SD   | N    | M    | SD   | N    | M    | SD   |
| AR  | 150  | 39.66| 15.41| 130  | 43.63| 14.98| 2.18*| 125  | 34.21| 10.15| 115  | 38.55| 14.60| 2.66**|
| SR  | 150  | 32.29| 8.36 | 130  | 31.17| 7.81 | 1.15+| 125  | 29.43| 7.51 | 115  | 30.84| 7.75 | 1.43+|
| CSA | 150  | 46.89| 23.65| 130  | 44.76| 23.47| .728+| 125  | 47.90| 3.65 | 115  | 56.80| 19.84| 4.75**|
| NA  | 150  | 33.40| 9.24 | 130  | 36.55| 13.62| 2.27*| 125  | 33.97| 11.50| 115  | 34.98| 15.05| .583+|
| VR  | 150  | 41.29| 9.92 | 130  | 46.94| 11.59| 4.39**| 125  | 40.41| 8.79 | 115  | 44.26| 10.50| 3.08**|
| MR  | 150  | 47.30| 8.70 | 130  | 47.78| 8.26 | .47+ | 125  | 41.68| 8.44 | 115  | 40.40| 7.24 | 1.26+|
| LU-gr| 150  | 45.94| 13.98| 130  | 44.99| 14.18| .565+| 125  | 47.09| 11.14| 115  | 51.16| 10.38| 2.94**|
| LU-sp| 150  | 49.37| 8.98 | 130  | 50.68| 7.85 | 1.29+| 125  | 50.68| 8.72 | 115  | 56.58| 8.70 | 5.26**|
| Comp.| 150  | 41.75| 5.71 | 130  | 43.30| 6.08 | 2.19*| 125  | 40.81| 4.48 | 115  | 44.20| 5.65 | 5.16**|

Inference ** P < .01, * P < .05, + P > .05

A close inspection of the Table 5.34 reveals a highly significant Locale difference has been consistently observed in AR, NA, VR and Comp. DAT. The Urban boys scored significantly higher Mean (M = 43.63, 36.55, 46.94 and 43.30) in AR, NA, VR and Comp. DAT than the Rural Boys (M = 39.66, 33.40, 41.29 & 41.75) respectively. Their t values are AR (t = 2.18, P < .05), NA (t = 2.27, P < .05), VR (t = 4.39, P < .01) and Comp. DAT (t = 2.19, P < .05) df = 278, respectively.

**H₈ (D)** (3) *The scores on Interest pattern of the Rural Pupils would be significantly inferior to those belonging to urban pupil. However Rural boys would score on all counts signicantly higher than urban boys but the scores of Rural Girls would be significantly inferior to the Urban girls.*
Table 5.35
Statistical Differentials in terms of Interest Patterns of the SC and ST pupils studying in Grade IX in Rural and Urban Higher Secondary Schools.

<table>
<thead>
<tr>
<th>Locale</th>
<th>Rural</th>
<th>Urban</th>
<th>t value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Fine Arts</td>
<td>275</td>
<td>13.13</td>
<td>3.94</td>
</tr>
<tr>
<td>Literacy</td>
<td>275</td>
<td>12.14</td>
<td>3.12</td>
</tr>
<tr>
<td>Scientific</td>
<td>275</td>
<td>13.48</td>
<td>3.76</td>
</tr>
<tr>
<td>Medical</td>
<td>275</td>
<td>13.11</td>
<td>3.99</td>
</tr>
<tr>
<td>Agriculture</td>
<td>275</td>
<td>12.16</td>
<td>3.20</td>
</tr>
<tr>
<td>Technical</td>
<td>275</td>
<td>12.11</td>
<td>3.86</td>
</tr>
<tr>
<td>Craft</td>
<td>275</td>
<td>11.68</td>
<td>3.43</td>
</tr>
<tr>
<td>Outdoor</td>
<td>275</td>
<td>12.26</td>
<td>3.19</td>
</tr>
<tr>
<td>Sports</td>
<td>275</td>
<td>13.32</td>
<td>3.93</td>
</tr>
<tr>
<td>Household</td>
<td>275</td>
<td>11.82</td>
<td>2.88</td>
</tr>
</tbody>
</table>

Inference ** P < .01, * P < .05, + P > .05

A global view of the Table 5.35 showing statistical differential in terms of Interest Patterns of the Rural and Urban SC and ST pupil reveals no significant difference in the dimensions of Interest Pattern. On the basis of the above result Hypothesis H₈(D) (3) is completely rejected and it is therefore concluded that the urban and rural pupils do not differ significantly from each other in Interest Pattern.

Table 5.36
Statistical Territorial Differential in Interest Pattern of SC and ST pupils studying in Rural and Urban Higher Secondary Schools.

<table>
<thead>
<tr>
<th>Caste</th>
<th>Scheduled Caste</th>
<th>Scheduled Tribes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Rural</td>
<td>Urban</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>M</td>
</tr>
<tr>
<td>Fine Arts</td>
<td>135</td>
<td>13.28</td>
</tr>
<tr>
<td>Literacy</td>
<td>135</td>
<td>12.28</td>
</tr>
<tr>
<td>Scientific</td>
<td>135</td>
<td>13.94</td>
</tr>
<tr>
<td>Medical</td>
<td>135</td>
<td>13.66</td>
</tr>
<tr>
<td>Agriculture</td>
<td>135</td>
<td>12.04</td>
</tr>
<tr>
<td>Technical</td>
<td>135</td>
<td>12.40</td>
</tr>
<tr>
<td>Craft</td>
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<td>11.54</td>
</tr>
<tr>
<td>Outdoor</td>
<td>135</td>
<td>12.46</td>
</tr>
<tr>
<td>Sports</td>
<td>135</td>
<td>13.37</td>
</tr>
<tr>
<td>Household</td>
<td>135</td>
<td>11.65</td>
</tr>
</tbody>
</table>

Inference ** P < .01, * P < .05, + P > .05
An inspection of the Table 5.36 reveals that there exists no significant difference between Rural and Urban SC pupils in all the dimensions of Interest Pattern. Further ST Rural and Urban pupils did not show any significant difference in their Interest Pattern in all the dimensions of Interest Pattern except Sports, where Rural Pupil \( (M = 13.29) \) showed more interest than Urban Pupil \( (M= 12.04) \), \( (t = 2.53, P < .05) \). On the strength of these results Hypothesis \( H_8 (D) (3) \) in regards to Locale differences has been completely rejected and retained only for ST Rural and Urban pupils Interest in Sports. It is concluded that:

- The SC Rural and Urban pupils did not show any significant difference in all the components of Interest Pattern.

- ST Rural and Urban pupils showed highly significant difference in Sports. No significant difference was observed in the remaining components of Interest Pattern.

**Table 5.37**

**Statistical Territorial Differentials: Interest Pattern of Boys and Girls studying in Rural and Urban Higher Secondary Schools.**

<table>
<thead>
<tr>
<th>Sex</th>
<th>Locale</th>
<th>Int. Pat.</th>
<th>N</th>
<th>M</th>
<th>SD</th>
<th>N</th>
<th>M</th>
<th>SD</th>
<th>t value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Rural</td>
<td>Fine Arts</td>
<td>150</td>
<td>13.48</td>
<td>2.99</td>
<td>130</td>
<td>14.32</td>
<td>2.85</td>
<td>2.37*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Literacy</td>
<td>150</td>
<td>12.81</td>
<td>2.80</td>
<td>130</td>
<td>12.77</td>
<td>3.26</td>
<td>.122+</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Scientific</td>
<td>150</td>
<td>14.61</td>
<td>3.87</td>
<td>130</td>
<td>14.29</td>
<td>3.45</td>
<td>.720+</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maths</td>
<td>150</td>
<td>14.72</td>
<td>3.60</td>
<td>130</td>
<td>15.06</td>
<td>3.38</td>
<td>.826+</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Agriculture</td>
<td>150</td>
<td>13.19</td>
<td>3.65</td>
<td>130</td>
<td>13.11</td>
<td>2.97</td>
<td>.236+</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Technical</td>
<td>150</td>
<td>13.67</td>
<td>2.94</td>
<td>130</td>
<td>14.33</td>
<td>3.45</td>
<td>1.71+</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Craft</td>
<td>150</td>
<td>12.02</td>
<td>2.50</td>
<td>130</td>
<td>13.10</td>
<td>2.35</td>
<td>3.71**</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Outdoor</td>
<td>150</td>
<td>12.72</td>
<td>3.16</td>
<td>130</td>
<td>12.41</td>
<td>2.94</td>
<td>.848+</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sports</td>
<td>150</td>
<td>14.00</td>
<td>4.10</td>
<td>130</td>
<td>13.74</td>
<td>4.07</td>
<td>.537+</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Household</td>
<td>150</td>
<td>11.69</td>
<td>2.36</td>
<td>130</td>
<td>11.46</td>
<td>2.11</td>
<td>.866+</td>
</tr>
</tbody>
</table>

Inference **\( P < .01 \), * \( P < .05 \), + \( P > .05 \)
Table 5.37 reveals that the Rural and Urban boys have been found significant in Fine Arts (t = 2.37, df = 278, P < .05) and Craft (t = 3.71, df = 278, P < .01) respectively. The Mean scores of Urban boys (M = 14.32 and 13.10) were higher than the Mean score of Rural boys (M = 13.48, and 12.02) in Fine Arts and Craft. The Rural and Urban boys did not show any significant difference in the remaining components of Interest Pattern. Further the Rural girls scored significantly higher mean in Fine Arts (M = 12.78) and Sports (M = 12.67) than the Urban girls (M = 11.48 and 11.57), t = 2.10 and 2.31 respectively, df = 238, P < .05 level. On the strength of these results Hypothesis H₈(D) (3) with regard to Intra-Sex difference has been completely rejected and is accepted only in case of Rural and Urban Boys in Fine Arts and Craft.

C. INTERCASTE DIFFERENCES (SC & ST) on Scholastic Attainment

**H₉(D) (1) The scores obtained on various School subjects of Scheduled Castes would be significantly higher than those by Scheduled Tribe Pupil.**
Table 5.38

Statistical Differentials in terms of Scholastic Attainment of the SC and ST pupils studying in grade IX of Higher Secondary Schools.

<table>
<thead>
<tr>
<th>Caste</th>
<th>Scheduled Caste</th>
<th>Scheduled Tribe</th>
<th>t value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>English</td>
<td>260</td>
<td>44.43</td>
<td>13.62</td>
</tr>
<tr>
<td>Hindi</td>
<td>260</td>
<td>49.72</td>
<td>11.73</td>
</tr>
<tr>
<td>Maths</td>
<td>260</td>
<td>44.34</td>
<td>18.63</td>
</tr>
<tr>
<td>Science</td>
<td>260</td>
<td>42.30</td>
<td>13.67</td>
</tr>
<tr>
<td>Social</td>
<td>260</td>
<td>41.74</td>
<td>13.07</td>
</tr>
<tr>
<td>Science</td>
<td>260</td>
<td>44.37</td>
<td>12.21</td>
</tr>
</tbody>
</table>

Inference ** P < .01, * P < .05, + P > .05

An examination of the Table 5.38 reveals that SC pupil (M = 44.37) have significantly (t = 4.63, df = 518, P < .01) excelled the ST pupil (M = 40.51) in the Composite test of Scholastic Attainment whereas the ST Pupil (M = 46.88) have significantly (t = 2.54, df = 518, P < .05) excelled the Scheduled Caste (M = 46.88) on social Science, but the difference between the two Social Groups has not been estimated significantly for the rest of the subjects i.e. English, Hindi, Maths and Science (t = .393, 1.13, .644 and 1.24, P > .05) though the latter has consistently scored higher Mean than the former in English, Hindi and Science. On the basis of the above result Hypothesis H9 (D) (1) has been completely rejected except in case of Composite Scholastic Attainment.

(2) Intercaste Aptitudes (DAT and SAT)

H9 (D) (2) There would be significant difference in the scores on various Aptitudes indicating Scheduled Castes would be significantly higher than those by Scheduled Tribe Pupils.
Table 5.39

Statistical Differentials in terms of Inter-Caste on DAT and its Components of SC and ST Pupils

<table>
<thead>
<tr>
<th>Caste</th>
<th>Scheduled Caste</th>
<th>Scheduled Tribe</th>
<th>t value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>AR</td>
<td>260</td>
<td>38.39</td>
<td>13.29</td>
</tr>
<tr>
<td>SR</td>
<td>260</td>
<td>30.00</td>
<td>7.85</td>
</tr>
<tr>
<td>CSA</td>
<td>260</td>
<td>63.35</td>
<td>18.81</td>
</tr>
<tr>
<td>NA</td>
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<td>260</td>
<td>42.39</td>
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</tr>
<tr>
<td>MR</td>
<td>260</td>
<td>44.83</td>
<td>9.23</td>
</tr>
<tr>
<td>LU-gr</td>
<td>260</td>
<td>48.47</td>
<td>14.63</td>
</tr>
<tr>
<td>LU-sp</td>
<td>260</td>
<td>51.40</td>
<td>9.11</td>
</tr>
<tr>
<td>Comp.DAT</td>
<td>260</td>
<td>43.71</td>
<td>5.33</td>
</tr>
</tbody>
</table>

Inference ** P < .01, * P < .05, + P > .05

An examination of Table 5.39 reveals that the ST pupils (M = 31.45 have moderately excelled the SC in SR (M = 30.00) df = 518, (t = 2.07), whereas in NA and Comp. DAT the ST pupils (M = 38.03 and 46.32) have significantly excelled the SC pupil (M = 31.95 and 43.71) beyond .01 level of confidence but in CSA and LU-gr the SC pupil (M = 63.35 and 48.47 have significantly excelled the ST pupil (M = 391.62 and 44.93) beyond .01 level, (t = 24.40, t = 2.85) df = 258 whereas in the rest of the dimensions of DAT there exist no significant difference. On the strength of the these results Hypothesis H9 (D) (2) is partially retained and it is concluded that:

- The SC pupil excelled the ST pupil only in CSA and LU-gr.
- The ST pupil excelled the ST pupil in SR, NA, and Comp. DAT.
Table 5.40

Statistical Differentials in terms of SAT and its seven components of the SC and ST pupils studying in grade IX of the Higher Secondary Schools.

<table>
<thead>
<tr>
<th>Caste</th>
<th>Scheduled Caste</th>
<th>Scheduled Tribe</th>
<th>t value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>SAT</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EB</td>
<td>260</td>
<td>50.62</td>
<td>23.86</td>
</tr>
<tr>
<td>DIIIC</td>
<td>260</td>
<td>38.63</td>
<td>15.85</td>
</tr>
<tr>
<td>ADC</td>
<td>260</td>
<td>38.96</td>
<td>11.08</td>
</tr>
<tr>
<td>AI</td>
<td>260</td>
<td>48.92</td>
<td>18.42</td>
</tr>
<tr>
<td>ARSP</td>
<td>260</td>
<td>35.17</td>
<td>16.66</td>
</tr>
<tr>
<td>CT</td>
<td>260</td>
<td>54.62</td>
<td>13.64</td>
</tr>
<tr>
<td>AO</td>
<td>260</td>
<td>94.62</td>
<td>22.61</td>
</tr>
<tr>
<td>Comp.</td>
<td>260</td>
<td>39.97</td>
<td>7.14</td>
</tr>
<tr>
<td>SAT</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Inference ** P < .01, * P < .05, + P > .05

An inspection of Table 5.40 reveals that a highly significant difference has been consistently observed between SC (M = 38.63 and 54.62) and ST (M = 42.10 and 49.33) on DIIIC and CT (t = 2.73 and 4.33, df = 518) whereas a moderate significant different has been observed between SC (M = 39.97) and ST (M = 41.26) in Comp. DAT (t = 2.24, df 518, P < .05). Further no significant difference between the SC and ST pupil has been obtained in the rest of the dimensions of SAT. The above Hypothesis is partially retained in case of SAT.

**Hypothesis H9 (D) (3) The Interest Patterns of Scheduled Castes would be significantly higher than those by Scheduled Tribe pupils.**

(3) Intercaste Differences on Interest Patterns
Table 5.41

Statistical Differentials in terms of Inter Caste on Interest Patterns and its ten components of the SC and ST pupils studying in grade IX of the Higher Secondary Schools.

<table>
<thead>
<tr>
<th>Int. Pat.</th>
<th>Scheduled Caste</th>
<th>Scheduled Tribe</th>
<th>t value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Fine Arts</td>
<td>260</td>
<td>13.05</td>
<td>3.79</td>
</tr>
<tr>
<td>Literary</td>
<td>260</td>
<td>12.10</td>
<td>3.08</td>
</tr>
<tr>
<td>Scientific</td>
<td>260</td>
<td>13.92</td>
<td>4.06</td>
</tr>
<tr>
<td>Medical</td>
<td>260</td>
<td>13.82</td>
<td>4.23</td>
</tr>
<tr>
<td>Agriculture</td>
<td>260</td>
<td>11.96</td>
<td>3.09</td>
</tr>
<tr>
<td>Technical</td>
<td>260</td>
<td>12.86</td>
<td>3.96</td>
</tr>
<tr>
<td>Craft</td>
<td>260</td>
<td>11.79</td>
<td>3.51</td>
</tr>
<tr>
<td>Outdoor</td>
<td>260</td>
<td>12.27</td>
<td>3.14</td>
</tr>
<tr>
<td>Sports</td>
<td>260</td>
<td>13.46</td>
<td>3.97</td>
</tr>
<tr>
<td>Household</td>
<td>260</td>
<td>11.63</td>
<td>2.39</td>
</tr>
</tbody>
</table>

Inference ** P < .01, * P < .05, + P > .05

An inspection of the Table 5.41 reveals that the ST pupils (M = 13.92, 13.82, 12.86) scored significantly higher Mean (t = 2.88, 2.27, 2.90) df = 258, P < .05 level respectively than the ST pupil (M = 12.96, 12.99, 11.84) respectively in Scientific, Medical and Technical interests. Whereas there is no significant difference between SC and ST pupils in the rest of the dimensions of the Interest Pattern. On the strength of these results Hypothesis H9 (D) (3) has been partially retained only in case of Scientific, Medical and Technical interests.
### 5.40 GLOBAL VIEW OF THE INFERENCES DRAWN FROM THE RESULTS OBTAINED FROM VARIOUS HYPOTHESIS.

(I) GLOBAL VIEW OF THE RESULTS ON CORRELATIONAL STUDIES:

#### A] Correlation between Scholastic Attainment and Differential Aptitudes of SC and ST pupil

<table>
<thead>
<tr>
<th>Scholastic Attainment</th>
<th>DAT</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>English, Hindi, Maths, Science &amp; Social Science</td>
<td>AR, NA, VR, LU-gr</td>
<td>+ve P &lt; .01</td>
</tr>
<tr>
<td>English, Hindi, Maths, Science &amp; Social Science</td>
<td>SR, CSA, LU-sp</td>
<td>+ve P &lt; .05</td>
</tr>
<tr>
<td>English, Hindi, Maths, Science &amp; Social Science</td>
<td>MR</td>
<td>No relation</td>
</tr>
</tbody>
</table>

#### B] Correlation between Scholastic Attainment and Scientific Aptitudes of SC and ST pupil

<table>
<thead>
<tr>
<th>Scholastic Attainment</th>
<th>SAT</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>English, Hindi, Maths, Science &amp; Social Science</td>
<td>DI/IC, Comp. SAT</td>
<td>-ve P &lt; .01</td>
</tr>
<tr>
<td>English, Hindi, Maths, Science &amp; Social Science</td>
<td>EB, ARSP, CT</td>
<td>-ve P &lt; .05</td>
</tr>
<tr>
<td>Hindi, Maths, Science &amp; Comp. SA</td>
<td>AO</td>
<td>+ve P &lt; .01</td>
</tr>
<tr>
<td>English, Hindi, Maths, Science &amp; Social Science</td>
<td>ADC, AI</td>
<td>NS</td>
</tr>
</tbody>
</table>
C] Correlation between Scholastic Attainment and Differential Aptitudes of SC pupil

<table>
<thead>
<tr>
<th>Scholastic Attainment</th>
<th>DAT</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>English, Hindi, Maths, Science, Social Science &amp; Comp. SA</td>
<td>AR, NA, CSA, LU-gr., Comp. DAT</td>
<td>+ve P &lt; .01</td>
</tr>
<tr>
<td>English, Hindi, Maths, Science, Social Science &amp; Comp. SA</td>
<td>SR, VR, LU-sp.</td>
<td>+ve P &lt; .05</td>
</tr>
<tr>
<td>English &amp; Comp. SA</td>
<td>MR</td>
<td>-ve P &lt; .01</td>
</tr>
<tr>
<td>Hindi &amp; Maths</td>
<td></td>
<td>-ve P &lt; .05</td>
</tr>
</tbody>
</table>

D] Correlation between Scholastic Attainment and Scientific Aptitudes of SC pupil

<table>
<thead>
<tr>
<th>Scholastic Attainment</th>
<th>SAT</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>English, Maths, Science, Social Science &amp; Comp. SA</td>
<td>EB, DI/IC, Comp. SAT</td>
<td>-ve P &lt; .01</td>
</tr>
<tr>
<td>English, Hindi, Maths, Science &amp; Social Science</td>
<td>ADC, AR, ARSP, CT, AO</td>
<td>No relation</td>
</tr>
</tbody>
</table>

E] Correlation between Scholastic Attainment and Differential Aptitudes of ST pupil

<table>
<thead>
<tr>
<th>Scholastic Attainment</th>
<th>DAT</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>English, Hindi, Maths, Science, Social Science &amp; Comp. SA</td>
<td>AR, VR, Comp. DAT</td>
<td>+ve P &lt; .01</td>
</tr>
<tr>
<td>English, Maths, Science &amp; Comp. SA</td>
<td>NA</td>
<td>+ve P &lt; .01</td>
</tr>
<tr>
<td>English, Maths, Science &amp; Comp. SA</td>
<td>MR, LU-sp.</td>
<td>No significance</td>
</tr>
<tr>
<td>Maths &amp; Comp. SA</td>
<td>SR</td>
<td>-ve P &lt; .05</td>
</tr>
<tr>
<td>English</td>
<td>CSA</td>
<td>+ve P &lt; .05</td>
</tr>
<tr>
<td>Maths</td>
<td>CSA</td>
<td>+ve P &lt; .01</td>
</tr>
</tbody>
</table>
Correlation between Scholastic Attainment and Scientific Aptitudes of ST pupil

<table>
<thead>
<tr>
<th>Scholastic Attainment</th>
<th>SAT</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>English, Hindi, Maths, Science, Social Science &amp; Comp. SA</td>
<td>Comp. SAT</td>
<td>-ve</td>
</tr>
<tr>
<td></td>
<td>P &lt; .01</td>
<td></td>
</tr>
<tr>
<td>English, Hindi, Maths, Science, Social Science &amp; Comp. SAT</td>
<td>EB, ARSP, AO</td>
<td>-ve</td>
</tr>
<tr>
<td></td>
<td>P &lt; .05</td>
<td></td>
</tr>
</tbody>
</table>

II) GLOBAL VIEW OF THE RESULTS ON INTERACTIONAL STUDIES:

<table>
<thead>
<tr>
<th></th>
<th>SA</th>
<th>DAT</th>
<th>SAT</th>
<th>Interest Pattern</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caste</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P &lt; .05</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sex</td>
<td>NS</td>
<td>NS</td>
<td>NS</td>
<td>P &lt; .01</td>
</tr>
<tr>
<td>P &lt; .01</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Locale</td>
<td></td>
<td>P &lt; .01</td>
<td>NS</td>
<td>P &lt; .05</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caste X Sex</td>
<td>P &lt; .01</td>
<td>NS</td>
<td>P &lt; .01</td>
<td>NS</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caste X Locale</td>
<td>NS</td>
<td>NS</td>
<td>NS</td>
<td>NS</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sex X Locale</td>
<td>NS</td>
<td>NS</td>
<td>P &lt; .01</td>
<td>NS</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caste X Sex X Locale</td>
<td>P &lt; .05</td>
<td>NS</td>
<td>NS</td>
<td>NS</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

III) GLOBAL VIEW OF THE RESULTS ON DIFFERENTIAL STUDIES

A) Sex Differentials

1. Scholastic Attainment

<table>
<thead>
<tr>
<th></th>
<th>Table: 5.14</th>
<th>Table: 5.15</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Global</td>
<td>Intra Social Group</td>
</tr>
<tr>
<td></td>
<td>SC &amp; ST</td>
<td>SC</td>
</tr>
<tr>
<td>Caste →</td>
<td>Boys</td>
<td>Girls</td>
</tr>
<tr>
<td>Sex →</td>
<td>English</td>
<td>NS</td>
</tr>
<tr>
<td></td>
<td>Hindi</td>
<td>NS</td>
</tr>
<tr>
<td></td>
<td>Maths</td>
<td>t = 3.27**</td>
</tr>
<tr>
<td></td>
<td>Science</td>
<td>NS</td>
</tr>
<tr>
<td></td>
<td>Social Science</td>
<td>t = 5.01**</td>
</tr>
<tr>
<td></td>
<td>Comp. SA</td>
<td>NS</td>
</tr>
</tbody>
</table>

* - showing t values and significance at .05 level.
** - showing significance at .01 level.
NS – showing insignificance
2. Scientific Aptitudes

<table>
<thead>
<tr>
<th>Caste →</th>
<th>Global</th>
<th>Intra Social Group</th>
<th>Inter Sex</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SC &amp; ST</td>
<td>SC</td>
<td>ST</td>
</tr>
<tr>
<td>Sex →</td>
<td>Boys</td>
<td>Girls</td>
<td>Boys</td>
</tr>
<tr>
<td>SAT ↓</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EB</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>t = 6.30**</td>
<td>t = 3.74**</td>
<td>t = 3.75**</td>
<td></td>
</tr>
<tr>
<td>DI/IC</td>
<td>t = 4.36**</td>
<td>t = 2.81**</td>
<td>t = 3.50**</td>
</tr>
<tr>
<td>ADC</td>
<td>NS</td>
<td>NS</td>
<td></td>
</tr>
<tr>
<td>AI</td>
<td>NS</td>
<td>NS</td>
<td>t = 5.48**</td>
</tr>
<tr>
<td>ARSP</td>
<td></td>
<td>NS</td>
<td></td>
</tr>
<tr>
<td>t = 3.31**</td>
<td>NS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CT</td>
<td>t = 4.33**</td>
<td>t = 2.71**</td>
<td>t = 4.04**</td>
</tr>
<tr>
<td>AO</td>
<td>NS</td>
<td>NS</td>
<td></td>
</tr>
<tr>
<td>Comp. SAT</td>
<td>NS</td>
<td>NS</td>
<td>t = 3.17**</td>
</tr>
</tbody>
</table>

* - showing t values and significance at .05 level.
** - showing significance at .01 level.
NS - showing insignificance

3. Differential Aptitudes

<table>
<thead>
<tr>
<th>Caste →</th>
<th>Global</th>
<th>Intra Social Group</th>
<th>Inter Sex</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SC &amp; ST</td>
<td>SC</td>
<td>ST</td>
</tr>
<tr>
<td>Sex →</td>
<td>Boys</td>
<td>Girls</td>
<td>Boys</td>
</tr>
<tr>
<td>DAT ↓</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AR</td>
<td>t = 4.01**</td>
<td>t = 3.47**</td>
<td>t = 3.48**</td>
</tr>
<tr>
<td>SR</td>
<td>NS</td>
<td>NS</td>
<td></td>
</tr>
<tr>
<td>CSA</td>
<td>t = 11.13**</td>
<td>t = 3.93**</td>
<td></td>
</tr>
<tr>
<td>NA</td>
<td>NS</td>
<td>NS</td>
<td></td>
</tr>
<tr>
<td>VR</td>
<td>NS</td>
<td>NS</td>
<td></td>
</tr>
<tr>
<td>MR</td>
<td>t = 4.15**</td>
<td>t = 5.39**</td>
<td>t = 7.10**</td>
</tr>
<tr>
<td>LU-gr.</td>
<td>t = 4.32**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LU-sp.</td>
<td>NS</td>
<td>NS</td>
<td></td>
</tr>
<tr>
<td>Comp. DAT</td>
<td>NS</td>
<td>NS</td>
<td></td>
</tr>
</tbody>
</table>

** - showing t values and significance at .05 level.
** - showing significance at .01 level.
NS - showing insignificance
### 4. Interest Pattern

<table>
<thead>
<tr>
<th>Caste →</th>
<th>SC &amp; ST</th>
<th>SC</th>
<th>ST</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex →</td>
<td>Boys</td>
<td>Girls</td>
<td>Boys</td>
</tr>
<tr>
<td>Int. Pat. ↓</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fine Arts</td>
<td>$t = 4.74^{**}$</td>
<td>$t = 3.31^{**}$</td>
<td>$t = 3.39^{**}$</td>
</tr>
<tr>
<td>Literary</td>
<td>$t = 5.47^{**}$</td>
<td>$t = 2.40^{**}$</td>
<td>$t = 5.29^{**}$</td>
</tr>
<tr>
<td>Scientific</td>
<td>$t = 6.88^{**}$</td>
<td>$t = 7.24^{**}$</td>
<td>$t = 2.51^*$</td>
</tr>
<tr>
<td>Medical</td>
<td>$t = 9.37^{**}$</td>
<td>$t = 6.77^{**}$</td>
<td>$t = 6.53^{**}$</td>
</tr>
<tr>
<td>Agriculture</td>
<td>$t = 8.18^{**}$</td>
<td>$t = 4.66^{**}$</td>
<td>$t = 6.89^{**}$</td>
</tr>
<tr>
<td>Technical</td>
<td>$t = 11.14^{**}$</td>
<td>$t = 7.45^{**}$</td>
<td>$t = 8.43^{**}$</td>
</tr>
<tr>
<td>Craft</td>
<td>$t = 5.51^{**}$</td>
<td>$t = 3.76^{**}$</td>
<td>$t = 4.04^{**}$</td>
</tr>
<tr>
<td>Outdoor</td>
<td>$t = 3.42^{**}$</td>
<td>$t = 2.49^{**}$</td>
<td>$t = 2.34^*$</td>
</tr>
<tr>
<td>Sports</td>
<td>$t = 4.75^{**}$</td>
<td>$t = 5.30^{**}$</td>
<td>NS</td>
</tr>
<tr>
<td>Household</td>
<td>NS</td>
<td>NS</td>
<td>NS</td>
</tr>
</tbody>
</table>

* - showing t values and significance at .05 level.
** - showing significance at .01 level.
NS – showing insignificance

### B) Sex Differentials

#### 1. Scholastic Attainment

<table>
<thead>
<tr>
<th>Caste →</th>
<th>SC</th>
<th>ST</th>
<th>SC</th>
<th>ST</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scholastic Attainment ↓</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>English</td>
<td>$t = 4.54^{**}$</td>
<td>$t = 4.08^{**}$</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hindi</td>
<td>$t = 5.71^{**}$</td>
<td>$t = 3.68^{**}$</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maths</td>
<td>NS</td>
<td>NS</td>
<td>$t = 3.35^{**}$</td>
<td></td>
</tr>
<tr>
<td>Science</td>
<td>$t = 4.97^{**}$</td>
<td>$t = 2.68^{**}$</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social Science</td>
<td>$T = 5.89^{**}$</td>
<td>NS</td>
<td>NS</td>
<td></td>
</tr>
<tr>
<td>Comp. SA</td>
<td>$t = 5.09^{**}$</td>
<td>$t = 2.81^{**}$</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* - showing t values and significance at .05 level.
** - showing significance at .01 level.
NS – showing insignificance
2. Scientific Aptitudes

Table: 5.23

| Sex → | Boys | | Girls |
|---|---|---|
| Caste → | SC | ST | SC | ST |
| SAT ↓ | | | | |
| EB | NS | NS | NS | NS |
| D/LIC | NS | NS | t= 2.09* | |
| ADC | NS | NS | t= 2.75** | |
| AI | t= 4.95** | | t= 7.26** | |
| ARSP | t= 2.56* | NS | NS | |
| CT | t= 3.37** | t= 2.40* | | |
| AO | NS | NS | t= 4.13** | |
| Comp. SAT | t= 2.56* | | t= 5.60** | |

* - showing t values and significance at .05 level.
** - showing significance at .01 level.
NS – showing insignificance

3. Differential Aptitudes

Table: 5.24

| Sex → | Boys | | Girls |
|---|---|---|
| Caste → | SC | ST | SC | ST |
| DAT ↓ | | | | |
| AR | NS | NS | NS | NS |
| SR | NS | NS | t= 2.33* | |
| CSA | t= 15.03** | t= 20.35** | | |
| NA | NS | NS | t= 8.19** | |
| VR | t= 2.00* | t= 1.97* | | |
| MR | NS | NS | NS | NS |
| LU-gr. | t= 5.67** | | NS | NS |
| LU-sp. | t= 2.51* | t= 5.36** | | |
| Comp. DAT | t= 4.62** | | t= 3.14** | |

* - showing t values and significance at .05 level.
** - showing significance at .01 level.
NS – showing insignificance
4. Interest Pattern

**Table: 5.25**

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<thead>
<tr>
<th>Sex →</th>
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<td>ST</td>
</tr>
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<td>Int. Pat.</td>
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<td>NS</td>
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</tr>
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<td>Fine Arts</td>
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<td>NS</td>
<td>NS</td>
<td>NS</td>
</tr>
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<td>Literary</td>
<td>NS</td>
<td>NS</td>
<td>NS</td>
<td>NS</td>
</tr>
<tr>
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<td>NS</td>
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<td>Agriculture</td>
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* - showing t values and significance at .05 level.
** - showing significance at .01 level.
NS -- showing insignificance

C. Locale Differentials

1. Scholastic Attainment

**Table: 5.26**

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<thead>
<tr>
<th>Castes →</th>
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<td></td>
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<td></td>
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</tr>
<tr>
<td>Locale →</td>
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</tr>
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</tr>
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<td></td>
</tr>
<tr>
<td>English</td>
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<td>t= 5.13**</td>
<td>t= 3.96**</td>
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<td>Hindi</td>
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<td>t= 3.94**</td>
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<td>Maths</td>
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<td>t= 3.44**</td>
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<td>t= 2.76**</td>
<td>t= 3.04**</td>
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<td>Social Science</td>
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<td>t= 4.87**</td>
<td>t= 2.19*</td>
</tr>
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<td>Comp. SA</td>
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<td>t= 3.88**</td>
<td>t= 3.70**</td>
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* - showing t values and significance at .05 level.
** - showing significance at .01 level.
NS – showing insignificance
2. Scientific Aptitudes

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SAT ↓

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<th></th>
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* - showing t values and significance at .05 level.
** - showing significance at .01 level.
NS – showing insignificance

3. Differential Aptitudes

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DAT ↓

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<th>MR</th>
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* - showing t values and significance at .05 level.
** - showing significance at .01 level.
NS – showing insignificance
4. Interest Patterns

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<td><strong>SC</strong></td>
</tr>
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<td>Locale →</td>
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<td>Rural Urban</td>
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<td>Non-Significant</td>
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<tr>
<td>Literary</td>
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<td>Craft</td>
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* - showing t values and significance at .05 level.
** - showing significance at .01 level.
NS - showing insignificance

D. Inter Caste Differences

1. Scholastic Attainment

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<td>Science</td>
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<td>Social Science</td>
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* - showing t values and significance at .05 level.
** - showing significance at .01 level.
NS - showing insignificance
2. Differential Aptitudes

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<tr>
<td>AR</td>
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<td>SR</td>
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<td>LU-gr.</td>
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<td>LU-sp.</td>
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* - showing t values and significance at .05 level.
** - showing significance at .01 level.
NS – showing insignificance

3. Scientific Aptitudes

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<td>Al</td>
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<td>CT</td>
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* - showing t values and significance at .05 level.
** - showing significance at .01 level.
NS – showing insignificance
4. Interest Patterns

Table 5.41

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<td>Fine Arts</td>
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<td>Sports</td>
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<tr>
<td>Household</td>
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</tr>
</tbody>
</table>

* - showing t values and significance at .05 level.
** - showing significance at .01 level.
NS – showing insignificance

5.50 FINDINGS

The following are the findings of this study.

PART-I: CORRELATIONAL STUDIES

Inter relationship between Scholastic Attainment and differential aptitudes (DAT) and Scientific Aptitudes (SAT)

1. A significant and positive relationship beyond 0.01 level exists between scholastic attainment in English, Hindi, Maths, Science, Social Science, composite scholastic attainment and components of DAT i.e. AR, NA, VR, LU-gr and composite DAT of S.C. and S.T. pupils.

- Moderate relationship exists between SR, CSA, LU-sp and scholastic attainment.
• There exists no relationship between scholastic attainment and Mechanical Reasoning (MR).

II. A significant and negative correlation exists between scholastic attainment and components of SAT i.e. DI/IC and composite scientific aptitude of SC & ST pupils.

• No relationship was found between scholastic attainment and ADC, AI respectively.

• Negative & Moderate relationship were found between scholastic attainment and EB, ARSP, and CT.

• Similarly positive and significant relationship were found between scholastic attainment and Accuracy of Observation (AO) in Hindi, Maths, Science and composite Scholastic Attainment.

III. Positive and highly significant relationship exists amongst Scheduled Caste pupils between scholastic achievement in English, Hindi, Maths, Science, Social Science, Composite Scholastic Achievement and AR, SP, NA, LU-gr, composite DAT as components of DAT.

• Positive and moderately significant relationship between scholastic achievement and SR, VR, LU-sp as components of SAT was found amongst the Scheduled Caste students.

• Similarly negative but significant relationship between scholastic achievement and MR were found amongst Scheduled Caste students in all subjects, except Science.

IV. A negative and significant relationship exists between Scholastic Achievement (except Hindi) and EB, DI/IC, composite SAT as components of SAT among scheduled caste pupils.

• No relationship exists between Scholastic Achievement in English, Hindi, Maths, Science, Social Science, composite Scholastic
Attainment and Components of SAT i.e. ADC, AI, ARSP, CT and AO.

V. A highly significant and positive relationship beyond 0.01 level exists between Scholastic Attainment in English, Hindi, Maths, Science, Social Science Composite Scholastic Attainment and Components of DAT i.e. AR, VR and composite DAT amongst Scheduled Tribe pupils.

• A highly significant relationship exist between Scholastic Achievement in English, Maths, Science, Composite Scholastic Attainment and Numerical Ability (NA).

• Similarly insignificant relationship exist between Scholastic Attainment and Mechanical Reasoning, Language Usage (spelling), amongst ST pupils.

• No relationship exists between Scholastic Attainment and SR and CSA.

VI. A significant and negative relationship exists between Scholastic Attainment and Composite SAT whereas negative and moderate relationship exists in EB, ARSP & AO amongst Scheduled Tribe pupils.

• No relationship exists between Scholastic Attainment and DI/IC, ADC, AI and CT amongst ST pupils.

VII. Interest Patterns

• A significant positive relationship has been found between Scholastic Attainment in English and Medical, Agri., Technical, craft and Household.

• A significant positive relationship has been observed between Scholastic Attainment in Hindi and Literacy, Medical, Agriculture, Technical, Craft, Outdoor and Household.
• A significant positive relationship has been found between Scholastic Attainment in Maths and Fine Arts, Literacy, Scientific, Medical, Agriculture, Technical, Craft, Household & moderate Correlation between Maths and outdoor.

• A significant positive relationship has been estimated between Scholastic Attainment in Science and Fine Arts, Agriculture, Technical, Craft, Outdoor and Household and moderate Correlation between Science and Literacy.

• A significant and positive relationship has been estimated between Scholastic Attainment in "Social Science and Fine Arts, Medical, Agriculture, Technical, Craft and Household whereas Social Science and Literacy shows moderate and significant relationship.

• A significant positive relationship has been estimated between Composite Scholastic Attainment and Fine Arts, Literacy, Medical, Agriculture, Technical, Craft and Household whereas moderately significant positive relationship between Social Science and Scientific.

• Insignificant positive relationship was found between Scholastic Attainment in English and Fine Arts, Literacy, Scientific, Hindi and Fine Arts and Sports, Science and Scientific, Social Science and Outdoor, Sports. Composite Scholastic Attainment and Fine Arts, Outdoor and Sports.

• A negative insignificant relationship has been found between Scholastic Attainment in: English and Sports, Hindi and Sports, Fine Arts, Science and Sports.

VIII. Positive and highly significant relationship exist between scholastic attainment and interest in Craft & Household amongst SC pupils

• Highly positive and significant relationship between scholastic attainment and technical in all the subjects except in Hindi.
• Significant and positive correlation exist between SA in Science, Social Science and Comp. SA and Agriculture. SA in Maths, Social Science and Comp. SA and Medical.

• Moderate relationship exist between Social Science and Finearts, Literacy and Outdoor, Composite SA and Literacy and Outdoor. It shows no correlation with other dimension of Interest Pattern.

IX. Highly significant and positive correlation exist between scholastic attainment in Hindi, Maths, Science, Social Science and Comp. DAT & Fine Arts, Literary amongst ST pupils.

• A highly significant and positive relationship exist between SA and Interest in Medical, Technical, Craft and Outdoor.

• Moderate correlation exist between SA in English, Maths, Social Science, Comp. SA and Household.

PART- II : INTERACTIONAL STUDIES:

(A). Interactional Effect on Scholastic Attainment:

• The main effects of caste on Scholastic Attainment was found moderately significant whereas Locale in Scholastic Attainment have been found highly significant but no effect have been found on Sex.

• The Interactional effect of (Caste & Sex) on scholastic attainment has been found highly significant, whereas the Interactional effect of (Caste, Sex & Locale) on scholastic attainment have been found moderately significant.

• The Interactional effect of (Caste & Locale) and (Sex & Locale) have been found to be insignificant.
(B) Interactional Effect on Aptitude Score:

- The main effect of Caste and Locale on differential aptitude have been found to be highly significant whereas of Sex was found to be insignificant.
- The Interactional effect of (Caste & Sex), (Caste & Locale) and (Caste & Sex & Locale) all have been found to be insignificant.
- The main effects of Caste on Scientific Aptitude have been found to be highly significant whereas the main effect of Sex and Locale on Scientific Aptitude have been found to be insignificant.
- The Interactional effect of (Caste & Sex) and (Sex & Locale) on SAT have been found to be highly significant whereas the Interactional effect of (Caste & Locale) and (Caste & Sex & Locale) have been found to be insignificant.

(C) Interactional Effect on Interest Patterns:

- The main effect of caste and sex on Interest Patterns have been found to be highly significant. But the main effect of Locale was found to be Moderately Significant.
- The Interactional effect of Caste and Sex, Caste and Locale & Sex and Locale have been found to be insignificant.
- Similarly the Interactional effect of Sex, Caste and Locale have been found to be insignificant.

PART - III: DIFFERENTIAL STUDIES:

A. Sex Differences:

1. Intra Social Group and Inter Sex differences:
   i. Boys are superior to girls with respect to scholastic attainment in Maths ($t = 3.27$) and Social Science ($t = 5.07$)
ii. S.C. Boys have scored significantly higher than SC girls in English (t=3.83), Hindi (t=2.82), Science (t=3.15) and composite scholastic attainment (t=2.43).

iii. ST Boys have scored significantly higher than ST Girls in English (t=4.87), Hindi (t=3.59), Maths (t=4.94), Science (t = 4.57), Social Science (t=6.56) and composite scholastic attainment (t=5.48) respectively.

iv. Girls excel boys in EB (t = 6.39), ARSP (t = 3.31) & CT (t=4.33) whereas boys excel girls in DI/IC (t = 4.36).

v. There exists a significant difference between SC Boys and SC Girls in the dimension of Scientific Aptitudes i.e. EB (t=3.74), DI/IC (t =2.81), ADC (t = 2.45), AI (t = 5.48), CT (t = 2.71), AO (t=3.93) and composite SAT (t =3.17) but shows no difference in ARSP dimension of SAT (t = 1.58).

vi. There exists a significant difference between ST boys and ST girls in EB (t = 3.75), DI/IC (t = 3.50), AI (t = 6.89), ARSP (t =3.81), CT (t=4.04) and composite SAT (t = 5.60) but shows no difference in ADC (t =1.33) and AO (t = 1.34).

vii. Boys exceed the girls in MR (t = 4.15), AR (t = 4.32) and LU-gr (t= 4.32) while girls exceed boys in CSA (t = 1.13).

viii There exists a significant difference in the differential aptitude of SC boys and SC girls in AR (t = 3.41), SR (t=3.87), NA (t=3.36), MR (t = 5.37), LU-sp (t=5.28) but shows no significant difference between SC boys and SC girls in SR (t = 1.75) VR (t=0.559) Lu-gr (t = 0.185) and composite DAT (t = 1.24).

ix. The ST boys and ST girls shows significant difference in CSA (t=2.90), NA (t = 2.64), VR (t = 4.38), MR (t = 6.36) LU-gr (t=3.93) but shows no significant difference in SR (t=0.784) LU-sp (t=0.572) and composite DAT (t=1.38) respectively.
x. SC & ST pupils differ significantly from each other with respect to Interest Patterns in Scientific, Medical & Technical.

xi. SC boys and girls differ significantly from each other with respect to Interest Patterns.

xii. ST boys and girls differ significantly from each other with respect to Interest Patterns except interest in Sports and House hold.

2. **Inter Social Group and Intra Sex Differential**:

xiii. The ST boys exceed the SC boys in their scholastic attainment in English (t=4.54), Hindi (t= 5.7), Science (t=4.97), Social Science (t=5.89) and composite Scholastic Attainment (t=5.09).

xiv. The SC girls exceed ST girls in English (t=4.08), Hindi (t=3.68), Maths (t=3.35), Science (t=2.68), and composite Scholastic Attainment (t = 2.81).

xv. SC boys exceed the ST boys in AI (t = 4.95), ARSP (t=2.56), CT (t= 3.37) and composite SAT (t=2.56).

- There exists no significant difference between SC and ST boys in EB (t = 1.16), ADC (t = 1.00), DI/IC (t= 1.90).

xvi. The ST girls exceed the SC girls in DI/IC (t=2.09), ADC (t =2.75), AI (t=7.26) and composite SAT (t=5.60), whereas the SC girls exceed ST girls in CT (t =2.40) and AO (t = 4.13).

- There exists no significant difference between SC and ST girls in EB (t = 0.092) and ARSP (t = 0.238)

xvii The SC boys exceed ST boys in their differential aptitude in CSA (t = 15.03), Lu-gr (t = 5.67) and composite DAT (t = 4.62) whereas ST boys exceed SC boys in VR (t = 2.00), LU-sp (t =2.51).
• But there exists no significant difference between SC and ST boys in their differential aptitude in AR ($t = 0.786$), SR ($t = 0.113$), NA ($t = 1.51$), MR ($t = 0.06$) respectively.

xviii. The SC girls exceed ST girls in CSA ($t = 20.35$), MR ($t = 1.97$) and composite DAT ($t = 5.36$) whereas ST girls exceed SC girls in SR ($t = 2.33$), NA ($t = 8.19$).

• But there exists no significant difference between SC and ST girls in AR ($t = 1.68$), LU-gr ($t = 1.05$), LU-sp ($t = 1.88$).

xix. There exists no significant difference between SC and ST boys in Scientific ($t = 4.71$), Medical ($t = 2.29$), Agriculture ($t = 2.35$), Technical ($t = 2.09$) and Sports ($t = 2.09$) as well as SC & ST girls with respect to Interest Patterns in Technical ($t = 2.44$).

(B) **Locale Wise Differential:**

xx. The Urban pupils are superior to the Rural pupils with respect to scholastic attainments.

xxi. The Scheduled Caste Urban students are superior to the Scheduled Caste Rural students with respect to Scholastic attainment in English ($t = 5.13$), Hindi ($t = 4.76$), Maths ($t = 2.25$), Science ($t = 2.76$), Social Science ($t = 4.87$) and composite scholastic attainment ($t = 3.88$).

xxii. The Scheduled Tribe Urban students are superior to the Scheduled Tribe Rural students with respect to Scholastic attainment in English ($t = 3.96$), Hindi ($t = 3.94$), Maths ($t = 3.44$), Science ($t = 3.04$), Social Science ($t = 2.10$) and composite scholastic attainments ($t = 3.71$).

xxiii. The Urban boys are superior to the Rural boys with respect to Scholastic attainment in English ($t = 3.98$), Hindi ($t = 6.06$), Maths ($t = 3.93$), Science ($t = 4.34$), Social Science ($t = 6.13$) and composite scholastic attainment ($t = 6.09$).
xxiv. The Urban Girls are superior to the Rural Girls with respect to scholastic attainment in English (t=5.17), Hindi (t=7.17), Maths (t=4.31), Science (t=5.70), Social Science (t=3.46) and composite scholastic attainment (t=4.11).

xxv. The Urban pupil are superior to the Rural pupil with respect to Scientific Aptitude in EB (t = 2.69) whereas Rural Pupil are superior to the Urban Pupil with respect to SAT in DI/IC (t = 2.87) & AI (t = 3.11); whereas they do not differ significantly with the rest of the dimensions of SAT.

xxvi. The SC Rural pupils are superior to SC Urban pupils with respect to DI/IC (t = 3.60) and CT (t = 2.96) whereas SC Rural and Urban pupils do not differ significantly from each other with respect to the rest of the dimensions of SAT.

xxvii. The ST Rural pupils are superior to ST Urban pupils with respect to AI (t = 4.27), whereas ST Rural and Urban pupils do not differ significantly from each other with respect to the rest of the dimension of SAT.

xxviii. The SC & ST Urban boys are superior to the SC & ST Rural boys with respect to the dimension of SAT in EB (t = 4.67), AI (t=3.77), CT (t=11.28), AO (t=19.15), whereas the SC & ST Rural boys are superior to the SC & ST Urban boys with respect to ADC (t = 4.63), ARSP (t=6.39), composite SAT (t=17.87) as dimension of Scientific Aptitudes but DI/IC shows no significance.

xxix. The SC & ST Urban girls are superior to the SC & ST Rural girls with respect to the dimension of SAT in EB (t =7.56), AI (t=6.01), CT (t =13.14) and AO (t = 14.30) whereas the SC&ST Rural girls are superior to the SC&ST Urban girls in DI/IC (t = 9.11), ARSP (t=9.55) and composite SAT (t=32.09) but ADC shows no significant difference.
xxx. The Urban pupils are superior to the Rural pupils in most of the tests except in MR & LU-sp & LU-gr.

xxxi Scheduled Caste Urban Pupils are superior to Scheduled Caste Rural Pupils with respect to LU-sp (t = 2.48) and composite DAT (t=2.09) as dimension of differential aptitudes. But do not differ significantly from each other with respect to AR, SR, CSA, NA, VR, MR, LU-gr as dimension of DAT.

xxxii Scheduled Tribe Urban pupils are superior to Scheduled Tribe Rural pupils with respect to the dimension of DAT in AR (t = 3.15), VR (t = 4.92) and composite DAT (t = 3.48) whereas ST Urban and Rural pupils do not differ significantly with respect to SR, CSA, NA, MR, LU-gr & LU-sp as dimensions of DAT.

xxxiii Scheduled Caste boys excelled Scheduled Caste girls in AR (t =3.47), SR (t= 3.93), NA (t=3.46) and MR (t=5.39) respectively; whereas Scheduled Caste girls excelled Scheduled Caste boys in LU-sp (t =5.29).

xxxiv Scheduled Tribe boys excelled Scheduled Caste girls in AR (t =3.48), VR (t=3.22), MR(t =7.10); whereas Scheduled Tribe girls excelled Scheduled Tribe boys in CSA (t=3.54) NA (t=3.74) and LU-gr (4.28) respectively.

xxxv The Urban boys are superior to the Rural boys with respect to Interest Patterns in Fine arts (t = 2.37) and craft (t = 3.71) but Rural and Urban boys do not differ significantly from each other with respect to the other dimension of the Interest Patterns.

xxxvi The Urban girls are superior to the Rural girls with respect to Interest Pattern in Fine Arts (t = 2.10), Sports (t=2.31) but do not differ significantly from each other with respect to the other dimension of Interest Patterns.
xxxvii. It does not show any significant different between Rural & Urban pupil with respect to Interest Patterns.

xxxviii. The Scheduled Tribe Pupils are superior to Scheduled caste pupils with respect to Social Science \((t = 2.54)\), whereas SC pupils are highly superior to ST pupils with respect to composite scholastic attainment \((t = 4.63)\). But there exists no Inter Caste Differences with respect to scholastic attainments in other school subjects.

xxxix SC Girls are superior to SC boys with respect to scholastic attainment in English \((t=3.83)\), Hindi \((t = 2.82)\), Science \((t=3.15)\) & Composite Scholastic Attainment\(( t = 2.48)\) whereas there exists no significant difference between SC boys & girls with respect to Maths & Social Science.

xxxx ST boys are superior to ST girls with respect to Scholastic Attainment in all the subjects namely English, Hindi, Science, Social Science & Maths.

xxxxi. The Scheduled Cast pupils are superior to the ST with respect to CSA \((t = 24.40)\) and LU-gr \((t = 2.05)\), whereas ST pupils are superior to SC pupils with respect to SR \((t = 2.07)\), NA \((t = 5.79)\) & Composite Differential Aptitude \((t = 3.08)\) respectively. But there is no caste difference with respect to AR, VR, MR & LU-sp as dimension of DAT.

xxxxii. SC boys are superior to SC girls with respect to DAT in AR \((t=3.41)\), NA \((t=3.36)\), MR \((t = 5.37)\) & LU-sp \((t=5.28)\).

xxxxiii. ST boys are superior to ST girls with respect to AR \((t=4.71)\), VR \((t = 4.38)\), MR \((t = 6.36)\), whereas ST girls are superior to ST boys with respect to NA \((t = 2.84)\) and LU-gr \((t = 3.93)\).

xxxxiv. The SC pupils are highly superior to ST pupils with respect to CT \((t = 4.33)\), whereas ST pupils are superior to SC pupils with
respect to DI/IC \( t = 2.73 \) and composite SAT \( t = 2.24 \) as components of Scientific Aptitude. But doesn’t shows any Inter Caste difference in EB, ADC, AI, ARSP and AO as components of SAT.

xxxxv. SC boys are superior to the SC girls with respect to DI/IC \( t=2.81 \), AI \( t = 5.45 \), and ADC \( t = 2.45 \), whereas SC girls are superior to SC boys with respect to EB \( t =3.74 \), CT \( t = 2.74 \) and AO \( t = 3.93 \), & Composite SAT \( t =3.21 \)

xxxxvi Scheduled Tribe boys are superior to Scheduled Tribe girls with respect to DI/IC \( t = 3.45 \); whereas Scheduled Tribe girls are superior to Scheduled Tribe boys with respect to EB \( t = 3.75 \) AI \( t =6.89 \) ARSP \( t =3.81 \), CT \( t = 4.40 \) & Composite SAT \( t =5.71 \) respectively. But there exists no significant difference between ST boys and Girls with respect to ADC & AO.

xxxxvii. There is Inter caste difference (SC & ST) with respect to Interest patterns in its ten components except House hold.

5.60. DISCUSSION

(A) DISCUSSION ON CORRELATIONAL STUDIES

1. Inter correlation between Scholastic Attainment and DAT:

The positive trend of indices of correlation corresponds increase or decrease in the two variables is noticed. thus with the increase in SA of SC & ST (Table-5.01) as well as SC (Table-5.02) pupil, there also occurred an increase in the score of AR, SR, CSA,NA,VR,LU-gr and LU-sp. The results reveals the dimensions of DAT as measure the fundamental intellectual abilities of a child. Children who are found having less I.Q. also fall in the category of under achievers. Children who have I. Q. became achievers in their life. Hence there exists a correlation between intelligence and scholastic achievement. The scores of intellectual abilities are often used to predict the success of a child.
The above result further reveals that high achievers who score high marks in the different subjects taught in schools are naturally considered to be intelligent, are able to react using their cognitive, affective and psychomotor domain. They have the ability to think, reason and then react. Further DAT appraise fundamental intellectual abilities are inherently dependant on school subjects. Further the negative and significant relationship amongst the SC pupils is indicative of the fact that as the scores on SA increased, there exists a corresponding decrease in the scores of the Mechanical reasoning. It is important to realise that Mechanical reasoning are of less educational and vocational significance, although the Mechanical reasoning test may be regarded as one aspect of intelligence, if intelligence is broadly defined. This is useful in those curricula where an appreciation of the principles of common physical forces is required.

The person who stands high in their characteristics finds it easy to learn the principles of operations and repair complex devices. Amongst ST (Table-5.03) pupil as well as SC.&ST pupil Insignificant relationship exist between scholastic attainment and Mechanical reasoning is indicative of the fact that there exist no relationship which could be confidently accepted.

2. **Inter correlation between Scholastic Attainment and SAT**

The results on hypothesis H2C reveal (1) A significant and negative relationship between scholastic attainment and DI / IC and composite SAT amongst SC& ST (Table- 5.04) pupils. (2) A significant and negative relationship between scholastic attainment and EB, DI/IC and composite SAT amongst SC (Table -5.05) (3) A significant and negative relationship exists between scholastic attainment and composite SAT, EB, ARSP & AO amongst ST (Table- 5.06)

The negative trend of indices of correlation reveals that inverse relationship between scholastic attainment and components of SAT mentioned above. This points out that With the increased in the scores on scholastic attainment there appeared a corresponding decrease in the scores of Scientific Aptitude mentioned above.
3. **Inter correlation between Scholastic Attainment and Interest Patterns**

In the correlational studies, the relationship between scholastic attainment and different fields of interest of SC&ST (Table-5.07) have been computed, and which have been largely found significant and positive so far as the relationship between various components of scholastic attainment and different fields of interest are concerned, out of 60 coefficients, 41 indices beyond .01 level and 5 coefficient at .05 level of confidence have been found significant and the remaining 14 have been found insignificant. 11 were positive, while 3 were negative. These results indicate the direction and magnitude of relationship that exist between different interest patterns and Scholastic Attainment.

The positive relationship indicates a corresponding increase or decrease in the two variables is noticed. Thus, with the increase in one variable there also occurred an increase in the scores of other variables whereas decrease in one variable results decrease in the other variable. These results appear to be very significant. The insignificance observed between the two variable are therefore attributed to the chance factored and in fact there existed no real relationship. There is no certainty that we will get the same results, in case the experiments are repeated. Further a significant and positive relationship beyond .01 level (Table-5.08) exist between (1) Scholastic attainment in English, Hindi, Maths, Science, Social Science, Comp. SA and Craft, Household. (2) Scholastic Attainment in English, Maths, Science, Social Science, Comp SA and Technical interest. (3) Science, Social Science and Comp. SA and Agriculture. (4) Maths, Social Science and Mechanical (5) Moderate relationship between Social Science and Languages. There exists no relationship between –Scholastic Attainment and fine arts, Scholastic Attainment and languages (except Social Science), Scholastic Attainment and outdoor (except Hindi), Scholastic Attainment and Sports.

**DISCUSSION ON INTERACTIONAL & DIFFERENTIAL STUDIES**

1. **Discussion on Scholastic Attainment**:

Discussion on the effect of Caste x Sex x Locale on Scholastic Attainment:

The results presented in Table 5.10 Reveal that the main effect of Caste and Locale
upon Scholastic Attainment has been found to be significant. Only the main effect of Sex upon Scholastic attainment has been found to be insignificant. The relative effects of Caste, Sex and Locale are also evident from the findings on the Differential Hypotheses $H_{7D_1}$ to $H_{9D_3}$ which specify as to which of the sub-components of these independent variables affect the dependent variable and to what extent.

The Results presented on Differential Hypothesis, table 5.37 reveal that there exist no significant different between SC and ST pupils in their Scholastic attainment except in Social Science. ST Pupils have been found moderately superior which may be due to chance factors. The findings can be attributed to exposure of the SC and ST to the same, Socio-cultural Climate, due to which learning takes place through the same pattern. Due to awareness amongst the parents the SC and ST pupils are brought up and nourished in a socio-cultural setting. Which provides children an opportunity for modern means of life and living.

Further Sex difference between the boys and girls of the SC and ST has not been found significant except in Maths and Social Science. In Science the SC boys were superior to the girls. The superiority of boys in Maths and Social Science.

However, Sex difference has been found pronounced within the boys and girls of the SC and ST Pupils. Table H41 reveals that SC girls have been found significantly superior than boy except in Maths and Social Science. The superiority of SC girls over boys indicates the awareness among the girls in their Scholastic Attainment as well as the achievement motivation provided by parents to SC girls.

Further there is the superiority of ST boys over the SC girls in scholastic attainment in all the subjects. This differential findings on Sex can be attributed to the social restriction on one hand and on the other hand home environment which refers to the sum total of within and external condition and factors of home, potentially capable of influencing on organism. Martin (1975) reported that enviroment (within) of family not only makes the life of a child, but by continued
intimate, numerous and varied associations, it becomes a major source of education and behaviour determination.

It is argued that the need for achievement has been found to be dependent on how child has been brought up in the family environment. Home and family environment affect adolescents behaviour in numerous ways. This kept ST girls at the lowest ebb in terms of self esteem. They do not have vocational aspiration as high as the boys. Hence the educational attainment of the ST boys is much good than the ST girls.

The girls educational attachments have by and large been used in our society for her successful role as a Home maker. Since the very beginning restriction were imposed on her out of door work. Initiative an the part of the girl herself was lacking as thousands of years of subjugation have made her Psychologically poor. These restrictions for girls are there in all the castes of our society. The general pupils, have come up from these restriction provided as the awareness among the SC pupils to cope with the general people have broken the barriers and have marched with the general pupils but still the restriction for girls is present in ST pupils.

The awareness of SC girl child to cope with the general pupils and the restriction provided for out door work compelled them ton concentrate on their studies leading to better educational achievement except in Maths and Social Science which was more in SC boys due to the exposure and interaction with the outer world increase the thinking our reasoning power. Hence the inferior Scholastic attainment of the ST girls were the non stimulating environment. This kept girls at the lowest ebb in terms of self esteem. They do not have vocational aspiration as high as that of boys. Hence the educational attainment of ST boys is much better than the ST girls.

Table 5.26 and 5.27 indicates a high superiority of Urban pupils for both the Caste group. It indicates that there is not difference between urban boys and girls with reference to Scholastic Attainment. Home environment occupies the first and the most significant place for development of the child. Though heredity plays
an important role but without proper imitation by the environment, the potential of
the child are unreached. The environment in which the child grown can accelerate
or retard the child's physical, mental, emotional and social development.

A cognitive home environment is one where parents are sensitive and
responsive to the development. Majority of children do not receive a rich
environment and stimulation at home. Parent are often ignorant and confused with
appropriate play and learning activities for their children. Brar and Brar (1989)
reported that middle class parents provided enriched environment to their children
which stimulated their intellectual abilities while lower class / poor parents were
unable to provide rich and stimulating environment to their childrens.

It has been observed by the researchers that children living in poor
environment can not develop their potentials and skills to the maximum extent
which do effect negatively as their performance in Schools and achievement in
social life. (UNICEF, 1987). Indian studies have also shown that children coming
from poor environment lag behind in all the activities involving cognitive abilities
than children coming from good environment (Sinha, 1982 and Brar, 1989).

Children living in rural and urban areas are exposed to two different types of
environment. In rural areas the pre-school age children go to Anganwadies and in
Urban areas children attend Nursery Classes in Convent or so called Public
Schools. Children coming to these Anganwadies in general, belong to poor
families and are exposed to poor or non-stimulating environment, not only in
Anganwadies, but also in their homes than their counter parts. Urban pupils have
better attitude in comparison to their counter part, residing in rural and tribal areas,
urban pupils have higher level of awareness.

It is clear from the results that both urban boys and girls were superior in
there Scholastic Attainment as compared to the rural boys and girls. It might be
due to stimulating and rich environment provided by the urban respondents.
2. **Discussion on Aptitude (DAT & SAT)**

The results on Interactional Hypothesis $H_{31}$ presents global effect of (i) Caste (2) Sex (3) Locale as independent variables, Interacting with in dimensions of DAT, SAT and its components.

The findings obtained on Interactional hypothesis $H_{31}$ presented in Table 5.11 & 5.12 reveals that the main effect of Caste and locale on DAT has been found to be highly significant only the main effect of Sex on DAT has been found to be insignificant. The highly significant main effect of these two main sources of variance can be attributed to their relative effects on their growth and development of aptitudes as an acquired potentiality of human beings during their developmental periods. The relative effect of Caste, Sex and Locale are also evident from the finding on Differential hypothesis, which specify as to which of the sub-components of these, independent variable affect the dependent variables and to what extent.

The results presented on Differential Hypothesis indicated that ST pupils have been found to be significantly inferior to the SC pupils in Clerical Speed and Accuracy and Language thoroughness as dimension of Differential aptitudes. No study on clerical aptitude of the SC and ST pupils have been reported so far therefore, the findings of the present study could be of great significance. The significant superiority in clerical aptitude of the SC over their counter part ST could be accounted for in terms of their superior schooling and environmental conditions. Since verbal excellence and numerical aptitudes are significant components of clerical aptitudes is certainly contributory in enriching the clerical aptitude. Lack of social, cultural and academic environment and absence of a good model at home and in environment, and absence of a good model at home and in neighborhood stand as stumbling blocks in the acquisition of skills of clerical abilities for the tribals.

Though clerical aptitude can not said to be ideal professional goal of the individuals; nor it could be said to be a significant aptitude for a successful life; however; higher clerical aptitude does discipline the individuals educationally as
well as professionally. Acquisition of clerical temperament is, therefore, a facilitative source train for those who intend to occupy significant position in applied field of life. Inculcation of adequate clerical traits, therefore should constitute important features of schooling in tribal educational institutions, so that the tribal students may also develop adequate clerical aptitude for a successful executive life. As no study indicating the differential aptitude on language usage of the SC and ST pupils has come to our notice we rely upon the study as original one, and hence of vital significance.

The superiority in language aptitude of the SC over the ST pupils could be accounted for in terms of their superior advantageous and privileged cultural as well as academic climate made available to them at home and in neighborhood. The ST pupils are deprived of such facilitative determinants of language aptitudes. The SC pupils get the advantages of superior socio-cultural interactions which are hardly made available to the ST. Consequently they are retarded to that extent and hence are found backward in language aptitude.

Since language aptitude is an acquired propensity those who get better opportunities for language learning from effective teachers are aspiring parents, attain higher proficiency in languages. In this respect the SC are certainly at an advantageous position. They get better models to learn languages at home as well as in the schools. However, they are made available frequently effective mass media of communication and other communicative aids from which language could be acquired. Whereas ST have been socio-culturally put to a disadvantaged condition which deprived them from such effective communicative aid.

Further the SC pupils have excelled the ST in caution and thoroughness which could be attributed to their better biological disposition for thoroughness in observation and sensory motor abilities, as well as socio-emotion maturity and higher mental process. Beside the Scholastic Attainment and Aptitude the SC have shown superiority of Interest pattern in scientific, medical and technical. Whereas ST pupils have been found moderately superior in Space Relation and highly superior in Numerical Ability and Composite DAT, but shows no difference in the
rest of the dimensions of DAT. The Space Relation aptitude indicate consistency of aptitude in Space relations. Perception of Space relation is a function of establishing relationship among various components of three dimensional perception which rather develops among children at a later stage of growth, but not earlier than concrete operational periods. Moreover, perception of the third dimension is accounted for in terms of personal experience.

The pupils certainly enjoy better schooling, but their observation of nature through which space relation could be effectively, perceived, is relatively poorer. On the contrary, the ST pupils being brought up and educated in nature and thereby assimilate and accumulate rich experiences through nature by being in the natural surrounding of hills and mountains, rivers and Valleys; their perception about the space relations is expected to be richer, however their schooling is poorer. Perhaps there may be the probable reason why the ST and SC pupils have shown marked difference between their Means on the test of space relation aptitudes.

The finding obtained on space relation have great educational and vocational significance in planning educational and vocational careers of the young adolescents. Since rich space relations promote deeper perceptual abilities and wider logical thinking. It is imperative to introduce enriched curricula which could create and cultivate space relation abilities among the pupils. The learning experiences have to be so designed and developed as to meet this national need of infusing finer perceptual potentialities and deeper thinking abilities.

Under Indian condition the social cultural and academic environment rather remain constant and uniform to a large extent for all the inhabitants regardless of their social stratification. Since less social control exist there exist greater chances of their assimilating and adapting more knowledge, better understanding and finer skills because of their being exposed to outer world in accordance with the physical, material and Socio-cultural resources. In the view of these interpretation the results that we have obtained are quite natural and expected too.
The entire results have vital educational implication not only in the Synchronization of Syllabi, curricula and course content but also in the patterning and processing of various education practices. Further Sex difference between boys and girls of SC and ST pupils reveals the superiority of Boys in AR, MR and LU-sp, whereas Girls in CSA. Deeper in to the results (Table 5.19) reveal that SC boys scored significantly higher in AR, SK, NA, MR than the girls whereas girls showed higher aptitude in LU-sp. Table 5.19 further reveals the high significance of ST boys in AR, VR and MR, whereas girls in CSA, NA and LU-gr.

The superiority of boys caste wise and sex wise in Abstract Reasoning Aptitude could be accounted for in terms of richer perception. Further they are exposed to richer environmental objects which try to develop their thinking and reasoning power. The availability of superior homes, better schooling and effective guidance made available to them by their parents and relatives. These facilitative factors equip them with higher abstract reasoning. Since they are equipped with better AR can solve many intricate problems of life consequently they prove themselves to be effective service personnel. In view of the importance of tribal potentiality in India, it is suggested that richer physical and cultural environment which are available to the boys should be made available to the girls by introducing various measures through Government and non Govt. agencies. So that they may also contribute substantially in all such fields where abstract reasoning abilities are essentially needed.

The superiority of the boys caste-wise and sex wise in Mechanical reasoning aptitude could be accounted for in terms of their advantageous and privileged social, cultural and academic environment. The interest of the boys in mechanical work enriched homes and availability of superior scientific appliances equip them with better mechanical reasoning aptitude; as they encounter with the scientific equipment and communicative devices of which the tribals are not conversant. The presence of these mechanical devices and their frequent application in their everyday life equip them with better knowledge, understanding and skills of
mechanical equipments. The ST suffer to that extent because they hardly get an opportunity to encounter with them.

In a developing Nation like India, the retardation in Mechanical reasoning aptitude of SC & ST girls with a large population but poor mechanical reasoning aptitudes is an indication of poor exploitation of human resources that may stand as a great obstacle in national progress and prosperity. It is therefore, suggested that suitable measures should be introduced and adapted to raise their level of mechanical reasoning potentially so that they may also prove themselves to be equally competent in all such national deliberations where mechanical reasoning aptitudes are involved.

3. Discussion on Scientific Aptitude

The findings obtained on international hypothesis H3I presented in table 5.12 reveals significant main effect of caste on scientific aptitude, but shows insignificant main effect of sex and locale on scientific aptitude. The highly significant effect of Caste can be attributed to their relative effects of the growth and development of aptitudes as an acquired potentiality of human beings during their developmental periods. The relative effects of Caste, Sex and Locale are also evident from the findings on Differential Hypotheses which specify as to which of the sub-components of these independent variable affect the dependent variables and to what extent.

In the Differential studies the Scientific Aptitude between SC and ST have been found to be insignificant, except in CT, SC pupils were superior to ST pupils where as in composite SAT, ST pupil were found to be moderately superior. Further sex difference between boys and girls of the SC and ST pupil (Table 5.16) shows high superiority of Girls (SC & ST) in EB, ARSP and CT than the boys (SC & ST) showed superiority in DI/IC than the girls and has not been found significant in rest of the dimensions of SAT. However Sex difference has been found pronounced within the boys and girls of the SC and ST pupils.

The SC boys significantly excelled the girls (Table 5.23) in AI, ARSP, CT and Comp. SAT, ST boys showed no superiority on any of the dimensions of SAT.
Similarly SC girls excelled the ST girls in CT and AO but the ST girls showed significant result in DI/IC, ADC, AI and Comp. SAT. The significant sex difference in the SAT of the boys and girls who have been brought up, nourished and educated under more or less identical social-cultural environment and physical surrounding could be attributed to biological and psychological sex differences. Though boy and girls encounter and interact with more or less identical physical environment; however, boys are psycho-biologically different from the girls, and the level of sensitivity and kind of attitude that the former develop in the same social setting are significantly different from those of the latter. As a consequence these psycho-biological variations, that makes the existing sex differences meaningful.

The girls scored high mean in EB, ARSP, CT as components of SAT. Perhaps, this may be because of the modern pressure of life and greater awakening. Perhaps, biological factors may also account for their superiority of boys in DI/IC. Higher achievement motivation and greater social mobility constitute the very core of their advancement. Pupils belonging to both the sexes of the scheduled caste social group are exerting their best to attain a higher goal. However in the run of competition, the SC boys have excelled significantly higher than the SC girls in AI, ARSP, CT and Comp. SAT whereas SC girls excelled the ST in CT and AO, through, no significant difference exists between them on DI/IC, ADC, AI and Comp. SAT.

By and large both the sexes have shown high order of excellence in Scientific Aptitude without any significant difference. Most probably in addition to the psychological factors as mentioned above., both the sexes of SC have shown consistently higher means in CT which could be attributed to their biological disposition for CT on sensory motor abilities as well as social-emotional naturity and higher mental process.

**locale differences**:  

Table 5.34 indicates a high superiority of Urban boys in AR, NA, VR and Comp. DAT whereas superiority of Urban Girls in all the dimension of DAT except
SR, NA and MR there exist no significant difference. The superiority of Urban boys in AR Aptitude could be accounted because of availability of superior homes, better schooling and effective guidance made available to them by their parents and relatives. Whereas the superiority of Urban boys in VR is due to healthy educational climate and socio-cultural values and norms prevalent at home and neighborhood; since verbal excellence too is largely developed and determined by such factors mentioned above.

Location of educational institutions matters much in the quality of learning potentiality and scientific thinking. Urbanisation makes provision for higher and better learning experiences because of impact of modernization and industrialization whereas ruralization inculcates thinking and learning process contrary to the modern life. However the effect of modernization is so penetrative that there is a gradual transformation of ruralization into urbanization. Consequently, school and colleges located in the rural social setting are also gradually getting transformed into urbanized culture.

Despite of all their socio-cultural changes the status and standard of rural institutions by and large have retained their Ruralness as core of schooling system which largely affect the learning and thinking of ST pupils who are educated there. Because of the inferior schooling is the schools located in the rural areas, the scheduled tribe have failed to be exposed to the rich knowledge and skill of Science and technology to which pupils studying in urban schools are easily exposed to. As a result of their rich learning and better exposure to modern means of communication, the pupils whether SC or ST studying in the urban educational institution are provided better opportunities for adoption, incorporation, learning and training of Scientific knowledge, skills interest and aptitudes.

The urban social setting characterized by modern means of communication and industrialization facilitate, the children to learn and think those aspects of Scientific thinking which promote generalization ability, lateral thinking, sensitivity and Scientific perception.
4. Discussion on Interactional Interest Pattern:

The results on Interactional hypothesis H6I presents global effects of (1) Caste (2) Sex and (3) Locale as independent variables. Interacting with the ten dimensions of Interest pattern and it was found that Caste and locale have shown highly significant main effect on the dependant variables where as sex have shown a moderately significant effect on the dependent variable.

The significant effect of these three sources of variance can be attributed to they global flow of communication via electronic media has resulted in cultural homogenization, thereby leading to radical reconstruction of social life in our country. The relative effect of Caste, Sex and Locale are also evident from the findings on differential hypothesis, which specify as to which of the sub-components of these independent variable affect the dependent variable and to what extend. The results presented above on Differential Hypothesis indicated that the ST pupils have been found significantly interior to the SC pupils in their Interest Pattern in Scientific, Medical and Technical. Besides the significant effect of social groups sex has also been estimated to be a significant independent variable. The relative effect of Sex among SC pupils differ significantly from each other with respect to interest pattern. While St boys and girls differ significantly from each other with respect to Interest pattern except in sports and Household.

The superiority of SC boys in Scientific, Medical, Agriculture and Technical than ST boys with respect to Interest Pattern as well as superiority of SC girls in Technical than ST girls. This result ensures a high level of confidence in the fact that the Interest Patterns of the SC Pupils is significantly different from those of the ST ones. This result could be accounted for the differences in their socio-cultural setting out of which the Interest emerge from the social environment and cultural setting in which a child is nourished and developed. Thus the nature and kind of socio-cultural system of the SC pupils are significantly different from those of the ST pupils; and such a difference has been reflected in their vocational interest which they have incorporated in their life style.
We may thus generalize that Interest Pattern of ST are culture-bond; and the difference in their Interest Pattern exists to the of their social values and cultural norms. The Twenty First Century is an age of tremendous growth of knowledge in the field of communication, space, technology, globalization of marketing etc. These differential findings can be attributed to the revealing result were obtained. The SC Pupils showed interesting Medical, Scientific and Technical. Due to modernization and Globalization and in the age of Science and Technology the interest of the SC pupil have been diverted toward technical and medical. The awareness of the children to opt a job related to their interest. So as Govt. has provided than benefits to uplift them and bring than with the general pupils come the awareness has come in majority of receipt pupils. The awareness among the young generation and the environment has led majority to think in a positive direction.

Caste wise the SC and ST pupils do not show any significant difference between Rural and Urban pupils with respect to Interest Pattern. Similarly the Rural and Urban boys do not differ significantly from each other with respect to Interest Pattern except Fine arts and Craft. Where as Rural and Urban girls do not differ significantly from each other with respect to interest pattern except Fine art and Sports.

The significant effect of SC and ST on the interest could be accounted for in terms of learning process. The ecology and environment to which the child is exposed have a deeper impact upon his growth and developmental process. The entire cognitive world of the child is shaped through the interaction of the Social forces and cultural values. Thus, the child acquires thought socialization process and social learning the Socio-cultural experiences and behavioral patterns. The entire input process of cultural assimilation, is therefore culture-bound. A child acquire, assimilates, adopts and accommodates what the perceives in his ecology and environment.

Interest as such is therefore adapted from the cultural environment to which the child is exposed persistently, constantly and consistently for a considerable long
period. The prevalent ecological forces, too, interact with the child and bring about significant changes, and ultimately design his liking and disliking under condition of prolonged deprivation, the cumulative cultural deficits, interacting constantly upon the process of growth and development of the individual get precipitated and become rigid and regimented consistently a stereotype behavioural style is observed among the deprived people. These psychological consequences of deprivation could also be interpreted in terms of two concentric layers of ecology of the child as advanced by Bronferorenier (1974). Both the ‘upper’ as well as the ‘supporting’ layers significantly affect the psychosocial development of the child.

It is thus interred that the interest of the SC and ST pupils are primarily soil-culture-bound; and are developed and shaped out of the ‘cumulative deficit’ existing for a prolonged period in their social groups. The cumulative deficit may account for physical, social, psychological, cultural, religious, economic, political, spiritual and such other deficiencies which may affect their total developmental process. The academic deficits in the Schooling process also influence their interest. The studies conducted by Langmeier (1972), Nelso (1958), Pierce Jones (1959) and others support our findings. There are certain vocation which have no relation with SC and ST pupils, so it is the nature and kind of vocations which emerge from the culture itself, and which are largely culture bound vocation, may show significant relationship whereas those which may display insignificant relationship.

These findings have great significance in the development of School curriculum. The results can guide the educational planners and programmers to design an effective and sound educational policy for the deprived pupils of the nation. Further, the finds on the differential nature of interest of boys and girls can suggest some measures to redesign our vocational policies for the vocational selection and placement of the deprived people. A global insight into the results reveal that deprivation has a detrimental effect upon the scholastic achievement of the pupils. The Interest patterns has been found to grow and develop out of their cultural contents. Marked sex differences in the interest pattern of the boy and girls
of the SC and ST groups has been observed. As such vocational interest of the deprived pupils found to have a great effect of ‘Soil-culture-bound’ properties.

5.70 EDUCATION IMPLICATIONS & SUGGESTIONS:

1. Education Implications:

Human resource development is central to the overall human development; especially for Scheduled Caste and Scheduled Tribe communities, education is key to their over all emancipation – socially, culturally and politically. The government as well as the voluntary sectors is well aware of this fundamental human need. Though through every five year plans and the special Tribal Sub-plans of the Govt. has made efforts to bring about literacy in the country to the maximum, mainly among the poor and the disadvantaged but the progress has not been as good as expected. The Voluntary sectors have also not been as successful as it is often presumed. Therefore without being unduly pessimistic or prejudiced, we must examine where the bottlenecks are in this vital sector and look for right approaches to deal with them.

For the Scheduled Caste and Scheduled Tribe communities, it would be proposed to look into the attitude, Interest and Aptitude of the people in general as to what extent the community is involved in the primary education, non-formal education, vocational education and formal education.

People perceptions on the SC & ST Education: The perception of general public tends to be negative in terms of attitude, Interest and Aptitude of the SC and St people. The illiterate or uneducated parents are narrow-minded, they don’t have a sense of awareness towards education and also other developmental schemes or programmes for that matter. They cannot inject such motivations into their children, because they basically don’t have that aptitude, hence the SC & SC children, coming from such situation / environment don’t have the Interest and aptitude towards education.

However, there are other SC and ST people, who have received a ray of education in the earlier days say (1970s-80s) by the foreign missionaries who were
responsible for developing the interest and aptitude towards the importance of education. Infact such SC and ST people who have changed their attitude have developed themselves so much that at present they are in the respectful posts in the Govt. as well as voluntary sectors. They also have understood the importance of education; hence they inject the same interest into their offspring's. This is the case in the belt of Jashpur, Raigarh and Ambikapur. However, there are some tribal communities like Korakus, Korkus, Bhils, Bhilalas, Marias etc. who are still in the pipeline in terms of the interest and attitude towards education.

Perception of Developmental Agencies: It seems one-way traffic in most of the cases. That is the Development Agencies try their level vest to bring about a change in the attitude towards education, but, SC and ST think as to what are they going to get out of it? Rather they would go for earnings in the fields and forest (short-term earnings). In such case the D.As find themselves on the back foot, in bringing about attitudinal changes in SC & ST pupils, However, the agencies are not discouraged, they are always going ahead with their developmental programmes. As the perception by D.As goes, that they want to have a radical change in the attitude, mentality, thinking pattern of the people towards education. The, only one can think of other schemes and programmes on education.

Government Intervention: The Govt. of Chhattisgarh has come out in unequivocal terms with a blue print for the spread of education in the state and on this point it boasts of the 100% literacy rate. The census of 2001, shows that the literacy rate in the state is 65.18% which was only 42.91% in 1991. Similarly the male literacy is 77.80% as compared to 58.07% while female literacy is 52.40% as compared to 27.52%. The state's Education policy admits that of the 35% illiterate population, the SC, ST, OBC & minorities are in bigger numbers. As such the Education policy resolves to bring about a Quality change in education for The Poor People of the Rich Soil. (C.G. Edu. Policy 2000:48)

The Policies of the Govt.

• To provide education compulsory for children within 6-14 age group free of cost.

• To make primary education more people Oriented, effective and target oriented and to provide equal opportunities to all sections without discrimination.

Giving emphasis on the above points, Govt. is also concerned with the education of the STs, SCs & OBCs’ the policies clearly state that primary education is for all irrespective of caste, class and creed. However, it is upto the persons and individuals, who have to show their interest and aptitude from within for the education. The Scheduled Caste and Scheduled Tribe in most of the backward areas like Bastar and Western Koregas do not have such enthusiasm towards education.

The NGO Intervention: The NGO work for SC and ST development through education has been more on the non-formal line. It's also non-academic and more practical as the name non-formal suggests. By and large the NGO policies and programmes have aimed at capacity building, awareness building and mobilization process of the grassroots people to get justice from the delivery mechanism. This way the NGO are engaged in various activities like adult literacy programmes, agriculture extension programmes, and facilitating people’s access to the Non-wood forest products to mention a few.

Concluding Remarks: As far as the interest and aptitude of the SC and ST people towards Education are concerned, it depends on the situation, area and background of the particular community, to have negative or positive mentality towards education. If the forefathers are motivated in the right direction, their offsprings too will get the same. If not, the negative attitude will be cultivated throughout the generations. However, one cannot judge, having the prejudice ideas on SC and ST. They will have a time, when they will come to realize the importance and need of education. Only thing they require is to accept the fact with an open heart and mind. There must be two-way traffic to get the things materialized. By and large, the SC and ST have developed in themselves the positive attitude towards education. The interest in education and the degree of aptitude in them have to be
injected regularly and frequently. One day the SC and ST will certainly see and realize the ray of hope for their successful life in and through education.

2. Suggestions:

The results on aptitudes and interest of the SC and ST pupils have significant implication in educational and vocational planning and programming of the deprived and privileged communities in India. Since National progress to a large extent depends largely upon the designing and developing, planning and processing, promoting and preserving of human resources; and particularly upon scientific talents of a developing country like India, the knowledge and understanding of aptitudes and interest and their differential potentialities would equip the planners, programmers, policy makers and executive leaders to introduce and implement such educational and vocational programmes as would help in promoting optimally their aptitudes and talents.

In view of the fact that language excellence is an essential condition for getting success in various fields of life, the educational plans and programmes should be directed for the effective implementation of various means and measures of language competencies among the SC and ST pupils of the society. Through various effective language learning programmes, viz: rehabilitative language programmes or language enrichment programmes or compensatory language learning programmes, or through cultural exchange programmes, the SC & ST should be brought on par to the language of the civilized society. Effective language is the key to progress; and the national system of education should be directed for the optimum development of language potentiality of all pupils. Effective language learning should be made core of educational system since the SC and ST pupil are poor language learners. Greater attention should be paid to bring them on par with the rest of the society.

The entire inherent talent could be properly unfolded and exploited for the cause of the nation in such a way as no wastage and stagnation of human resources could be perceived. In this wider perspective, the knowledge and understanding of aptitude and interest of the SC and ST growing pupils have a great significance in
nation building. Further the finding have deeper educational and vocation implications from the point of view of planning, programming and processing, promoting and preserving their talents in India.

5.80 FOLLOW-UP STUDIES

Numerous studies have been suggested by ICSSR, new Delhi, however some of the under mentioned appear to be more significant keeping in view the observations made inference drawn and the utility seen in this investigation, may more research studies can be undertaken.

- A differential study of self perception of the SC and ST pupils.
- A study of some significant personality traits of the SC and ST pupils.
- A study of vocational preference and interest patterns of the SC and ST pupils.
- A developmental study of the conservation of the SC and ST pupils.
- A study of self concept and emotional adjustment of SC and ST pupils.
- Scholastic attainment as a function of Socio-Emotional Maturity of SC and ST adolescent pupils.
- A differential study of curriculum development of SC and ST pupils.