CHAPTER-IV

ANALYSIS AND INTERPRETATION
OF THE DATA

The analysis of data and detailed results of the study have been presented in this chapter. The study was designed to find out the psychological profiles of All India Inter-university Chess players. For this purpose, 60 subjects each have been selected based on their the achievement level such as high achievers, moderate achievers and low achievers to a total strength of 180 subjects from All India Inter-university Chess tournament organised by Chhatrapati Sahu Ji Maharaj University, Kanpur, Uttra Pradesh, India in the year 2007-2008. The age of the subjects ranged from 18 to 25 years. To assess the psychological profiles of Chess players, Cattelle’s 16PF Questionnaire was used to collect the data from the subjects.

The obtained Sten scores from the subjects were statistically analysed by using descriptive and differential analyses. Mean and Standard Deviation were calculated for descriptive analysis and the one way Analysis of variance (ANOVA) was used for differential analysis. Whenever ‘F’ ratio was found to be significant, the Scheffe’s test was applied as post-hoc test to
determine the differences among the paired means. The level of confidence was fixed at .05 level for all the cases to test the hypothesis.

**ANALYSIS OF THE DATA**

**Descriptive Analysis**

The mean and standard deviation scores of Catelle’s 16 Personality Factors of Chess players were given in the following table I.

**TABLE I**

**THE MEAN AND STANDARD DEVIATION SCORES OF HIGH, MODERATE AND LOW ACHIEVERS ON 16 PERSONALITY PROFILES AMONG CHESS PLAYERS**

<table>
<thead>
<tr>
<th>Factors</th>
<th>High Achievers</th>
<th>Moderate Achievers</th>
<th>Low Achievers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
</tr>
<tr>
<td>A</td>
<td>5.983</td>
<td>2.071</td>
<td>6.600</td>
</tr>
<tr>
<td>B</td>
<td>7.550</td>
<td>1.080</td>
<td>4.700</td>
</tr>
<tr>
<td>C</td>
<td>8.367</td>
<td>1.193</td>
<td>5.767</td>
</tr>
<tr>
<td>E</td>
<td>7.283</td>
<td>1.776</td>
<td>5.267</td>
</tr>
<tr>
<td>F</td>
<td>5.950</td>
<td>1.863</td>
<td>5.717</td>
</tr>
<tr>
<td>G</td>
<td>7.467</td>
<td>1.443</td>
<td>5.700</td>
</tr>
<tr>
<td>H</td>
<td>7.400</td>
<td>2.060</td>
<td>5.383</td>
</tr>
<tr>
<td>I</td>
<td>3.917</td>
<td>1.862</td>
<td>5.700</td>
</tr>
<tr>
<td>L</td>
<td>5.900</td>
<td>2.608</td>
<td>5.350</td>
</tr>
<tr>
<td>M</td>
<td>3.350</td>
<td>1.665</td>
<td>5.467</td>
</tr>
<tr>
<td>N</td>
<td>7.550</td>
<td>1.760</td>
<td>5.167</td>
</tr>
<tr>
<td>O</td>
<td>3.683</td>
<td>1.918</td>
<td>5.783</td>
</tr>
<tr>
<td>Q1</td>
<td>7.650</td>
<td>1.516</td>
<td>5.333</td>
</tr>
<tr>
<td>Q2</td>
<td>7.367</td>
<td>1.615</td>
<td>5.067</td>
</tr>
<tr>
<td>Q3</td>
<td>7.483</td>
<td>1.790</td>
<td>5.300</td>
</tr>
<tr>
<td>Q4</td>
<td>3.217</td>
<td>1.195</td>
<td>5.600</td>
</tr>
</tbody>
</table>
Factor – A (Warmth)

TABLE II
ANALYSIS OF VARIANCE AMONG CHESS PLAYERS ON PERSONALITY FACTOR-A (WARMTH)

<table>
<thead>
<tr>
<th>Source of Variance</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Squares</th>
<th>F-Value</th>
<th>Result at 0.05 level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between</td>
<td>66.633</td>
<td>2</td>
<td>33.317</td>
<td>8.009</td>
<td>Significant</td>
</tr>
<tr>
<td>Within</td>
<td>736.317</td>
<td>177</td>
<td>4.160</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>802.950</td>
<td>179</td>
<td></td>
<td>8.009</td>
<td></td>
</tr>
</tbody>
</table>

Table value for df (2,177) is 3.05

The mean values of high, moderate and low achievement level Chess players on the Personality Factor-A (Warmth) were 5.983, 6.600 and 7.467 respectively. The above table shows that the obtained ‘F’ ratio value, 8.009 is greater than the table value 3.05 at 0.05 level of significance with df 2 and 177. Hence it is inferred that there existed significant difference among the Chess players of high, moderate and low achievement with reference to the Personality Factor-A (Warmth).

Since the obtained ‘F’ ratio value was significant further to find out the paired mean differences, the Scheffe’s test was employed and presented in table III.
TABLE-III
THE SCHEFFE’S TEST FOR THE DIFFERENCE BETWEEN PAIRED MEANS ON THE PERSONALITY FACTOR-A AMONG CHESS PLAYERS

<table>
<thead>
<tr>
<th></th>
<th>High Achievers</th>
<th>Moderate Achievers</th>
<th>Low Achievers</th>
<th>MD</th>
<th>CI</th>
<th>Result at 0.05 level</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.983</td>
<td>6.600</td>
<td>-</td>
<td>-</td>
<td>0.617</td>
<td>0.920</td>
<td>N.S</td>
</tr>
<tr>
<td>5.983</td>
<td>-</td>
<td>7.467</td>
<td>1.483</td>
<td>0.920</td>
<td>Sig</td>
<td></td>
</tr>
<tr>
<td>-</td>
<td>6.600</td>
<td>7.467</td>
<td>0.867</td>
<td>0.920</td>
<td>N.S</td>
<td></td>
</tr>
</tbody>
</table>

From the above table it is observed that the mean difference values between high and moderate; high and low; and moderate and low achievement level Chess players were 0.617, 1.483 and 0.867 respectively. There existed significant difference between high and low achievement level Chess players with reference to the Personality Factor-A (Warmth). Hence it is concluded that high and moderate achievement level Chess players were found to be Schizothymia whereas the low achievement level Chess players were found to be Affectothymia.

The high and moderate achievers might have dominant traits of formal, reserved and aloof. These traits are useful in performing Chess related skills. However the other traits whether contributing or not in the winning of Chess might also influence to identify their under average category of warmth.
The low achievers of this factor might have been identified with psychological traits such as easy going, participating and attending on others. This may not help in a game like Chess.

The mean values of high, moderate and low achievement level Chess players on the Personality Factor-A (Warmth) were graphically represented in the Figure I.
FIGURE I: THE MEAN VALUES OF HIGH, MODERATE AND LOW ACHIEVEMENT LEVEL CHESS PLAYERS ON THE PERSONALITY FACTOR-A.
**Factor-B (Reasoning)**

**TABLE-IV**

**ANALYSIS OF VARIANCE AMONG CHESS PLAYERS ON PERSONALITY FACTOR-B (REASONING)**

<table>
<thead>
<tr>
<th>Source of Variance</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Squares</th>
<th>F-Value</th>
<th>Result at 0.05 level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between</td>
<td>358.144</td>
<td>2</td>
<td>179.072</td>
<td>58.245</td>
<td>Significant</td>
</tr>
<tr>
<td>Within</td>
<td>544.183</td>
<td>177</td>
<td>3.074</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>902.328</td>
<td>179</td>
<td>-</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table value for df (2,177) is 3.05

The mean values of high, moderate and low achievement level Chess players on the Personality Factor-B (Reasoning) were 7.550, 4.700 and 4.433 respectively. The above table shows that the obtained ‘F’ ratio value, 58.245 is greater than the table value 3.05 at 0.05 level of significance with df 2 and 177. Hence it is inferred that there existed significant difference among the Chess players of high, moderate and low achievement with reference to the Personality Factor-B (Reasoning).

Since the obtained ‘F’ ratio value was significant further to find out the paired mean differences, the Scheffe’s test was employed and presented in table V.
TABLE V

THE SCHEFFE’S TEST FOR THE DIFFERENCE BETWEEN PAIRED MEANS ON THE PERSONALITY FACTOR-B AMONG CHESS PLAYERS

<table>
<thead>
<tr>
<th>High Achievers</th>
<th>Moderate Achievers</th>
<th>Low Achievers</th>
<th>MD</th>
<th>CI</th>
<th>Result at 0.05 level</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.550</td>
<td>4.700</td>
<td>-</td>
<td>2.850</td>
<td>0.791</td>
<td>Sig</td>
</tr>
<tr>
<td>7.550</td>
<td>-</td>
<td>4.433</td>
<td>3.117</td>
<td>0.791</td>
<td>Sig</td>
</tr>
<tr>
<td>-</td>
<td>4.700</td>
<td>4.433</td>
<td>0.267</td>
<td>0.791</td>
<td>N.S</td>
</tr>
</tbody>
</table>

From the above table it is observed that the mean difference values between high and moderate; high and low; and moderate and low achievement level Chess players were 2.850, 3.117 and 0.267 respectively. There existed significant difference between high and moderate; and high and low achievement level Chess players with reference to the Personality Factor-B (Reasoning). Hence it is concluded that high achievement level Chess players were found to have Higher Scholastic Mental Capacity whereas the moderate and low achievement level Chess players were found to have Lower Scholastic Mental Capacity.

The characteristics such as concrete thinking, lower general mental capacity and inability to handle abstract problems may not influence to excel in games like Chess. Thus low achievement level Chess players might have dominantly possess
these traits. The moderate level scorers possess the traits of both sides with dominant traits from low achievement level Chess players. The high achievement level Chess players are bright, fast learners with abstract thinking and higher general mental ability.

The mean values of high, moderate and low achievement level Chess players on the Personality Factor-B were graphically represented in the Figure II.
FIGURE II: THE MEAN VALUES OF HIGH, MODERATE AND LOW ACHIEVEMENT LEVEL CHESS PLAYERS ON THE PERSONALITY FACTOR-B.
Factor-C (Emotional Stability)

TABLE-VI

ANALYSIS OF VARIANCE AMONG CHESS PLAYERS ON PERSONALITY FACTOR-C (EMOTIONAL STABILITY)

<table>
<thead>
<tr>
<th>Source of Variance</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Squares</th>
<th>F-Value</th>
<th>Result at 0.05 level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between</td>
<td>716.411</td>
<td>2</td>
<td>358.206</td>
<td>102.984</td>
<td>Significant</td>
</tr>
<tr>
<td>Within</td>
<td>615.650</td>
<td>177</td>
<td>3.478</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1332.061</td>
<td>179</td>
<td>-</td>
<td>102.984</td>
<td>Significant</td>
</tr>
</tbody>
</table>

Table value for df (2,177) is 3.05

The mean values of high, moderate and low achievement level Chess players on the Personality Factor-C (Emotional Stability) were 8.367, 5.767 and 3.483 respectively. The above table shows that the obtained ‘F’ ratio value, 102.984 is greater than the table value 3.05 at 0.05 level of significance with df 2 and 177. Hence it is inferred that there existed significant difference among the Chess players of high, moderate and low achievement with reference to the Personality Factor C (Emotional Stability).

Since the obtained ‘F’ ratio value was significant further to find out the paired mean differences, the Scheffe’s test was employed and presented in table VII.
TABLE-VII
THE SCHEFFE’S TEST FOR THE DIFFERENCE BETWEEN PAIRED MEANS ON THE PERSONALITY FACTOR-C AMONG CHESS PLAYERS

<table>
<thead>
<tr>
<th>High Achievers</th>
<th>Moderate Achievers</th>
<th>Low Achievers</th>
<th>MD</th>
<th>CI</th>
<th>Result at 0.05 level</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.367</td>
<td>5.767</td>
<td>-</td>
<td>2.600</td>
<td>0.841</td>
<td>Sig</td>
</tr>
<tr>
<td>8.367</td>
<td>-</td>
<td>3.483</td>
<td>4.883</td>
<td>0.841</td>
<td>Sig</td>
</tr>
<tr>
<td>-</td>
<td>5.767</td>
<td>3.483</td>
<td>2.283</td>
<td>0.841</td>
<td>Sig</td>
</tr>
</tbody>
</table>

From the above table it is observed that the mean difference values between high and moderate; high and low; moderate and low achievement level Chess players were 2.600, 4.883 and 2.283 respectively. There existed significant difference between high and moderate; high and low; and moderate and low achievement level Chess players with reference to the Personality Factor-C (Emotional Stability). Hence it is concluded that high achievement level Chess players were found to have Higher Ego Strength whereas the moderate achievers were found to have the mixture of both higher and lower ego strength qualities and low achievement level Chess players were found to have Lower Ego Strength.

The low achievement level Chess players are marked with qualities such as emotionally unstable, easily upset, changeable
and emotionally reactive. The high achievement level Chess players are emotionally stable, mature and adaptive, and they face reality which contributes for their better performance. The moderate level achievers have the combination of both the sides and have the mixture of both the qualities of high and low level achievers of Chess.

The mean values of high, moderate, and low achievement level Chess players on the Personality Factor-C were graphically represented in the Figure-III.
FIGURE III: THE MEAN VALUES OF HIGH, MODERATE AND LOW ACHIEVEMENT LEVEL CHESS PLAYERS ON THE PERSONALITY FACTOR-C.
Factor-E (Dominance)

TABLE-VIII
ANALYSIS OF VARIANCE AMONG CHESS PLAYERS ON PERSONALITY FACTOR-E (DOMINANCE)

<table>
<thead>
<tr>
<th>Source of Variance</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Squares</th>
<th>F-Value</th>
<th>Result at 0.05 level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between</td>
<td>317.078</td>
<td>2</td>
<td>158.539</td>
<td>65.312</td>
<td>Significant</td>
</tr>
<tr>
<td>Within</td>
<td>429.650</td>
<td>177</td>
<td>2.427</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>746.728</td>
<td>179</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table value for df (2,177) is 3.05

The mean values of high, moderate and low achievement level Chess players on the Personality Factor-E (Dominance) were 7.283, 5.267 and 4.067 respectively. The above table shows that the obtained ‘F’ ratio value, 65.312 is greater than the table value 3.05 at 0.05 level of significance with df 2 and 177. Hence it is inferred that there existed significant difference among the Chess players of high, moderate and low achievement with reference to the Personality Factor-E (Dominance).

Since the obtained ‘F’ ratio value was significant further to find out the paired mean differences, the Scheffe’s test was employed and presented in table IX.
**TABLE-IX**

THE SCHEFFE’S TEST FOR THE DIFFERENCE BETWEEN PAIRED MEANS ON THE PERSONALITY FACTOR-E AMONG CHESS PLAYERS

<table>
<thead>
<tr>
<th></th>
<th>High Achievers</th>
<th>Moderate Achievers</th>
<th>Low Achievers</th>
<th>MD</th>
<th>CI</th>
<th>Result at 0.05 level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>7.283</td>
<td>5.267</td>
<td>-</td>
<td>2.017</td>
<td>0.703</td>
<td>Sig</td>
</tr>
<tr>
<td>7.283</td>
<td>-</td>
<td>4.067</td>
<td>3.217</td>
<td>0.703</td>
<td>Sig</td>
<td></td>
</tr>
<tr>
<td>-</td>
<td>5.267</td>
<td>4.067</td>
<td>1.200</td>
<td>0.703</td>
<td>Sig</td>
<td></td>
</tr>
</tbody>
</table>

From the above table it is observed that the mean difference values between high and moderate; high and low; and moderate and low achievement level Chess players were 2.017, 3.217 and 1.200 respectively. There existed significant difference between high and moderate; high and low; and moderate and low achievement level Chess players with reference to the Personality Factor-E (Dominance). Hence it is concluded that high achievement level Chess players were found to be dominant whereas the moderate and low achievement level Chess players were found to be submissive.

The high achievement level Chess players are assertive, aggressive, stubborn, competitive and forceful. In a game like Chess, psychological traits like aggression, stubborn and competitive spirit are essential to win over the stimulated war
situation. Hence these necessary traits may contribute for their present performance in Chess. The moderate and low level achievers in Chess in the present study are marked with submissiveness such as humble, obedient, decide and accommodating. These traits will not help in winning war like situations.

The mean values of high, moderate and low achievement level Chess players on the Personality Factor-E were graphically represented in the Figure IV.
FIGURE IV: THE MEAN VALUES OF HIGH, MODERATE AND LOW ACHIEVEMENT LEVEL CHESS PLAYERS ON THE PERSONALITY FACTOR-E.
Factor-F (Liveliness)

TABLE-X

ANALYSIS OF VARIANCE AMONG CHESS PLAYERS ON PERSONALITY FACTOR-F (LIVELINESS)

<table>
<thead>
<tr>
<th>Source of Variance</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Squares</th>
<th>F-Value</th>
<th>Result at 0.05 level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between</td>
<td>64.133</td>
<td>2</td>
<td>32.067</td>
<td>10.479</td>
<td>Not Significant</td>
</tr>
<tr>
<td>Within</td>
<td>541.617</td>
<td>177</td>
<td>3.060</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>605.750</td>
<td>179</td>
<td>-</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table value for df (2,177) is 3.05

The mean values of high, moderate and low achievement level Chess players on the Personality Factor-F (Liveliness) were 5.950, 5.717 and 4.583 respectively. The above table shows that the obtained ‘F’ ratio value, 10.479 is lesser than the table value 3.05 at 0.05 level of significance with df 2 and 177. Hence it is inferred that there existed significant difference among the Chess players of high, moderate and low achievement with reference to the Personality Factor-F (Liveliness).

Since the obtained ‘F’ ratio value was significant further to find out the paired mean differences, the Scheffe’s test was employed and presented in table XI.
TABLE XI
THE SCHEFFE’S TEST FOR THE DIFFERENCE BETWEEN PAIRED MEANS ON THE PERSONALITY FACTOR-F AMONG CHESS PLAYERS

<table>
<thead>
<tr>
<th></th>
<th>High Achievers</th>
<th>Moderate Achievers</th>
<th>Low Achievers</th>
<th>MD</th>
<th>CI</th>
<th>Result at 0.05 level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5.950</td>
<td>5.717</td>
<td>-</td>
<td>0.233</td>
<td>0.789</td>
<td>N.S</td>
</tr>
<tr>
<td>High Achievers</td>
<td>5.950</td>
<td>-</td>
<td>4.583</td>
<td>1.367</td>
<td>0.789</td>
<td>Sig</td>
</tr>
<tr>
<td>Moderate Achievers</td>
<td>-</td>
<td>5.717</td>
<td>4.583</td>
<td>1.133</td>
<td>0.789</td>
<td>Sig</td>
</tr>
</tbody>
</table>

From the above table it is observed that the mean difference values between high and moderate, high and low; and moderate and low achievement level Chess players were 0.233, 1.367 and 1.133 respectively. There existed significant difference between high and low; and moderate and low achievement level Chess players with reference to the Personality Factor-F (Liveliness). Hence it is concluded that high and moderate achievement level Chess players were found to be desurgent whereas the low achievement level Chess players were found to be surgent.

The high achievers possess the traits meant for desurgent such as serious, prudent, silent, taciturn and introspective. These qualities in favour of winning games like Chess where introspection significantly analyse the errors made and prudence
to think ahead of few steps either to besiege the king or to escape safely to win the game.

The low and moderate achievers too possess the qualities of high achievers. However these qualities are mixed and one cannot make a clear distinction between high and moderate. But the low achievers have the negative traits. Despite the fact that they are cheerful, spontaneous and enthusiastic, these qualities may help them be identified as social but not for winning a game like Chess.

The mean values of high, moderate and low achievement level Chess players on the Personality Factor-F were graphically represented in the Figure V.
FIGURE V: THE MEAN VALUES OF HIGH, MODERATE AND LOW ACHIEVEMENT LEVEL CHESS PLAYERS ON THE PERSONALITY FACTOR-F.
Factor-G (Rule-Consciousness)

TABLE XII
ANALYSIS OF VARIANCE AMONG CHESS PLAYERS ON PERSONALITY FACTOR-G (RULE-CONSCIOUSNESS)

<table>
<thead>
<tr>
<th>Source of Variance</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Squares</th>
<th>F-Value</th>
<th>Result at 0.05 level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between</td>
<td>256.311</td>
<td>2</td>
<td>128.156</td>
<td>46.648</td>
<td>Significant</td>
</tr>
<tr>
<td>Within</td>
<td>486.267</td>
<td>177</td>
<td>2.747</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>742.578</td>
<td>179</td>
<td></td>
<td>46.648</td>
<td>Significant</td>
</tr>
</tbody>
</table>

Table value for df (2,177) is 3.05

The mean values of high, moderate and low achievement level Chess players on the Personality Factor-G (Rule-Consciousness) were 7.467, 5.700 and 4.567 respectively. The above table shows that the obtained ‘F’ ratio value, 46.648 is greater than the table value 3.05 at 0.05 level of significance with df 2 and 177. Hence it is inferred that there existed significant difference among the Chess players of high, moderate and low achievement with reference to the Personality Factor-G (Rule-Consciousness).

Since the obtained ‘F’ ratio value was significant further to find out the paired mean differences, the Scheffe’s test was employed and presented in table XIII.
TABLE-XIII

THE SCHEFFE’S TEST FOR THE DIFFERENCE BETWEEN PAIRED MEANS ON THE PERSONALITY FACTOR-G AMONG CHESS PLAYERS

<table>
<thead>
<tr>
<th>High Achievers</th>
<th>Moderate Achievers</th>
<th>Low Achievers</th>
<th>MD</th>
<th>CI</th>
<th>Result at 0.05 level</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.467</td>
<td>5.700</td>
<td>-</td>
<td>1.767</td>
<td>0.747</td>
<td>Sig</td>
</tr>
<tr>
<td>7.467</td>
<td>-</td>
<td>4.567</td>
<td>2.900</td>
<td>0.747</td>
<td>Sig</td>
</tr>
<tr>
<td>-</td>
<td>5.700</td>
<td>4.567</td>
<td>1.133</td>
<td>0.747</td>
<td>Sig</td>
</tr>
</tbody>
</table>

From the above table it is observed that the mean difference values between high and moderate; high and low; and moderate and low achievement level Chess players were 1.767, 2.900 and 1.133 respectively. There existed significant difference between high and moderate; high and low; and moderate and low achievement level Chess players with reference to the Personality Factor-G (Rule-Consciousness). Hence it is concluded that high achievement level Chess players were found to have Stronger Superego Strength whereas the moderate and low achievement level Chess players were found to have Weaker Superego Strength.

The high achievers are rule conscious, dutiful, conscientious, staid and moralistic. These qualities in addition to conforming help them be a task master of finest blend. They do
not compromise on petty excuses and will certainly achieve whatever they aim at binding morally. The moderate and low achievers are self indulgent, expedient, non-conforming, and disregard rules. As a result they need to adjust other likely problems which may deviate them from fixing goals and achieving. Thus the weaker ego strength allows them accept and pull on the life among common. This may not help in game where the different attributes of power must be channellised and secured amidst dislocating the plan of the opponent.

The mean values of high, moderate and low achievement level Chess players on the Personality Factor-G were graphically represented in the Figure VI.
FIGURE VI: THE MEAN VALUES OF HIGH, MODERATE AND LOW ACHIEVEMENT LEVEL CHESS PLAYERS ON THE PERSONALITY FACTOR-G.
Factor-H (Social Boldness)

**TABLE-XIV**

**ANALYSIS OF VARIANCE AMONG CHESS PLAYERS ON PERSONALITY FACTOR-H (SOCIAL BOLDNESS)**

<table>
<thead>
<tr>
<th>Source of Variance</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Squares</th>
<th>F-Value</th>
<th>Result at 0.05 level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between</td>
<td>211.011</td>
<td>2</td>
<td>105.506</td>
<td>50.202</td>
<td>Significant</td>
</tr>
<tr>
<td>Within</td>
<td>371.983</td>
<td>177</td>
<td>2.102</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>582.994</td>
<td>179</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table value for df (2,177) is 3.05

The mean values of high, moderate and low achievement level Chess players on the Personality Factor-H (Social Boldness) were 7.400, 5.383 and 4.900 respectively. The above table shows that the obtained ‘F’ ratio value, 50.202 is greater than the table value 3.05 at 0.05 level of significance with df 2 and 177. Hence it is inferred that there existed significant difference among the Chess players of high, moderate and low achievement with reference to the Personality Factor-H (Social Boldness).

Since the obtained ‘F’ ratio value was significant further to find out the paired mean differences, the Scheffe’s test was employed and presented in table XV.
From the above table it is observed that the mean difference values between high and moderate; high and low; and moderate and low achievement level Chess players were 2.017, 2.500 and 0.483 respectively. There existed significant difference between high and moderate; and high and low achievement level Chess players with reference to the Personality Factor-H (Social Boldness). Hence it is concluded that high achievement level Chess players were found to be Parmia whereas the moderate and low achievement level Chess players were found to be Threctia.

The high achievers are identified with the available data as socially bold, adventurous, uninhibited and thick skinned. This social boldness is highly appreciable quality when one is in a state of confusion and chance of losing. This may help them regain a position rather than getting collapsed. Similarly this will
lead to develop aggression and to have control over other beings. This is a necessary trait for Chess player to oppress the opponent either to surrender or give up his psychological move to win the setting.

This social boldness is remarkably better in high achievers than moderate and low achievers of Chess game. However there is no difference between moderate and low achievers. These members are identified to be timid, hesitant, and threat sensitive. These traits may not be desirable in a decision making setting especially when it is threat sensitive. There hesitation and timidity will also additional barriers to fair better in Chess.

The mean values of high, moderate and low achievement level Chess players on the Personality Factor-H were graphically represented in the Figure VII.
FIGURE VII: THE MEAN VALUES OF HIGH, MODERATE AND LOW ACHIEVEMENT LEVEL CHESS PLAYERS ON THE PERSONALITY FACTOR-H.
Factor-I (Sensitivity)

**TABLE-XVI**

**ANALYSIS OF VARIANCE AMONG CHESS PLAYERS ON PERSONALITY FACTOR-I (SENSITIVITY)**

<table>
<thead>
<tr>
<th>Source of Variance</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Squares</th>
<th>F-Value</th>
<th>Result at 0.05 level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between</td>
<td>223.811</td>
<td>2</td>
<td>111.906</td>
<td>40.959</td>
<td>Significant</td>
</tr>
<tr>
<td>Within</td>
<td>483.583</td>
<td>177</td>
<td>2.732</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>707.394</td>
<td>179</td>
<td>-</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table value for df (2,177) is 3.05

The mean values of high, moderate and low achievement level Chess players on the Personality Factor-I (Sensitivity) were 3.917, 5.700 and 6.600 respectively. The above table shows that the obtained ‘F’ ratio value, 40.959 is greater than the table value 3.05 at 0.05 level of significance with df 2 and 177. Hence it is inferred that there existed significant difference among the Chess players of high, moderate and low achievement with reference to the Personality Factor-I (Sensitivity).

Since the obtained ‘F’ ratio value was significant further to find out the paired mean differences, the Scheffe’s test was employed and presented in table XVII.
TABLE-XVII
THE SCHEFFE’S TEST FOR THE DIFFERENCE BETWEEN PAIRED MEANS ON THE PERSONALITY FACTOR-I AMONG CHESS PLAYERS

<table>
<thead>
<tr>
<th>High Achievers</th>
<th>Moderate Achievers</th>
<th>Low Achievers</th>
<th>MD</th>
<th>CI</th>
<th>Result at 0.05 level</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.917</td>
<td>5.700</td>
<td>-</td>
<td>1.783</td>
<td>0.745</td>
<td>Sig</td>
</tr>
<tr>
<td>3.917</td>
<td>-</td>
<td>6.600</td>
<td>2.683</td>
<td>0.745</td>
<td>Sig</td>
</tr>
<tr>
<td>-</td>
<td>5.700</td>
<td>6.600</td>
<td>0.900</td>
<td>0.745</td>
<td>Sig</td>
</tr>
</tbody>
</table>

From the above table it is observed that the mean difference values between high and moderate; high and low; and moderate and low achievement level Chess players were 1.783, 2.683 and 0.900 respectively. There existed significant difference between high and moderate; high and low; and moderate and low achievement level Chess players with reference to the Personality Factor-I (Sensitivity). Hence it is concluded that high achievement level Chess players were found to be Harria whereas the moderate and low achievement level Chess players were found to be Premsia.

The high achievers are said to be objective, tough minded, self-reliant, unsentimental and rough. These qualities are essentially focused in today’s military training. These utilitarian
qualities in combination with other qualities of confidence will assure the victory in Chess competitions.

Although the moderate achievers possess greater traits of Harrria than the low achievers, there is a significant difference between high achievers and moderate in the factor-I Sensitivity. The low achievers are believed to possess sentimental, sensitive, intuitive and tender minded. These refined traits of Psychology, although essential in one’s life do not contribute effectively in a serious game like Chess. These traits may result in losing certain moves as the demands more aggressive, unsentimental and objective decisions in fixing up certain moves in the game.

The mean values of high, moderate and low achievement level Chess players on the Personality Factor-I were graphically represented in the Figure VIII.
FIGURE VIII: THE MEAN VALUES OF HIGH, MODOERATE AND LOW ACHIEVEMENT LEVEL CHESS PLAYERS ON THE PERSONALITY FACTOR-I.
Factor-L (Vigilance)

**TABLE-XVIII**

ANALYSIS OF VARIANCE AMONG CHESS PLAYERS ON PERSONALITY FACTOR-L (VIGILANCE)

<table>
<thead>
<tr>
<th>Source of Variance</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Squares</th>
<th>F-Value</th>
<th>Result at 0.05 level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between</td>
<td>86.544</td>
<td>2</td>
<td>43.272</td>
<td>9.120</td>
<td>Significant</td>
</tr>
<tr>
<td>Within</td>
<td>839.783</td>
<td>177</td>
<td>4.745</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>926.328</td>
<td>179</td>
<td>-</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table value for df (2,177) is 3.05

The mean values of high, moderate and low achievement level Chess players on the Personality Factor-L (Vigilance) were, 5.900, 5.350 and 4.233 respectively. The above table shows that the obtained ‘F’ ratio value, 9.120 is greater than the table value 3.05 at 0.05 level of significance with df 2 and 177. Hence it is inferred that there existed significant difference among the Chess players of high, moderate and low achievement with reference to the Personality Factor-L (Vigilance).

Since the obtained ‘F’ ratio value was significant further to find out the paired mean differences, the Scheffe’s test was employed and presented in table XIX.
TABLE-XIX

THE SCHEFFE’S TEST FOR THE DIFFERENCE BETWEEN PAIRED MEANS ON THE PERSONALITY FACTOR-L AMONG CHESS PLAYERS

<table>
<thead>
<tr>
<th></th>
<th>High Achievers</th>
<th>Moderate Achievers</th>
<th>Low Achievers</th>
<th>MD</th>
<th>CI</th>
<th>Result at 0.05 level</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.900</td>
<td>5.350</td>
<td>-</td>
<td>0.550</td>
<td>0.982</td>
<td>N.S</td>
<td></td>
</tr>
<tr>
<td>5.900</td>
<td>-</td>
<td>4.233</td>
<td>1.667</td>
<td>0.982</td>
<td>Sig</td>
<td></td>
</tr>
<tr>
<td>-</td>
<td>5.350</td>
<td>4.233</td>
<td>1.117</td>
<td>0.982</td>
<td>Sig</td>
<td></td>
</tr>
</tbody>
</table>

From the above table it is observed that the mean difference values between high and moderate; high and low; and moderate and low achievement level Chess players were 0.550, 1.667 and 1.117 respectively. There existed significant difference between high and low; and moderate and low achievement level Chess players with reference to the Personality Factor-L (Vigilance). Hence it is concluded that high and high achievement level Chess players were found to be protensive whereas the moderate and low achievement level Chess players were found alaxia.

The high and moderate achievers jointly identified to be vigilant, skeptical, suspicious and distrustful. These necessary traits of war-like setting help them perform better in Chess by keeping vigil over one’s power and dislocating the opponent’s
powers. The easy and unconditional low achievers are said to have a sort of acceptance and unconditional traits which may not influence the possible offence and defence of their menial grade attributes – pawns. These qualities, though common at times, even among the moderate achievers considerably influence in moves or the loss of certain powers during the game. However the low achievers significantly differ from both the groups in the factor L- vigilance.

The mean values of high, moderate and low achievement level Chess players on the Personality Factor-L were graphically represented in the Figure IX.
FIGURE IX: THE MEAN VALUES OF HIGH, MODERATE AND LOW ACHIEVEMENT LEVEL CHESS PLAYERS ON THE PERSONALITY FACTOR-L.
Factor-M (Abstractedness)

TABLE-XX

ANALYSIS OF VARIANCE AMONG CHESS PLAYERS ON PERSONALITY FACTOR-M (ABSTRACTEDNESS)

<table>
<thead>
<tr>
<th>Source of Variance</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Squares</th>
<th>F-Value</th>
<th>Result at 0.05 level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between</td>
<td>267.633</td>
<td>2</td>
<td>133.817</td>
<td>32.388</td>
<td>Significant</td>
</tr>
<tr>
<td>Within</td>
<td>731.317</td>
<td>177</td>
<td>4.132</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>998.950</td>
<td>179</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table value for df (2,177) is 3.05

The mean values of high, moderate and low achievement level Chess players on the Personality Factor-M (Abstractedness) were 3.350, 5.467 and 6.233 respectively. The above table shows that the obtained ‘F’ ratio value, 32.388 is greater than the table value 3.05 at 0.05 level of significance with df 2 and 177. Hence it is inferred that there existed significant difference among the Chess players of high, moderate and low achievement with reference to the Personality Factor-M (Abstractedness).

Since the obtained ‘F’ ratio value was significant further to find out the paired mean differences, the Scheffe’s test was employed and presented in table XXI.
TABLE-XXI
THE SCHEFFE’S TEST FOR THE DIFFERENCE BETWEEN PAIRED MEANS ON THE PERSONALITY FACTOR-M AMONG CHESS PLAYERS

<table>
<thead>
<tr>
<th>High Achievers</th>
<th>Moderate Achievers</th>
<th>Low Achievers</th>
<th>MD</th>
<th>CI</th>
<th>Result at 0.05 level</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.350</td>
<td>5.467</td>
<td>-</td>
<td>2.117</td>
<td>0.917</td>
<td>Sig</td>
</tr>
<tr>
<td>3.350</td>
<td>-</td>
<td>6.233</td>
<td>2.883</td>
<td>0.917</td>
<td>Sig</td>
</tr>
<tr>
<td>-</td>
<td>5.467</td>
<td>6.233</td>
<td>0.767</td>
<td>0.917</td>
<td>N.S</td>
</tr>
</tbody>
</table>

From the above table it is observed that the mean difference values between high and moderate; high and low; and moderate and low achievement level Chess players were 2.117, 2.883 and 0.767 respectively. There existed significant difference between high and moderate; and high and low achievement level Chess players with reference to the Personality Factor-M (Abstractedness). Hence it is concluded that high achievement level Chess players were found to possess traits of Praxernia whereas the moderate and low achievement level Chess players were found to possess traits of Autia.

The high achievers are marked with traits such as steady, practical, grounded, prosaic and solution oriented. These conventional people with these firm and assured traits meant for battle setting may make the best out of available resources in the
battle game Chess. The moderate and low achievers may have impractical traits, abstract, imaginative, absent-minded and absorbed in ideas. These traits of Autia may help one be artistic and creative but may not help in solving a problem where the powers of different attributes differently used both for attack and securing one’s own king.

The mean values of high, moderate and low achievement level Chess players on the Personality Factor-M were graphically represented in the Figure X.
FIGURE X: THE MEAN VALUES OF HIGH, MODERATE AND LOW ACHIEVEMENT LEVEL CHESS PLAYERS ON THE PERSONALITY FACTOR-M.
Factor-N (Privateness)

**TABLE-XXII**

ANALYSIS OF VARIANCE AMONG CHESS PLAYERS ON PERSONALITY FACTOR-N (PRIVATENESS)

<table>
<thead>
<tr>
<th>Source of Variance</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Squares</th>
<th>F-Value</th>
<th>Result at 0.05 level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between</td>
<td>269.633</td>
<td>2</td>
<td>134.817</td>
<td>24.925</td>
<td>Significant</td>
</tr>
<tr>
<td>Within</td>
<td>957.367</td>
<td>177</td>
<td>5.409</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1227.000</td>
<td>179</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table value for df (2,177) is 3.05

The mean values of high, moderate and low achievement level Chess players on the Personality Factor-N (Privateness) were 7.550, 5.167 and 4.783 respectively. The above table shows that the obtained ‘F’ ratio value, 24.925 is greater than the table value 3.05 at 0.05 level of significance with df 2 and 177. Hence it is inferred that there existed significant difference among the Chess players of high, moderate and low achievement with reference to the Personality Factor-N (Privateness).

Since the obtained ‘F’ ratio value was significant further to find out the paired mean differences, the Scheffe’s test was employed and presented in table XXIII.
TABLE-XXIII
THE SCHEFFE’S TEST FOR THE DIFFERENCE BETWEEN PAIRED MEANS ON THE PERSONALITY FACTOR-N AMONG CHESS PLAYERS

<table>
<thead>
<tr>
<th>High Achievers</th>
<th>Moderate Achievers</th>
<th>Low Achievers</th>
<th>MD</th>
<th>CI</th>
<th>Result at 0.05 level</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.550</td>
<td>5.167</td>
<td>-</td>
<td>2.383</td>
<td>1.049</td>
<td>Sig</td>
</tr>
<tr>
<td>7.550</td>
<td>-</td>
<td>4.783</td>
<td>2.767</td>
<td>1.049</td>
<td>Sig</td>
</tr>
<tr>
<td>-</td>
<td>5.167</td>
<td>4.783</td>
<td>0.383</td>
<td>1.049</td>
<td>N.S</td>
</tr>
</tbody>
</table>

From the above table it is observed that the mean difference values between high and moderate; high and low; and moderate and low achievement level Chess players were 2.383, 2.767 and 0.383 respectively. There existed significant difference between high and moderate; and high and low achievement level Chess players with reference to the Personality Factor-N (Privateness). Hence it is concluded that high achievement level Chess players were found to be shrewd and diplomatic whereas the moderate and low achievement level Chess players were found to be artless and sentimental.

The high achievers scores may have been endowed with shrewd, polished, diplomatic and non-disclosing. The additional traits such as worldly, astute and discreet are in favour of performing well in powers of different attributes and managing
their potential to secure various powers of opponents. The moderate and low achievers are identified with traits such as open, artless, genuine and for the right. These guiltless and unpretentious, involved nature may sometimes mislead them to be fixed on one particular power. The guileless nature of them to be open enough to learn the prospective moves and hence these traits may curtail to be well ahead and their opponents gain a better hand by predicting whatever they have in their mind. The game of Chess needs diplomacy, discreet patterns of movement of different powers.

The mean values of high, moderate and low achievement level Chess players on the Personality Factor-N were graphically represented in the Figure XI.
FIGURE XI: THE MEAN VALUES OF HIGH, MODERATE AND LOW ACHIEVEMENT LEVEL CHESS PLAYERS ON THE PERSONALITY FACTOR-N.
Factor-O (Apprehension)

**TABLE-XXIV**

**ANALYSIS OF VARIANCE AMONG CHESS PLAYERS ON PERSONALITY FACTOR-O (APPREHENSION)**

<table>
<thead>
<tr>
<th>Source of Variance</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Squares</th>
<th>F-Value</th>
<th>Result at 0.05 level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between</td>
<td>331.811</td>
<td>2</td>
<td>165.906</td>
<td>57.231</td>
<td>Significant</td>
</tr>
<tr>
<td>Within</td>
<td>513.100</td>
<td>177</td>
<td>2.899</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>844.911</td>
<td>179</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table value for df (2,177) is 3.05

The mean values of high, moderate and low achievement level Chess players on the Personality Factor-O (Apprehension) were 3.683, 5.783 and 6.967 respectively. The above table shows that the obtained ‘F’ ratio value, 57.231 is greater than the table value 3.05 at 0.05 level of significance with df 2 and 177. Hence it is inferred that there existed significant difference among the Chess players of high, moderate and low achievement with reference to the Personality Factor-O (Apprehension).

Since the obtained ‘F’ ratio value was significant further to find out the paired mean differences, the Scheffe’s test was employed and presented in table XXV.
**TABLE-XXV**

THE SCHEFFE’S TEST FOR THE DIFFERENCE BETWEEN PAIRED MEANS ON THE PERSONALITY FACTOR-O AMONG CHESS PLAYERS

<table>
<thead>
<tr>
<th>High Achievers</th>
<th>Moderate Achievers</th>
<th>Low Achievers</th>
<th>MD</th>
<th>CI</th>
<th>Result at 0.05 level</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.683</td>
<td>5.783</td>
<td></td>
<td>2.100</td>
<td>0.768</td>
<td>Sig</td>
</tr>
<tr>
<td>3.683</td>
<td></td>
<td>6.967</td>
<td>3.283</td>
<td>0.768</td>
<td>Sig</td>
</tr>
<tr>
<td>5.783</td>
<td>6.967</td>
<td></td>
<td>1.183</td>
<td>0.768</td>
<td>Sig</td>
</tr>
</tbody>
</table>

From the above table it is observed that the mean difference values between high and moderate; high and low; and moderate and low achievement level Chess players were 2.100, 3.283 and 1.183 respectively. There existed significant difference between high and moderate; high and low; and moderate and low achievement level Chess players with reference to the Personality Factor-O (Apprehension). Hence it is concluded that high achievement level Chess players were found to be untroubled whereas the moderate and low achievement level Chess players were found to be guilt prone.

The high achievers are self-satisfied, self-assured, complacent, secure, confident, unworried and free of guilt. The low achievers are self-doubting, self-blaming, insecure, apprehensive, worried and guilt prone. The moderate achievers
significantly differ from both high and low achievers, because of the blend of both the traits (high and low achievers of Chess). Self-assured, secure and complacent players can comfortably establish their mental patterns while they execute various moves of different attributes and can secure the opponent’s power besides protecting his own powers from the opponent. People with self-doubting, insecure and worried mindset lose every potential opportunity thrown to them besides losing their powers due to worry and hurry.

The mean values of high, moderate and low achievement level Chess players on the Personality Factor-O were graphically represented in the Figure XII.
FIGURE XII: THE MEAN VALUES OF HIGH, MODERATE AND LOW ACHIEVEMENT LEVEL CHESS PLAYERS ON THE PERSONALITY FACTOR-O.
Factor-Q1 (Openness to Change)

TABLE-XXVI
ANALYSIS OF VARIANCE AMONG CHESS PLAYERS ON PERSONALITY FACTOR-Q1 (OPENNESS TO CHANGE)

<table>
<thead>
<tr>
<th>Source of Variance</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Squares</th>
<th>F-Value</th>
<th>Result at 0.05 level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between</td>
<td>590.033</td>
<td>2</td>
<td>295.017</td>
<td>121.673</td>
<td>Significant</td>
</tr>
<tr>
<td>Within</td>
<td>429.167</td>
<td>177</td>
<td>2.425</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1019.200</td>
<td>179</td>
<td>-</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table value for df (2,177) is 3.05

The mean values of high, moderate and low achievement level Chess players on the Personality Factor-Q1 (Openness to Change) were 7.650, 5.333 and 3.217 respectively. The above table shows that the obtained ‘F’ ratio value, 121.673 is greater than the table value 3.05 at 0.05 level of significance with df 2 and 177. Hence it is inferred that there existed significant difference among the Chess players of high, moderate and low achievement with reference to the personality Factor-Q1 (Openness to Change).

Since the obtained ‘F’ ratio value was significant further to find out the paired mean differences, the Scheffe’s test was employed and presented in table XXVII.
TABLE-XXVII
THE SCHEFFE’S TEST FOR THE DIFFERENCE BETWEEN
PAIRED MEANS ON THE PERSONALITY FACTOR-Q1
AMONG CHESS PLAYERS

<table>
<thead>
<tr>
<th></th>
<th>High Achievers</th>
<th>Moderate Achievers</th>
<th>Low Achievers</th>
<th>MD</th>
<th>CI</th>
<th>Result at 0.05 level</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.650</td>
<td>5.333</td>
<td>-</td>
<td>2.317</td>
<td>0.702</td>
<td>Sig</td>
<td></td>
</tr>
<tr>
<td>7.650</td>
<td>-</td>
<td>3.217</td>
<td>4.433</td>
<td>0.702</td>
<td>Sig</td>
<td></td>
</tr>
<tr>
<td>-</td>
<td>5.333</td>
<td>3.217</td>
<td>2.117</td>
<td>0.702</td>
<td>Sig</td>
<td></td>
</tr>
</tbody>
</table>

From the above table it is observed that the mean difference values between high and moderate; high and low; and moderate and low achievement level Chess players were 2.317, 4.433 and 2.117 respectively. There existed significant difference between high and moderate; high and low; and moderate and low achievement level Chess players with reference to the Personality Factor-Q1 (Openness to Change). Hence it is concluded that high achievement level Chess players were found to be radical whereas the moderate and low achievement level Chess players were found to be conservative. The moderate achievers are significantly different from both high and low achievers and form a different category of the combination of both traits.

The high achievers are liberal, experimental, analytical, critical and free thinking. They are flexible and open to change by
which they change their course of move and ascertain their positions in both in offence and defence. The low achievers are conservative, traditional and attached to familiar elements. These traits of conservatism, although facilitates in adopting firm ideas, may not help in problem setting as it is with the case of analytical and open mind. The moderate achievers, however, be termed with traits of either side of the bi-polar traits of Cattel’s 16 Personality Factor as far the Q1 (Openness to Change) are concerned.

The mean values of high, moderate and low achievement level Chess players on the Personality Factor-Q1 were graphically represented in the Figure XIII.
Factor-Q2 (Self-Reliance)

TABLE-XXVII
ANALYSIS OF VARIANCE AMONG CHESS PLAYERS ON PERSONALITY FACTOR-Q2 (SELF-RELIANCE)

<table>
<thead>
<tr>
<th>Source of Variance</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Squares</th>
<th>F-Value</th>
<th>Result at 0.05 level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between</td>
<td>305.644</td>
<td>2</td>
<td>152.822</td>
<td>60.343</td>
<td>Significant</td>
</tr>
<tr>
<td>Within</td>
<td>448.267</td>
<td>177</td>
<td>2.533</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>753.911</td>
<td>179</td>
<td>-</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table value for df (2,177) is 3.05

The mean values of high, moderate and low achievement level Chess players on the Personality Factor-Q2 (Self-Reliance) were 7.367, 5.067 and 4.300 respectively. The above table shows that the obtained ‘F’ ratio value, 60.343 is greater than the table value 3.05 at 0.05 level of significance with df 2 and 177. Hence it is inferred that there existed significant difference among the Chess players of high, moderate and low achievement with reference to the Personality Factor-Q2 (Self-Reliance).

Since the obtained ‘F’ ratio value was significant further to find out the paired mean differences, the Scheffe’s test was employed and presented in table XXIX.
From the above table it is observed that the mean difference values between high and moderate; high and low; and moderate and low achievement level Chess players were 2.300, 3.067 and 0.767 respectively. There existed significant difference between high and moderate; high and low; and moderate and low achievement level Chess players with reference to the Personality Factor-Q2 (Self-Reliance). Hence it is concluded that high achievement level Chess players were found to be self sufficient whereas low achievement level Chess players were found to be group adherent. The moderate achievers are significantly different from both high and low achievers and form a different category of the combination of both traits.

The high achievers are said to be self reliant, self-sufficient individualistic, solitary and resourceful. These are the
necessary traits in a game like Chess where the decision making must be spontaneous and individualistic at the time of distress and set back. Being resourceful, they are able to upset opponents forecast when they gain upper hand in the game. The low achievers are affiliative, followers or dependents and group oriented. These traits may help in team events whereas in a game like Chess, these traits are comparatively not helpful as that of self-sufficient traits of high achievers. The moderate achievers, as discussed earlier for Q1, possess the blend of both ends. The positive traits contribute for better performance while the negative traits influence the set back in their game.

The mean values of high, moderate and low achievement level Chess players on the Personality Factor-Q2 were graphically represented in the Figure XIV.
FIGURE XIV: THE MEAN VALUES OF HIGH, MODERATE AND LOW ACHIEVEMENT LEVEL CHESS PLAYERS ON THE PERSONALITY FACTOR-Q2.
Factor-Q3 (Perfectionism)

TABLE-XXX

ANALYSIS OF VARIANCE AMONG CHESS PLAYERS ON PERSONALITY FACTOR-Q3 (PERFECTIONISM)

<table>
<thead>
<tr>
<th>Source of Variance</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Squares</th>
<th>F-Value</th>
<th>Result at 0.05 level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between</td>
<td>335.144</td>
<td>2</td>
<td>167.572</td>
<td>67.535</td>
<td>Significant</td>
</tr>
<tr>
<td>Within</td>
<td>439.183</td>
<td>177</td>
<td>2.481</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>774.328</td>
<td>179</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table value for df (2,177) is 3.05

The mean values of high, moderate and low achievement level Chess players on the Personality Factor-Q3 (Perfectionism) were 7.483, 5.300 and 4.200 respectively. The above table shows that the obtained ‘F’ ratio value, 67.535 is greater than the table value 3.05 at 0.05 level of significance with df 2 and 177. Hence it is inferred that there existed significant difference among the Chess players of high, moderate and low achievement with reference to the Personality Factor-Q3 (Perfectionism).

Since the obtained ‘F’ ratio value was significant further to find out the paired mean differences, the Scheffe’s test was employed and presented in table XXXI.
### TABLE-XXXI

**THE SCHEFFE’S TEST FOR THE DIFFERENCE BETWEEN PAIRED MEANS ON THE PERSONALITY FACTOR-Q3 AMONG CHESS PLAYERS**

<table>
<thead>
<tr>
<th>High Achievers</th>
<th>Moderate Achievers</th>
<th>Low Achievers</th>
<th>MD</th>
<th>CI</th>
<th>Result at 0.05 level</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.483</td>
<td>5.300</td>
<td>-</td>
<td>2.183</td>
<td>0.710</td>
<td>Sig</td>
</tr>
<tr>
<td>7.483</td>
<td>-</td>
<td>4.200</td>
<td>3.283</td>
<td>0.710</td>
<td>Sig</td>
</tr>
<tr>
<td>-</td>
<td>5.300</td>
<td>4.200</td>
<td>1.100</td>
<td>0.710</td>
<td>Sig</td>
</tr>
</tbody>
</table>

From the above table it is observed that the mean difference values between high and moderate; high and low; and moderate and low achievement level Chess players were 2.183, 3.283 and 1.100 respectively. There existed significant difference between high and moderate; high and low; and moderate and low achievement level Chess players with reference to the Personality Factor-Q3 (Perfectionism). Hence it is concluded that high achievement level Chess players were found to have high self concept control whereas the low achievement level Chess players were found to have low integration. The moderate achievers are significantly different from both high and low achievers and form a different category of the combination of both traits.

The high achievers are considered organised, compulsive, precise, controlled and perfectionistic. They are also self-
disciplined, self-sentimental and exacting will power to execute all their moves and choices in Chess. These traits assure them to win any setting in addition to psychologically distract the opponents. The low achievers are said to be undisciplined, flexible, lax, impulsive and uncontrolled. They tolerate disorder and careless of social rule. These traits of low integration influence chaotic stage in moving or defending the power attribute of different elements of Chess. The moderate achievers significantly differ from both high and low achievers, although there is no fixed pattern of psychological profile for moderate achievers. The combination of both the traits forms the average category under the factor Perfectionism.

The mean values of high, moderate and low achievement level Chess players on the Personality Factor-Q3 were graphically represented in the Figure XV.
FIGURE XV: THE MEAN VALUES OF HIGH, MODERATE AND LOW ACHIEVEMENT LEVEL CHESS PLAYERS ON THE PERSONALITY FACTOR-Q3.
Factor-Q4 (Tension)

**TABLE-XXXII**

**ANALYSIS OF VARIANCE AMONG CHESS PLAYERS ON PERSONALITY FACTOR-Q4 (TENSION)**

<table>
<thead>
<tr>
<th>Source of Variance</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Squares</th>
<th>F-Value</th>
<th>Result at 0.05 level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between</td>
<td>259.411</td>
<td>2</td>
<td>129.706</td>
<td>44.841</td>
<td>Significant</td>
</tr>
<tr>
<td>Within</td>
<td>511.983</td>
<td>177</td>
<td>2.893</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>771.394</td>
<td>179</td>
<td>-</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table value for df (2,177) is 3.05

The mean values of high, moderate and low achievement level Chess players on the Personality Factor-Q4 (Tension) were 3.217, 5.600 and 5.900 respectively. The above table shows that the obtained ‘F’ ratio value, 44.841 is greater than the table value 3.05 at 0.05 level of significance with df 2 and 177. Hence it is inferred that there existed significant difference among the Chess players of high, moderate and low achievement with reference to the Personality Factor-Q4 (Tension).

Since the obtained ‘F’ ratio value was significant further to find out the paired mean differences, the Scheffe’s test was employed and presented in table XXXIII.
TABLE-XXXIII
THE SCHEFFE’S TEST FOR THE DIFFERENCE BETWEEN PAIRED MEANS ON THE PERSONALITY FACTOR-Q4 AMONG CHESS PLAYERS

<table>
<thead>
<tr>
<th>High Achievers</th>
<th>Moderate Achievers</th>
<th>Low Achievers</th>
<th>MD</th>
<th>CI</th>
<th>Result at 0.05 level</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.217</td>
<td>5.600</td>
<td>-</td>
<td>2.383</td>
<td>0.767</td>
<td>Sig</td>
</tr>
<tr>
<td>3.217</td>
<td>-</td>
<td>5.900</td>
<td>2.683</td>
<td>0.767</td>
<td>Sig</td>
</tr>
<tr>
<td>-</td>
<td>5.600</td>
<td>5.900</td>
<td>0.300</td>
<td>0.767</td>
<td>N.S</td>
</tr>
</tbody>
</table>

From the above table it is observed that the mean difference values between high and moderate; high and low; and moderate and low achievement level Chess players were 2.383, 2.683 and 0.300 respectively. There existed significant difference between high and moderate; and high and low achievement level Chess players with reference to the Personality Factor- Q4 (Tension). Hence it is concluded that the high achievement level Chess players were found to have Low Ergic Tension whereas and low and moderate achievement level Chess players were found to High Ergic Tension.

The high achievers are classified to be patient, relaxed, torpid, placid and tranquil. The moderate and low achievers are said to possess the traits such as tense, driven, over wrought, impatient and frustrated. These traits of high ergic tension
influence them to make errors in judgements and execution. There may not take wise decisions when the mind is excited with problem and tensed with moments of expansion and embarrassment. Such situations of tight corner may not be won by people with high ergic tension. This is an indication for why people lose the game or even professional setting.

The mean values of high, moderate and low achievement level Chess players on the Personality Factor-Q4 were graphically represented in the Figure XVI.
DISCUSSION ON FINDINGS

Generally it is a tough task to discriminate the Chess players on the basis of personality traits and analysing their achievement. There are significantly minute differences in terms of their playing ability of any players by the right utilization of psychological traits. However the psychological combination directs them to react and respond to various situations. Playing is also a kind of problem solving where the psychological traits of players are exercised maximum in order that the playing ability will be outshined and adequately exploited.

The Chess players based on their ranking of Inter-university level tournaments were analysed for identifying the psychological profiles in the present study. They are classified into three major categories namely high achievers, moderate achievers and low achievers of Chess. The high achievers were identified to possess certain psychological traits that contribute for the better performance than others in the Inter-university level Chess tournament.

The high achievers are Schiothymia and have higher scholastic mental capacity. They are Dominant, Desurgent and
possess Higher and Super Ego Strength. They are identified to be Parmia, Harria, Autia and have Protention and Shrewdness. They also have high Self Concept Control, Self-Sufficient, Radical and have Low Ergic Tension. The findings of the present study of high achievers corroborate with findings of the studies conducted by Waters and Gobet (2008), Bilalic et al. (2006), Hernandez (2006), Campitelli et al. (2005), Eisele (2004), Atherton et al., (2003), Ericsson and Charness (1994), Cooke et al. (1993), Horgan (1992) and Freyhof et al. (1992).

The low achievers of Chess are Affectothymia and have Lower Scholastic Mental Capacity. They are Submissive, Surgent and possess Lower Ego Strength, Low Super Ego Strength. They are identified to be Thretia, Premsia, Praxernia, Alexia and Artlessness. They have Low integration, Conservative with High Ergic Tension. The findings of the present study of low achievers corroborate with Gobet and Campitelli (2007) that practice is necessary but not sufficient condition for the acquisition of expertise due to some additional factors.

The moderate achievers are identified to be the combination of both high and low achievers. The traits from both high and low achievers are identified to be the traits of moderate
achievers. The traits are not separately identified for moderate achievers. However the Sten scores of these players form the average category in Cattell’s 16 Personality Factors with their responses to individual traits of each category under 16 Personality Factors.

According to Harreveld et al., (2007) skill differences among players of different nature become less predictive of the game outcome as the time controls, other technical and general conditions which may not be controlled. This is in confirmation with the findings of the performance of the moderate achievers of Chess.

**DISCUSSION ON HYPOTHESIS**

In the present study, it was hypothesized that there might be significant difference among the high, moderate and low achievers of Chess in their psychological profiles. The psychological profiles of high, moderate and low achievers of Chess in Inter-university level tournament significantly different from one another with respect to the Cattell’s 16 Personality Factors. The moderate achievers do not form a separate category significantly in all 16 factors of Cattell’s 16 PF. However they were
identified to be a different category since they possess the combination of the both the traits meant for High and Low achievers of Chess players.