The hypothesis $H_{35.6}$ was tested analysing the profiles. The value of Hottelling's $T^2$ is not statistically significant even at the 0.05 level ($T^2 = 0.76, p > 0.05$). Since the $T^2$ is not statistically significant, it is concluded that all line segment slopes of profiles are truly zero.

The hypothesis $H_{35.6}$ is, thus, sustained.

To summarize, the findings reveal that a significant and positive relationship exists between performance in 200 M running event and level of aspiration in athletics. Besides, the individuals with higher level of aspiration significantly differ from the individuals with lower level of aspiration in performing 200 M running event. The group having higher level of aspiration shows better physical performance in 200 M running event than the lower aspiration group. However, the converse is also true i.e., the individuals showing higher performance in 200 M running event have higher level of aspiration than the individuals showing lower performance in 200 M running event.

Comparison of individuals having higher and lower level of aspiration on their profiles of physical performance shows by the two groups are to of different values and of the different levels, and follows a non-parallel pattern.

5.2.2.4. RESULTS OF GENERAL INTELLIGENCE IN RELATION TO PHYSICAL PERFORMANCE IN ATHLETIC EVENTS FOR WOMEN SUBJECTS

The results of general intelligence in relation to physical performance in 100 M run, running long jump, shot put, running high jump and 200 M run for 'women' Ss are presented as follows:

5.2.2.4.1. Results of General Intelligence in Relation to Physical Performance in 100 M Running Event for Women Ss

It was hypothesized that a significant correlation will
exist between the scores of the women Ss on the general intelligence and the scores on the 100 M running event ($H_{36.1}$).

To test the hypothesis-$H_{36.1}$, product moment correlation was used. The coefficient of correlation obtained is 0.38 which is statistically significant at the 0.01 level ($r = 0.38, p < 0.01$).

The hypothesis-$H_{36.1}$ is, thus, sustained.

The high- and the low- groups on 100 M running event were identified computing cumulative percentages. The Ss' scores falling on the top 10 percentile and on the bottom 10 percentile constitute the high- and the low- groups on the performance in 100 M running event. The high group on 100 M running event comprises 21 individuals and the low group on 100 M running event comprises 25 individuals.

It was hypothesized that there will be significant difference between the scores of high- and low- groups on 100 M running event on general intelligence among women Ss ($H_{36.2}$).

To test the hypothesis-$H_{36.2}$, Sign Test was used. Since the value of Chi-Square with Yates' Correction ($\chi^2 = 10.27, p<0.01$) is statistically significant, it is concluded that the high group (mean = 15.51 secs.) and the low group (mean = 19.42 secs.) on 100 M running event differ significantly in showing general intelligence.

The hypothesis-$H_{36.2}$ is, thus, sustained.

The high- and the low- groups on general intelligence were identified on the basis of percentile rank. The top 10 percentile and the bottom 10 percentile constituted the high- and the low-group on general intelligence.

It was hypothesized that there will be significant difference between the scores of high- and low- groups on general intelligence on 100 M running event among women Ss ($H_{36.3}$).
To test the hypothesis $H_{36.3}$, Sign Test was used. Since the value of Chi-Square with Yates' Correction ($X^2 = 11.43, p < 0.01$) is statistically significant, it is concluded that the high- and the low- groups on general intelligence differ significantly in the performance of 100 M running event.

The hypothesis $H_{36.3}$ is, thus, sustained.

It was hypothesized that the profiles of general intelligence for the high- and the low- groups on 100 M running event will not be parallel among women Ss ($H_{36.4}$).

To test the hypothesis $H_{36.4}$, profile analysis was done. However, the value of Hottelling's $T^2$ obtained is statistically significant ($T^2 = 4.06, p < 0.01$). Since the $T^2$ comparing the scores of the high- and the low- groups on 100 M running performance on the 7 dimensions assessed in the DGIT does not refute the null hypothesis, it is concluded that the two profiles are not parallel and the slope of each line segment making up the profile is not same for both groups.

It was hypothesized that the profiles of general intelligence for the high- and the low- groups on the performance in 100 M running event will be at the different mean levels among women Ss ($H_{36.5}$).

To test the hypothesis $H_{36.5}$, profile analysis was done. The value of the Hottelling's $T^2$ is statistically significant at the 0.01 level ($T^2 = 3.91, p < 0.01$). Since the $T^2$ is significant, it is concluded that the profiles of general intelligence for two groups are at the different level and the mean of means (the mean sum) of the separate variable is not identical for the two groups.

The hypothesis $H_{36.5}$ is, thus, sustained.

It was hypothesized that the 'pooled' profiles of general intelligence for the high- and the low- groups on 100 M running event combined will be perfectly flat among women Ss ($H_{36.6}$).
To test the hypothesis-$H_{36.6}$, profile analysis was done. The value of Hotteling's $T^2$ is not statistically significant even at the 0.05 level ($T^2 = 1.14$, $p > 0.05$). Since the $T^2$ is not significant, it is concluded that all line segment slopes of profiles are truly zero.

The hypothesis-$H_{36.6}$ is, thus, sustained.

To summarize, the findings reveal that a significant and positive relationship exists between performance in 100 M running event and general intelligence. Besides, the individuals with higher intelligence significantly differ from the individuals with lower intelligence in performing 100 M running event. The higher intelligent group shows better physical performance in 100 M running event than the lower intelligent one. However, the converse is also true i.e., the individuals showing higher performance in 100 M running event have higher intelligence than the individuals showing lower performance in 100 M running event.

Comparison of individuals having higher and lower intelligence on their profiles of physical performance shows that the physical performances in 100 M running event showed by the two groups are to be of different values and of the different levels, and follows a non-parallel pattern.

5.2.2.4.2. Results of General Intelligence in Relation to Physical Performance in Running Long Jump Event for Women Ss

It was hypothesized that a significant correlation will exist between the scores of women Ss on the general intelligence and the scores on the running long jump event ($H_{37.1}$).

To test the hypothesis-$H_{37.1}$, product moment correlation was used. The coefficient of correlation obtained is 0.31 which is statistically significant at the 0.01 level ($r = 0.31$, $p < 0.01$).
The hypothesis $H_{37.1}$ is, thus, sustained.

The high- and the low- groups on running long jump event were identified computing cumulative percentages. The Ss' scores falling on the top 10 percentile and the scores falling on the bottom 10 percentile constitute the high- and the low-groups on the performance in running long jump event. The high group on running long jump event comprises 18 individuals and the low group on running long jump event comprises 22 individuals.

It was hypothesized that there will be significant difference between the scores of high- and low- groups on running long jump event on general intelligence among women Ss ($H_{37.2}$).

To test the hypothesis $H_{37.2}$, Sign Test was used. Since the value of Chi-Square with Yates' Correction ($X^2 = 12.36, p < 0.01$) is statistically significant, it is concluded that the high group (mean = 4.18 M) and the low group (mean = 2.48 M) on running long jump event differ significantly in showing general intelligence.

The hypothesis $H_{37.2}$ is, thus, sustained.

The high- and the low- groups on general intelligence were identified on the basis of percentile rank. The top 10 percentile and the bottom 10 percentile constituted the high- and the low-groups on general intelligence.

It was hypothesized that there will be significant difference between the scores of high- and low- groups on general intelligence on running long jump event among women Ss ($H_{37.3}$).

To test the hypothesis $H_{37.3}$, Sign Test was used. Since the value of Chi-Square with Yates' Correction ($X^2 = 10.42, p < 0.01$) is statistically significant, it is concluded that the high- and the low- groups on general intelligence differ significantly in the performance of running long jump event.
The hypothesis $H_{37.3}$ is, thus, sustained.

It was hypothesized that the profiles of general intelligence for the high- and the low- groups on running long jump event will not be parallel among women Ss ($H_{37.4}$).

To test the hypothesis $H_{37.4}$, profile analysis was done. However, the value of Hottelling's $T^2$ obtained is statistically significant ($T^2 = 3.73$, $p < 0.01$). Since the $T^2$ comparing the scores of the high- and the low- groups on running long jump performance on the 7 dimensions assessed in the DGIT does not refute the null hypothesis, it is concluded that the two profiles are not truly parallel and the slope of each line segment making up the profile is not same for both groups.

The hypothesis $H_{37.4}$ is, thus, sustained.

It was hypothesized that the profiles of general intelligence for the high- and the low- groups on the performance in running long jump event will be at the different mean levels among women Ss ($H_{37.5}$).

To test the hypothesis $H_{37.5}$, profile analysis was done. The value of the Hottelling's $T^2$ is statistically significant ($T^2 = 4.33$, $p < 0.01$). Since the $T^2$ is significant at the 0.01 level, it is concluded that the profiles of general intelligence for two groups are at the different levels and the mean of means (the mean sum) of the separate variable is not identical for the two groups.

The hypothesis $H_{37.5}$ is, thus, sustained.

It was hypothesized that the 'pooled' profiles of general intelligence for the high- and the low- groups on running long jump event combined will be perfectly flat among women Ss ($H_{37.6}$).

To test the hypothesis $H_{37.6}$, profile analysis was done.
The value of Hottelling's $T^2$ is not statistically significant even at the 0.05 level ($T^2 = 1.05, p > 0.05$). Since the $T^2$ is not statistically significant, it is concluded that all the line segment slopes of profiles are truely zero.

The hypothesis $H_{37,6}$ is, thus, sustained.

To summarize, the findings reveal that a significant and positive relationship exists between performance in running long jump event and general intelligence. Besides, the individuals with higher intelligence significantly differ from the individuals with lower intelligence in performing running long jump event. The higher intelligent group shows better physical performance in running long jump event than the lower intelligent one. However, the converse is also true i.e., the individuals showing higher performance in running long jump have had higher intelligence than the individuals showing lower performance in running long jump event.

Comparison of individuals having higher and lower intelligence on their profiles of physical performance shows that the physical performances in running long jump event showed by the two groups are to be of different values and of the different levels, and follows a non-parallel pattern.

5.2.2.4.3. Results of General Intelligence in Relation to Physical Performance in Shot Put Event for Women Ss

It was hypothesized that a significant correlation will exist between the scores of the women Ss on the general intelligence and the scores on the shot put event ($H_{38,1}$).

To test the hypothesis $H_{38,1}$, product moment correlation was used. The coefficient of correlation obtained is 0.31 which is statistically significant at the 0.01 level ($r = 0.31, p < 0.01$).
The hypothesis $H_{38.1}$ is, thus, sustained.

The high- and the low- groups on shot put event were identified computing cumulative percentages. The Ss' scores falling on the top 10 percentile and on the bottom 10 percentile constitute the high- and the low- groups on the performance in shot put event. The high group on shot put event comprises 19 individuals and the low group on shot put event comprises 20 individuals.

It was hypothesized that there will be significant difference between the scores of high- and low- groups on shot put event on general intelligence among women Ss ($H_{38.2}$).

To test the hypothesis $H_{38.2}$, Sign Test was used. Since the value of Chi-Square with Yates' Correction ($X^2 = 12.34, p < 0.01$) is statistically significant, it is concluded that the high group (mean = 5.99 M) and the low group (mean = 3.92 M) on shot put event differ significantly in showing general intelligence.

The hypothesis $H_{38.2}$ is, thus, sustained.

The high- and the low- groups on general intelligence were identified on the basis of percentile rank. The top 10 percentile and the bottom 10 percentile constituted the high- and the low- groups on general intelligence.

It was hypothesized that there will be significant difference between the scores of high- and low- groups on general intelligence on shot put event among women Ss ($H_{38.3}$).

To test the hypothesis $H_{38.3}$, Sign Test was used. Since the value of Chi-Square with Yates' Correction ($X^2 = 15.25, p < 0.01$) is statistically significant, it is concluded that the high- and the low- groups on general intelligence differ significantly in the performance of shot put event.

The hypothesis $H_{38.3}$ is, thus, sustained.
It was hypothesized that the profiles of general intelligence for the high- and the low- groups on shot put event will not be parallel among women Ss ($H_{38.4}^g$).

To test the hypothesis-$H_{38.4}^g$, profile analysis was done. However, the value of Hottelling's $T^2$ obtained is statistically significant ($T^2 = 3.88, p < 0.01$). Since the $T^2$ comparing the scores of the high- and the low- groups on shot put performance on the 7 dimensions assessed in the DGIT does not refute the null hypothesis, it is concluded that the two profiles are not truly parallel and the slope of each line segment making up the profile is not same for both groups.

The hypothesis-$H_{38.4}^g$ is thus sustained.

It was hypothesized that the profiles of general intelligence for the high- and the low- groups on the performance in shot put event will be at the different mean levels among women Ss ($H_{38.5}^g$).

To test the hypothesis-$H_{38.5}^g$, profile analysis was done. The value of the Hottelling's $T^2$ is statistically significant at the 0.01 level ($T^2 = 4.07, p < 0.01$). Since the $T^2$ is significant, it is concluded that the profiles of general intelligence for two groups are at the different level and the mean of means (the mean sum) of the separate variable is not identical for the two groups.

The hypothesis-$H_{38.5}^g$ is thus sustained.

It was hypothesized that the 'pooled' profiles of general intelligence for the high- and the low- groups on shot put event combined will be perfectly flat among women Ss ($H_{38.6}^g$).

To test the hypothesis-$H_{38.6}^g$, profile analysis was done. The value of Hottelling's $T^2$ is not statistically significant ($T^2 = 1.36, p > 0.05$). Since the $T^2$ is not significant even at the 0.05 level it is concluded that all line segment slopes of profiles are truly zero.
The hypothesis-H^g_38.6 is, thus, sustained.

To summarize, the findings reveal that a significant and positive relationship exists between performance in shot put event and general intelligence. Besides, the individuals with higher intelligence significantly differ from the individuals with lower intelligence in performing shot put event. The higher intelligent group shows better physical performance in shot put event than the lower intelligent one. However, the converse is also true i.e., the individuals showing higher performance in shot put event have had higher intelligence than the individuals showing lower performance in shot put event.

Comparison of individuals having higher and lower intelligence on their profiles of physical performance shows that the physical performance in shot put event showed by the two groups are to be of different value and of the different level, and follows a non-parallel pattern.

5.2.2.4.4. Results of General Intelligence in Relation to Physical Performance in Running High Jump Event for Women Ss

It was hypothesized that a significant correlation will exist between the scores of the women Ss on the general intelligence and the scores of the running high jump event (H^j_39.1).

To test the hypothesis-H^j_39.1, product moment correlation was used. The coefficient of correlation obtained is 0.39 which is statistically significant at the 0.01 level (r = 0.39, p < 0.01).

The hypothesis-H^j_39.1 is, thus, sustained.

The high- and the low- groups on running high jump event were identified computing cumulative percentages. The Ss' scores falling on the top 10 percentile and on the bottom 10 percentile
constitute the high- and the low- groups on the performance in
running high jump event. The high group on running high jump
event comprises 22 individuals and the low group on running high
jump event comprises 24 individuals.

It was hypothesized that there will be significant differ­
ence between the scores of high- and low- groups on running high
jump event on general intelligence among women Ss (H_{39.2}).

To test the hypothesis-H_{39.2}, Sign Test was used. Since
the value of Chi-Square with Yates' Correction ($X^2 = 10.03, p<0.01$)
is statistically significant, it is concluded that the high group
(mean = 1.20 M) and the low group (mean = 0.66 M) on running high
jump event differ significantly in showing general intelligence.

The hypothesis-H_{39.2} is, thus, sustained.

The high- and the low- groups on general intelligence were
identified on the basis of percentile rank. The top 10 percentile
and the bottom 10 percentile constituted the high- and the low-
groups on general intelligence.

It was hypothesized that there will be significant difference
between the scores of high- and low- groups on general intelligence
on running high jump event among women Ss (H_{39.3}).

To test the hypothesis-H_{39.3}, Sign Test was used. Since
the value of Chi-Square with Yates' Correction ($X^2 = 9.98, p < 0.01$)
is statistically significant, it is concluded that the high- and the low-
groups on general intelligence differ significantly in the
performance of running high jump event.

The hypothesis-H_{39.3} is, thus, sustained.

It was hypothesized that the profiles of general intelligence
for the high- and the low- groups on running high jump
event will not be parallel among women Ss (H_{39.4}).
To test the hypothesis-H$_{39.4}$, profile analysis was done. However, the value of Hottelling's $T^2$ obtained is statistically significant ($T^2 = 4.39$, $p < 0.01$). Since the $T^2$ is significant at the 0.01 level, and comparing the scores of the high- and the low- groups on running high jump performance on the 7 dimensions assessed in the DGIT does not refute the null hypothesis, it is concluded that the two profiles are not truly parallel and the slope of each line segment making up the profile is not same for both groups.

The hypothesis-H$_{39.4}$ is, thus, sustained.

It was hypothesized that the profiles of general intelligence for the high- and the low- groups on the performance in running high jump event will be at the different mean level among women Ss (H$_{39.5}$). To test the hypothesis-H$_{39.5}$, profile analysis was done. The value of Hottelling's $T^2$ is statistically significant ($T^2 = 5.21$, $p < 0.01$). Since the $T^2$ is significant, it is concluded that the profiles of general intelligence for two groups are at the different level and the mean of means (the mean sum) of the separate variable is not identical for the two groups.

The hypothesis-H$_{39.5}$ is, thus, sustained.

It was hypothesized that the 'pooled' profiles of general intelligence for the high- and the low- groups on running high jump event combined will be perfectly flat among women Ss (H$_{39.6}$). To test the hypothesis-H$_{39.6}$, profile analysis was done. The value of Hottelling's $T^2$ is not statistically significant even at the 0.05 level ($T^2 = 0.72$, $p > 0.05$). Since the $T^2$ is not significant, it is concluded that all line segment slopes of profiles are truly zero.

The hypothesis-H$_{39.6}$ is, thus, sustained.
To summarize, the findings reveal that a significant and positive relationship exists between performance in running high jump event and general intelligence. Besides, the individuals with higher intelligence significantly differ from the individuals with lower intelligence in performing running high jump event. The higher intelligent group shows better physical performance in running high jump event than the lower intelligent one. However, the converse is also true i.e., the individuals showing higher performance in running high jump have had higher intelligence than the individuals showing lower performance in running high jump event.

Comparison of individuals having higher and lower intelligence on their profiles of physical performance shows that the physical performance in running high jump event showed by the two groups are to be of different value and of the different level, and follows a non-parallel pattern.

5.2.2.4.5. Results of General Intelligence in Relation to Physical Performance in 200 M Running Event for Women Ss

It was hypothesized that a significant correlation will exist between the scores of the women Ss on the general intelligence and the scores on the 200 M running event \( H_{40.1} \).

To test the hypothesis-\( H_{40.1} \), product moment correlation was used. The coefficient of correlation obtained is 0.35 which is statistically significant at the 0.01 level \( (r = 0.35, p < 0.01) \).

The hypothesis-\( H_{40.1} \) is, thus, sustained.

The high- and the low- groups on 200 M running event were identified computing cumulative percentages. The Ss' scores falling on the top 10 percentile and on the bottom 10 percentile constitute the high- and the low- groups on the performance in 200 M running event. The high group on 200 M running event comprises 22
individuals and the low group on 200 M running event comprises 24 individuals.

It was hypothesized that there will be significant difference between the scores of high- and low- groups on 200 M running event on general intelligence among women Ss (H_{40.2}).

To test the hypothesis-H_{40.2}, Sign Test was used. Since the value of Chi-Square with Yates' Correction ($X^2 = 14.82$, $p < 0.01$) is statistically significant, it is concluded that the high group (mean = 30.02 sec.) and the low group (mean = 39.87 secs.) on 200 M running event differ significantly in showing general intelligence.

The hypothesis-H_{40.2} is, thus, sustained.

The high- and the low- groups on general intelligence were identified on the basis of percentile rank. The top 10 percentile and the bottom 10 percentile constituted the high- and the low- groups on general intelligence.

It was hypothesized that there will be significant difference between the scores of high- and low- groups on general intelligence on 200 M running event among women Ss (H_{40.3}).

To test the hypothesis-H_{40.3}, Sign Test was used. Since the value of Chi-Square with Yates' Correction ($X^2 = 14.03$, $p < 0.01$) is statistically significant, it is concluded that the high- and the low- groups on general intelligence differ significantly in the performance of 200 M running event.

It was hypothesized that the profiles of general intelligence for the high- and the low- groups on 200 M running event will not be parallel among women Ss (H_{40.4}).

To test the hypothesis-H_{40.4}, profile analysis was done. Since the value of $T^2$ (Hottelling's) is statistically significant at the 0.01 level ($T^2 = 4.44$, $p < 0.01$) and comparing the scores of the high- and the low- groups on 200 M running performance on the
7 dimensions assessed in the DGIT does not refute the null hypothesis, it is concluded that the two profiles are not truly parallel and the slope of each line segment making up the profile is not same for both groups.

The hypothesis-$H_{40.4}$ is, thus, sustained.

It was hypothesized that the profiles of general intelligence for the high- and the low- groups on the performance in 200 M running event will be at the different mean level among women Ss($H_{40.5}$).

To test the hypothesis-$H_{40.5}$, profile analysis was done. The value of the Hottelling's $T^2$ is statistically significant at the 0.01 level ($T^2 = 5.16$, $p < 0.01$). Since the $T^2$ is significant at the 0.01 level, it is concluded that the profiles of general intelligence for two groups are at the different level and the mean of means (the mean sum) of the separate variable is not identical for the two groups.

The hypothesis-$H_{40.5}$ is, thus, sustained.

It was hypothesized that the 'pooled' profiles of general intelligence for the high- and the low- groups on 200 M running event combined will be perfectly flat among women Ss ($H_{40.6}$).

To test the hypothesis-$H_{40.6}$, profile analysis was done. The value of Hottelling's $T^2$ is not statistically significant even at the 0.05 level ($T^2 = 0.98$, $p > 0.05$). Since the $T^2$ is not significant, it is concluded that all line segment slopes of profiles are truly zero.

The hypothesis-$H_{40.6}$ is, thus, sustained.

To summarize, the findings reveal that a significant and positive relationship exists between the performance in 200 M running event and general intelligence. Besides, the individuals with higher intelligence significantly differ from the individuals with
lower intelligence in performing 200 M running event. The higher intelligent group shows better physical performance in 200 M running event than the lower intelligent one. However, the converse is also true i.e., the individuals showing higher performance in 200 M running event have had higher intelligence than the individuals showing lower performance in 200 M running event.

Comparison of individuals having higher and lower intelligence on their profiles of physical performance shows that the physical performances in 200 M running event showed by the two groups are to be of different values and of the different levels, and follows a non-parallel pattern.
5.2.3. DATA ANALYSIS WITH REGARD TO RELATIONSHIP EXISTING BETWEEN AND AMONG VARIABLES

It is of interest to attempt predicting physical performance in athletics based on these observations made so far. The predictive value of physical performance in each athletic event has been interpreted in relation to the Ss' performance in the inventories viz., BAHIA, BISTAA, BLATA and DGIT.

Multiple Step Up Regression analysis was done -

0 to obtain the best possible prediction of physical performance in athletics for the present population weighing and summing the scores of the individual on independent variables;

0 to obtain the accuracy in prediction equation; and

0 to know how much of the variance in physical performance in athletics is accounted by the joint linear influences of achievement motivation in athletics (BAHIA), anxiety in athletics (BISTAA), level of aspiration in athletics (BLATA), and general intelligence (DGIT).

The Multiple Step Up Regression Analysis was done using the scores of the Ss' (men & women) on the selected athletic events (Men: 100 M run, running long jump, shot put, running high jump & 800 M run; Women: 100 M run, running long jump, shot put, running high jump & 200 M run), achievement motivation in athletics (BAHIA), anxiety in athletics (BISTAA), level of aspiration in athletics (BLATA) and general intelligence (DGIT).

Here multiple regression analysis is viewed as descriptive tool by which the linear dependence of one variable on other is summarized and decomposed.

In order to employ multiple regression analysis the scores of the 240 Ss (Men = 120 & Women = 120) on the selected athletic events (men & women), BAHIA, BISTAA, BLATA and DGIT were computed for correlation.
However, mean, SD, and inter correlations of the scores of the Ss (men & women) on the independent variables viz., BAMIA, BISTAA, BLATA, and DGIT are presented in Tables 43 & 44.

**TABLE 43**
**Means, SD, and Intercorrelations of the Scores of Ss (men) on the BAMIA, BISTAA, BLATA, and DGIT**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>SD</th>
<th>Coefficients of Correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>BAMIA</td>
</tr>
<tr>
<td>BAMIA</td>
<td>139.72</td>
<td>14.36</td>
<td>1.000</td>
</tr>
<tr>
<td>BISTAA</td>
<td>206.14</td>
<td>22.50</td>
<td>-----</td>
</tr>
<tr>
<td>BLATA</td>
<td>232.48</td>
<td>25.17</td>
<td>-----</td>
</tr>
<tr>
<td>DGIT</td>
<td>034.82</td>
<td>4.53</td>
<td>-----</td>
</tr>
</tbody>
</table>

*p < 0.01

**TABLE 44**
**Means, SD, and Intercorrelations of the Scores of Ss (women) on the BAMIA, BISTAA, BLATA, and DGIT**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>SD</th>
<th>Coefficients of Correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>BAMIA</td>
</tr>
<tr>
<td>BAMIA</td>
<td>138.20</td>
<td>14.25</td>
<td>1.000</td>
</tr>
<tr>
<td>BISTAA</td>
<td>203.75</td>
<td>21.14</td>
<td>-----</td>
</tr>
<tr>
<td>BLATA</td>
<td>238.53</td>
<td>24.26</td>
<td>-----</td>
</tr>
<tr>
<td>DGIT</td>
<td>034.82</td>
<td>03.52</td>
<td>-----</td>
</tr>
</tbody>
</table>

*p < 0.01
Tables 43 & 44 show that the scores on the BAHIA and the scores on the BISTAA are positively associated. The scores on the BLATA and the scores on the DGIT are also found to be correlated. Due to this multicollinearity inverting the correlation matrix of the independent variable may not be possible. The reliability of the relative importance indicated by the partial regression coefficients will be less if the inter-correlations of the independent variable are high. Hence it was decided to use at a time one athletic event separately to study the regression with the set of psychological determinants.

Tables 45 & 46 show that the mean, SS, and degree of association of the scores of each athletic event with the scores of each psychological variable of the Ss (men & women).

### TABLE 45

**MEAN, SD AND INTERCORRELATIONS OF THE SCORES OF Ss (MEN) ON THE ATHLETIC EVENTS AND THE SCORES OF Ss (MEN) ON THE PSYCHOLOGICAL INVENTORIES**

<table>
<thead>
<tr>
<th>Psychological Variables</th>
<th>Coefficients of Correlation (Mean ± SD)</th>
<th>Level of Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Athletic Events</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BAMIA</td>
<td>(129.75 ± 14.52)</td>
<td></td>
</tr>
<tr>
<td>BISTAA</td>
<td>(199.21 ± 21.03)</td>
<td></td>
</tr>
<tr>
<td>BLATA</td>
<td>(236.32 ± 24.56)</td>
<td></td>
</tr>
<tr>
<td>DGIT</td>
<td>(34.05 ± 4.32)</td>
<td></td>
</tr>
</tbody>
</table>

#### 100 M Run
- Mean ± SD: 13.22 ± 1.05
- Correlation: 0.77
- Level of Significance: p<0.01

#### Running Long Jump
- Mean ± SD: 4.55 ± 0.62
- Correlation: 0.84
- Level of Significance: p<0.01

#### Shot Put
- Mean ± SD: 6.22 ± 0.93
- Correlation: 0.78
- Level of Significance: p<0.01

#### Running High Jump
- Mean ± SD: 1.34 ± 0.22
- Correlation: 0.76
- Level of Significance: p<0.01

#### 800 M Run
- Mean ± SD: 194.00 ± 20.23
- Correlation: 0.59
- Level of Significance: p<0.01

The unit of scores in running event is in seconds. The unit of scores in throwing and jumping events is in metres.
### TABLE 46
MEAN, SD, AND INTERCORRELATIONS OF THE SCORES OF SS (WOMEN) ON THE ATHLETIC EVENTS AND THE SCORES OF SS (WOMEN) ON THE PSYCHOLOGICAL INVENTORIES

<table>
<thead>
<tr>
<th>Psychological Variables</th>
<th>Coefficients of Correlation (Mean ± SD)</th>
<th>Level of Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Athletic Events (Mean ± SD)</td>
<td>BAMIA</td>
<td>BISTAA</td>
</tr>
<tr>
<td>100 M Run (17.35 ± 1.82)</td>
<td>0.75</td>
<td>-0.78</td>
</tr>
<tr>
<td>Running Long Jump (3.43 ± 0.62)</td>
<td>0.79</td>
<td>-0.75</td>
</tr>
<tr>
<td>Shot Put (5.03 ± 0.73)</td>
<td>0.76</td>
<td>-0.69</td>
</tr>
<tr>
<td>Running High Jump (0.93 ± 0.08)</td>
<td>0.74</td>
<td>-0.78</td>
</tr>
<tr>
<td>200 M Run (36.21 ± 3.72)</td>
<td>0.54</td>
<td>-0.78</td>
</tr>
</tbody>
</table>

The unit of scores in running event is in seconds.
The unit of scores in throwing and jumping events is in metres.
The unit of scores in inventories is in points.

Tables 45 & 46 show that the scores of athletic events are significantly correlated with the scores of the BAMIA, BISTAA, BLATA and DGIT. The Step Up Regression Analysis was then performed. In this procedure the best predictor was included first.

Sex-wise results of Multiple Step Up Regression are presented as follows:
5.2.3.1. MULTIPLE STEP UP REGRESSION ANALYSIS OF THE SCORES IN ATHLETIC EVENTS, BAMIA, BISTAA, BLATA AND DGIT FOR MEN SUBJECTS

5.2.3.1.1. Multiple Step Up Regression Analysis of the scores in 100 M Run, BAMIA, BISTAA, BLATA and DGIT

Among all the psychological variables selected in this study, achievement motivation in athletics (BAMIA) has the highest degree of coefficient of correlation with 100 M running performance and is included first in the analysis. The results of the regression of the performance score of 100 M running event on the BAMIA score are given in Table 47.

---

**TABLE 47**

REGRESSION OF THE PERFORMANCE SCORES IN 100 M RUNNING EVENT ON THE SCORES OF ACHIEVEMENT MOTIVATION IN ATHLETICS (BAMIA)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Parameter</th>
<th>Estimate</th>
<th>Standard Error</th>
<th>Computed 'T' value</th>
<th>$R^2$</th>
<th>Adjusted $F$ Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>A</td>
<td>0.7599</td>
<td>0.0745</td>
<td>10.2001**</td>
<td>0.8172</td>
<td></td>
</tr>
<tr>
<td>BAMIA</td>
<td>B</td>
<td>0.0495</td>
<td>0.0026</td>
<td>19.0385**</td>
<td>0.8153</td>
<td>447.13**</td>
</tr>
</tbody>
</table>

** Significant at the 0.01 level (p < 0.01)**

---

As seen in Table 47 the relationship between the scores in 100 M running performance and the scores in the BAMIA is positive and that 81.53 percent of the variance in 100 M running performance is explained by linear regression on the variable, viz., achievement motivation in athletics.

The B value given in Table 47 is used as measure of influence of each independent variable upon 100 M running performance with adjustments made for all other psychological variables.
The predicted score on 100 M run is 0.7599 unit when the score of BAMIA is zero, and the predicted score increases by 0.0495 unit on the 100 M run for each unit of increase in the score of the BAMIA. The regression coefficient is found to be statistically significant at the 0.01 level (\( T \) Value : 15.0667).

In the second step, anxiety in athletics (BISTAA) that in combination with achievement motivation in athletics (BAMIA) gave the highest value of adjusted \( R^2 \). The results of the regression of the performance scores in 100 M run on the BAMIA scores and on the BISTAA scores are given in Table 48.

As seen in Table 48 the relationship between the BISTAA and 100 M run is negative and that 82.83 percent of the variance in 100 M running performance is explained by linear regression jointly by the BAMIA and the BISTAA.

**TABLE 48**

REGRESSION OF THE PERFORMANCE SCORES IN 100 M RUN ON THE SCORES OF ACHIEVEMENT MOTIVATION IN ATHLETICS (BAMIA) AND ANXIETY IN ATHLETICS (BISTAA)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Parameters</th>
<th>Estimate</th>
<th>Standard Error</th>
<th>Computed 'T' Value</th>
<th>( R^2 )</th>
<th>Adjusted ( R^2 )</th>
<th>F Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>A</td>
<td>1.4471</td>
<td>0.2480</td>
<td>5.8351**</td>
<td></td>
<td>0.8325</td>
<td></td>
</tr>
<tr>
<td>BAMIA</td>
<td>B_1</td>
<td>0.0452</td>
<td>0.0030</td>
<td>15.0667**</td>
<td></td>
<td>0.8283</td>
<td></td>
</tr>
<tr>
<td>BISTAA</td>
<td>B_2</td>
<td>-0.0060</td>
<td>0.0019</td>
<td>-3.1579**</td>
<td></td>
<td>245.84**</td>
<td></td>
</tr>
</tbody>
</table>

** Significant at the 0.01 level ( \( p < 0.01 \))

The regression coefficient of achievement motivation in athletics (Table 48) is found to be statistically significant at the 0.01 level (\( T \) Value : 15.0667).
The regression coefficient of anxiety in athletics (Table 48) is found to be statistically significant at the 0.01 level ('T' Value : -3.1579).

The predicted score on 100 M run is 1.4471 units when the scores of both the BAMIA and the BISTAA are zeros.

The predicted score increases by 0.0452 unit on the 100 M running performance for each unit of increase in the BAMIA when the effect of the BISTAA is controlled statistically.

The predicted score increase by -0.0060 unit on the 100 M running performance for each unit of increase in anxiety in athletics (BISTAA) when the effect of achievement motivation in athletics (BAMIA) is controlled statistically.

In the third step, the BLATA that in combination with the BAMIA and the BISTAA, gave the highest value of adjusted $R^2$. The results of regression of the performance scores in 100 M run on the BAMIA, BISTAA and BLATA are presented in Table 49.

As seen in Table 49 the relationship between level of aspiration in athletics (BLATA) and 100 M running performance is positive and that 84.99 percent of the variance in 100 M running performance is explained by linear regression jointly by the BAMIA, BISTAA and BLATA.

The regression coefficient of the BAMIA is found to be statistically significant at the 0.01 level ('T' value : 11.7500).

The regression coefficient of the BISTAA is found to be statistically significant at the 0.01 level ('T' Value : -2.6364).

The regression coefficient of the BLATA is found to be statistically significant at the 0.01 level ('T' Value : 2.4622).

The predicted performance score on 100 M running event is
1.3200 units when the scores of the BAMIA, BISTAA, and BLATA are zeros.

The predicted performance score increases by 0.0423 units on 100 M running event for each unit increase in the BAMIA when the effects of the BISTAA and BLATA are controlled statistically.

The predicted performance score increases by -0.0058 units on 100 M running event for each unit increase in the BISTAA when the effects of the BAMIA and BLATA are controlled statistically.

The predicted performance score increases by 0.0293 units on 100 M running event for each unit of increase in the BLATA when the effects of the BISTAA and BAMIA are controlled statistically.

**TABLE 49**

REGRESSION OF THE PERFORMANCE SCORES IN 100 M RUN ON THE ACHIEVEMENT MOTIVATION IN ATHLETICS (BAMIA), ANXIETY IN ATHLETICS (BISTAA) AND LEVEL OF ASPIRATION IN ATHLETICS (BLATA)

<table>
<thead>
<tr>
<th>Variables Parameter</th>
<th>Parameter Estimate</th>
<th>Standard Error</th>
<th>Computed 'T' Value</th>
<th>$R^2$</th>
<th>Adjusted $R^2$</th>
<th>F Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant A</td>
<td>1.3200</td>
<td>0.2499</td>
<td>5.2821**</td>
<td></td>
<td>0.8401</td>
<td></td>
</tr>
<tr>
<td>BAMIA B1</td>
<td>0.0423</td>
<td>0.0036</td>
<td>11.7500**</td>
<td></td>
<td>0.8499</td>
<td></td>
</tr>
<tr>
<td>BISTAA B2</td>
<td>-0.0058</td>
<td>0.0022</td>
<td>-2.6364**</td>
<td></td>
<td></td>
<td>174.25**</td>
</tr>
<tr>
<td>BLATA B3</td>
<td>0.0293</td>
<td>0.0119</td>
<td>2.4622**</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

** Significant at the 0.01 level (p < 0.01)

In the last step general intelligence (DGIT), that in combination with the BAMIA, BISTAA and BLATA gave highest value of adjusted $R^2$. The results of the regression analysis of the performance scores in 100 M running event on the BAMIA, BISTAA, BLATA, and DGIT scores are presented in Table 50.
Table 50

Regression of the Performance Scores in 100 M Run on Achievement Motivation in Athletics (BAMIA), Anxiety in Athletics (BISTAA), Level of Aspiration in Athletics (BLATA) and General Intelligence (DGIT)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Parameter</th>
<th>Estimate</th>
<th>Standard Error</th>
<th>Computed 'T' Value</th>
<th>R²</th>
<th>Adjusted R²</th>
<th>F Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant A</td>
<td>1.2253</td>
<td>0.2793</td>
<td>4.3870**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BAMIA B₁</td>
<td>0.0420</td>
<td>0.0036</td>
<td>11.6667**</td>
<td>0.8522</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BISTAA B₂</td>
<td>-0.0056</td>
<td>0.0022</td>
<td>-2.5455**</td>
<td>0.8503</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BLATA B₃</td>
<td>0.0285</td>
<td>0.0119</td>
<td>2.3949**</td>
<td>129.20**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DGIT B₄</td>
<td>0.0063</td>
<td>0.0056</td>
<td>1.1454</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Significant at the 0.01 level (p < 0.01)

The results presented in Table 50 show that the relationship between general intelligence (DGIT) and 100 M running performance is positive, and that 85.03 percent of the variance in performing 100 M run is explained by linear regression jointly by the BAMIA, BISTAA, BLATA, and DGIT.

The predicted performance score on 100 M run is 1.2253 units when the scores of all the independent variables are zeros.

The predicted performance score increases by 0.0420 unit on 100 M running event for each unit of increase in the BAMIA when the effects of the BISTAA, BLATA, and DGIT are controlled statistically. The partial regression coefficient is found to be statistically significant at the 0.01 level ('T' Value: 11.6667). The comparison of the partial B value with the sample bivariate B presented in Table 50 indicates that the influence of achievement motivation in
athletics (BAMIA) is slightly diminished if the confounding effects of the BISTAA, BLATA and DGIT are controlled.

The predicted performance score increases by -0.0056 unit on 100 M running event for each unit of increase in anxiety in athletics (BISTAA) when the effects of the BAMIA, BLATA and DGIT are controlled statistically. The partial regression coefficient is found to be statistically significant at the 0.01 level ("T" Value: -2.5455).

The predicted performance score increases by 0.0285 unit on 100 M running event for each unit of increase in level of aspiration in athletics (BLATA) when the effects of the BAMIA, BISTAA and DGIT are controlled statistically. The partial regression coefficient is found to be statistically significant at the 0.01 level ("T" Value: 2.3949).

The predicted performance score increases by 0.0063 unit on 100 M running event for each unit of increase in general intelligence (DGIT) when the effects of the BAMIA, BISTAA, and BLATA are controlled statistically. However, the partial regression coefficient is not found to be statistically significant even at the 0.05 level ("T" value: 1.1454).

The \( R^2 \), adjusted \( R^2 \) and the increase in the adjusted \( R^2 \) produced by each additional variable are given in Table 51.

<table>
<thead>
<tr>
<th>Psychological Variables in the Regression</th>
<th>( R^2 )</th>
<th>Adjusted ( R^2 )</th>
<th>Increase in Adjusted ( R^2 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>BAMIA</td>
<td>0.8172</td>
<td>0.8153</td>
<td>0.8153</td>
</tr>
<tr>
<td>BAMIA &amp; BISTAA</td>
<td>0.8325</td>
<td>0.8283</td>
<td>0.0130</td>
</tr>
<tr>
<td>BAMIA, BISTAA &amp; BLATA</td>
<td>0.8401</td>
<td>0.8499</td>
<td>0.0216</td>
</tr>
<tr>
<td>BAMIA, BISTAA, BLATA &amp; DGIT</td>
<td>0.8522</td>
<td>0.8503</td>
<td>0.0004</td>
</tr>
</tbody>
</table>
Table 51 shows that 81.53 percent of the variance in 100 M running performance is explained by the linear regression on the achievement motivation variable (BAMIA). The anxiety in athletics (BISTAA) adds an increment of 1.30 percent to the variance already explained by the BAMIA. The level of aspiration in athletics (BLATA) adds an increment of only 2.16 percent to the variance already explained by the BAMIA and BISTAA. General intelligence (DGIT) adds an increment of only 0.04 percent of the variance already explained by other three independent variables.

In summary, the result of regression analysis showed higher percent of the variation in the performance of 100 M running event. The physical performance in 100 M running event was orderly explained by achievement motivation in athletics, anxiety in athletics, and level of aspiration in athletics for men subjects.

The result of regression analysis also showed a lower percent of variation in the performance of 100 M running event which is explained by general intelligence for men Ss.

5.2.3.1.2. Multiple Step Up Regression Analysis of the scores in Running Long Jump, BAMIA, BISTAA, BLATA and DGIT for Men Ss

Among all the psychological variables selected in this study, achievement motivation in athletics (BAMIA) has the highest degree of coefficient of correlation with running long jump performance and is included first in the analysis. The results of the regression of the performance score of running long jump event on the BAMIA scores are given in Table 52.

As seen in Table 52 the relationship between the scores in running long jump performance and the scores in the BAMIA is positive and that 80.01 percent of the variance in running long jump performance is explained by linear regression on the variable, namely, achievement motivation in athletics.
TABLE 52
REGRESSION OF THE PERFORMANCE SCORES IN RUNNING LONG JUMP EVENT ON THE SCORES OF ACHIEVEMENT MOTIVATION IN ATHLETICS (BAMIA)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Parameter</th>
<th>Estimate</th>
<th>Standard Error</th>
<th>Computed 'T' Value</th>
<th>$R^2$</th>
<th>Adjusted $R^2$</th>
<th>F Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>A</td>
<td>0.7732</td>
<td>0.0702</td>
<td>11.0142**</td>
<td>0.8025</td>
<td>0.8001</td>
<td>423.15**</td>
</tr>
<tr>
<td>BAMIA</td>
<td>B</td>
<td>0.0625</td>
<td>0.0065</td>
<td>9.6154**</td>
<td>0.8001</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

** Significant at the 0.01 level (\(p < 0.01\))

The B value given in Table 52 is used as measure of influence of each independent variable upon running long jump performance with adjustments made for all other psychological variables.

The predicted scores on running long jump is 0.7732 unit when the score of the BAMIA is zero, and the predicted score increases by 0.0625 unit on the running long jump for each unit of increase in the score of the BAMIA. The regression coefficient is found to be statistically significant at the 0.01 level ("T" value: 9.6154).

In the second step anxiety in athletics (BISTAA), that in combination with achievement motivation in athletics (BAMIA) gave the highest value of adjusted $R^2$. The result of the regression of the performance scores in running long jump on the BAMIA scores and on the BISTAA scores are given in Table 53.

As seen in Table 53 the relationship between BISTAA and running long jump is negative and that 81.05 percent of the variance in running long jump performance is explained by linear regression jointly by the BAMIA and the BISTAA.
TABLE 53
REGRESSION OF THE PERFORMANCE SCORES IN RUNNING LONG JUMP ON THE SCORES OF ACHIEVEMENT MOTIVATION IN ATHLETICS (BAMIA) AND ANXIETY IN ATHLETICS (BISTAA)

<table>
<thead>
<tr>
<th>Variables</th>
<th>parameter</th>
<th>Estimate</th>
<th>Standard Error</th>
<th>'T' Value</th>
<th>R²</th>
<th>Adjusted R²</th>
<th>F Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>A</td>
<td>1.4705</td>
<td>0.2503</td>
<td>5.8749**</td>
<td></td>
<td>0.8136</td>
<td></td>
</tr>
<tr>
<td>BAMIA</td>
<td>B₁</td>
<td>0.0591</td>
<td>0.0073</td>
<td>8.0958**</td>
<td></td>
<td>0.8105</td>
<td></td>
</tr>
<tr>
<td>BISTAA</td>
<td>B₂</td>
<td>-0.0076</td>
<td>0.0022</td>
<td>-3.4545**</td>
<td></td>
<td></td>
<td>231.52**</td>
</tr>
</tbody>
</table>

** Significant at the 0.01 level (p < 0.01)

The regression coefficient of achievement motivation in athletics is found to be statistically significant at the 0.01 level ('T'=8.0958).

The regression coefficient of anxiety in athletics is found to be statistically significant at the 0.01 level ('T' value=-3.4545).

The predicted score on running long jump is 1.4705 unit when the scores of both the BAMIA and the BISTAA are zeros.

The predicted score increases by 0.0591 unit on the running long jump performance for each unit of increase in the BAMIA when the effect of the BISTAA is controlled statistically.

The predicted score increase by -0.0076 unit on the running long jump performance for each unit of increase in anxiety in athletics (BISTAA) when the effect of achievement motivation in athletics (BAMIA) is controlled statistically.
In the third step, level of aspiration in athletics (BLATA) that in combination with the BAMIA and the BISTAA, gave the highest value of adjusted $R^2$. The results of the regression of the performance scores in running long jump event on the BAMIA, BISTAA and BLATA are presented in Table 54.

**TABLE 54**

REGRESSION OF THE PERFORMANCE SCORES IN RUNNING LONG JUMP ON THE ACHIEVEMENT MOTIVATION IN ATHLETICS (BAMIA), ANXIETY IN ATHLETICS (BISTAA) AND LEVEL OF ASPIRATION IN ATHLETICS (BLATA)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Parameter</th>
<th>Estimate</th>
<th>Standard Error</th>
<th>Computed 'T' Value</th>
<th>$R^2$</th>
<th>Adjusted $R^2$</th>
<th>F Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>A</td>
<td>1.4683</td>
<td>0.2514</td>
<td>5.8405**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BAMIA</td>
<td>B&lt;sub&gt;1&lt;/sub&gt;</td>
<td>0.0565</td>
<td>0.0078</td>
<td>7.2436**</td>
<td></td>
<td>0.8245</td>
<td></td>
</tr>
<tr>
<td>BISTAA</td>
<td>B&lt;sub&gt;2&lt;/sub&gt;</td>
<td>-0.0072</td>
<td>0.0024</td>
<td>-2.9583**</td>
<td></td>
<td>0.8213</td>
<td></td>
</tr>
<tr>
<td>DGIT</td>
<td>B&lt;sub&gt;3&lt;/sub&gt;</td>
<td>0.0284</td>
<td>0.0114</td>
<td>2.4912**</td>
<td></td>
<td>145.34**</td>
<td></td>
</tr>
</tbody>
</table>

** Significant at the 0.01 level (p < 0.01)

As seen in Table 54 the relationship between level of aspiration in athletics (BLATA) and running long jump performance is positive and that 82.13 percent of the variance in running long jump performance is explained by linear regression jointly by the BAMIA, BISTAA and BLATA.

The regression coefficient of the BAMIA is found to be statistically significant at the 0.01 level ('T' Value: 7.2436).

The regression coefficient of the BISTAA is found statistically significant at the 0.01 level ('T' value: -2.9583).
The regression coefficient of level of aspiration in athletics (BLATA) is found to be statistically significant at the 0.01 level (‘T’ Value : 2.4912).

The predicted performance score on running long jump is 1.4683 units when the scores of both the BAMIA, BISTAA and BLATA are zeros.

The predicted performance score increases by 0.0565 unit on running long jump event for each unit increase in the BAMIA when the effects of the BISTAA and BLATA are controlled statistically.

The predicted performance score increases by -0.0071 unit on running long jump event for each unit increase in the BISTAA when the effects of the BAMIA and BLATA are controlled statistically.

The predicted performance score increases by 0.0284 unit on running long jump event for each unit increase in level of aspiration in athletics (BLATA) when the effects of the BISTAA and BAMIA are controlled statistically.

In the last step general intelligence (DGIT), that in combination with BAMIA, BISTAA and BLATA gave highest value of adjusted $R^2$. The results of the regression analysis of the performance scores in running long jump event on the BAMIA, BISTAA, BLATA and DGIT scores are presented in Table 55.

The results presented in Table 55 show that the relationship between general intelligence (DGIT) and running long jump performance is positive and that 82.64 percent of the variance in performing running long jump is explained by linear regression jointly by the BAMIA, BISTAA, BLATA and DGIT.

The predicted performance score on running long jump is 1.4665 units (Table 55) when the scores of all the independent variables are zeros.
TABLE 55
REGRESSION OF THE PERFORMANCE SCORES IN RUNNING LONG JUMP ON ACHIEVEMENT MOTIVATION IN ATHLETICS (BAMIA), ANXIETY IN ATHLETICS (BISTAA), LEVEL OF ASPIRATION IN ATHLETICS (BLATA) AND GENERAL INTELLIGENCE (DGIT)

<table>
<thead>
<tr>
<th>variable</th>
<th>Parameter</th>
<th>Estimate</th>
<th>Standard Error</th>
<th>Computed 'T' value</th>
<th>R²</th>
<th>Adj R²</th>
<th>F Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>A</td>
<td>1.4665</td>
<td>0.2532</td>
<td>5.7918**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BAMIA</td>
<td>B₁</td>
<td>0.0550</td>
<td>0.0078</td>
<td>7.0513**</td>
<td></td>
<td></td>
<td>0.8294</td>
</tr>
<tr>
<td>BISTAA</td>
<td>B₂</td>
<td>-0.0068</td>
<td>0.0024</td>
<td>2.8334**</td>
<td></td>
<td></td>
<td>0.8264</td>
</tr>
<tr>
<td>BLATA</td>
<td>B₃</td>
<td>0.0281</td>
<td>0.0114</td>
<td>2.4649**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DGIT</td>
<td>B₄</td>
<td>0.0056</td>
<td>0.0042</td>
<td>1.3334</td>
<td></td>
<td></td>
<td>112.30**</td>
</tr>
</tbody>
</table>

** Significant at the 0.01 level (p < 0.01)

The predicted performance score increases by 0.0550 unit on running long jump event for each unit of increase in the BAMIA when the effects of the BISTAA, BLATA and DGIT are controlled statistically. The partial regression coefficient is found to be statistically significant at the 0.01 level ('T' Value: 7.0513). The comparison of the partial B value with the sample bivariate B presented in Table 55 indicates that the influence of achievement motivation in athletics (BAMIA) is slightly diminished if the confounding effects of the BISTAA, BLATA and DGIT are statistically controlled.

The predicted performance score increases by -0.0068 unit on running long jump event for each unit of increase in anxiety in athletics (BISTAA) when the effects of the BAMIA, BLATA and DGIT are controlled statistically. The partial regression coefficient is
found to be statistically significant at the 0.01 level ('T' Value: 2.8334).

The predicted performance score increases by 0.0281 units on running long jump event for each unit of increase in level of aspiration in athletics (BLATA) when the effects of the BAMIA, BISTAA and DGIT are controlled statistically. The partial regression coefficient is found to be statistically significant at the 0.01 level ('T' Value: 2.4649).

The predicted performance score increases by 0.0056 unit on running long jump event for each unit of increase in general intelligence (DGIT) when the effects of the BAMIA, BISTAA and BLATA are controlled statistically. However, the partial regression coefficient is not found to be statistically significant even at the 0.05 level ('T' Value: 1.3334).

The $R^2$, adjusted $R^2$ and the increase in the adjusted $R^2$ produced by each additional variable are given in Table 56.

**TABLE 56**

<table>
<thead>
<tr>
<th>Psychological Variables in the Regression</th>
<th>$R^2$</th>
<th>Adjusted $R^2$</th>
<th>Increase in Adjusted $R^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>BAMIA</td>
<td>0.8025</td>
<td>0.8001</td>
<td>0.8001</td>
</tr>
<tr>
<td>BAMIA, &amp; BISTAA</td>
<td>0.8136</td>
<td>0.8105</td>
<td>0.0105</td>
</tr>
<tr>
<td>BAMIA, BISTAA &amp; BLATA</td>
<td>0.8245</td>
<td>0.8213</td>
<td>0.0108</td>
</tr>
<tr>
<td>BAMIA, BISTAA &amp; BLATA &amp; DGIT</td>
<td>0.8249</td>
<td>0.8264</td>
<td>0.0051</td>
</tr>
</tbody>
</table>

Table 56 shows that 80.01 percent of the variance in running long jump performance is explained by the linear regre-
ession on the achievement motivation variable (BAMIA). The anxiety in athletics (BISTAA) adds an increment of 1.05 percent to the variance already explained by the BAMIA. The level of aspiration in athletics (BLATA) adds an increment of only 1.08 percent to the variance already explained by the BAMIA and the BISTAA. General intelligence (DGIT) adds an increment of only 0.51 percent of variance already explained by other three independent variables.

In summary, the result of regression analysis showed higher percent of the variation in the performance of running long jump event. The physical performance in running long jump event was orderly explained by achievement motivation in athletics, anxiety in athletics, and level of aspiration in athletics for men Ss.

The result of regression analysis also showed a lower percent of variation in the performance of running long jump event which is explained by general intelligence for men subjects.

5.2.3.1.3. Multiple Step Up Regression Analysis of scores in Shot Put, BAMIA, BISTAA, BLATA and DGIT for Men Subjects

Among all the selected psychological variables, achievement motivation in athletics has the highest degree of coefficient of correlation with shot put performance and is included first in the analysis. The results of the regression of the performance score of shot put event on the BAMIA scores are given in Table 57.

As seen in Table 57 the relationship between the scores in shot put performance and the scores in BAMIA is positive and that 78.94 percent of the variance in shot put performance is explained by linear regression on the variable viz., achievement motivation in athletics.

The B value given in Table 57 is used as measure of influence of each independent variable upon shot put performance with adjustments made for all other psychological variables.
TABLE 57
REGRESSION OF THE PERFORMANCE SCORES IN SHOT PUT EVENT ON THE SCORES OF ACHIEVEMENT MOTIVATION IN ATHLETICS (BAMIA)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Parameter</th>
<th>Estimate</th>
<th>Standard Error</th>
<th>Computed R²</th>
<th>Adjusted R²</th>
<th>F Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant A</td>
<td>0.6832</td>
<td>0.0739</td>
<td>9.2449**</td>
<td>0.7925</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BAMIA B</td>
<td>0.0353</td>
<td>0.0028</td>
<td>12.6942**</td>
<td>0.7894</td>
<td></td>
<td>388.52**</td>
</tr>
</tbody>
</table>

** Significant at the 0.01 level (p < 0.01)

The predicted score on shot put is 0.6832 unit when the scores of the BAMIA is zero and the predicted score increases by 0.0353 units on the shot put event for each unit of increase in the score of the BAMIA. The regression coefficient is found to be statistically significant at the 0.01 level ('T' Value : 12.6942).

In second step anxiety in athletics (BISTAA), that in combination with achievement motivation in athletics (BAMIA) gave the high value of adjusted R². The result of the regression of the performance scores in shot put event on the BAMIA scores and on the BISTAA scores are given in Table 58.

As seen in Table 58 the relationship between the BISTAA and shot put event is negative and that 80.36 percent of the variance in shot put performance is explained by linear regression jointly by the BAMIA and BISTAA.

The regression coefficient of achievement motivation in athletics is found to be statistically significant at the 0.01 level ('T' Value : 12.4400).
TABLE 58
REGRESSION OF THE PERFORMANCE SCORES IN SHOT PUT EVENT ON THE SCORES OF ACHIEVEMENT MOTIVATION IN ATHLETICS (BAMIA) AND ANXIETY IN ATHLETICS (BISTAA)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Parameter</th>
<th>Estimate</th>
<th>Standard Error</th>
<th>Computed 't' Value</th>
<th>R²</th>
<th>Adjusted R²</th>
<th>F Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>A</td>
<td>1.1568</td>
<td>0.1824</td>
<td>6.3421**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BAMIA</td>
<td>B₁</td>
<td>0.0336</td>
<td>0.0027</td>
<td>12.4400**</td>
<td>0.8049</td>
<td>0.8036 **</td>
<td>241.05 **</td>
</tr>
<tr>
<td>BISTAA</td>
<td>B₂</td>
<td>-0.0069</td>
<td>0.0017</td>
<td>-4.0588**</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

** Significant at the 0.01 level (p < 0.01 )

The regression coefficient of anxiety in athletics is found to be statistically significant at the 0.01 level ('t' Value: -4.0588).

The predicted score on shot put event is 1.1568 units when the scores of both the BAMIA and BISTAA are zeros.

The predicted score increases by 0.0336 unit on the shot put performance for each unit of increase in the BAMIA when the effect of the BISTAA is controlled statistically.

The predicted score increases by -0.0069 unit on the shot put performance for each unit of increase in anxiety in athletics (BISTAA) when the effect of the BAMIA is controlled statistically.

In the third step, level of aspiration in athletics (BLATA) that in combination with the BAMIA and BISTAA gave the high value of adjusted $R^2$. The results of the regression of the performance scores in shot put event on the BAMIA, BISTAA and BLATA are presented in Table 59.
As seen in Table 59 the relationship between level of aspiration in athletics (BLATA) and shot put performance is positive and that 81.43 percent of the variance in shot put performance is explained by linear regression jointly by the BAMIA, BISTAA and BLATA. The regression coefficient of the BAMIA is found to be statistically significant at the 0.01 level ('T' value : 8.4358).

The regression coefficient of the BISTAA is found statistically significant at the 0.01 level ('T' value : -3.5556).

The regression coefficient of level of aspiration in athletics is found to be statistically significant at the 0.01 level ('T' value : 3.7283).

The predicted performance score on shot put event is 1.0865 units when the scores of both the BAMIA, BISTAA and BLATA are zeros.
The predicted performance score increases by 0.0329 unit on shot put event for each unit increase in the BAMIA when the effects of the BISTAA and BLATA are controlled statistically.

The predicted performance score increases by -0.0064 unit on shot put event for each unit increase in the BISTAA when the effects of the BAMIA and BLATA are controlled statistically.

The predicted performance score increases by 0.0302 unit on shot put event for each unit of increase in level of aspiration in athletics (BLATA) when the effects of the BISTAA and BLATA are controlled statistically.

In the last step, general intelligence (DGIT) that in combination with the BAMIA, BISTAA and BLATA gave highest value of adjusted $R^2$. The results of the regression analysis of the performance scores in shot put event on the BAMIA, BISTAA, BLATA and DGIT scores are presented in Table 60.

**TABLE 60**

REGRESSION OF THE PERFORMANCE SCORES IN SHOT PUT EVENT ON ACHIEVEMENT MOTIVATION IN ATHLETICS (BAMIA), ANXIETY IN ATHLETICS (BISTAA), LEVEL OF ASPIRATION IN ATHLETICS (BLATA) AND GENERAL INTELLIGENCE (DGIT)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Parameter</th>
<th>Estimate</th>
<th>Standard Error</th>
<th>Computed 't' Value</th>
<th>$R^2$</th>
<th>Adjusted $R^2$</th>
<th>F Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>A</td>
<td>1.0823</td>
<td>0.2015</td>
<td>5.3712**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BAMIA</td>
<td>B_1</td>
<td>0.0325</td>
<td>0.0039</td>
<td>8.3334**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BISTAA</td>
<td>B_2</td>
<td>-0.0062</td>
<td>0.0018</td>
<td>-3.4445**</td>
<td>0.8208</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BLATA</td>
<td>B_3</td>
<td>0.0298</td>
<td>0.0018</td>
<td>-3.6341**</td>
<td></td>
<td></td>
<td>0.8179</td>
</tr>
<tr>
<td>DGIT</td>
<td>B_4</td>
<td>0.0058</td>
<td>0.0054</td>
<td>1.0741</td>
<td></td>
<td></td>
<td>132.56**</td>
</tr>
</tbody>
</table>

**Significant at the 0.01 level (p < 0.01)**
The results presented in Table 60 show that the relationship between general intelligence (DGIT) and shot put performance is positive and that 81.79 percent of the variance in performing shot put is explained by linear regression jointly by the BAMIA, BISTAA, BLATA and DGIT.

The predicted performance score on shot put is 1.0823 units when the scores of all the independent variables are zeros.

The predicted performance score increases by 0.0325 unit on shot put event for each unit of increase in the BAMIA when the effects of the BISTAA, BLATA and DGIT are controlled statistically. The partial regression coefficient is found to be statistically significant at the 0.01 level ('T' Value: 8.3334). The comparison of the partial B value with the sample bivariate B presented in Table 60 indicates that the influence of achievement motivation in athletics is slightly diminished if the confounding effects of the BISTAA, BLATA and DGIT are controlled.

The predicted performance score increases by -0.0062 unit on shot put event for each unit of increase in anxiety in athletics (BISTAA) when the effects of the BAMIA, BLATA and DGIT are controlled statistically. The partial regression coefficient is found to be statistically significant at the 0.01 level ('T' value: -3.4445).

The predicted performance score increases by 0.0298 unit on shot put event for each unit of increase in level of aspiration in athletics (BLATA) when the effects of the BAMIA, BISTAA and DGIT are controlled statistically. The partial regression coefficient is found to be statistically significant at the 0.01 level ('T' Value: 3.6341).

The predicted performance score increases by 0.0058 unit on shot put event for each unit of increase in general intelligence (DGIT) when the effects of the BAMIA, BISTAA, and BLATA are...
controlled statistically. However, the partial regression coefficient is not found to be statistically significant even at the 0.05 level ('T' Value: 1.0741).

The $R^2$, adjusted $R^2$ and the increase in the adjusted $R^2$ produced by each additional variable are given in Table 61.

<table>
<thead>
<tr>
<th>Psychological Variables in the Regression</th>
<th>$R^2$</th>
<th>Adjusted $R^2$</th>
<th>Increase in Adjusted $R^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>BAHIA</td>
<td>0.7925</td>
<td>0.7894</td>
<td>0.7894</td>
</tr>
<tr>
<td>BAHIA &amp; BISTAA</td>
<td>0.8049</td>
<td>0.8036</td>
<td>0.0142</td>
</tr>
<tr>
<td>BAHIA, BISTAA &amp; BLATA</td>
<td>0.8157</td>
<td>0.8143</td>
<td>0.0107</td>
</tr>
<tr>
<td>BAHIA, BISTAA, BLATA &amp; DGIT</td>
<td>0.8208</td>
<td>0.8179</td>
<td>0.0036</td>
</tr>
</tbody>
</table>

Table 61 shows that 78.94 percent of the variance in shot put performance is explained by the linear regression on the achievement motivation variable (BAHIA). The anxiety in athletics (BISTAA) adds an increment of 1.42 percent to the variance already explained by the BAHIA. The level of aspiration in athletics (BLATA) adds an increment of only 1.07 percent to the variance already explained by the BAHIA and BISTAA. General intelligence (DGIT) adds an increment of only 0.36 percent of the variance already explained by other three independent variables.

In summary, the result of regression analysis showed higher percent of the variation in the performance of shot put event. The physical performance in shot put event was orderly explained by
achievement motivation in athletics, anxiety in athletics and level of aspiration in athletics for men subjects.

The result of regression analysis also showed a lower percent of variation in the performance of shot put event which is explained by general intelligence for men Ss.

5.2.3.1.4. Multiple Step Up Regression Analysis of the Scores in Running High Jump, BAMIA, BISTAA, BLATA and DGIT for Men Ss

Among all the selected psychological variables, achievement motivation in athletics has the highest degree of coefficient of correlation with running high jump event and is included first in the analysis. The result of the regression of the performance scores of running high jump event on the BAMIA scores are given in Table 62.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Parameter Estimate</th>
<th>Standard Error</th>
<th>Computed 'T' Value</th>
<th>R^2</th>
<th>Adjusted R^2</th>
<th>F  Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant A</td>
<td>0.7321</td>
<td>0.06332</td>
<td>11.5625**</td>
<td>0.7439</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BAMIA B</td>
<td>0.0486</td>
<td>0.0040</td>
<td>14.3024**</td>
<td>0.7416</td>
<td></td>
<td>382.52**</td>
</tr>
</tbody>
</table>

** Significant at the 0.01 level (p < 0.01)

As seen in Table 62 the relationship between the scores in running high jump event and the scores in the BAMIA is positive and that 74.16 percent of the variance in running high jump performance is explained by linear regression on the variable.
The value given in Table 62 is used as measure of influence of each independent variable upon running high jump performance with adjustments made for all other psychological variables.

The predicted score on running high jump event is 0.7321 unit when the score of the BAMIA is zero, and the predicted score increases by 0.0486 unit on the running high jump for each unit of increase in the score of the BAMIA. The regression coefficient is found to be statistically significant at the 0.01 level ("T' Value : 14.3024). 

In the second step, anxiety in athletics that in combination with achievement motivation in athletics gave the highest value of adjusted $R^2$. The result of the regression of the performance scores in running high jump event on the BAMIA scores and on the BISTAA scores are given in Table 63.

**TABLE 63**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Parameter</th>
<th>Estimate</th>
<th>Standard Error</th>
<th>Computed 'T' Value</th>
<th>Computed $R^2$</th>
<th>Adjusted $T^2$ Value</th>
<th>F Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>A</td>
<td>1.2130</td>
<td>0.1670</td>
<td>7.2594**</td>
<td>0.7582</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BAMIA</td>
<td>B_1</td>
<td>0.0395</td>
<td>0.0032</td>
<td>12.3437**</td>
<td>0.7577</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BISTAA</td>
<td>B_2</td>
<td>-0.0043</td>
<td>0.0008</td>
<td>-5.3750**</td>
<td></td>
<td></td>
<td>204.05</td>
</tr>
</tbody>
</table>

**Significant at the 0.01 level (p < 0.01)**

As seen in Table 63 the relationship between the BISTAA and the running high jump event is negative and that 75.77 percent of the variance in running high jump performance is explained by linear regression jointly by the BAMIA and BISTAA.
The regression coefficient of achievement motivation in athletics is found to be statistically significant at the 0.01 level ('T' Value: 12.3437).

The regression coefficient of anxiety in athletics is found to be statistically significant at the 0.01 level ('T' Value: -5.375).

The predicted score on running high jump event is 1.2130 unit when the scores of both the BAMIA and BISTAA are zeros.

The predicted score increases by 0.0395 unit on the running high jump performance for each unit of increase in the BAMIA when the effect of the BISTAA is controlled statistically.

The predicted score increase by -0.0043 units on the running high jump performance for each unit of increase in anxiety in athletics (BISTAA) when the effect of achievement motivation in athletics (BAMIA) controlled statistically.

In the third step, level of aspiration in athletics that in combination with the BAMIA and the BISTAA gave the highest value of adjusted $R^2$. The results of the regression of the performance scores in running high jump event on the BAMIA, BISTAA, and BLATA are presented in Table 64.

### Table 64

<table>
<thead>
<tr>
<th>Variable</th>
<th>Parameter</th>
<th>Estimate</th>
<th>Standard Error</th>
<th>Computed 'T' Value</th>
<th>$R^2$</th>
<th>Adjusted $R^2$</th>
<th>F Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>$A$</td>
<td>1.1639</td>
<td>0.1839</td>
<td>6.3289**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BAMIA</td>
<td>$B_1$</td>
<td>0.0362</td>
<td>0.0037</td>
<td>9.7838**</td>
<td>0.7735</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BISTAA</td>
<td>$B_2$</td>
<td>-0.0038</td>
<td>0.0008</td>
<td>-4.7500**</td>
<td>0.7709</td>
<td></td>
<td>148.39**</td>
</tr>
<tr>
<td>BLATA</td>
<td>$B_3$</td>
<td>0.0274</td>
<td>0.0108</td>
<td>2.5370**</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

** Significant at the 0.01 level (p < 0.01)
As seen in Table 64 the relationship between level of aspiration in athletics and running high jump performance is positive and that 77.09 percent of the variance in running high jump performance is explained by linear regression jointly by the BAMIA, BISTAA and BLATA.

The regression coefficient of the BAMIA is found to be statistically significant at the 0.01 level ('T' Value : 9.7838).

The regression coefficient of the BISTAA is found to be statistically significant at the 0.01 level ('T' Value : - 4.7500).

The regression coefficient of level of aspiration in athletics as found to be statistically significant at the 0.01 level ('T' Value: 2.5370).

The predicted performance score on running high jump event is 1.1639 units when the scores of both the BAMIA, BISTAA and BLATA are zeros.

The predicted performance score increases by 0.0362 unit on running high jump event for each unit increase in the BAMIA when the effects of BISTAA and BLATA are controlled statistically.

The predicted performance score increases by -0.0038 unit on running high jump event for each unit increase in the BISTAA when the effects of the BAMIA and BLATA are controlled statistically.

The predicted performance score increases by 0.0274 unit on running high jump event for each unit of increase in level of aspiration in athletics when the effects of the BISTAA and BLATA are controlled statistically.

In the last step general intelligence (DGIT) that in combination with the BAMIA, BISTAA and BLATA gave highest value of adjusted $R^2$. The results of the regression analysis of the performance scores in running high jump event on BAMIA, BISTAA, BLATA and DGIT scores are presented in Table 65.
The results presented in Table 65 show that the relationship between general intelligence (DGIT) and running high jump performance is positive and that 77.13 percent of the variance in performing running high jump is explained by linear regression jointly by BAMIA, BISTAA, BLATA and DGIT.

**TABLE 65**

**REGRESSION OF THE PERFORMANCE SCORES IN RUNNING HIGH JUMP EVENT ON ACHIEVEMENT MOTIVATION IN ATHLETICS (BAMIA), ANXIETY IN ATHLETICS (BLATA) AND GENERAL INTELLIGENCE SCORES (DGIT)**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Parameter</th>
<th>Estimate</th>
<th>Standard Error</th>
<th>Computed 'T' Value</th>
<th>R² Adjusted</th>
<th>F Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>A</td>
<td>1.1604</td>
<td>0.1939</td>
<td>5.9845**</td>
<td>0.7728</td>
<td></td>
</tr>
<tr>
<td>BAMIA</td>
<td>B₁</td>
<td>0.0351</td>
<td>0.0042</td>
<td>8.3571**</td>
<td>0.7713</td>
<td></td>
</tr>
<tr>
<td>BISTAA</td>
<td>B₂</td>
<td>-0.0035</td>
<td>0.0008</td>
<td>4.3750**</td>
<td>107.23**</td>
<td></td>
</tr>
<tr>
<td>BLATA</td>
<td>B₃</td>
<td>0.0269</td>
<td>0.0107</td>
<td>2.5140**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DGIT</td>
<td>B₄</td>
<td>0.0058</td>
<td>0.0056</td>
<td>1.0357</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

** Significant at the 0.01 level (p < 0.01)**

The predicted performance score on running high jump is 1.1604 units when the scores of all the independent variables are zeros.

The predicted performance score increases by 0.0351 unit on running high jump event for each unit of increase in the BAMIA when the effects of the BISTAA, BLATA and DGIT are controlled statistically. The partial regression coefficient is found to be statistically significant at the 0.01 level ('T' Value : 8.3571). The comparison of the partial B value with the sample bivariate B presented in Table 65 indicates that the influence of achievement
motivation in athletics (BAMIA) is slightly diminished if the confounding effects of the BISTAA, BLATA and DGIT are controlled.

The predicted performance score increases by -0.0035 unit on running high jump event for each unit of increase in anxiety in athletics (BISTAA) when the effects of the BAMIA, BLATA and DGIT are controlled statistically. The partial regression coefficient is found to be statistically significant at the 0.01 level ('T' Value: -4.3750).

The predicted performance score increases by 0.0269 unit on running high jump event for each unit of increase in level of aspiration in athletics (BLATA) when the effects of the BAMIA,BISTAA, and DGIT are controlled statistically. The partial regression coefficient is found to be statistically significant at the 0.01 level ('T' Value: 2.5140).

The predicted performance score increases by 0.0058 unit on running high jump event for each unit of increase in general intelligence (DGIT) when the effects of the BAMIA, BISTAA, and BLATA are controlled statistically. However, the partial regression coefficient is not found to be statistically significant even at the 0.05 level ('T' Value: 1.0357).

The $R^2$, adjusted $R^2$ and the increase in the adjusted $R^2$ produced by each additional variable are given in Table 66.

### Table 66

<table>
<thead>
<tr>
<th>Variable (Psychological) in the Regression</th>
<th>$R^2$</th>
<th>Adjusted $R^2$</th>
<th>Increase in Adjusted $R^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>BAMIA</td>
<td>0.7439</td>
<td>0.7416</td>
<td>0.7416</td>
</tr>
<tr>
<td>BAMIA &amp; BISTAA</td>
<td>0.7586</td>
<td>0.7577</td>
<td>0.0161</td>
</tr>
<tr>
<td>BAMIA, BISTAA &amp; BLATA</td>
<td>0.7735</td>
<td>0.7709</td>
<td>0.0132</td>
</tr>
<tr>
<td>BAMIA, BISTAA, BLATA &amp; DGIT</td>
<td>0.7728</td>
<td>0.7713</td>
<td>0.0004</td>
</tr>
</tbody>
</table>
Table 66 shows that 74.16 percent of the variance in running high jump performance is explained by the linear regression on the achievement motivation variable (BAMIA). The anxiety in athletics (BISTAA) adds an increment of 1.61 percent to the variance already explained by the BAMIA. The level of aspiration in athletics (BLATA) adds an increment of only 1.32 percent to the variance already explained by the BAMIA and the BISTAA. General intelligence (DGIT) adds an increment of only 0.04 percent of the variance already explained by other three independent variables.

In summary, the result of regression analysis showed higher percent of the variation in the performance of running high jump event. The physical performance in running high jump event was orderly explained by achievement motivation in athletics, anxiety in athletics and level of aspiration in athletics for men subjects.

The result of regression analysis also showed a lower percent of variation in the performance of running high jump event which is explained by general intelligence for men Ss.

5.2.3.1.5. Multiple Step Up Regression analysis of the Scores in 800 M Run, BAMIA, BISTAA, BLATA and DGIT for Men Ss

Among all the selected psychological variables, achievement motivation in athletics has the highest degree of coefficient of correlation with 800 M running event and is included first in the analysis. The results of the regression of the performance score of 800 M running event on the BAMIA scores are given in Table 67.

As seen in Table 67 the relationship between the scores in 800 M running performance and the scores in the BAMIA is positive and that 64.98 percent of the variance in 800 M running performance is explained by linear regression on the variable viz., achievement motivation in athletics.
TABLE 67
REGRESSION OF THE PERFORMANCE SCORES IN 800 M EVENT ON THE SCORES OF ACHIEVEMENT MOTIVATION IN ATHLETICS (BAMIA)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Parameter</th>
<th>Estimate</th>
<th>Standard Error</th>
<th>Computed 'T' Value</th>
<th>R²</th>
<th>Adjusted R²</th>
<th>F Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>A</td>
<td>0.7524</td>
<td>0.1437</td>
<td>5.2362**</td>
<td></td>
<td>0.6537</td>
<td></td>
</tr>
<tr>
<td>BAMIA</td>
<td>B</td>
<td>0.0518</td>
<td>0.0061</td>
<td>8.5614**</td>
<td></td>
<td>0.6498</td>
<td>296.25**</td>
</tr>
</tbody>
</table>

** Significant at the 0.01 level ( p < 0.01 )

The B value given in Table 67 is used as measure of influence of each independent variable upon 800 M running performance with adjustments made for all other psychological variables.

The predicted score on 800 M running event is 0.7524 unit when the score of the BAMIA is zero and the predicted score increase by 0.0518 unit on the 800 M running event for each unit of increase in the score of the BAMIA. The regression coefficient is found to be statistically significant at the 0.01 level ('T' Value: 8.5614).

In the second step anxiety in athletics (BISTAA) that in combination with achievement motivation in athletics (BAMIA) gave high value of adjusted R². The results of the regression of the performance scores in 800 M running event on the BAMIA scores and on the BISTAA scores are given in Table 68.

As seen in Table 68 the relationship between the anxiety in athletics and 800 M running event is negative and that 65.99 percent of the variance in 800 M running performance is explained by linear regression jointly by the BAMIA and BISTAA.
TABLE 68
REGRESSION OF THE PERFORMANCE SCORES IN 800 M RUNNING EVENT ON THE SCORES OF ACHIEVEMENT MOTIVATION IN ATHLETICS (BAMIA) AND ANXIETY IN ATHLETICS (BISTAA)

<table>
<thead>
<tr>
<th>Variable Parameter</th>
<th>Estimate</th>
<th>Standard Error</th>
<th>Computed 'T' Value</th>
<th>$R^2$ Adjusted R²</th>
<th>F Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant A</td>
<td>1.0192</td>
<td>0.2113</td>
<td>4.8235**</td>
<td>0.6605</td>
<td></td>
</tr>
<tr>
<td>BAMIA $B_1$</td>
<td>0.0467</td>
<td>0.0076</td>
<td>6.1592**</td>
<td>0.6599</td>
<td>182.36**</td>
</tr>
<tr>
<td>BISTAA $B_2$</td>
<td>-0.0048</td>
<td>0.0015</td>
<td>-3.2476**</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

** Significant at the 0.01 level ( $p < 0.01$ )

The regression coefficient of achievement motivation in athletics is found to be statistically significant at the 0.01 level ('$T$' Value : 6.1592).

The regression coefficient of anxiety in athletics is found to be statistically significant at the 0.01 level ('$T$' Value: -3.2476).

The predicted score on 800 M running event is 1.0192 units when the scores of both the BAMIA and BISTAA are zeros.

The predicted score increases by 0.0467 unit on the 800 M running performance for each unit of increase in the BAMIA when the effect of BISTAA is controlled statistically.

The predicted score increase by -0.0048 unit on the 800 M running performance for each unit of increase in anxiety in athletics (BISTAA) when the effect of the BAMIA is controlled statistically.

In the third step, level of aspiration in athletics (BLATA), that in combination with the BAMIA, and the BISTAA gave high value...
of adjusted $R^2$. The results of the regression of the performance scores in 800 M running event on the BAHIA, BISTAA, and BLATA are presented in Table 69.

### TABLE 69

REGRESSION OF THE PERFORMANCE SCORES IN 800 M RUNNING EVENT ON THE ACHIEVEMENT MOTIVATION IN ATHLETICS (BAHIA), ANXIETY IN ATHLETICS (BISTAA), AND LEVEL OF ASPIRATION IN ATHLETICS (BLATA)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Parameter</th>
<th>Estimate</th>
<th>Standard Error</th>
<th>Computed 'T' Value</th>
<th>$R^2$</th>
<th>Adjusted $R^2$</th>
<th>$F$ Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>constant</td>
<td>A</td>
<td>1.1366</td>
<td>0.3019</td>
<td>3.7651**</td>
<td>0.6673</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BAMIA</td>
<td>B&lt;sub&gt;1&lt;/sub&gt;</td>
<td>0.0443</td>
<td>0.0088</td>
<td>5.0326**</td>
<td>0.6651</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BISTAA</td>
<td>B&lt;sub&gt;2&lt;/sub&gt;</td>
<td>-0.0037</td>
<td>0.0013</td>
<td>-2.8914**</td>
<td></td>
<td>102.31**</td>
<td></td>
</tr>
<tr>
<td>BLATA</td>
<td>B&lt;sub&gt;3&lt;/sub&gt;</td>
<td>0.0246</td>
<td>0.0096</td>
<td>2.5603**</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

** Significant at the 0.01 level ($p < 0.01$)

As seen in Table 69 the relationship between level of aspiration in athletics (BLATA) and 800 M running performance is positive and that 66.51 percent of the variance in 800 M running performance is explained by linear regression jointly by the BAHIA, BLATA, and BISTAA.

The regression coefficient of the BAHIA is found to be statistically significant at the 0.01 level ('T' Value : 5.0326).

The regression coefficient of the BISTAA is found to be statistically significant at the 0.01 level ('T' Value : -2.8914).

The regression coefficient of level of aspiration in athletics is found to be statistically significant at the 0.01 level ('T' Value : 2.5603).
The predicted performance score on 800 M running event is 1.1366 units when the scores of BAMIA, BLATA, and BISTAA are zeros.

The predicted performance score increases by 0.0443 unit on 800 M running event for each unit increase in the BAMIA when the effects of the BISTAA and BLATA are controlled statistically.

The predicted performance score increases by -0.0037 unit on 800 M running event for each unit increase in the BISTAA when the effects of the BAMIA and BLATA are controlled statistically.

The predicted performance score increases by 0.0246 unit on 800 M running event for each unit increase in level of aspiration in athletics (BLATA) when the effects of the BISTAA and BLATA are controlled statistically.

In the last step general intelligence (DGIT) that in combination with the BAMIA, BISTAA, and BLATA gave highest value of adjusted $R^2$. The results of the regression analysis of the performance scores in 800 M running event on the BAMIA, BISTAA, BLATA, and DGIT scores are presented in Table 70.

The results presented in Table 70 show that the relationship between general intelligence (DGIT) and 800 M running performance is positive and that 66.85 percent of the variance in performing 800 M running event is explained by linear regression jointly by BAMIA, BISTAA, BLATA, and DGIT.

The predicted performance score on 800 M run is 1.1343 units when the scores of all the independent variables are zeros.

The predicted performance score increases by 0.0438 unit on 800 M running event for each unit increase in the BAMIA when the effects of the BISTAA, BLATA, and DGIT are controlled statistically. The partial regression coefficient is found to be statistically significant at the 0.01 level ("T" Value: 4.8623).
TABLE 70
REGRESSION OF THE PERFORMANCE SCORES IN 800 M RUNNING EVENT ON ACHIEVEMENT MOTIVATION IN ATHLETICS (BAMIA), ANXIETY IN ATHLETICS (BISTAA), LEVEL OF ASPIRATION IN ATHLETICS (BLATA), AND GENERAL INTELLIGENCE (DGIT)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Parameter</th>
<th>Estimate</th>
<th>Standard error</th>
<th>Computed 'T' Value</th>
<th>R²</th>
<th>Adjusted R²</th>
<th>F Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant A</td>
<td>1.1343</td>
<td>0.3206</td>
<td>3.5378**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BAMIA B₁</td>
<td>0.0438</td>
<td>0.0090</td>
<td>4.8623**</td>
<td>0.6732</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BISTAA B₂</td>
<td>-0.0034</td>
<td>0.0012</td>
<td>-2.7851**</td>
<td>0.6685</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BLATA B₃</td>
<td>0.0237</td>
<td>0.0154</td>
<td>1.5342</td>
<td>94.32**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DGIT B₄</td>
<td>0.0046</td>
<td>0.0037</td>
<td>1.2436</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

** Significant at the 0.01 level (p < 0.01)

The comparison of the partial B value with the sample bivariate B presented in Table 70 indicates that the influence of achievement motivation in athletics (BAMIA) is slightly diminished if the confounding effects of the BISTAA, BLATA and DGIT are controlled.

The predicted performance score increases by -0.0034 unit on 800 M running event for each unit of increase in anxiety in athletics (BISTAA) when the effects of the BAMIA, BLATA and DGIT are controlled statistically. The partial regression coefficient is found to be statistically significant at the 0.01 level ('T' Value: -2.7851).

The predicted performance score increases by 0.0237 unit on 800 M running event for each unit of increase in level of aspiration in athletics (BLATA) when the effects of the BAMIA, BISTAA and DGIT are controlled statistically. The partial regression coefficient is found to be statistically non-significant at the 0.05 level ('T' value: 1.5342).
The predicted performance score increases by 0.0046 unit on 800 M running event for each unit of increase in general intelligence (DGIT) when the effects of the BAHIA, BISTAA and BLATA are controlled statistically. However, the partial regression coefficient is not found to be statistically significant even at the 0.05 level (T' Value : 1.2436).

The $R^2$, adjusted $R^2$ and the increase in the adjusted $R^2$ produced by each additional variable are given in Table 71.

Table 71 shows that 64.98 percent of the variance in 800 M running performance is explained by the linear regression on the achievement motivation variable (BAHIA). The anxiety in athletics (BISTAA) adds an increment of 1.01 percent to the variance already explained by the BAHIA. The level of aspiration in athletics (BLATA) adds an increment of only 0.52 percent to the variance already explained by the BAHIA and BISTAA. General intelligence (DGIT) adds an increment of only 0.34 percent of the variance already explained by other three independent variables.
In summary, the result of regression analysis showed higher percent of the variation in the performance of 800 M running event. The physical performance in 800 M running event was orderly explained by achievement motivation in athletics, anxiety in athletics, and level of aspiration in athletics for men subjects.

The result of regression analysis also showed a lower percent of variation in the performance of 800 M running event which is explained by general intelligence for men Ss.

5.2.3.2. MULTIPLE STEP UP REGRESSION ANALYSIS OF THE SCORES IN ATHLETIC EVENTS, BAMIA, BISTAA, BLATA AND DGIT FOR WOMEN SUBJECTS

5.2.3.2.1. Multiple Step Up Regression analysis of the scores in 100 M run, BAMIA, BISTAA, BLATA and DGIT for Women Subjects

Among all the selected psychological variables, achievement motivation in athletics has the highest degree of coefficient of correlation with 100 M running event and is included first in the analysis. The result of the regression of the performance score of 100 M running event on the BAMIA scores are given in Table 72.

TABLE 72
REGRESSION OF THE PERFORMANCE SCORES IN 100 M RUNNING EVENT ON THE SCORES OF ACHIEVEMENT MOTIVATION IN ATHLETICS (BAMIA)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Parameter</th>
<th>Estimate</th>
<th>Standard Error</th>
<th>Computed 'T' value</th>
<th>$R^2$</th>
<th>Adjusted $R^2$</th>
<th>F Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>A</td>
<td>0.7268</td>
<td>0.0587</td>
<td>12.3805**</td>
<td>0.7852</td>
<td>0.7835</td>
<td>432.01**</td>
</tr>
<tr>
<td>BAMIA</td>
<td>B</td>
<td>0.0423</td>
<td>0.0027</td>
<td>15.5620**</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

** Significant at the 0.01 level (p < 0.01)
As seen in Table 72 the relationship between the scores in 100 M running performance and the scores in the BAHIA is positive and that 78.35 percent of the variance in 100 M running performance is explained by linear regression on the variable, viz., achievement motivation in athletics.

The B values given in Table 72 are used as measures of influence of each independent variable upon 100 M running performance with adjustments made for all other psychological variables.

The predicted score on 100 M running event is 0.7268 unit when the score of the BAHIA is zero, and the predicted score increases by 0.0423 unit on the 100 M running event for each unit of increase in the score of the BAHIA. The regression coefficient is found to be statistically significant at the 0.01 level (*T* Value: 15.5620).

In the second step, anxiety in athletics (BISTAA) that in combination with achievement motivation in athletics (BAHIA) gave high value of adjusted $R^2$. The result of the regression of the performance scores in 100 M running event on the BAHIA scores and on the BISTAA scores are given in Table 73.

As seen in Table 73 the relationship between the BISTAA and 100 M running event is negative and that 79.98 percent of the variance in 100 M running performance is explained by linear regression jointly by the BAHIA and BISTAA.

The regression coefficient of achievement motivation in athletics is found to be statistically significant at the 0.01 level (*T* Value: 13.3425).

The regression coefficient of anxiety in athletics is found to be statistically significant at the 0.01 level (*T* Value:-2.8508).

The predicted score on 100 M running event is 1.3528 units when the scores of both the BAHIA and the BISTAA are zeros.
TABLE 73
REGRESSION OF THE PERFORMANCE SCORES IN 100 M RUNNING EVENT ON THE SCORES OF ACHIEVEMENT MOTIVATION IN ATHLETICS (BAMIA) AND ANXIETY IN ATHLETICS (BISTAA)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Parameter</th>
<th>Estimate</th>
<th>Standard Error</th>
<th>Computed ‘T’ Value</th>
<th>R²</th>
<th>Adjusted R²</th>
<th>F value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant A</td>
<td>1.3528</td>
<td>0.2169</td>
<td>6.2356**</td>
<td>0.8023</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BAMIA B₁</td>
<td>0.0391</td>
<td>0.0029</td>
<td>13.3425**</td>
<td>0.7998</td>
<td></td>
<td></td>
<td>235.25**</td>
</tr>
<tr>
<td>BISTAA B₂</td>
<td>-0.0055</td>
<td>0.0019</td>
<td>-2.8508**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

** Significant at the 0.01 level (p < 0.01)

The predicted score increases by 0.0391 unit on the 100 M running performance for each unit of increase in the BAMIA when the effect of the BISTAA is controlled statistically.

The predicted score increase by -0.0055 unit on the 100 M running performance for each unit of increase in anxiety in athletics (BISTAA) when the effect of achievement motivation in athletics (BAMIA) is controlled statistically.

In third step, level of aspiration in athletics (BLATA) that in combination with the BAMIA and BISTAA gave high value of adjusted R². The results of the regression of the performance scores in 100 M running event on the BAMIA, BISTAA, and BLATA are presented in Table 74.

As seen in Table 74 the relationship between level of aspiration in athletics (BLATA) and 100 M running performance is positive and that 81.76 percent of the variance in 100 M running event is explained by linear regression jointly by the BAMIA, BISTAA, and BLATA.


**TABLE 74**

REGRESSION OF THE PERFORMANCE SCORES IN 100 M RUNNING EVENT ON THE ACHIEVEMENT MOTIVATION IN ATHLETICS (BAMIA), ANXIETY IN ATHLETICS (BISTAA) AND LEVEL OF ASPIRATION IN ATHLETICS (BLATA)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Parameter</th>
<th>Estimate</th>
<th>Standard Error</th>
<th>Computed 'T'Value</th>
<th>R²</th>
<th>Adjusted R²</th>
<th>F Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>A</td>
<td>1.2963</td>
<td>0.2516</td>
<td>5.1508**</td>
<td>0.8165</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BAMIA</td>
<td>B₁</td>
<td>0.0354</td>
<td>0.0034</td>
<td>10.2371**</td>
<td>0.8126</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BISTAA</td>
<td>B₂</td>
<td>-0.0047</td>
<td>0.0018</td>
<td>-2.6345**</td>
<td></td>
<td>168.23**</td>
<td></td>
</tr>
<tr>
<td>BLATA</td>
<td>B₃</td>
<td>0.0288</td>
<td>0.0114</td>
<td>2.5239**</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Significant at the 0.01 level (p < 0.01).**

The regression coefficient of the BAMIA is found to be statistically significant at the 0.01 level ('T' value : 10.2371).

The regression coefficient of the BISTAA found to be statistically significant at the 0.01 level ('T' Value : -2.6345).

The regression coefficient of level of aspiration in athletics (BLATA) is found to be statistically significant at the 0.01 level ('T' Value : 2.5239).

The predicted performance score on 100 M running event is 1.2963 units when the scores of both the BAMIA, BISTAA and BLATA are zeros.

The predicted performance score increases by 0.0354 unit on 100 M running event for each unit increase in the BAMIA when the effects of the BISTAA and BLATA are controlled statistically.

The predicted performance score increases by -0.0047 unit on
100 M running event for each unit increase in the BISTAA when the effects of the BAMIA and BLATA are controlled statistically.

The predicted performance score increases by 0.0288 unit on 100 M running event for each unit of increase in level of aspiration in athletics (BLATA) when the effects of the BISTAA and BAMIA are controlled statistically.

In the last step, general intelligence (DGIT) that in combination with the BAMIA, BISTAA and BLATA gave highest value of adjusted $R^2$. The results of the regression analysis of the performance scores in 100 M running event on the BAMIA, BISTAA and DGIT scores are presented in Table 75.

**TABLE 75**

| REGRESSION OF THE PERFORMANCE SCORES IN 100 M RUNNING EVENT ON ACHIEVEMENT MOTIVATION IN ATHLETICS (BAMIA) ANXIETY IN ATHLETICS (BISTAA) AND GENERAL INTELLIGENCE (DGIT) |
|---|---|---|---|---|---|---|
| Variable | Parameter | Estimate | Standard Error | Computed 'T' Value | $R^2$ | Adjusted $R^2$ | F Value |
|---|---|---|---|---|---|---|
| Constant | A  | 1.2038 | 0.2495 | 4.8256** | | | |
| BAMIA | $B_1$ | 0.0306 | 0.0034 | 9.0032** | | | 0.8224 |
| BISTAA | $B_2$ | -0.0046 | 0.0018 | -2.5865** | | | 0.8201 |
| BLATA | $B_3$ | 0.0284 | 0.0114 | 2.4937** | | | 125.03** |
| DGIT | $B_4$ | 0.0059 | 0.0046 | 1.2735 | | | |

** Significant at the 0.01 level (p < 0.01) **

The results presented in Table 75 show that the relationship between general intelligence (DGIT) and 100 M running event is positive and that 82.01 percent of the variance in performing 100 M running
event is explained by linear regression jointly by the BAMIA, BISTAA, BLATA and DGIT.

The predicted performance score on 100 M running event is 1.2038 units when the scores of all the independent variables are zero.

The predicted performance score increase by 0.0306 unit on 100 M running event for each unit of increase in the BAMIA when the effects of the BISTAA, BLATA and DGIT are controlled statistically. The partial regression coefficient is found to be statistically significant at the 0.01 level ('T' Value : 9.0032).

The comparison of the partial B value with the sample bivariate B presented in Table 75 indicates that the influence of achievement motivation in athletics is slightly diminished if the confounding effects of the BISTAA, BLATA and DGIT are controlled.

The predicted performance score increases by -0.0046 unit on 100 M running event for each unit of increase in anxiety in athletics (BISTAA) when the effects of the BAMIA, BLATA and DGIT are controlled statistically. The partial regression coefficient is found to be statistically significant at the 0.01 level ('T' Value : -2.5865).

The predicted performance score increases by 0.0284 unit on 100 M running event for each unit of increase in level of aspiration in athletics (BLATA) when the effects of the BAMIA, BISTAA and DGIT are controlled statistically. The partial regression coefficient is found to be statistically significant at the 0.01 level ('T' Value : 2.4937).

The predicted performance score increases by 0.0059 unit on 100 M running event for each unit of increase general intelligence (DGIT) when the effects of the BAMIA, BISTAA and BLATA are controlled statistically. However, the partial regression coefficient is not found to be statistically significant even at the 0.05 level ('T' Value : 1.2735).
The $R^2$, adjusted $R^2$ and the increase in the adjusted $R^2$ produced by each additional variable are given in Table 76.

### Table 76

The $R^2$, adjusted $R^2$ and the increase in the adjusted $R^2$ produced by each additional psychological variable in the case of 100 M running event

<table>
<thead>
<tr>
<th>Psychological Variables in the Regression</th>
<th>$R^2$</th>
<th>Adjusted $R^2$</th>
<th>Increase in $R^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>BAMIA</td>
<td>0.7852</td>
<td>0.7835</td>
<td>0.7835</td>
</tr>
<tr>
<td>BAMIA &amp; BISTAA</td>
<td>0.8023</td>
<td>0.7998</td>
<td>0.0163</td>
</tr>
<tr>
<td>BAMIA, BISTAA &amp; BLATA</td>
<td>0.8165</td>
<td>0.8126</td>
<td>0.0128</td>
</tr>
<tr>
<td>BAMIA, BISTAA, BLATA &amp; DGIT</td>
<td>0.8224</td>
<td>0.8201</td>
<td>0.0075</td>
</tr>
</tbody>
</table>

Table 76 shows that 78.35 percent of the variance in 100 M running performance is explained by the linear regression on the achievement motivation variable (BAMIA). The anxiety in athletics (BISTAA) adds an increment of 1.63 percent to the variance already explained the BAMIA. The level of aspiration in athletics (BLATA) adds an increment of only 1.28 percent to the variance already explained by the BAMIA and BISTAA. General intelligence (DGIT) adds an increment of only 0.75 percent of the variance already explained by other three independent variables.

In summary, the result of regression analysis showed higher percent of the variation in the performance of 100 M running event. The physical performance in 100 M running event was orderly explained by achievement motivation in athletics, anxiety in athletics and level of aspiration in athletics for women subjects.

The result of regression analysis also showed a lower percent of variation in the performance of 100 M event which is explained by general
5.2.3.2.2. Multiple Step Up Regression Analysis of the scores in Running Long Jump, BAMIA, BISTAA, BLATA and DGIT for Women Subjects

Among all the selected psychological variables, achievement motivation in athletics has the highest degree of coefficient of correlation with 100 M running event and is included first in the analysis. The result of the regression of the performance score of running long jump event on the BAMIA scores are given in Table 77.

**TABLE 77**

REGRESSION OF THE PERFORMANCE SCORES IN RUNNING LONG JUMP EVENT ON THE SCORES OF ACHIEVEMENT MOTIVATION IN ATHLETICS (BAMIA)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Parameter</th>
<th>Estimate</th>
<th>Standard Error</th>
<th>Computed 'T' Value</th>
<th>$R^2$</th>
<th>Adjusted $R^2$</th>
<th>F Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>A</td>
<td>0.7921</td>
<td>0.1252</td>
<td>6.3288**</td>
<td>0.8169</td>
<td>0.8136</td>
<td></td>
</tr>
<tr>
<td>BAMIA</td>
<td>B</td>
<td>0.0435</td>
<td>0.0030</td>
<td>14.3253**</td>
<td></td>
<td>440.39**</td>
<td></td>
</tr>
</tbody>
</table>

** Significant at the 0.01 level (p < 0.01 )

As seen in Table 77 the relationship between the scores in running long jump performance and the scores in the BAMIA is positive and that 81.36 percent of the variance in running long jump performance is explained by linear regression on the variable, viz., achievement motivation in athletics.

The B values given in Table 77 are used as measures of influence of each independent variable upon running long jump performance with adjustments made for all other psychological variables.
The predicted score on running long jump event is 0.7921 unit when the score of the BAMIA is zero and the predicted score increases by 0.0435 unit on the running long jump event for each unit of increase in the score of the BAMIA. The regression coefficient is found to be statistically significant at the 0.01 level ('T' value : 14.3253).

In the second step, anxiety in athletics (BISTAA) that in combination with achievement motivation in athletics (BAMIA) gave high value of adjusted $R^2$. The result of the regression of the performance scores in running long jump event on the BAMIA scores and on the BISTAA scores are given in Table 78.

**TABLE 78**
REGRESSION OF THE PERFORMANCE SCORES IN RUNNING LONG JUMP EVENT ON THE SCORES OF ACHIEVEMENT MOTIVATION IN ATHLETICS (BAMIA) AND ANXIETY IN ATHLETICS (BISTAA)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Parameter</th>
<th>Estimate</th>
<th>Standard Error</th>
<th>Computed 'T' Value</th>
<th>$R^2$</th>
<th>Adjusted $R^2$</th>
<th>F Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>A</td>
<td>1.4372</td>
<td>0.2853</td>
<td>5.0375**</td>
<td>0.8375</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BAMIA</td>
<td>B1</td>
<td>0.0423</td>
<td>0.0034</td>
<td>12.3410**</td>
<td>0.8334</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BISTAA</td>
<td>B2</td>
<td>-0.0071</td>
<td>0.0024</td>
<td>-3.0125**</td>
<td></td>
<td>242.09**</td>
<td></td>
</tr>
</tbody>
</table>

** Significant at the 0.01 level ( p < 0.01 )**

As seen in Table 78 the relationship between BISTAA and running long jump event is negative and that 83.34 percent of the variance in running long jump performance is explained by linear regression jointly by the BAMIA and BISTAA.

The regression coefficient of achievement motivation in athletics is found to be statistically significant at the 0.01 level ('T' Value : 12.3410).
The regression coefficient of anxiety in athletics is found to be statistically significant at the 0.01 level ('T' Value: -3.0125).

The predicted score on running long jump event is 1.4372 units when the scores of both the BAMIA and BISTAA are zeros.

The predicted score increases by 0.0423 unit on the running long jump performance for each unit of increase in the BAMIA when the effect of the BISTAA is controlled statistically.

The predicted score increases by -0.0071 unit on the running long jump performance for each unit of increase in anxiety in athletics (BISTAA) when the effect of achievement motivation in athletics (BAMIA) is controlled statistically.

In the third step, level of aspiration in athletics (BLATA) that in combination with the BAMIA and BISTAA gave high value of adjusted $R^2$. The results of the regression of the performance scores in running long jump event on the BAMIA, BISTAA and BLATA are presented in Table 79.

As seen in Table 79 the relationship between level of aspiration in athletics (BLATA) and running long jump performance is positive and that 84.96 percent of the variance in running long jump performance is explained by linear regression jointly by the BAMIA, BISTAA and BLATA.

The regression coefficient of the BAMIA is found to be statistically significant at the 0.01 level ('T' Value: 9.5617).

The regression coefficient of the BISTAA is found to be statistically significant at the 0.01 level ('T' Value: -2.9346).

The regression coefficient of level of aspiration in athletics (BLATA) is found to be statistically significant at the 0.01 level ('T' Value: 2.6320).
The predicted performance score on running long jump event is 1.4056 units when the scores of both BAMIA, BISTAA and BLATA are zeros.

The predicted performance score increases by 0.0398 unit on running long jump event for each unit increase in the BAMIA when the effects of the BISTAA and BLATA are controlled statistically.

The predicted performance score increases by 0.0303 unit on running long jump event for each unit of increase in level of aspiration in athletics (BLATA) when the effects of the BISTAA and BAMIA are controlled statistically.

In the last step, general intelligence (DGIT) that
combination with the BAMIA, BISTAA and BLATA gave highest value of adjusted \( R^2 \). The results of the regression analysis of the performance scores in running long jump event on the BAMIA, BLATA and DGIT scores are presented in Table 80. The result of the BISTAA is also included and presented in Table 80.

### TABLE 80

**REGRESSION OF THE PERFORMANCE SCORES IN RUNNING LONG JUMP EVENT ON ACHIEVEMENT MOTIVATION IN ATHLETICS (BAMIA), ANXIETY IN ATHLETICS (BISTAA), LEVEL OF ASPIRATION IN ATHLETICS (BLATA) AND GENERAL INTELLIGENCE (DGIT)**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Parameter</th>
<th>Estimate</th>
<th>Standard Error</th>
<th>Computed 'T' Value</th>
<th>( R^2 )</th>
<th>Adjusted ( R^2 )</th>
<th>F Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>A</td>
<td>1.3261</td>
<td>0.2806</td>
<td>4.7259**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BAMIA</td>
<td>B(_1)</td>
<td>0.0351</td>
<td>0.0042</td>
<td>8.3620**</td>
<td>0.8603</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BISTAA</td>
<td>B(_2)</td>
<td>-0.0057</td>
<td>0.0021</td>
<td>-2.7319**</td>
<td>0.8571</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BLATA</td>
<td>B(_3)</td>
<td>0.0289</td>
<td>0.0115</td>
<td>2.5136**</td>
<td></td>
<td></td>
<td>132.48**</td>
</tr>
<tr>
<td>DGIT</td>
<td>B(_4)</td>
<td>0.0076</td>
<td>0.0063</td>
<td>1.2147</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

** Significant at the 0.01 level (p < 0.01)**

The results presented in Table 80 show that the relationship between general intelligence (DGIT) and running long jump performance is positive and that 85.71 percent of the variance in performing running long jump is explained by linear regression jointly by the BAMIA, BISTAA, BLATA and DGIT.

The predicted performance score on running long jump event is 1.3261 units when the scores of all the independent variables are zero.

The predicted performance score increases by 0.0351 unit on
running long jump event for each unit of increase in achievement motivation in athletics (BAHIA) when the effects of the BISTAA, BLATA and DGIT are controlled statistically. The partial regression coefficient is found to be statistically significant at the 0.01 level ('T' Value : 8.3620).

The comparison of the partial B value with the sample bivariate B presented in Table 80 indicates that the influence of achievement motivation in athletics (BAHIA) is slightly diminished if the confounding effects of the BISTAA, BLATA and DGIT are controlled.

The predicted performance score increases by -0.0057 unit on running long jump event for each unit of increase in anxiety in athletics (BISTAA) when the effects of the BAHIA, BLATA and DGIT are controlled statistically. The partial regression coefficient is found to be statistically significant at the 0.01 level ('T' Value : -2.7319).

The predicted performance score increases by 0.0289 unit on running long jump event for each unit of increase in level of aspiration in athletics (BLATA) when the effects of the BAHIA, BISTAA, and DGIT are controlled statistically. The partial regression coefficient is found to be statistically significant at the 0.01 level ('T' Value : 2.5136).

The predicted performance score increases by 0.0076 unit on running long jump event for each unit of increase in general intelligence (DGIT) when the effects of the BAHIA, BISTAA, and BLATA are controlled statistically. However, the partial regression coefficient is not found to be statistically significant even at the 0.05 level ('T' Value : 1.2147).

The $R^2$, adjusted $R^2$ and the increase in the adjusted $R^2$ produced by each additional variable are given in Table 81.

Table 81 shows that 81.36 percent of the variance in running long jump performance is explained by the linear regression on
the achievement motivation variable (BAMIA). The anxiety in athletics (BISTAA) adds an increment of 1.96 percent to the variance already explained by the BAMIA. The level of aspiration in athletics (BLATA) adds an increment of only 1.62 percent to the variance already explained by the BAMIA and BISTAA. General intelligence (DGIT) adds an increment of only 0.75 percent of the variance already explained by other three independent variables.

The $R^2$, Adjusted $R^2$, and the increase in the Adjusted $R^2$ produced by each additional psychological variable in the case of running long jump event

<table>
<thead>
<tr>
<th>Psychological Variables in the Regression</th>
<th>$R^2$</th>
<th>Adjusted $R^2$</th>
<th>Increase in $R^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>BAMIA</td>
<td>0.8169</td>
<td>0.8136</td>
<td>0.8136</td>
</tr>
<tr>
<td>BAMIA &amp; BISTAA</td>
<td>0.8375</td>
<td>0.8334</td>
<td>0.0198</td>
</tr>
<tr>
<td>BAMIA, BISTAA &amp; BLATA</td>
<td>0.8508</td>
<td>0.8496</td>
<td>0.0162</td>
</tr>
<tr>
<td>BAMIA, BISTAA, BLATA &amp; DGIT</td>
<td>0.8603</td>
<td>0.8571</td>
<td>0.0075</td>
</tr>
</tbody>
</table>

In summary, the result of regression analysis showed higher percent of the variation in the performance of running long jump event. The physical performance in running long jump event was orderly explained by achievement motivation in athletics, anxiety in athletics and level of aspiration in athletics for women subjects.

The result of regression analysis showed a lower percent of variation in the performance of running long jump event which is explained by general intelligence for women subjects.
5.2.3.2.3. **Multiple Step Up Regression Analysis of the Scores in Shot Put, BAMIA, BISTAA, BLATA and DGIT for Women Subjects**

Among the selected psychological variables, achievement motivation in athletics has the highest degree of coefficient of correlation with shot put event and is included first in the analysis. The results of the regression of the performance scores of shot put event on the BAMIA scores are given in Table 82.

**Table 82**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Parameter</th>
<th>Estimate</th>
<th>Standard Error</th>
<th>Computed 'T'Value</th>
<th>R²</th>
<th>Adjusted R²</th>
<th>F Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>A</td>
<td>0.8152</td>
<td>0.0883</td>
<td>9.2365**</td>
<td>0.8253</td>
<td>0.8184</td>
<td>385.61**</td>
</tr>
<tr>
<td>BAMIA</td>
<td>B</td>
<td>0.0486</td>
<td>0.0030</td>
<td>16.3642**</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Significant at the 0.01 level (p < 0.01)**

As seen in Table 82 the relationship between the scores in shot put event and the scores in the BAMIA is positive and that 81.84 percent of the variance in shot put performance is explained by linear regression on the variable, viz., achievement motivation in athletics.

The B values given in Table 82 are used as measures of influence of each independent variable upon shot put performance with adjustments made for all other psychological variables.

The predicted score on shot put event is 0.8152 unit when the score of the BAMIA is zero and the predicted score increases
by 0.0486 unit on the shot put event for each unit of increase in the score of the BAMIA. The regression coefficient is found to be statistically significant at the 0.01 level ('T' Value: 16.3642).

In the second step anxiety in athletics (BISTAA) that in combination with achievement motivation in athletics (BAMIA) gave high value of adjusted $R^2$. The results of the regression of the performance scores in shot put event on the BAMIA scores and on the BISTAA scores are given in Table 83.

As seen in Table 83 the relationship between the BISTAA and shot put performance is negative and that 83.87 percent of the variance in shot put performance is explained by linear regression jointly by the BAMIA and the BISTAA.

**TABLE 83**

REGRESSION OF THE PERFORMANCE SCORES IN SHOT PUT EVENT ON THE SCORES OF ACHIEVEMENT MOTIVATION IN ATHLETICS (BAMIA), ANXIETY IN ATHLETICS (BISTAA)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Parameter</th>
<th>Estimate</th>
<th>Standard Error</th>
<th>Computed 'T' Value</th>
<th>$R^2$</th>
<th>Adjusted $R^2$</th>
<th>F Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>$A$</td>
<td>1.5261</td>
<td>0.2236</td>
<td>6.8245**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BAMIA</td>
<td>$B_1$</td>
<td>0.0472</td>
<td>0.0033</td>
<td>14.4321**</td>
<td>0.8399</td>
<td>0.8387</td>
<td>238.39**</td>
</tr>
<tr>
<td>BISTAA</td>
<td>$B_2$</td>
<td>-0.0067</td>
<td>0.0016</td>
<td>-4.2860**</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

** Significant at the 0.01 level ($p < 0.01$)

The regression coefficient of achievement motivation in athletics is found to be statistically significant at the 0.01 level ('T' Value: 14.4321).

The regression coefficient of anxiety in athletics found to
be statistically significant at the 0.01 level ('T' Value : -4.2860).

The predicted score on shot put event is 1.5261 units when the scores of both the BAMIA and BISTAA are zeros.

The predicted score increases by 0.0472 unit on the shot put performance for each unit of increase in the BAMIA when the effect of the BISTAA is controlled statistically.

The predicted score increases by 0.0067 unit on the shot put performance for each unit of increase in anxiety in athletics (BISTAA) when the effect of achievement motivation in athletics (BAMIA) is controlled statistically.

In the third step level of aspiration in athletics (BLATA) that in combination with the BAMIA and BISTAA gave high value of adjusted $R^2$. The results of the regression of the performance scores in shot put event on the BAMIA, BISTAA, and BLATA are presented in Table 84.

**TABLE 84**

REGRESSION OF THE PERFORMANCE SCORES IN SHOT PUT EVENT ON THE ACHIEVEMENT MOTIVATION IN ATHLETICS (BAMIA), ANXIETY IN ATHLETICS (BISTAA), AND LEVEL OF ASPIRATION IN ATHLETICS (BLATA)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Parameter</th>
<th>Estimate</th>
<th>Standard Error</th>
<th>Computed 'T' Value</th>
<th>$R^2$</th>
<th>Adjusted $R^2$</th>
<th>F Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>A</td>
<td>1.4937</td>
<td>0.3184</td>
<td>4.6916**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BAMIA</td>
<td>$B_1$</td>
<td>0.0463</td>
<td>0.0038</td>
<td>12.0512**</td>
<td>0.8546</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BISTAA</td>
<td>$B_2$</td>
<td>-0.0062</td>
<td>0.0016</td>
<td>-3.9821**</td>
<td>0.8516</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BLATA</td>
<td>$B_3$</td>
<td>0.0315</td>
<td>0.0074</td>
<td>4.2652**</td>
<td></td>
<td></td>
<td>170.34**</td>
</tr>
</tbody>
</table>

** Significant at the 0.01 level (p < 0.01 )
As seen in Table 84 the relationship between level of aspiration in athletics (BLATA) and shot put performance is positive and that 85.16 percent of the variance in shot put performance is explained by linear regression jointly by the BAMIA, BISTAA and BLATA.

The regression coefficient of the BAMIA is found to be statistically significant at the 0.01 level ('T' Value : 12.0512).

The regression coefficient of the BISTAA is found to be statistically significant at the 0.01 level ('T' Value : -3.9821).

The regression coefficient of level of aspiration in athletics (BLATA) is found to be statistically significant at the 0.01 level ('T' Value : 4.2652).

The predicted performance score on shot put event is 1.4937 units when the scores of both the BAMIA, BISTAA and BLATA are zeros.

The predicted performance score increases by 0.0463 unit on shot put event for each unit increase in the BAMIA when the effects of the BISTAA and BLATA are controlled statistically.

The predicted performance score increases by -0.0062 unit on shot put event for each unit increase in the BISTAA when the effects of the BAMIA and BLATA are controlled statistically.

The predicted performance score increases by 0.0315 unit on shot put event for each unit of increase in level of aspiration in athletics (BLATA) when the effects of the BISTAA and BAMIA are controlled statistically.

In the last step general intelligence (DGIT) that in combination with the BAMIA, BISTAA and BLATA gave high value of adjusted $R^2$. The results of the regression analysis of the performance scores in shot put event on the BAMIA, BISTAA, BLATA, and DGIT scores are presented in Table 85.
TABLE 85

REGRESSION OF THE PERFORMANCE SCORES IN SHOT PUT EVENT ON ACHIEVEMENT MOTIVATION IN ATHLETICS (BAMIA), ANXIETY IN ATHLETICS (BISTAA), LEVEL OF ASPIRATION IN ATHLETICS (BLATA) AND GENERAL INTELLIGENCE (DGIT)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Parameter</th>
<th>Estimate</th>
<th>Standard Error</th>
<th>Computed 'T' Value</th>
<th>R²</th>
<th>Adjusted R²</th>
<th>F Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>A</td>
<td>1.4365</td>
<td>0.3321</td>
<td>4.3250**</td>
<td>0.8632</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BAMIA</td>
<td>B₁</td>
<td>0.0438</td>
<td>0.0038</td>
<td>11.5247**</td>
<td>0.8611</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BISTAA</td>
<td>B₂</td>
<td>-0.0055</td>
<td>0.0014</td>
<td>-3.8263**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BLATA</td>
<td>B₃</td>
<td>0.0311</td>
<td>0.0077</td>
<td>4.0521**</td>
<td></td>
<td></td>
<td>125.92**</td>
</tr>
<tr>
<td>DGIT</td>
<td>B₄</td>
<td>0.0078</td>
<td>0.0057</td>
<td>1.3609</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

** Significant at the 0.01 level (p < 0.01)

The results presented in Table 85 show that the relationship between general intelligence (DGIT) and shot put performance is positive and that 86.11 percent of the variance in performing shot put event is explained by linear regression jointly by the BAMIA, BISTAA, BLATA and DGIT.

The predicted performance score on shot put event is 1.4365 units when the scores of all the independent variables are zero.

The predicted performance score increase by 0.0438 unit on shot put event for each unit of increase in the BAMIA when the effects of the BISTAA, BLATA and DGIT are controlled statistically. The partial regression coefficient is found to be statistically significant at the 0.01 level ('T' Value: 11.5257).

The comparison of the partial B value with the sample bivariate B presented in Table 85 indicates that the influence of
achievement motivation in athletics (BAMIA) is slightly diminished if the confounding effects of the BISTAA, BLATA and DGIT are controlled statistically.

The predicted performance score increases by -0.0055 unit on shot put event for each unit of increase in anxiety in athletics (BISTAA) when the effects of the BAMIA, BLATA and DGIT are controlled statistically. The partial regression coefficient is found to be statistically significant at the 0.01 level ('T' Value: -3.8263).

The predicted performance score increases by 0.0311 unit on shot put event for each unit of increase in level of aspiration in athletics (BLATA) when the effects of the BAMIA, BISTAA and DGIT are controlled statistically. The partial regression coefficient is found to be statistically significant at the 0.01 level ('T' Value: 4.0521).

The predicted performance score increases by 0.0078 unit on shot put event for each unit of increase in general intelligence (DGIT) when the effects of the BAMIA, BISTAA, and BLATA are controlled statistically. However, the partial regression coefficient is not found to be statistically significant even at the 0.05 level ('T' Value: 1.3609).

The $R^2$, adjusted $R^2$ and the increase in the adjusted $R^2$ produced by each additional variable are given in Table 86.

Table 86 shows that 81.84 percent of the variance in shot put performance is explained by the linear regression on the achievement motivation variable (BAMIA). The anxiety in athletics (BISTAA) adds an increment of 2.03 percent to the variance already explained by the BAMIA. The level of aspiration in athletics (BLATA) adds an increment of only 1.29 percent to the variance already explained by the BAMIA and BISTAA. General intelligence (DGIT) adds an increment of only 0.95 percent of the variance already explained by other three independent variables.
In summary, the result of regression analysis showed higher percent of variation in the performance of shot put event. The physical performance in shot put event was orderly explained by achievement motivation in athletics, anxiety in athletics, and level of aspiration in athletics for women subjects.

The result of regression analysis also showed a lower percent of variation in the performance of shot put event which is explained by general intelligence for women subjects.

5.2.3.2.4. Multiple Step Up Regression Analysis of the Scores in Running High Jump, BAMIA, BISTAA, BLATA & DGIT

Among all the selected psychological variables, achievement motivation in athletics has the highest degree of coefficient of correlation with running high jump event and is included first in the analysis. The results of the regression of the performance score of running high jump on the BAMIA scores are given in Table 87.
TABLE 87
REGRESSION OF THE PERFORMANCE SCORES IN RUNNING HIGH JUMP EVENT ON THE SCORES OF ACHIEVEMENT MOTIVATION IN ATHLETICS (BAMIA)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Parameter</th>
<th>Estimate</th>
<th>Standard Error</th>
<th>Computed 'T'Value</th>
<th>R²</th>
<th>Adjusted R²</th>
<th>F Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>A</td>
<td>0.7708</td>
<td>0.1465</td>
<td>5.2592**</td>
<td>0.8375</td>
<td>0.8352</td>
<td>362.51**</td>
</tr>
<tr>
<td>BAMIA</td>
<td>B</td>
<td>0.0496</td>
<td>0.0032</td>
<td>15.5307**</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

** Significant at the 0.01 level (p < 0.01)

As seen in Table 87 the relationship between the scores in running high jump performance and the scores in the BAMIA is positive and that 83.52 percent of the variance in running high jump performance is explained by linear regression on the variable viz., achievement motivation in athletics.

The values (B) given in Table 87 are used as measures of influence of each independent variable upon running high jump performance with adjustments made for all other psychological variables.

The predicted score on running high jump is 0.7708 unit when the score of the BAMIA is zero and the predicted score increases by 0.0496 units on the running high jump for each unit of increase in the score of the BAMIA. The regression coefficient is found to be statistically significant at the 0.01 level ('T'Value : 15.5307).

In the second step anxiety in athletics (BISTAA) that in combination with achievement motivation in athletics (BAMIA) gave high value of adjusted R². The results of the regression of the performance scores in running high jump event on the BAMIA scores
and on the BISTAA scores are given in Table 88.

**TABLE 88**

REGRESSION OF THE PERFORMANCE SCORES IN RUNNING HIGH JUMP EVENT ON THE SCORES OF ACHIEVEMENT MOTIVATION IN ATHLETICS (BAMIA) AND ANXIETY IN ATHLETICS (BISTAA)

<table>
<thead>
<tr>
<th>Variable Parameter</th>
<th>Estimate</th>
<th>Standard Error</th>
<th>Computed R²</th>
<th>Adjusted R²</th>
<th>F Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>A</td>
<td>1.4926</td>
<td>0.3007</td>
<td>4.9631**</td>
<td>0.8698</td>
</tr>
<tr>
<td>BAMIA</td>
<td>B₁</td>
<td>0.0480</td>
<td>0.0034</td>
<td>14.0885**</td>
<td>0.8673</td>
</tr>
<tr>
<td>BISTAA</td>
<td>B₂</td>
<td>-0.0065</td>
<td>0.0016</td>
<td>-3.9962**</td>
<td>223.54**</td>
</tr>
</tbody>
</table>

** Significant at the 0.01 level (p < 0.01)

As seen in Table 88 the relationship between the BISTAA and running high jump event is negative and that 86.73 percent of the variance in running high jump performance is explained by linear regression jointly by the BAMIA and the BISTAA.

The regression coefficient of achievement motivation in athletics is found to be statistically significant at the 0.01 level ('T' Value : 14.0885).

The regression coefficient of anxiety in athletics is found to be statistically significant at the 0.01 level ('T' Value : -3.9962).

The predicted score on running high jump is 1.4926 units on when the scores of both the BAMIA and BISTAA are zeros.

The predicted score increases by 0.0480 unit on the running high jump performance for each unit of increase in the BAMIA when the effect of the BISTAA is controlled statistically.
The predicted score increase by -0.0065 units on the running high jump performance for each unit of increase in anxiety in athletics (BISTAA) when the effect of achievement motivation in athletics (BAMIA) is controlled statistically.

In the third step, level of aspiration in athletics (BLATA) that in combination with the BAMIA and BISTAA gave high value of adjusted $R^2$. The results of the regression of the performance scores in running high jump event on the BAMIA, BISTAA, and BLATA are presented in Table 89.

**TABLE 89**
REGRESSION OF THE PERFORMANCE SCORES IN RUNNING HIGH JUMP EVENT ON THE ACHIEVEMENT MOTIVATION IN ATHLETICS (BAMIA), ANXIETY IN ATHLETICS (BISTAA), AND LEVEL OF ASPIRATION IN ATHLETICS (BLATA)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Parameter</th>
<th>Estimate</th>
<th>Standard Error</th>
<th>Computed 'T' Value</th>
<th>$R^2$</th>
<th>Adjusted $R^2$</th>
<th>F Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>$A$</td>
<td>1.4539</td>
<td>0.3132</td>
<td>4.6392**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BAMIA</td>
<td>$B_1$</td>
<td>0.0469</td>
<td>0.0037</td>
<td>12.5609**</td>
<td>0.8871</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BISTAA</td>
<td>$B_2$</td>
<td>-0.0058</td>
<td>0.0015</td>
<td>-3.8142**</td>
<td>0.8841</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BLATA</td>
<td>$B_3$</td>
<td>0.0301</td>
<td>0.0098</td>
<td>3.0593**</td>
<td></td>
<td>162.09**</td>
<td></td>
</tr>
</tbody>
</table>

** Significant at the 0.01 level ( p < 0.01 )

As seen in Table 89 the relationship between level of aspiration in athletics (BLATA) and running high jump performance is positive and that 88.41 percent of the variance in running high jump performance is explained by linear regression jointly by the BAMIA, BISTAA and BLATA.
The regression coefficient of the BAHIA is found to be statistically significant at the 0.01 level ('T' Value : 12.5609).

The regression coefficient of the BISTAA is found to be statistically significant at the 0.01 level ('T' Value : -3.8142).

The regression coefficient of level of aspiration in athletics (BLATA) is found to be statistically significant at the 0.01 level ('T' value : 3.0593).

The predicted performance score on running high jump event is 1.4539 units when the scores of both the BAMIA, BISTAA and BLATA are zeros.

The predicted performance score increases by 0.0469 unit on running high jump event for each unit increase in the BAMIA when the effects of the BISTAA and BLATA are controlled statistically.

The predicted performance score increases by -0.0058 unit on running high jump event for each unit increase in the BISTAA when the effects of the BAMIA and BLATA are controlled statistically.

The predicted performance score increases by 0.0301 unit on running high jump event for each unit increase in level of aspiration in athletics (BLATA) when the effects of the BISTAA and BAMIA are controlled statistically.

In the last step general intelligence (DGIT) that in combination with the BAMIA, BISTAA and BLATA gave highest value of adjusted $R^2$. The results of the regression analysis of the performance scores in running high jump event on the BAMIA, BISTAA, BLATA, and DGIT scores are presented in Table 90.

The results presented in Table 90 show that the relationship between general intelligence (DGIT) and running high jump performance is positive and that 89.42 percent of the variance in performing
running high jump event is explained by linear regression jointly by the BAHIA, BISTAA, BLATA and DGIT.

**TABLE 90**

REGRESSION OF THE PERFORMANCE SCORES IN RUNNING HIGH JUMP EVENT ON ACHIEVEMENT MOTIVATION IN ATHLETICS (BAHIA), ANXIETY IN ATHLETICS (BISTAA), LEVEL OF ASPIRATION IN ATHLETICS (BLATA) AND GENERAL INTELLIGENCE (DGIT)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Parameter</th>
<th>Estimate</th>
<th>Standard Error</th>
<th>Computed 'T' Value</th>
<th>R²</th>
<th>Adjusted R²</th>
<th>F Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>A</td>
<td>1.4365</td>
<td>0.3181</td>
<td>4.5160**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BAHIA</td>
<td>B₁</td>
<td>0.0453</td>
<td>0.0038</td>
<td>11.9856**</td>
<td>0.8942</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BISTAA</td>
<td>B₂</td>
<td>-0.0056</td>
<td>0.0015</td>
<td>-3.7291**</td>
<td>0.8942</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BLATA</td>
<td>B₃</td>
<td>0.0297</td>
<td>0.0099</td>
<td>2.9858**</td>
<td>105.37**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DGIT</td>
<td>B₄</td>
<td>0.0064</td>
<td>0.0046</td>
<td>1.4016</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Significant at the 0.01 level (p < 0.01)**

The predicted performance score on running high jump is 1.4365 units when the scores of all the independent variables are zero.

The predicted performance score increase by 0.0453 unit on running high jump event for each unit of increase in the BAHIA when the effects of the BISTAA, BLATA and DGIT are controlled statistically. The partial regression coefficient is found to be statistically significant at the 0.01 level (T' Value : 11.9856).

The comparison of the partial B value with the sample bivariate B presented in Table 90 indicates that the influence of
achievement motivation in athletics (BAMIA) is slightly diminished if the confounding effects of the BISTAA, BLATA and DGIT are controlled statistically.

The predicted performance score increases by -0.0056 unit on running high jump event for each unit of increase in anxiety in athletics (BISTAA) when the effects of the BAMIA, BLATA and DGIT are controlled statistically. The partial regression coefficient is found to be statistically significant at the 0.01 level ('T' Value: -3.7291).

The predicted performance score increases by 0.0297 unit on running high jump event for each unit of increase in level of aspiration in athletics (BLATA) when the effects of the BAMIA, BISTAA, and DGIT are controlled statistically. The partial regression coefficient is found to be statistically significant at the 0.01 level ('T' Value: 2.9858).

The predicted performance score increases by 0.0064 unit on running high jump event for each unit of increase in general intelligence (DGIT) when the effects of the BAMIA, BISTAA, and DGIT are controlled statistically. However, the partial regression coefficient is not found to be statistically significant even at the 0.05 level ('T' Value: 1.4016).

The $R^2$, adjusted $R^2$ and the increase in the adjusted $R^2$ produced by each additional variable are given in Table 91.

Table 91 shows that 83.51 percent of the variance in running high jump performance is explained by the linear regression on the achievement motivation variable (BAMIA). The anxiety in athletics (BISTAA) adds an increment of 3.21 percent to the variance already explained by the BAMIA. The level of aspiration in athletics (BLATA) adds an increment of only 1.68 percent of the variance already explained by the BAMIA and BISTAA. General intelligence (DGIT)
adds an increment of only 1.01 percent of the variance already explained by other three independent variables.

**TABLE 91**

<table>
<thead>
<tr>
<th>Psychological Variables in the Regression</th>
<th>$R^2$</th>
<th>Adjusted $R^2$</th>
<th>Increase in $R^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>BAMIA</td>
<td>0.8375</td>
<td>0.8352</td>
<td>0.8351</td>
</tr>
<tr>
<td>BAMIA &amp; BISTAA</td>
<td>0.8698</td>
<td>0.8673</td>
<td>0.0321</td>
</tr>
<tr>
<td>BAMIA, BISTAA &amp; BLATA</td>
<td>0.8871</td>
<td>0.8841</td>
<td>0.0168</td>
</tr>
<tr>
<td>BAMIA, BISTAA, BLATA &amp; DGIT</td>
<td>0.8986</td>
<td>0.8942</td>
<td>0.0101</td>
</tr>
</tbody>
</table>

In summary, the result of regression analysis showed higher percent of the variation in the performance of running high jump event. The physical performance in running high jump event was orderly explained by achievement motivation in athletics, anxiety in athletics, & level of aspiration in athletics for women subjects.

The result of regression analysis also showed a lower percent of variation in the performance of running high jump event which is explained by general intelligence for women subjects.

5.2.3.2.5. Multiple Step Up Regression Analysis of the Scores in 200 M Running, BAMIA, BISTAA, BLATA and DGIT for Women Subjects

Among all the psychological variables, achievement motivation in athletics has the high degree of coefficient of correlation with 200 M running event and is included first in the analysis. The results of the regression of the performance score of 200 M run
on the BAMIA scores are given in Table 92.

**TABLE 92**

REGRESSION OF THE PERFORMANCE SCORES IN 200 M RUNNING EVENT ON THE SCORES OF ACHIEVEMENT MOTIVATION IN ATHLETICS (BAMIA)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Parameter</th>
<th>Estimate</th>
<th>Standard Error</th>
<th>Computed 'T' Value</th>
<th>R²</th>
<th>Adjusted R²</th>
<th>F Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant A</td>
<td>0.7023</td>
<td>0.1442</td>
<td>4.8690**</td>
<td>0.7805</td>
<td>0.7776</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BAMIA B</td>
<td>0.0385</td>
<td>0.0030</td>
<td>12.8506**</td>
<td>333.56**</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Significant at the 0.01 level (p < 0.01)**

As seen in Table 92 the relationship between the scores in 200 M running performance and the scores in the BAMIA is positive and that 77.76 percent of the variance in 200 M running performance is explained by linear regression on the variable, viz., achievement motivation in athletics.

The B values given in Table 92 are used as measures of influence of each independent variable upon 200 M running performance with adjustments made for all other psychological variables.

The predicted score on 200 M running event is 0.7023 unit when the score of the BAMIA is zero and the predicted score increases by 0.0385 unit on the 200 M running event for each unit of increase in the score of the BAMIA. The regression coefficient is found to be statistically significant at the 0.01 level ('T' Value: 12.8506).

In the second step anxiety in athletics (BISTAA) that in combination with achievement motivation in athletics (BAMIA) gave high
value of adjusted $R^2$. The results of the regression of the performance scores in 200 M running event on the BAMIA scores and on the BISTAA scores are given in Table 93.

As seen in Table 93 the relationship between BISTAA and 200 M running event is negative and that 79.21 percent of the variance in 200 M running performance is explained by linear regression jointly by the BAMIA and the BISTAA.

**TABLE 93**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Parameter</th>
<th>Estimate</th>
<th>Standard Error</th>
<th>Computed $'T'$ Value</th>
<th>$R^2$</th>
<th>Adjusted $R^2$</th>
<th>$F$ Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>A</td>
<td>1.3925</td>
<td>0.2938</td>
<td>4.7392**</td>
<td>0.7982</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BAMIA</td>
<td>$B_1$</td>
<td>0.0371</td>
<td>0.0034</td>
<td>11.0630**</td>
<td>0.7921</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BISTAA</td>
<td>$B_2$</td>
<td>0.0046</td>
<td>-0.0016</td>
<td>-2.8506**</td>
<td></td>
<td>210.50**</td>
<td></td>
</tr>
</tbody>
</table>

**Significant at the 0.01 level ($p < 0.01$)**

The regression coefficient of achievement motivation in athletics is found to be statistically significant at the 0.01 level ("$T'$ Value : 11.0630").

The regression coefficient of anxiety in athletics is found to be statistically significant at the 0.01 level ("$T'$ Value: -2.8506).

The predicted score on 200 M running event is 1.3925 units when the scores of both the BAMIA and BISTAA are zeros.

The predicted score increases by 0.0371 unit on the 200 M running performance for each unit of increase in the BAMIA when
the effect of the BISTAA is controlled statistically.

The predicted score increase by 0.0046 unit on the 200 M running performance for each unit of increase in anxiety in athletics (BISTAA) when the effect of the BAMIA is controlled statistically.

In the third step, level of aspiration in athletics (BLATA) that in combination with the BAMIA and BISTAA gave high value of adjusted $R^2$. The results of the regression of the performance scores in 200 M running event on the BAMIA, BISTAA, and BLATA are presented in Table 94.

TABLE 94
REGRESSION OF THE PERFORMANCE SCORES IN 200 M RUNNING EVENT ON THE ACHIEVEMENT MOTIVATION IN ATHLETICS (BAMIA), ANXIETY IN ATHLETICS (BISTAA) AND LEVEL OF ASPIRATION IN ATHLETICS (BLATA)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Parameter</th>
<th>Estimate</th>
<th>Standard Error</th>
<th>Computed 'T'Value</th>
<th>$R^2$</th>
<th>Adjusted $R^2$</th>
<th>F Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>A</td>
<td>1.3639</td>
<td>0.3020</td>
<td>4.5165**</td>
<td>0.8139</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BAMIA</td>
<td>$B_1$</td>
<td>0.0363</td>
<td>0.0034</td>
<td>10.5926**</td>
<td>0.8106</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BISTAA</td>
<td>$B_2$</td>
<td>-0.0046</td>
<td>0.0017</td>
<td>-2.6321**</td>
<td>130.63**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BLATA</td>
<td>$B_3$</td>
<td>0.0052</td>
<td>0.0018</td>
<td>2.8552**</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

** Significant at the 0.01 level (p < 0.01)

As seen in Table 94 the relationship between level of aspiration in athletics (BLATA) and 200 M running performance is positive and that 81.06 percent of the variance in 200 M running performance is explained by linear regression jointly by the BAMIA, BISTAA and BLATA.
The regression coefficient of the BAMIA is found to be statistically significant at the 0.01 level (*T* Value: 10.5926).

The regression coefficient of the BISTAA is found to be statistically significant at the 0.01 level (*T* Value: -2.6321).

The regression coefficient of level of aspiration in athletics is found to be statistically significant at the 0.01 level (*T* Value: 2.8552).

The predicted performance score on 200 M running event/1.3639 units when the scores of both the BAMIA, BISTAA and BLATA are zeros.

The predicted performance score increases by 0.0363 unit on 200 M running event for each unit increase in the BAMIA when the effects of the BISTAA and BLATA are controlled statistically.

The predicted performance score increases by -0.0046 unit on 200 M running event for each unit increase in the BISTAA when the effects of the BAMIA and BLATA are controlled statistically.

The predicted performance score increases by -0.0052 unit on 200 M running event for each unit of increase in level of aspiration in athletics (BLATA) when the effects of the BISTAA and BAMIA are controlled statistically.

In the last step, general intelligence (DGIT) that in combination with the BAMIA, BISTAA and BLATA gave highest value of adjusted $R^2$. The results of the regression analysis of the performance scores in 200 M running event on the BAMIA, BISTAA, BLATA and DGIT scores are presented in Table 95.

The results presented in Table 95 show that the relationship between general intelligence (DGIT) and 200 M running performance is positive and that 81.91 percent of the variance in performing 200 M
running event is explained by linear regression jointly by the BAMIA, BISTAA, BLATA and DGIT.

**TABLE 95**

REGRESSION OF THE PERFORMANCE SCORES IN 200 M RUNNING EVENT ON ACHIEVEMENT MOTIVATION IN ATHLETICS (BAMIA), ANXIETY IN ATHLETICS (BISTAA), LEVEL OF ASPIRATION IN ATHLETICS (BLATA), AND GENERAL INTELLIGENCE (DGIT)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Parameter</th>
<th>Estimate</th>
<th>Standard Error</th>
<th>Computed 'T' Value</th>
<th>$R^2$</th>
<th>Adjusted $R^2$</th>
<th>F Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>A</td>
<td>1.3625</td>
<td>0.3149</td>
<td>4.3265**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BAMIA</td>
<td>B_1</td>
<td>0.0355</td>
<td>0.0036</td>
<td>9.9261**</td>
<td>0.8202</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BISTAA</td>
<td>B_2</td>
<td>-0.0043</td>
<td>0.0017</td>
<td>-2.5724**</td>
<td></td>
<td></td>
<td>0.8191</td>
</tr>
<tr>
<td>BLATA</td>
<td>B_3</td>
<td>0.0049</td>
<td>0.0018</td>
<td>2.7605**</td>
<td></td>
<td></td>
<td>96.69**</td>
</tr>
<tr>
<td>DGIT</td>
<td>B_4</td>
<td>0.0052</td>
<td>0.0038</td>
<td>1.3555</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

** Significant at the 0.01 level (p < 0.01)**

The predicted performance score on 200 M running event is 1.3625 units when the scores of all the independent variables are zero.

The predicted performance score increase by 0.0355 unit on 200 M running event for each unit of increase in the BAMIA when the effects of the BISTAA, BLATA and DGIT are controlled statistically. The partial regression coefficient is found to be statistically significant at the 0.01 level ('T' Value : 9.9261).

The comparison of the partial B value with the sample bivariate B presented in Table 95 indicates that the influence of achievement motivation in athletics (BAMIA) is slightly diminished if the confounding effects of the BISTAA, BLATA and DGIT are controlled.
The predicted performance score increases by -0.0043 unit on 200 M running event for each unit of increase in anxiety in athletics (BISTAA) when the effects of the BAMIA, BLATA and DGIT are controlled statistically. The partial regression coefficient is found to be statistically significant at the 0.01 level ('T' Value: -2.5724).

The predicted performance score increases by 0.0049 unit on 200 M running event for each unit of increase in level of aspiration in athletics (BLATA) when the effects of the BAMIA, BISTAA, and DGIT are controlled statistically. The partial regression coefficient is found to be statistically significant at the 0.01 level ('T' Value: 2.7605).

The predicted performance score increases by 0.0052 unit on 200 M running event for each unit of increase in general intelligence (DGIT) when the effects of the BAMIA, BISTAA and BLATA are controlled statistically. However, the partial regression coefficient is not found to be statistically significant even at the 0.05 level ('T' Value: 1.3555).

The R², adjusted R² and the increase in the adjusted R² produced by each additional variable are given in Table 96.

Table 96 shows that 77.76 percent of the variance in 200 M running performance is explained by the linear regression on the achievement motivation variable (BAMIA). The anxiety in athletics (BISTAA) adds an increment of 1.45 percent to the variance already explained by the BAMIA. The level of aspiration in athletics (BLATA) adds an increment of only 1.85 percent to the variance already explained by the BAMIA and BISTAA. General intelligence (DGIT) adds an increment of only 0.85 percent of the variance already explained by other three independent variables.
TABLE 96

THE $R^2$, ADJUSTED $R^2$ AND INCREASE IN THE ADJUSTED $R^2$ PRODUCED BY EACH ADDITIONAL PSYCHOLOGICAL VARIABLE IN THE CASE OF 200 M RUNNING EVENT

<table>
<thead>
<tr>
<th>Psychological Variables in the Regression</th>
<th>$R^2$</th>
<th>Adjusted $R^2$</th>
<th>Increase in $R^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>BAMIA</td>
<td>0.7805</td>
<td>0.7776</td>
<td>0.7776</td>
</tr>
<tr>
<td>BAMIA &amp; BISTAA</td>
<td>0.7982</td>
<td>0.7921</td>
<td>0.0145</td>
</tr>
<tr>
<td>BAMIA, BISTAA &amp; BLATA</td>
<td>0.8139</td>
<td>0.8106</td>
<td>0.0185</td>
</tr>
<tr>
<td>BAMIA, BISTAA, BLATA &amp; DGIT</td>
<td>0.8202</td>
<td>0.8191</td>
<td>0.0085</td>
</tr>
</tbody>
</table>

In conclusion, the result of regression analysis showed higher percent of the variation in the performance of 200 M running event. The physical performance in 200 M running event was orderly explained by achievement motivation in athletics, anxiety in athletics, and level of aspiration in athletics for women subjects.

The result of regression analysis also showed a lower percent of variation in the performance of 200 M running event which is explained by general intelligence for women subjects.

To summarize the chapter, the findings reveal that a significant relationship exists between the physical performance in selected athletic event and the psychological determinants. Anxiety in athletics shows a negative relationship with physical performance in athletic events. The result of regression analysis showed that the physical performance in selected athletic events is orderly explained by achievement motivation in athletics, anxiety in athletics, level of aspiration in athletics and general intelligence.
CHAPTER V(C)

ANALYSIS OF DATA AND RESULTS OF THE FOLLOW UP STUDY
CHAPTER V (C)

5.3. ANALYSIS OF DATA AND RESULTS OF THE FOLLOW-UP STUDY

As stated earlier, the Follow-Up study was undertaken for a period of 6 weeks to see the treatment effects of the 'suggestive model' and the 'vertical teaching model' on physical performance in selected athletic events. **ANOVA** (Analysis of Covariance) was used to analyze the data. The value of difference between pairs of ordered means for each event was compared with respect to Scheffe's **post hoc** technique.

In this section sex-wise analysis of data of each of the selected athletic events is also presented and the results are interpreted separately as follows:

5.3.1. TREATMENT EFFECTS OF THE SUGGESTIVE MODEL AND THE VERTICAL TEACHING MODEL ON 100 M RUNNING PERFORMANCE

5.3.1.1. Treatment Effects of Both the 'Models' on 100 M Running Performance for Men Ss

Measures of central tendency and variability of the data for 100 M running event are presented in Table 96 A. That all the three groups viz., Suggestive Model Group, Vertical Teaching Model Group and Control Group have shown an improvement in the performance (Fig. 15). The significant improvement between these groups were tested by **ANOVA**.

The **ANOVA** of mean recovery in 100 M running performance for men Ss presented in Table 97 reveals that there are significant differences \( F = 21.63, \ p < 0.01 \) between adjusted means of three different groups (Group \( A_1 \) = Suggestive Model Group, Group \( B_1 \) = Vertical Teaching Model Group, and Group \( C_1 \) = Control Group).

The arrangement of adjusted means of Group \( A_1 \), Group \( B_1 \), and
Group $C_1$ are presented in Table 98. It is observed from Table 98 that the Group $A_1$ has shown better value of adjusted mean of 12.81 secs. as compared with 13.99 secs. of the Group $B_1$ and 14.23 secs. of the Group $C_1$.

**TABLE 96A**

**MEAN PERFORMANCE SCORES IN THE SELECTED EVENTS OF TRACK & FIELD ATHLETICS FOR MEN SUBJECTS**

<table>
<thead>
<tr>
<th>Treatment</th>
<th>MEAN PERFORMANCE SCORES IN SELECTED TRACK &amp; FIELD ATHLETIC EVENTS</th>
<th>100 M Run (Secs.)</th>
<th>Running Long Jump (M)</th>
<th>Shot Put (M)</th>
<th>Running High Jump (M)</th>
<th>800 M Run (Secs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Groups</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td></td>
<td>14.56±2.36</td>
<td>4.25±0.53</td>
<td>5.53±0.68</td>
<td>1.22±0.16</td>
<td>189.25±18.21</td>
</tr>
<tr>
<td>Pre Test</td>
<td>(20)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Test</td>
<td>(20)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post Test</td>
<td>14.97±2.98</td>
<td>4.31±0.72</td>
<td>5.59±0.82</td>
<td>1.26±0.24</td>
<td>192.12±21.52</td>
<td></td>
</tr>
<tr>
<td>(20)</td>
<td>(20)</td>
<td>(20)</td>
<td>(20)</td>
<td>(20)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vertical Teaching</td>
<td></td>
<td>14.83±1.98</td>
<td>4.29±0.47</td>
<td>5.66±0.62</td>
<td>1.24±0.19</td>
<td>188.72±19.00</td>
</tr>
<tr>
<td>Pre Test</td>
<td>(20)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Test</td>
<td>(20)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post Test</td>
<td>13.62±2.12</td>
<td>4.65±0.59</td>
<td>6.45±0.77</td>
<td>1.33±0.29</td>
<td>185.82±24.50</td>
<td></td>
</tr>
<tr>
<td>(20)</td>
<td>(20)</td>
<td>(20)</td>
<td>(20)</td>
<td>(20)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Suggestive Model</td>
<td></td>
<td>15.26±2.63</td>
<td>4.34±0.50</td>
<td>5.52±0.50</td>
<td>1.26±0.12</td>
<td>191.46±20.58</td>
</tr>
<tr>
<td>Pre Test</td>
<td>(20)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Test</td>
<td>(20)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post Test</td>
<td>12.79±2.50</td>
<td>5.18±0.57</td>
<td>6.70±0.65</td>
<td>1.58±0.15</td>
<td>182.13±19.35</td>
<td></td>
</tr>
<tr>
<td>(20)</td>
<td>(20)</td>
<td>(20)</td>
<td>(20)</td>
<td>(20)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Mean ± SD*  
(No. of Subjects)

The difference between pairs of adjusted means of three groups in 100 M running is presented in Table 99. The value of difference between each pair of ordered means is compared with respect to Scheffe's *post hoc* CD value.
However, Scheffe's post hoc CD value (CD = 1.13) reveals that the value of mean difference between Group B1 and Group C1 is not statistically significant (Mean Difference = 0.26, p > 0.05) even at the 0.05 level (Table 96). The results show clearly that the 'vertical teaching model' group did not show statistically significant difference in mean gains over the 'control group' in performing 100M run. Therefore, it may be interpreted that the 'vertical teaching model' is having no significant effect for improving the physical performance in 100 M run.

**TABLE 96b**

**MEAN PERFORMANCE SCORES IN THE SELECTED EVENTS OF TRACK & FIELD ATHLETICS FOR WOMEN SUBJECTS**

<table>
<thead>
<tr>
<th>Treatment Groups</th>
<th>100 M Run (Secs.)</th>
<th>Running Long Jump (M)</th>
<th>Shot Put (M)</th>
<th>Running High Jump (M)</th>
<th>800 M Run (Secs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CONTROL GROUP</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre Test</td>
<td>17.98±1.85</td>
<td>3.05±0.33</td>
<td>4.94±0.55</td>
<td>0.95±0.09</td>
<td>38.21±4.02</td>
</tr>
<tr>
<td>(20)</td>
<td>(20)</td>
<td>(20)</td>
<td>(20)</td>
<td>(20)</td>
<td>(20)</td>
</tr>
<tr>
<td>Post Test</td>
<td>17.85±1.79</td>
<td>3.11±0.38</td>
<td>4.87±0.54</td>
<td>0.99±0.05</td>
<td>39.71±3.86</td>
</tr>
<tr>
<td>(20)</td>
<td>(20)</td>
<td>(20)</td>
<td>(20)</td>
<td>(20)</td>
<td>(20)</td>
</tr>
<tr>
<td><strong>VERTICAL TEACHING MODEL</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre Test</td>
<td>16.50±1.92</td>
<td>3.50±0.52</td>
<td>5.56±0.69</td>
<td>1.18±0.13</td>
<td>35.93±3.73</td>
</tr>
<tr>
<td>(20)</td>
<td>(20)</td>
<td>(20)</td>
<td>(20)</td>
<td>(20)</td>
<td>(20)</td>
</tr>
<tr>
<td>Post Test</td>
<td>17.92±1.74</td>
<td>3.15±0.30</td>
<td>4.92±0.45</td>
<td>1.02±0.02</td>
<td>38.85±3.95</td>
</tr>
<tr>
<td>(20)</td>
<td>(20)</td>
<td>(20)</td>
<td>(20)</td>
<td>(20)</td>
<td>(20)</td>
</tr>
<tr>
<td><strong>SUGGESTIVE MODEL</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre Test</td>
<td>15.05±1.59</td>
<td>3.99±0.35</td>
<td>6.19±0.54</td>
<td>1.27±0.04</td>
<td>33.4±3.87</td>
</tr>
<tr>
<td>(20)</td>
<td>(20)</td>
<td>(20)</td>
<td>(20)</td>
<td>(20)</td>
<td>(20)</td>
</tr>
</tbody>
</table>

Mean ± SD
(No. of Subjects)
TABLE 97

ANALYSIS OF COVARIANCE (ANCOVA) OF MEAN RECOVERY IN
100 M RUNNING PERFORMANCE (MEN Ss)

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>df</th>
<th>Sum of Squares</th>
<th>Mean Square</th>
<th>'F' Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Group</td>
<td>2</td>
<td>173.52</td>
<td>86.76</td>
<td>21.63**</td>
</tr>
<tr>
<td>Within Group</td>
<td>57</td>
<td>232.58</td>
<td>4.01</td>
<td></td>
</tr>
</tbody>
</table>

** Significant at the 0.01 level (p < 0.01)

TABLE 98

ADJUSTED MEAN SCORES OF 100 M RUNNING PERFORMANCE FOR
TWO TREATMENT GROUPS AND ONE CONTROL GROUP (MEN Ss)

<table>
<thead>
<tr>
<th>Group No.</th>
<th>Groups</th>
<th>n</th>
<th>X (Secs.)</th>
<th>MSerror</th>
<th>'CD' Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Suggestive Model (Gr. A₁)</td>
<td>20</td>
<td>12.81</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Vertical Teaching Model (Gr. B₁)</td>
<td>20</td>
<td>13.99</td>
<td>4.01</td>
<td>1.43**</td>
</tr>
<tr>
<td>1</td>
<td>Control (Gr. C₁)</td>
<td>20</td>
<td>14.25</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* p < 0.05  ,  ** p < 0.01

Scheffe's post hoc CD value (CD = 1.43) reveals that the value of mean difference between Group A₁ and Group C₁ is statistically significant (Mean Difference = 1.44, p < 0.01) at the 0.01 level (Table 99). It is evident from this result that the 'suggestive model group' showed statistically significant difference in mean gains over the 'control group' in performing 100 M run. It may
Therefore, be interpreted that the 'suggestive model' is having a treatment effect for improving the performance in 100 M run (Fig.25).

**TABLE 99**

**Scheffe's Post Hoc Test Applied to the Difference Between Pairs of Ordered Means for 100 M Running Performance (MEN Subjects)**

<table>
<thead>
<tr>
<th>ORDERED MEANS (STEPS)</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(2)</td>
<td>(3)</td>
</tr>
<tr>
<td>3</td>
<td>1.18*</td>
<td>1.44**</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>0.26</td>
</tr>
</tbody>
</table>

* p < 0.05 , ** p < 0.01

Scheffe's post hoc CD value (CD = 1.13) reveals that the value of mean difference between Group A1 and Group B1 is also statistically significant (Mean difference = 1.18, p < 0.05) at the 0.05 level (Table 99). On the basis of this finding it appears that the 'suggestive model group' showed statistically significant difference in mean gains over the 'vertical teaching model group' in performing 100 M run.

Therefore, finally, it may be of interest to conclude that the 'suggestive model' is influential to improve the physical performance of men subjects in 100 M run as compared to the 'vertical teaching model'.
5.3.1.2. Treatment Effects of Both the 'Models' on 100 M Running Performance for Women Ss

Measures of central tendency and variability of the data for 100 M running event are presented in Table 96B. It is observed from Table 96B that the two groups viz., 'suggestive model group' and 'vertical teaching model group' have shown an improvement in the performance (Fig. 16). The significant improvement between these groups was tested by ANCOVA.

The ANCOVA of mean recovery in 100 M running performance for women Ss presented in Table 100 reveals that there are significant differences ($F = 21.17$, $p < 0.01$) between adjusted means of three different groups (Group $A_2$ = Suggestive Model Group, Group $B_2$ = Vertical Teaching Model Group, and Group $C_2$ = Control Group).

**TABLE 100**

ANALYSIS OF COVARIANCE (ANCOVA) OF MEAN RECOVERY IN 100 M RUNNING PERFORMANCE (WOMEN SUBJECTS)

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>df</th>
<th>Sum of Squares</th>
<th>Mean Square</th>
<th>'F' Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Group</td>
<td>2</td>
<td>142.68</td>
<td>71.34</td>
<td>21.17**</td>
</tr>
<tr>
<td>Within Group</td>
<td>57</td>
<td>195.32</td>
<td>3.37</td>
<td></td>
</tr>
</tbody>
</table>

** $p < 0.01$

The arrangement of adjusted means of Group $A_2$, Group $B_2$, and Group $C_2$ are presented in Table 101. It is observed from Table 101 that the Group $A_2$ has shown better value of adjusted mean of 15.88 secs. as compared with 17.03 secs. of the Group $B_2$ and 18.39 secs. of the Group $C_2$.
TABLE 101

ADJUSTED MEAN SCORES OF 100 M RUNNING PERFORMANCE FOR TWO TREATMENT GROUPS AND ONE CONTROL GROUP (Women Subjects)

<table>
<thead>
<tr>
<th>Group No.</th>
<th>Groups</th>
<th>n</th>
<th>( \bar{x} ) (secs.)</th>
<th>MSerror</th>
<th>'CD' Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Control (Gr. C&lt;sub&gt;2&lt;/sub&gt;)</td>
<td>20</td>
<td>18.39</td>
<td></td>
<td>1.32**</td>
</tr>
<tr>
<td>2</td>
<td>Vertical Teaching Model (Gr. B&lt;sub&gt;2&lt;/sub&gt;)</td>
<td>20</td>
<td>17.03</td>
<td>3.37</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Suggestive Model (Gr. A&lt;sub&gt;2&lt;/sub&gt;)</td>
<td>20</td>
<td>15.88</td>
<td>1.04*</td>
<td></td>
</tr>
</tbody>
</table>

* \( p < 0.05 \),  ** \( p < 0.01 \)

TABLE 102

Scheffe's POST HOC TEST APPLIED TO THE DIFFERENCE BETWEEN PAIRS OF ORDERED MEANS FOR 100 M RUNNING PERFORMANCE (WOMEN SUBJECTS)

<table>
<thead>
<tr>
<th>ORDERED MEANS</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>(STEPS)</td>
<td>(2)</td>
<td>(3)</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>1.15*</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* \( p < 0.05 \),  ** \( p < 0.01 \)

The difference between pairs of adjusted means of three groups in 100 M running performance are presented in Table 102. The value of difference between each pair of ordered means is
compared with respect to Scheffe's post hoc CD value.

However, Scheffe's post hoc CD value (CD = 1.32) reveals that the value of mean difference between Group B₂ and Group C₂ is statistically significant (Mean Difference = 1.36, p < 0.01) at the 0.01 level (Table 102). The results show statistically significant difference in mean gains over the 'Control group' in performing 100 M run. Therefore, it may be interpreted that 'vertical teaching model' is having significantly better effect for improving the physical performance in 100 M run for women Ss.

Scheffe's post hoc CD value (CD = 1.32) reveals that the value of mean difference between Group A₂ and Group C₂ is statistically significant (Mean Difference = 2.51, p < 0.01) at the 0.01 level (Table 102). It is evident from this result that the 'suggestive model group' showed statistically significant difference in mean gains over the 'control group' in performing 100 M run. It may, therefore, be interpreted that the 'suggestive model' is having a treatment effect for improving the performance in 100 M running event for the women Ss (Fig. 26).

Scheffe's post hoc CD value (CD = 1.04) reveals that the value of mean difference between Group A₂ and Group B₂ is also statistically significant (Mean Difference = 1.15, p < 0.05) at the 0.05 level (Table 102). On the basis of this finding it appears that the 'suggestive model group' shows a statistically significant difference in mean gains over the 'vertical teaching model group' in performing 100 M run (women Ss).

Therefore, finally, it may be of interest to conclude that the 'suggestive model' is influential to improve the physical performance of women subjects in 100 M run than the 'vertical teaching model'.
Fig. 15

Scale: X-axis: 1Cm.=One Gr.
Y-axis: 1Cm.=1 Sec.

Fig. 16

Control Group  VTM Group  SM Group

TREATMENT GROUPS

Fig. 15. Pre- & Post Test Comparison in Mean Performance of 100 M Running Event of Three Different Groups (Men Ss).

Fig. 16. Pre- & Post Test Comparison in Mean Performance of 100 M Running Event of Three Different Groups (Women Ss).
5.3.2. TREATMENT EFFECTS OF THE SUGGESTIVE MODEL AND THE VERTICAL TEACHING MODEL ON RUNNING LONG JUMP PERFORMANCE

5.3.2.1. Treatment Effects of Both the 'Models' on Running Long Jump Performance for Men Ss

Measures of central tendency and variability of the data for running long jump event for men Ss are presented in Table 96A. It is observed from Table 96A that all the three groups viz., 'suggestive model group', 'vertical teaching model group' and 'control group' have shown an improvement in performance (Fig. 17). The significant improvement between these groups was tested by ANCOVA.

The ANCOVA of mean recovery in running long jump performance for men Ss presented in Table 103 reveals that there are significant differences ($F = 23.62$, $p < 0.01$) between adjusted means of three different groups (Group $A_1$ = Suggestive Model Group, Group $B_1$ = Vertical Teaching Model Group, and Group $C_1$ = Control Group).

**TABLE 103**

ANALYSIS OF COVARIANCE (ANCOVA) OF MEAN RECOVERY IN RUNNING LONG JUMP PERFORMANCE (MEN SUBJECTS)

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>df</th>
<th>Sum of Squares</th>
<th>Mean Square</th>
<th>'F' Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Group</td>
<td>2</td>
<td>38.28</td>
<td>19.14</td>
<td></td>
</tr>
<tr>
<td>Within Group</td>
<td>57</td>
<td>46.75</td>
<td>0.81</td>
<td></td>
</tr>
</tbody>
</table>

** $p < 0.01$  

The arrangement of adjusted means of Group $A_1$, Group $B_1$ and Group $C_1$ are presented in Table 104. It is observed from Table 104 that the Group $A_1$ has shown better value of adjusted mean of 5.16 M as compared with 4.64 M of the Group $B_1$ and 4.10 M of Group $C_1$. 


The difference between pairs of adjusted means of three groups in running long jump performance are presented in Table 105. The value of difference between each pair of ordered means is compared with respect to Scheffe's post hoc CD value.

However, Scheffe's post hoc CD value (CD = 0.51) reveals that the value of mean difference between Group $B_1$ and Group $C_1$ is statistically significant (Mean Difference = 0.52, $p < 0.05$) at the 0.05 level (Table 105). The results show statistically significant difference in mean gains over the 'control group' in performing running long jump event. Therefore, it may be interpreted that 'vertical teaching model' is having a better effect for improving the physical performance in running long jump.

Scheffe's post hoc CD value (CD = 0.63) reveals that the value of mean difference between Group $A_1$ and Group $C_1$ is statistically significant (Mean Difference = 1.08, $p < 0.01$) at the 0.01 level.
level (Table 105). It is evident from this result that the 'suggestive model group' showed statistically significant difference in mean gains over the 'control group' in performing running long jump. It may, therefore, be interpreted that the 'suggestive model' is having a better treatment effect for improving the performance in running long jump (Fig. 27).

Scheffe's post hoc CD value (CD = 0.51) reveals that the value of mean difference between Group A\textsubscript{1} and Group B\textsubscript{1} is also statistically significant (Mean Difference = 0.52, p < 0.05) at the 0.05 level (Table 105). On the basis of this finding it appears that the 'suggestive model group' shows a statistically significant difference in mean gains over the 'vertical teaching model group' in performing running long jump.

Therefore, finally, it may be of interest to conclude that the 'suggestive model' is influential to improve the physical performance of men subjects in running long jump than the 'vertical teaching model'.

TABLE 105
Scheffe's post hoc test applied to the difference between pairs of ordered means for running long jump performance (men subjects)

<table>
<thead>
<tr>
<th>ORDERED MEANS</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>(STEPS)</td>
<td>(2)</td>
<td>(3)</td>
</tr>
<tr>
<td>3</td>
<td>0.52*</td>
<td>1.08**</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>0.54*</td>
</tr>
</tbody>
</table>

* p < 0.05 , ** p < 0.01
5.3.2.2. Treatment Effects of Both the 'Models' on Running Long Jump Performance for Women Ss

Measures of central tendency and variability of the data for running long jump event are presented in Table 96B. It is observed from Table 96B that all the three groups viz., 'suggestive model group', 'vertical teaching model group' and 'control group' have shown an improvement in the performance (Fig. 18). The significant improvement between these groups was tested by ANCOVA.

The ANCOVA of mean recovery in running long jump performance for women Ss presented in Table 106 reveals that there are significant differences ($F = 23.41$, $p < 0.01$) between adjusted means of three different groups (Group $A_2$ = Suggestive Model Group, Group $B_2$ = Vertical Teaching Model Group and Group $C_2$ = Control Group).

<table>
<thead>
<tr>
<th>TABLE 106</th>
<th>ANALYSIS OF COVARIANCE (ANCOVA) OF MEAN RECOVERY IN RUNNING LONG JUMP PERFORMANCE (WOMEN SUBJECTS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source of Variation</td>
<td>df</td>
</tr>
<tr>
<td>Between Group</td>
<td>2</td>
</tr>
<tr>
<td>Within Group</td>
<td>57</td>
</tr>
</tbody>
</table>

** $p < 0.01$

The arrangement of adjusted means of Group $A_2$, Group $B_2$ and Group $C_2$ are presented in Table 107. It is observed from Table 107 that the Group $A_2$ has shown better value of adjusted mean of 3.98 M as compared with 3.51 M of the Group $B_2$ and 3.00 M of the Group $C_2$.

The difference between pairs of adjusted means of three groups in running long jump performance are presented in Table 108.
The value of difference between each pair of ordered means is compared with respect to Scheffe's post hoc CD value.

**TABLE 107**

ADJUSTED MEAN SCORES OF RUNNING LONG JUMP PERFORMANCE FOR TWO TREATMENT GROUPS AND ONE CONTROL GROUP (WOMEN SUBJECTS)

<table>
<thead>
<tr>
<th>Group No.</th>
<th>Groups</th>
<th>n</th>
<th>( \bar{x} ) (metre)</th>
<th>MSerror</th>
<th>'CD' Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Suggestive Model (Gr. A(_2))</td>
<td>20</td>
<td>3.98</td>
<td></td>
<td>0.41*</td>
</tr>
<tr>
<td>2</td>
<td>Vertical Teaching Model (Gr. B(_2))</td>
<td>20</td>
<td>3.51</td>
<td>0.53</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Control (Gr. C(_2))</td>
<td>20</td>
<td>3.00</td>
<td></td>
<td>0.52**</td>
</tr>
</tbody>
</table>

* P < 0.05 , ** p < 0.01

**TABLE 108**

SCHEEFFE'S POST HOC TEST APPLIED TO THE DIFFERENCE BETWEEN PAIRS OF ORDERED MEANS FOR RUNNING LONG JUMP PERFORMANCE (WOMEN SUBJECTS)

<table>
<thead>
<tr>
<th>ORDERED MEANS</th>
<th>(STEPS)</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(2)</td>
<td>(3)</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>0.47*</td>
<td>0.98**</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>(2)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.51*</td>
<td></td>
</tr>
</tbody>
</table>

* P < 0.05 , ** p < 0.01
However, Scheffe's **post hoc** CD value (CD = 0.41) reveals that the value of mean difference between Group B₂ and Group C₂ is statistically significant (Mean Difference = 0.51, p < 0.05) at the 0.05 level (Table 108). The results show statistically significant difference in mean gains over the 'control group' in performing running long jump. Therefore, it may be interpreted that 'vertical teaching model' is having a better effect for improving the physical performance in running long jump.

Scheffe's **post hoc** CD value (CD = 0.52) reveals that the value of mean difference between Group A₂ and Group C₂ is statistically significant (Mean Difference = 0.98, p < 0.01) at the 0.01 level (Table 108). It is evident from this result that the 'suggestive model group' showed statistically significant difference in mean gains over the 'control group' in performing running long jump. It may, therefore, be interpreted that the 'suggestive model' is having a better effect for improving the performance in running long jump (Fig. 28).

Scheffe's **post hoc** CD value (CD = 0.41) reveals that the value of mean difference between Group A₂ and Group B₂ is also statistically significant (Mean Difference = 0.47, p < 0.05) at the 0.05 level (Table 108). On the basis of this finding it appears that the 'suggestive model group' showed a statistically significant difference in mean gains over the 'vertical teaching model group' in performing running long jump.

Therefore, finally, it may be of interest to conclude that the 'suggestive model' is influential to improve the physical performance of women subjects in running long jump than the 'vertical teaching model'.
Fig. 17. Pre- & Post Test comparison in mean performance of running long jump event of three different groups (men Ss).

Fig. 18. Pre- & Post Test comparison in mean performance of running long jump event of three different groups (women Ss).
5.3.3. Treatment Effects of Both the 'Models' on Shot Put Performance for Men Ss

Measures of central tendency and variability of the data for shot put event are presented in Table 96A. It is observed from Table 96A that all the three groups viz., 'suggestive model group', 'vertical teaching model group' and 'control group' have shown an improvement in performance (shot put) which is presented in Fig. 19. The significant improvement between these groups was tested by ANCOVA.

The ANCOVA of mean recovery in shot put performance for men Ss presented in Table 109 reveals that there are significant differences \( F = 18.60, \ p < 0.01 \) between adjusted means of three different groups (Group \( A_1 = \) Suggestive Model Group, Group \( B_1 = \) Vertical Teaching Model Group, and Group \( C_1 = \) Control Group).

The arrangement of adjusted means of Group \( A_1 \), Group \( B_1 \) and Group \( C_1 \) is presented in Table 110. It is observed from Table 110 that the Group \( A_1 \) has shown better value of adjusted mean of 6.68 M as compared with 6.43 M of the Group \( B_1 \) and 5.58 M of the Group \( C_1 \).

The difference between pairs of adjusted means of three groups in shot put performance are presented in Table 111. The value of difference between each pair of ordered means is compared with respect to Scheffe's post hoc CD value.

However, Scheffe's post hoc CD value (CD = 0.79) reveals that the value of mean difference between Group \( B_1 \) and Group \( C_1 \) is statistically significant (Mean Difference = 0.85, \( p < 0.01 \)) at the 0.01 level (Table 111). The results show clearly that the 'vertical teaching model group' makes a statistically significant difference in mean gains over the 'control group' in performing...
shot put. Therefore, it may be interpreted that 'vertical teaching model' is having a better effect for improving the physical performance in shot put.

**TABLE 109**

ANALYSIS OF COVARIANCE (ANOVA) OF MEAN RECOVERY IN SHOT PUT PERFORMANCE (MEN SUBJECTS)

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>df</th>
<th>Sum of Squares</th>
<th>Mean Square</th>
<th>'F' Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Group</td>
<td>2</td>
<td>44.64</td>
<td>22.32</td>
<td>18.60**</td>
</tr>
<tr>
<td>Within Group</td>
<td>57</td>
<td>69.85</td>
<td>1.20</td>
<td>** p &lt; 0.01</td>
</tr>
</tbody>
</table>

**TABLE 110**

ADJUSTED MEAN SCORES OF SHOT PUT PERFORMANCE FOR TWO TREATMENT GROUPS AND ONE CONTROL GROUP

<table>
<thead>
<tr>
<th>Group No.</th>
<th>Groups</th>
<th>n</th>
<th>X (metres)</th>
<th>MSerror</th>
<th>'CD' Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Suggestive Model (Gr. A₁)</td>
<td>20</td>
<td>6.68</td>
<td></td>
<td>0.63*</td>
</tr>
<tr>
<td>2</td>
<td>Vertical Teaching Model (Gr. B₁)</td>
<td>20</td>
<td>6.43</td>
<td>1.20</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Control (Gr. C₁)</td>
<td>20</td>
<td>5.58</td>
<td></td>
<td>0.79**</td>
</tr>
</tbody>
</table>

* p < 0.05 , ** p < 0.01
Scheffe's post hoc CD value (CD = 0.79) reveals that the value of mean difference between Group A₁ and Group C₁ is statistically significant (Mean Difference = 1.10, p < 0.01) at the 0.01 level (Table 111). It is evident from this result that the 'suggestive model group' showed statistically significant difference in mean gains over the 'control group' in performing shot put. It may, therefore, be interpreted that the 'suggestive model' is having a better effect for improving the performance in shot put (Fig. 29).

Scheffe's post hoc CD value (CD = 0.63) reveals that the value of mean difference between Group A₁ and Group B₁ is statistically non-significant (Mean Difference = 0.25, p > 0.05) even at the 0.05 level (Table 111). On the basis of this finding it appears that the 'suggestive model group' did not show statistically significant difference in mean gains over the 'vertical teaching model group' in performing shot put.

Therefore, finally, it may be of interest to conclude that the

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** TABLE 111 **

Scheffe's post hoc CD test applied to the difference between pairs of ordered means for shot put performance (men subjects)

<table>
<thead>
<tr>
<th>ORDERED MEANS (STEPS)</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>(2) (3)</td>
<td><strong>0.25</strong></td>
<td><strong>1.10</strong>**</td>
</tr>
<tr>
<td><strong>0.85</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

** p < 0.01 . .
'suggestive model' is not influential to improve the physical performance of men subjects in shot put event than the 'vertical teaching model'.

5.3.3.2. Treatment Effects of Both the 'Models' on Shot Put Performance for Women Ss

Measures of central tendency and variability of the data for shot put event are presented in Table 96B. It is observed from Table 96B that all the three groups viz., 'suggestive model group', 'vertical teaching model group' and 'control group' have shown an improvement in performance (shot put), which is presented in Fig. 20. The significant improvement between these groups was tested by ANCOVA.

The ANCOVA of mean recovery in shot put performance for women Ss presented in Table 112 reveals that there are significant difference ($F = 16.45, p < 0.01$) between adjusted means of three different groups (Group $A_2 =$ Suggestive Model Group, Group $B_2 =$ Vertical Teaching Model Group, and Group $C_2 =$ Control Group).

The arrangement of adjusted means of Group $A_2$, Group $B_2$ and Group $C_2$ is presented in Table 113. It is observed from Table 113 that the Group $A_2$ has shown better value of adjusted mean of 6.15 M as compared with 5.52 M of the Group $B_2$ and 4.85 M of the Group $C_2$.

The differences between pairs of adjusted means of three groups in shot put performance are presented in Table 114. The value of difference between each pair of ordered means is compared with respect to Scheffe's post hoc CD value.

However, Scheffe's post hoc CD value ($CD = 0.61$) reveals that the value of mean difference between Group $B_2$ and Group $C_2$ is statistically significant ($\text{Mean Difference} = 0.67, p < 0.05$) at the 0.05 level (Table 114). The results show statistically significant difference in mean gains over the 'control group' in performing shot put.
Therefore, it may be interpreted that 'vertical teaching model' is having a better effect for improving the physical performance in shot put.

### TABLE 112

**ANALYSIS OF COVARIANCE (ANCOVA) OF MEAN RECOVERY IN SHOT PUT PERFORMANCE (WOMEN SUBJECTS)**

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>df</th>
<th>Sum of Squares</th>
<th>Mean Square</th>
<th>'F' Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Group</td>
<td>2</td>
<td>38.82</td>
<td>19.41</td>
<td>16.45**</td>
</tr>
<tr>
<td>Within Group</td>
<td>57</td>
<td>68.53</td>
<td>1.18</td>
<td>**p &lt; 0.01</td>
</tr>
</tbody>
</table>

** **p < 0.01

### TABLE 113

**ADJUSTED MEAN SCORES OF SHOT PUT PERFORMANCE FOR TWO TREATMENT GROUPS AND ONE CONTROL GROUP (WOMEN SUBJECTS)**

<table>
<thead>
<tr>
<th>Group No.</th>
<th>Groups</th>
<th>n</th>
<th>X (metre)</th>
<th>MS error</th>
<th>'CD' Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Suggestive Model (Gr. A&lt;sub&gt;2&lt;/sub&gt;)</td>
<td>20</td>
<td>6.15</td>
<td>0.61*</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Vertical Teaching Model (Gr. B&lt;sub&gt;2&lt;/sub&gt;)</td>
<td>20</td>
<td>5.52</td>
<td>1.18</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Control (Gr. C&lt;sub&gt;2&lt;/sub&gt;)</td>
<td>20</td>
<td>4.85</td>
<td>0.77**</td>
<td></td>
</tr>
</tbody>
</table>

*p < 0.05 , **p < 0.01
**Fig. 19**

Scale: X-axis: 1.5 Cm. = One Gr.  
Y-axis: 1.0 Cm. = 0.20 M

**Fig. 20**

**Treatment Groups**

**Fig. 19.** Pre- & Post Test Comparison in Mean Performance of Shot Put Event of Three Different Groups (men Ss).

**Fig. 20.** Pre- & Post Test Comparison in Mean Performance of Shot Put Event of Three Different Groups (women Ss).
Scheffe's post hoc CD value (CD = 0.77) reveals that the value of mean difference between Group A_2 and Group C_2 is statistically significant (Mean Difference = 1.30, p < 0.01) at the 0.01 level (Table 114). It is evident from this result that the 'suggestive model group' showed statistically significant difference in mean gains over the 'control group' in performing shot put event. It may, therefore, be interpreted that the 'suggestive model' is having a better effect for improving the performance in shot put event (Fig. 30).

Scheffe's post hoc CD value (CD = 0.61) reveals that the value of mean difference between Group A_2 and Group B_2 is also statistically significant (Mean Difference = 0.63, p < 0.05) at the 0.05 level (Table 114). On the basis of this finding it appears that the 'suggestive model group' showed statistically significant difference in mean gains over the 'vertical teaching model group' in performing shot put.

Therefore, finally, it may be of interest to conclude that the 'suggestive model' is influential to improve the physical perfor-

---

**TABLE 114**

Scheffe's POST HOC TEST APPLIED TO THE DIFFERENCE BETWEEN PAIRS OF ORDERED MEANS FOR SHOT PUT PERFORMANCE (WOMEN SUBJECTS)

<table>
<thead>
<tr>
<th>ORDERED MEANS (STEPS)</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>(2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>0.63*</td>
<td>1.30**</td>
</tr>
<tr>
<td>(3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>0.67*</td>
<td></td>
</tr>
</tbody>
</table>

* p < 0.05, ** p < 0.01
mance of women subjects in shot put event than the 'vertical teaching model'.

5.3.4. TREATMENT EFFECTS OF THE SUGGESTIVE MODEL AND THE VERTICAL TEACHING MODEL ON RUNNING HIGH JUMP PERFORMANCE

5.3.4.1. Treatment Effects of Both the 'Models' on Running High Jump Performance for Men Ss

Measures of central tendency and variability of data for running high jump event are presented in Table 96A. It is observed from Table 96A that all the three groups viz., 'suggestive model group', 'vertical teaching model group' and 'control group' have shown an improvement in performance (Fig. 21). The significant improvement between these groups was tested by ANCOVA.

The ANCOVA of mean recovery in running high jump performance for men Ss presented in Table 115 reveals that there are significant differences ($F = 14.33, p < 0.01$) between adjusted means of three different groups (Group $A_1 = $ Suggestive Model Group, Group $B_1 = $ Vertical Teaching Model Group, and Group $C_1 = $ Control Group).

The arrangement of adjusted means of Group $A_1$, Group $B_1$ and Group $C_1$ is presented in Table 116. It is observed from Table 116 that the Group $A_1$ has shown better value of adjusted mean of 1.55 M as compared with 1.23 M of the Group $B_1$ and 1.20 M of the Group $C_1$.

The differences between pairs of adjusted means of three groups in running high jump performance are presented in Table 117. The value of difference between each pair of ordered means is compared with respect of Scheffe's post hoc CD value.

However, Scheffe's post hoc CD value ($CD = 0.31$) reveals that the value of mean difference between Group $B_1$ and Group $C_1$ is not statistically significant ($Mean Difference = 0.03, p > 0.05$) even
at the 0.05 level (Table 117). The results show clearly that the 'vertical teaching model group' did not show statistically significant difference in mean gains over the 'control group' in performing running high jump. Therefore, it may be interpreted that 'vertical teaching model' is having no significant effect for improving the physical performance in running high jump.

Scheffe's post hoc CD value (CD = 0.31) reveals that the value of mean difference between Group A1 and Group C1 is statistically significant (Mean Difference = 0.35, p < 0.05) at the 0.05 level (Table 117). It is evident from this result that the 'suggestive model group' showed statistically significant difference in mean gains over the 'control group' in performing running high jump. It may, therefore, be interpreted that the 'suggestive model' is having a significant effect for improving the performance in running high jump (Fig. 31).

**TABLE 115**

ANALYSIS OF COVARIANCE (ANCOVA) OF MEAN RECOVERY IN RUNNING HIGH JUMP PERFORMANCE (MEN SUBJECTS)

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>df</th>
<th>Sum of Squares</th>
<th>Mean Square</th>
<th>'F' Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Group</td>
<td>2</td>
<td>8.89</td>
<td>4.44</td>
<td>14.33**</td>
</tr>
<tr>
<td>Within Group</td>
<td>57</td>
<td>17.78</td>
<td>0.31</td>
<td></td>
</tr>
</tbody>
</table>

**p < 0.01**

Scheffe's post hoc CD value (CD = 0.31) reveals that the value of mean difference between Group A1 and Group B1 is also statistically significant (Mean Difference = 0.32, p < 0.05) at the 0.05 level (Table 117). On the basis of this finding it appears that the 'suggestive model group' showed statistically significant
difference in mean gains over the 'vertical teaching model group' in performing running high jump.

**TABLE 116**

**ADJUSTED MEAN SCORES OF RUNNING HIGH JUMP PERFORMANCE FOR TWO TREATMENT GROUPS AND ONE CONTROL GROUP (MEN SUBJECTS)**

<table>
<thead>
<tr>
<th>Group No.</th>
<th>Groups</th>
<th>n</th>
<th>$%$ (metre)</th>
<th>MS error</th>
<th>'CD' value</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Suggestive Model (Gr. A₁)</td>
<td>20</td>
<td>1.55</td>
<td>0.31</td>
<td>*</td>
</tr>
<tr>
<td>2</td>
<td>Vertical Teaching Model (Gr. B₁)</td>
<td>20</td>
<td>1.23</td>
<td>0.31</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Control (Gr. C₁)</td>
<td>20</td>
<td>1.20</td>
<td>0.41**</td>
<td></td>
</tr>
</tbody>
</table>

* $p < 0.05$, ** $p < 0.01$

**TABLE 117**

**SCHERFFE'S POST HOC TEST APPLIED TO THE DIFFERENCE BETWEEN PAIRS OF ORDERED MEANS FOR RUNNING HIGH JUMP PERFORMANCE (MEN SUBJECTS)**

<table>
<thead>
<tr>
<th>ORDERED MEANS</th>
<th>2</th>
<th>1</th>
<th>(STEPS)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(2)</td>
<td>(3)</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>0.32*</td>
<td>0.35*</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>0.03</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* $p < 0.05$

Therefore, finally, it may be of interest to conclude that the 'suggestive model' is influential to improve the physical performance of men Ss in running high jump than the 'vertical teaching model'.
5.3.4.2. Treatment Effects of Both the 'Models' on Running High Jump Performance for Women Ss

Measures of central tendency and variability of the data for running high jump event are presented in Table 96B. It is observed from Table 96B that all the three groups viz., 'suggestive model group', 'vertical teaching model group' and 'control group' have shown an improvement in performance (Fig. 22). The significant improvement between these groups was tested by ANCOVA.

The ANCOVA of mean recovery in running high jump performance for women Ss presented in Table 118 reveals that there are significant differences ($F = 15.0, p < 0.01$) between adjusted means of three different groups (Group $A_2 =$ Suggestive Model Group, Group $B_2 =$ Vertical Teaching Model Group, and Group $C_2 =$ Control Group).

The arrangement of adjusted means of Group $A_2$, Group $B_2$ and Group $C_2$ is presented in Table 119. It is observed from Table 119 that the Group $A_2$ has shown better value of adjusted mean of 1.25 M as compared with 1.11 M of the Group $B_2$ and 0.85 M of the Group $C_2$.

The difference between pairs of adjusted means of three groups in running high jump performance are presented in Table 120. The value of difference between each pair of ordered means is compared with respect to Scheffe's post hoc CD value.

However, Scheffe's post hoc CD value (CD = 0.23) reveals that the value of mean difference between Group $B_2$ and Group $C_2$ is statistically significant (Mean Difference = 0.26, $p < 0.05$) at the 0.05 level (Table 120). The results show statistically significant difference in mean gains over the 'control group' in performing running high jump. Therefore, it may be interpreted that 'vertical teaching model' is having significant effect for improving the physical performance in running high jump.

Scheffe's post hoc CD value (CD = 0.29) reveals that the
value of mean difference between Group A₂ and Group C₂ is statistically significant (Mean Difference = 0.40, p < 0.01) at the 0.01 level (Table 120). It is evident from this result that the 'suggestive model group' showed statistically significant difference in mean gains over the 'control group' in performing running high jump. It may, therefore, be interpreted that the 'suggestive model' is having a significant effect for improving the performance in running high jump (Fig. 32).

**TABLE 118**

**ANALYSIS OF COVARIANCE (ANCOVA) OF MEAN RECOVERY IN RUNNING HIGH JUMP PERFORMANCE (WOMEN SUBJECTS)**

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>df</th>
<th>Sum of Squares</th>
<th>Mean Square</th>
<th>'F' Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Group</td>
<td>2</td>
<td>5.11</td>
<td>2.55</td>
<td>15.0**</td>
</tr>
<tr>
<td>Within group</td>
<td>57</td>
<td>10.20</td>
<td>0.17</td>
<td></td>
</tr>
</tbody>
</table>

**p < 0.01**

**TABLE 119**

**ADJUSTED MEAN SCORES OF RUNNING HIGH JUMP PERFORMANCE FOR TWO TREATMENT GROUPS AND ONE CONTROL GROUP (WOMEN SUBJECTS)**

<table>
<thead>
<tr>
<th>Group No.</th>
<th>Groups</th>
<th>n</th>
<th>( \bar{X} ) (metre)</th>
<th>MS error</th>
<th>'CD' Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Suggestive Model (Group A₂)</td>
<td>20</td>
<td>1.25</td>
<td>0.23*</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Vertical Teaching Model (Group B₂)</td>
<td>20</td>
<td>1.11</td>
<td>0.17</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Control (Group C₂)</td>
<td>20</td>
<td>0.85</td>
<td>0.29**</td>
<td></td>
</tr>
</tbody>
</table>

* p < 0.05 , ** p < 0.01
FIG. 21. PRE- & POST TEST COMPARISON IN MEAN PERFORMANCE OF RUNNING HIGH JUMP EVENT OF THREE DIFFERENT GROUPS (MEN Ss).

FIG. 22. PRE- & POST TEST COMPARISON IN MEAN PERFORMANCE OF RUNNING HIGH JUMP EVENT OF THREE DIFFERENT GROUPS (WOMEN Ss).
Scheffe's post hoc test applied to the difference in pairs of ordered means for running high jump performance (women subjects).

<table>
<thead>
<tr>
<th>ORDERED MEANS</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>(STEPS)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(2)</td>
<td>(3)</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>0.14</td>
<td>0.40**</td>
</tr>
<tr>
<td>(2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>0.26*</td>
<td></td>
</tr>
</tbody>
</table>

Scheffe's post hoc CD value (CD = 0.23) reveals that the value of mean difference between Group A_2 and Group B_2 is statistically non-significant (Mean Difference = 0.14, p > 0.05) even at the 0.05 level (Table 120).

On the basis of this finding it appears that the 'suggestive model group' did not show statistically significant difference in mean gains over the 'vertical teaching model group' in performing running high jump.

Therefore, finally, it may be of interest to conclude that the 'suggestive model' is not influential to improve the physical performance of 'women subjects' in running high jump than the 'vertical teaching model'.
5.3.5. TREATMENT EFFECTS OF THE SUGGESTIVE MODEL AND THE VERTICAL TEACHING MODEL ON 200 M AND 800 M RUNNING PERFORMANCE

5.3.5.1. Treatment Effects of Both the 'Models' on 800 M Running Performance for Men Ss

Measures of central tendency and variability of the data for 800 M running event are presented in Table 96A. It is observed from Table 96A that all the three groups viz., 'suggestive model group', 'vertical teaching model group' and 'control group' have shown an improvement in the performance (Fig. 23). The significant improvement between these groups was tested by ANCOVA.

The ANCOVA of mean recovery in 800 M running performance for men Ss presented in Table 121 reveals that there are significant differences \((F = 3.62, p < 0.05)\) between adjusted means of three different groups (Group A\(_1\) = Suggestive Model Group, Group B\(_1\) = Vertical Teaching Model Group, and Group C\(_1\) = Control Group).

The arrangement of adjusted means of Group A\(_1\), Group B\(_1\) and Group C\(_1\) is presented in Table 122. It is observed from Table 122 that the Group A\(_1\) has shown better value of adjusted mean of 182.00 secs. as compared with 187.00 secs. of the Group B\(_1\) and 191.08 secs. of the Group C\(_1\).

The differences between pairs of adjusted means of three groups in 800 M running performance are presented in Table 123. The value of difference between each pair of ordered means is compared with respect of Scheffe's post hoc CD value.

However, Scheffe's post hoc CD value \((CD = 4.15)\) reveals that the value of mean difference between Group B\(_1\) and Group C\(_1\) is not statistically significant \((\text{Mean Difference} = 4.08, p > 0.05)\) even at the 0.05 level (Table 123). The results show that the 'vertical teaching model group' did not show statistically significant difference in mean gains over the 'control group' in perfor-
ming 800 M running event. Therefore, it may be interpreted that 'vertical teaching model' is having no significant effect for improving the physical performance in 800 M running event.

**TABLE 121**

**ANALYSIS OF COVARIANCE (ANCOVA) OF MEAN RECOVERY IN 800 M RUNNING PERFORMANCE (MEN SUBJECTS)**

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>df</th>
<th>Sum of Squares</th>
<th>Mean Square</th>
<th>'F' Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Group</td>
<td>2</td>
<td>390.00</td>
<td>195.00</td>
<td>3.62*</td>
</tr>
<tr>
<td>Within Group</td>
<td>57</td>
<td>3120.00</td>
<td>53.79</td>
<td></td>
</tr>
</tbody>
</table>

* p < 0.05

**TABLE 122**

**ADJUSTED MEAN SCORES OF 800 M RUNNING PERFORMANCE FOR TWO TREATMENT GROUPS AND ONE CONTROL GROUP (MEN SUBJECTS)**

<table>
<thead>
<tr>
<th>Group No.</th>
<th>Groups</th>
<th>n</th>
<th>x (Secs.)</th>
<th>MS error</th>
<th>'CD' Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Suggestive Model (Gr. A₁)</td>
<td>20</td>
<td>182.00</td>
<td>53.79</td>
<td>4.15*</td>
</tr>
<tr>
<td>2</td>
<td>Vertical Teaching Model (Gr. B₁)</td>
<td>20</td>
<td>187.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Control (Gr. C₁)</td>
<td>20</td>
<td>191.08</td>
<td>5.26**</td>
<td></td>
</tr>
</tbody>
</table>

* p < 0.05 , ** p < 0.01
Scheffe's post hoc CD value (CD = 5.26) reveals that the value of mean difference between Group $A_1$ and Group $C_1$ is statistically significant (Mean Difference = 9.08, $p < 0.01$) at the 0.01 level (Table 123). It is evident from this result that the 'suggestive model group' showed statistically significant difference in mean gains over the 'control group' in performing 800 M run. It may, therefore, be interpreted that the 'suggestive model' is having a significant effect for improving the performance in 800 M run (Fig. 33).

Scheffe's post hoc CD value (CD = 4.15) reveals that the value of mean difference between Group $A_1$ and Group $B_1$ is also statistically significant (Mean Difference = 5.00, $p < 0.05$) at the 0.05 level (Table 123). On the basis of this finding it appears that the 'suggestive model group' showed statistically significant difference in mean gains over the 'vertical teaching model group' in performing 800 M run.

Therefore, finally, it may be of interest to conclude that the 'suggestive model' is influential to improve the physical performance of men subjects in 800 M running event than the 'vertical teaching model'.
5.3.5.2. **Treatment Effects of Both the 'Models' on 200 M Running Performance for Women Ss**

Measures of central tendency and variability of the data for 200 M running event are presented in Table 96B. It is observed from Table 96B that all the three group viz., 'suggestive model group', 'vertical teaching model group' and 'control group' have shown an improvement in performance (Fig. 24). The significant improvement between these groups was tested by ANCOVA.

The ANCOVA of mean recovery in 200 M running performance for 'women subjects' presented in Table 124 reveals that there are significant differences ($F = 9.67, p < 0.01$) between adjusted means of three different groups (Group $A_2 =$ Suggestive Model Group, Group $B_2 =$ Vertical Teaching Model Group, and Group $C_2 =$ Control Group).

The differences between pairs of adjusted means of three groups in 200 M running performance are presented in Table 126. The value of difference between each pair of ordered means is compared with respect to Scheffe's post hoc CD value.

In Table 125 the arrangement of adjusted means of Group $A_2$, Group $B_2$ and Group $C_2$ is presented. It is observed from Table 125 that the Group $A_2$ has shown better value of adjusted mean of 34.30 secs. as compared with 36.11 secs. of the Group $B_2$ and 37.68 secs. of the Group $C_2$.

However, in Table 126, Scheffe's post hoc CD value (CD = 1.51) reveals that the value of mean difference between Group $B_2$ and Group $C_2$ is statistically significant (Mean Difference = 1.57, $P<0.05$) at the 0.05 level. The results show statistically significant difference in mean gains over the 'control group' in performing 200 M running event. Therefore, it may be interpreted that the 'vertical teaching model' is having a significant effect for improving the physical performance in 200 M running event for women Ss.
**Fig. 23**
Scale: X-axis: 1.5 Cm.=One Gr.
Y-axis: 1.0 Cm.=5 Secs.

**Fig. 24**

**Fig. 23**
Pre Test
Post Test
Pre Test
Post Test
Pre Test
Post Test

**Fig. 24**
Pre Test
Post Test
Pre Test
Post Test
Pre Test
Post Test

**Fig. 23.** Pre- & Post Test Comparison in Mean Performance of 800 M Running Event of Three Different Groups (Men Ss)

**Fig. 24.** Pre- & Post Test Comparison in Mean Performance of 200 M Running Event of Three Different Groups (Women Ss)
### TABLE 124
ANALYSIS OF COVARIANCE (ANCOVA) OF MEAN RECOVERY IN 200 M RUNNING PERFORMANCE (WOMEN SUBJECTS)

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>df</th>
<th>Sum of Squares</th>
<th>Mean Square</th>
<th>'F' Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Group</td>
<td>2</td>
<td>137.20</td>
<td>68.60</td>
<td>9.67**</td>
</tr>
<tr>
<td>Within Group</td>
<td>54</td>
<td>411.60</td>
<td>7.09</td>
<td></td>
</tr>
</tbody>
</table>

** p < 0.01

### TABLE 125
ADJUSTED MEAN SCORES OF 200 M RUNNING PERFORMANCE FOR TWO TREATMENT GROUPS AND ONE CONTROL GROUP (WOMEN SUBJECTS)

<table>
<thead>
<tr>
<th>Group No.</th>
<th>Groups</th>
<th>n</th>
<th>T (Secs.)</th>
<th>MS error</th>
<th>'CD' Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Suggestive Model (Gr. A₂)</td>
<td>20</td>
<td>34.30</td>
<td></td>
<td>1.51*</td>
</tr>
<tr>
<td>2</td>
<td>Vertical Teaching Model (Gr. B₂)</td>
<td>20</td>
<td>36.11</td>
<td>7.09</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Control (Gr. C₂)</td>
<td>20</td>
<td>37.68</td>
<td></td>
<td>1.90**</td>
</tr>
</tbody>
</table>

* p < 0.05 , ** p < 0.01

Scheffe's post hoc CD value (CD = 1.90) reveals that the value of mean difference between Group A₂ and Group C₂ is statistically significant (Mean Difference = 3.38 , p < 0.01) at the 0.01 level (Table 126). It is evident from this result that the 'suggestive model group' showed statistically significant difference...
FIG. 25. TREATMENT EFFECTS OF 'VERTICAL TEACHING MODEL' AND 'SUGGESTIVE MODEL' ON 100M RUNNING PERFORMANCE (ANCova FOR MEN Ss)

FIG. 26. TREATMENT EFFECTS OF 'VERTICAL TEACHING MODEL' AND 'SUGGESTIVE MODEL' ON 100M RUNNING PERFORMANCE (WOMEN Ss)
**FIG. 27** TREATMENT EFFECTS OF "VERTICAL TEACHING MODEL" AND "SUGGESTIVE MODEL" ON THE PERFORMANCE IN RUNNING LONG JUMP EVENT (ANCOVA FOR MEN Ss)

**FIG. 28** TREATMENT EFFECTS OF "VERTICAL TEACHING MODEL" AND "SUGGESTIVE MODEL" ON THE PERFORMANCE IN RUNNING LONG JUMP EVENT (ANCOVA FOR WOMEN Ss)
FIG. 29. TREATMENT EFFECTS OF "VERTICAL TEACHING MODEL" AND "SUGGESTIVE MODEL" ON THE PERFORMANCE IN SHOT PUT EVENT (ANCOVA FOR MEN Ss)

FIG. 30. TREATMENT EFFECTS OF "VERTICAL TEACHING MODEL" AND "SUGGESTIVE MODEL" ON THE PERFORMANCE IN SHOT PUT EVENT (ANCOVA FOR WOMEN Ss)
FIG. 31. TREATMENT EFFECTS OF "VERTICAL TEACHING MODEL" AND "SUGGESTIVE MODEL" ON THE PERFORMANCE IN RUNNING HIGH JUMP EVENT (ANCOVA FOR MEN Ss)

FIG. 32. TREATMENT EFFECTS OF "VERTICAL TEACHING MODEL" AND "SUGGESTIVE MODEL" ON THE PERFORMANCE IN RUNNING HIGH JUMP EVENT (ANCOVA FOR WOMEN Ss)
FIG. 33. TREATMENT EFFECTS OF "VERTICAL TEACHING MODEL" AND "SUGGESTIVE MODEL" ON THE PERFORMANCE IN 800 M RUNNING EVENT (AMCOVA FOR MEN SS)

FIG. 34. TREATMENT EFFECTS OF "VERTICAL TEACHING MODEL" AND "SUGGESTIVE MODEL" ON THE PERFORMANCE IN 200 M RUNNING EVENT (AMCOVA FOR WOMEN SS)
in mean gains over the 'control group' in performing 200 M running event. It may, therefore, be interpreted that the 'suggestive model' is having a significant effect for improving the performance in 200 M running event (Fig. 34).

### TABLE 126

Scheffe's post hoc test applied to the difference between pairs of ordered means for 200 M running performance (women subjects)

<table>
<thead>
<tr>
<th>ORDERED MEANS (STEPS)</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>(2)</td>
<td>(3)</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>1.81*</td>
<td>3.38**</td>
</tr>
<tr>
<td>(2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>1.57*</td>
</tr>
</tbody>
</table>

* p < 0.05 , ** p < 0.01

Scheffe's post hoc CD value (CD = 1.51) reveals that the value of mean difference between Group A2 and Group B2 is also statistically significant (Mean Difference = 1.81, p < 0.05) at the 0.05 level (Table 126). On the basis of this finding it appears that the 'suggestive model group' showed statistically significant difference in mean gains over the 'vertical teaching model group' in performing 200 M running event.

Therefore, finally, it may be of interest to conclude that the 'suggestive model' is influential to improve the physical performance of the 'women subjects' in 200 M running event than the 'vertical teaching model'.
In summary, the Follow Up Study was undertaken for a period of 6 weeks to see the treatment effects of the 'suggestive model' and the 'vertical teaching model' on physical performance in selected athletic events. The results of ANCOVA and Scheffe's Post hoc technique reveal that the 'suggestive model' planned in this study is influential to improve the physical performance of both the sexes in most of the selected athletic events as compared to the 'vertical teaching model'. However, in shot put event for men Ss and running high jump event for women Ss both the 'models' have shown similar improvement.