CHAPTER VI

PILOT STUDY

A pilot study is a step to formulate or modify the questionnaire or a test on a scientific basis. In the present study, a pilot study is essential before the questionnaire is finalized and the tests are accepted for this study.

Attempts have been made to find out the discrepancies, inconsistencies and/or assess in a limited way the reliability and validity of the tests to be used in the present research.

Pilot study:— I

Modification of Kupuswamy's Socio Economic status scale (Urban), FORM A

The intention of this study was to apply the Socio Economic status scale of Kupuswamy to a group of 30 subjects and to make necessary modification in the scale for measuring Socio Economic Status if desirable in accordance with the sample and problems of the present study.

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Sample 15 male and 15 female students were taken randomly from 2nd year degree Arts, Science and Commerce classes representing different Socio Economic status and academic achievement.

The mean age of males was 19 years and of females 18 years. Their I.Q. ranged from 29-56 as measured by Raven's progressive Matrices (Adult Form).

The subjects of the sample were given to fill up Kupuswamy's Socio Economic status scale extensively used to measure Socio Economic status of the subjects. It was applied with a view to find out the unnecessary columns in each scale which the subjects of the final study may find difficult to fill up and which can be eliminated without affecting the measurement of Socio Economic status of the subjects.

Each subject was approached individually and was instructed to fill up the form and to point out if he finds any difficulty in filling up a particular column. Most of the subject hesitated to give the name and age of their father as they had also to give the income of their parents. They also complained that they did not
know the year of passing different examinations of their father and guardian. The investigator also felt that if the name and age of the parents and their year of passing different examinations are eliminated from the questionnaire it would not affect the measurement of Socio Economic status of the subjects. In order to obtain correct information from the subject it was considered desirable to keep the answers anonymous.

Under the heading occupation, the column "who controls the organization" was also eliminated from the scale as most of the subjects did not answer it.

In Orissa most of the employees get monthly salary. So subjects mentioned only the monthly salary of their father or guardian. Most of them did not fill up the column "what are the allowance or bonus he gets". So it was eliminated from the final questionnaire.

On the basis of the above Pilot study Kupuswamy's Socio Economic status scale was modified to be used in the final study. The modified form is given in the appendix.

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Pilot study : 2

Purpose :

(a) to determine the reliability of Rotter's Level of Aspiration Board Test by Test retest and split half technique.

(b) to find out the effect of practice.

In order to determine the reliability of the Rotter's Level of Aspiration Board Test, it was conducted on the subjects of the sample (N = 30) following the general procedure adopted by several investigators based on the established method of Frank with slight variation.

To calculate the reliability of the Level of Aspiration Board test by Test retest and split half methods, the most common and usual measures of level of aspiration i.e., goal discrepancy and goal tenacity scores were calculated.

In test retest reliability the test was again repeated on the same subjects (N = 30) after an interval

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of two months and r between the Goal Discrepancy score of test and retest were calculated.

In the split half reliability method the test was broken in the odd and even trials and the correlation between the odd and even trials of Goal Discrepancy and Goal Tenacity scores were calculated. From the self correlation, correlation for the whole test was found out by Spearman and Brown formula. Also split half reliability for the retest score was calculated.

Results

Table I - Table showing the correlation of coefficient for Goal Discrepancy and Goal Tenacity scores in Level of Aspiration Board test by split half and Test retest method.

<table>
<thead>
<tr>
<th>Task</th>
<th>N</th>
<th>1st Testing</th>
<th>2nd Testing</th>
<th>Test Retest</th>
</tr>
</thead>
<tbody>
<tr>
<td>r Value</td>
<td>0.85</td>
<td>0.24</td>
<td>0.62</td>
<td>0.23</td>
</tr>
</tbody>
</table>

G.D.S. = Goal Discrepancy Score
G.T.S. = Goal Tenacity Score

contd...
Table II - Table showing the correlation of coefficients for Goal Discrepancy Score in L.A.B. Test by Test-Retest and split half method by Rotter (1942) and Muthayya (1959).

<table>
<thead>
<tr>
<th>Task</th>
<th>N</th>
<th>Investigator</th>
<th>1st Testing</th>
<th>2nd Testing</th>
<th>Test - Retest</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Muthayya</td>
<td>.32</td>
<td>.37</td>
<td>.76</td>
</tr>
</tbody>
</table>

Discussion - Reliability of this test for Discrepancy score as found by Rotter (1942,a) is .32 and .37 by the split half technique and .76 by the Test Retest method. Muthayya (1959) obtained reliability of .34 and .37 by the split half technique and .37 by the Test Retest method for the same test.

The level of significance for N of 30 is .363 at .05 level and .463 at .01 level. Thus, Table-I indicates that the r's between the Goal Discrepancy score obtained by split half and Test retest method are significant.
beyond .01 level. But the Goal Tenacity score is not statistically significant and hence not reliable. However, as it is not a primary measure of aspiration like Goal Discrepancy score, it does not affect the reliability of the result. It can therefore be concluded that the test seems to be reliable and the methods used to measure it are also reliable.
(b) Effect of Practice

To examine the effect of practice in Level of Aspiration Board study two methods of calculation were followed.

(i) The average performance of the sample for the first 10 trials was compared with the average performance for the last 10. The difference was only .63 which is not significant. Trial by trial learning was analysed for the sample to find out the effect of practice trial wise. The difference is only .51 and not significant.

Results

Table - I  Table showing the effect of practice in L.A.B.Test. Average performance of the sample for the first 10 trials compared with the average performance for the last 10 trials.

<table>
<thead>
<tr>
<th>Task</th>
<th>N</th>
<th>Average Aspiration for first 10 trial</th>
<th>Average Aspiration for last 10 trials</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>L.A.B. Test</td>
<td>30</td>
<td>29.47</td>
<td>28.34</td>
<td>.63</td>
</tr>
</tbody>
</table>

The difference as found by Rotter = .65
Table - II

Table showing the effect of practice in Level of Aspiration Board test trial wise. The average score for all the subjects for each trial is given in the following table.

\[ N = 30 \]

<table>
<thead>
<tr>
<th>Trial</th>
<th>Average performance of 30 subjects</th>
<th>Trial</th>
<th>Average performance of 30 subjects</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>28.16</td>
<td>11</td>
<td>27.16</td>
</tr>
<tr>
<td>2</td>
<td>28.66</td>
<td>12</td>
<td>27.73</td>
</tr>
<tr>
<td>3</td>
<td>31.32</td>
<td>13</td>
<td>31.03</td>
</tr>
<tr>
<td>4</td>
<td>29.50</td>
<td>14</td>
<td>29.50</td>
</tr>
<tr>
<td>5</td>
<td>31.00</td>
<td>15</td>
<td>29.23</td>
</tr>
<tr>
<td>6</td>
<td>29.75</td>
<td>16</td>
<td>31.03</td>
</tr>
<tr>
<td>7</td>
<td>28.00</td>
<td>17</td>
<td>27.46</td>
</tr>
<tr>
<td>8</td>
<td>29.10</td>
<td>18</td>
<td>29.76</td>
</tr>
<tr>
<td>9</td>
<td>31.13</td>
<td>19</td>
<td>30.40</td>
</tr>
<tr>
<td>10</td>
<td>30.90</td>
<td>20</td>
<td>28.26</td>
</tr>
</tbody>
</table>
Table - 3

Table showing the average performance of the sample for the first 10 trials, average performance for the last 10 trials and average for 20 trials.

<table>
<thead>
<tr>
<th>N</th>
<th>Average for first 10 trials</th>
<th>Average for last 10 trials</th>
<th>Difference</th>
<th>Average for 20 trials</th>
</tr>
</thead>
<tbody>
<tr>
<td>30</td>
<td>29.67</td>
<td>29.16</td>
<td>.51</td>
<td>29.41</td>
</tr>
</tbody>
</table>

The difference between the average performance of first 10 and last 10 trials as found by Rotter is .84 (1942) as compared to .51 obtained by the present investigator.

Discussion -

Table - 1 and 2 indicate that in subject wise analysis the average difference between performance of first 10 and last 10 trials is only .63 which does not indicate any practice effect upon performance.
In Table 3 similarly where trial wise analysis is made, the effect of practice is only .51 more for the first 10 trials. It therefore does not indicate any effect of practice on performance in Level of Aspiration Board test. This result is supported by Rotter (1940) who found the effect of practice only .66 subject wise and .84 trial wise. In the present study the average performance of the group of 30 subjects is 29.41 and the range was from 25-33 and about 90% of the cases scored between 28-30.

It is therefore evident that there was little difference in the height of performance level for the subjects of this study. Almost 70% of the performance scores were concentrated at a level slightly below the middle of the distribution of possible scores. Although learning was at a minimum in the situation, there was for each individual considerable variability from trial to trial so that the possibility of having to change his estimate always existed.

From these results it is clear that the Level of Aspiration Board Test fits to a high degree to the various criterias of Level of Aspiration tests mentioned earlier.
Pilot study - 3

The aim of this Pilot study is

(a) to examine the time taken by each subject to complete a trial of the Symbol Digit Test.

(b) to determine the reliability of the test by Test retest and split half technique.

(c) to find out the effect of practice on performance.

(d) to determine the factor of generality in level of aspiration by calculating the $r$ between the Goal Discrepancy score of Level of Aspiration Board and Symbol Digit test and Goal Tenacity Score of Level of Aspiration Board and Symbol Digit Test.

In order to calculate the reliability of the Symbol Digit Test and generality of Level of Aspiration, the Symbol digit test was conducted on the Sample ($N=30$).

Goal Discrepancy and Goal Tenacity Scores were calculated to find out the reliability of the tests used. For finding out generality of Level of Aspiration which
among other factors may also depend upon the relatedness and unrelatedness of the task, \( r \) between Goal Discrepancy Score of Level of Aspiration Board and Symbol Digit Tests and Goal Tenacity Score of Level of Aspiration Board and Symbol Digit Tests were calculated. For measuring the reliability of symbol digit test, the procedures followed in Pilot study No. 2 were also followed here.

Results

Table - I shows the correlation of coefficients of Goal Discrepancy and Goal Tenacity Scores of Symbol Digit Test by the Test Retest and split half technique.

<table>
<thead>
<tr>
<th>Task</th>
<th>N Investigator</th>
<th>Split Half</th>
<th>Test - Retest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symbol</td>
<td>Present</td>
<td>1st Testing</td>
<td>2nd Testing</td>
</tr>
<tr>
<td></td>
<td></td>
<td>.69</td>
<td>.46</td>
</tr>
<tr>
<td>Muthayya</td>
<td></td>
<td>.73</td>
<td>-</td>
</tr>
</tbody>
</table>

G.D.S. = Goal Discrepancy Score
G.T.S. = Goal Tenacity Score
Table - 2

Showing the average performance of the subjects for the first 3 and last 3 trials in symbol digit test.

<table>
<thead>
<tr>
<th>Task</th>
<th>( N )</th>
<th>( M_1 )</th>
<th>( S_1 )</th>
<th>( S_{m1} )</th>
<th>( M_2 )</th>
<th>( S_2 )</th>
<th>( S_{m2} )</th>
<th>( r_{12} )</th>
<th>( \sigma_D )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symbol Digit</td>
<td>30</td>
<td>21.96</td>
<td>5.0</td>
<td>.96</td>
<td>25.18</td>
<td>6.02</td>
<td>1.1</td>
<td>.27</td>
<td>1.14</td>
</tr>
<tr>
<td>Test</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

C.R. = 2.28
Sign. at .05 level

Table - 3

Table showing the performance for the first 3 trials and last 3 trials of the Sample in Symbol Digit.

<table>
<thead>
<tr>
<th>Task</th>
<th>( N )</th>
<th>( M_1 )</th>
<th>( S_1 )</th>
<th>( S_{m1} )</th>
<th>( M_2 )</th>
<th>( S_2 )</th>
<th>( S_{m2} )</th>
<th>( r_{12} )</th>
<th>( \sigma_D )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symbol Digit</td>
<td>30</td>
<td>19.76</td>
<td>4.0</td>
<td>0.73</td>
<td>26.76</td>
<td>3.28</td>
<td>0.60</td>
<td>0.13</td>
<td>0.87</td>
</tr>
<tr>
<td>Test</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

C.R. = 8.1
Sign at .01 level

contd. .93
Table 4

Table showing the correlation of coefficients between Symbol Digit Test and Level of Aspiration Board Test for Goal Discrepancy scores and Goal Tenacity scores to study generality.

\[ r \text{ between G.D.S. of L.A.B. and S.D. Test} = .44 \]
\[ r \text{ between G.T.S. of L.A.B. and S.D. Test} = .38 \]

Both \( r \) sign. at .05 level

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Discussion and conclusion

The investigator observed that within 30 seconds most of the subjects replaced 25-30 correct numbers for symbols. When some of the subjects were given 40 seconds for completing two rows, most of them replaced both the rows in the given time and so there was nothing to aspire for. Hence 30 seconds time limit was considered to be optimum for completing one trial on the basis of the findings of the Pilot study.

Muthayya (1959, 1963, 1967) in his studies has also given 30 seconds time to his subjects for completing two rows in symbol digit test consisting of 40 symbols.

The correlation between Goal Discrepancy score by test Retest in symbol digit test as found by Muthayya (1959) is .18 and by the split half technique in the first and second testing is .73 and .81 respectively. All these correlations are significant except the r of symbol digit test found out by the test retest method.

contd...
In the present pilot study the r for Goal Discrepancy score between test retest is .71 and for Goal Tenacity scores .54 and both are significant at .01 level.

By the split half technique in the first test the rs for Goal Discrepancy score and Goal Tenacity score are .69 and .46 respectively while in the retest the rs for Goal Discrepancy score and Goal Tenacity score between odd and even trials are .57 and .49 respectively. This indicates that in both the testings the rs for Goal Discrepancy score and Goal Tenacity score are significant at .01 level.

All these high correlations lead us to believe that the symbol digit test as a task of level of Aspiration is reliable and the procedure adopted to measure level of aspiration is also reliable.

Result table IV indicates that the r between Goal Discrepancy score of Symbol Digit test and L.A.B. test is .44 and between the Goal Tenacity score of L.A.B. and Symbol Digit test is .38. Both these correlations are significant at .05 level. This result indicates that
the level of aspiration behaviour remains constant regardless of the means used to measure it. This result also supports previous findings on the generality of level of aspiration obtained by Frank (1935) Gardner (1939) Gould (1939) Heathers (1942) Rotter (1942) Muthayya (1963) and Das (1965).

All these studies on generality of level of aspiration have shown that level of aspiration is not specific to one situation, but a general trait in the person being independent of the nature of the situation.

Analysis of result table 2 indicates that when in the average performance of the subjects the pilot study for the first 3 trials is compared with their average performance for the last 3 trials, the effect of practice on performance is significant at .05 level, the C.R. being 2.28.

Similarly when the average performance of the first 3 trials is compared with the average performance of the last 3 trials of the subjects, the difference is found to be significant at .01 level (C.R. = 3.1). Thus it is clearly proved that in the symbol digit test the

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effect of practice on performance is significant. In verbal tests like symbol digit, it is very difficult to eliminate the effect of practice on performance completely.

In spite of the effect of practice, it has been successfully used by previous investigators (Muthayya-1959, 1963, 1967, Himelstein-1956) as a test of Level of Aspiration.

Conclusion

The results of all the three pilot studies including the reliability of the tests obtained indicate that Rotter's Level of Aspiration Board and symbol digit substitution tests previously used by many investigators in the study of Level of Aspiration can also be applied in the present study successfully because of their suitability and reliability.