CHAPTER III

This study has been undertaken to investigate the effect of variables, vocational maturity, manifest-anxiety and the experimental treatment, namely information regarding the world of work, on vocational choice and to verify the incidence of indecision and indecisiveness in the 'No Choice' group which has been formulated on the basis of the first administration of Trow's Vocational Choice Inventory (V.C.I.) to sample population.

With the help of experimental design the relationship of manifest anxiety and vocational choice to indecision and indecisiveness was studied. This experimental design has the added advantage of sifting out the main effect of experimental variable and the interaction effect of the experimental variable along with the other two independent variables. After the second administration of V.C.I. each group was divided into two sub-groups of those who made a choice and those who even after this second administration of the V.C.I. failed to make a choice. The entire group (including all the eight groups) was administered the M.A.S. and V.D.Q. (Post-test). Further when the indecision and indecisive subjects were clearly identified they were treated with the conflict resolution experiment. The two groups, namely the indecision and the indecisive, were tested for significant differences.
in the time taken to resolve the conflict by applying the 'Kruskal-Wallis (One way analysis of variance) test. With this treatment the incidence of anxiety and its role in indecisiveness was tested and verified and its relation to conflict resolution was studied.

Sample of the Study

The sample population of this study consists of 100 undergraduate students of the Aligarh Muslim University, Aligarh. The Vocational Choice Inventory was administered to the II, IV and VI Semester, B.A., B.Sc. and B.Com. students of the University. The total population of these classes consisted of 500 students. The following break up shows the number of students in each class:

<table>
<thead>
<tr>
<th>Classes</th>
<th>Semester</th>
<th>Students</th>
<th>Choice</th>
<th>No Choice</th>
</tr>
</thead>
<tbody>
<tr>
<td>B.A.</td>
<td>II</td>
<td>40</td>
<td>29</td>
<td>11</td>
</tr>
<tr>
<td>B.A.</td>
<td>IV</td>
<td>43</td>
<td>33</td>
<td>10</td>
</tr>
<tr>
<td>B.A.</td>
<td>VI</td>
<td>50</td>
<td>36</td>
<td>14</td>
</tr>
<tr>
<td>B.Sc.</td>
<td>II</td>
<td>88</td>
<td>64</td>
<td>24</td>
</tr>
<tr>
<td>B.Sc.</td>
<td>IV</td>
<td>102</td>
<td>80</td>
<td>22</td>
</tr>
<tr>
<td>B.Sc.</td>
<td>VI</td>
<td>70</td>
<td>30</td>
<td>40</td>
</tr>
<tr>
<td>B.Com.</td>
<td>II</td>
<td>38</td>
<td>18</td>
<td>20</td>
</tr>
<tr>
<td>B.Com.</td>
<td>IV</td>
<td>42</td>
<td>22</td>
<td>20</td>
</tr>
<tr>
<td>B.Com.</td>
<td>VI</td>
<td>47</td>
<td>22</td>
<td>20</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>500</td>
<td>319</td>
<td>181</td>
</tr>
</tbody>
</table>

Out of the total number of 500 students, 181 failed to give a choice or gave a choice of a profession about which they were uncertain to enter. One hundred students who form the sample of this study were
selected according to the random sampling technique, out of 181 students who did not give any vocational choice or were uncertain about their choice. The age range of the sample population was 17 to 21 years.

The Aligarh Muslim University, Aligarh, as Central Institution of learning attracts students from the whole country and may, therefore, be assumed to be a representative institution. Moreover, by the time the undergraduates reach the II, IV or VI Semester they should become fairly aware of entering an occupation and should at least take a more or less tentative yet fairly certain decision regarding the choice of their occupation. By the time our subjects enter on an undergraduate course of study, they are assumed to have fairly good information about the occupation of their choice. Any sampling technique can at least take into consideration the relevant factors having important bearings on the piece of investigation for which it is being employed or made use of.

Whatever be the sampling technique and however meticulously it may have been carried out in a piece of research, one often is doubtful regarding sampling methodology in the field of social sciences as will be borne out by the following observation of Good and Scates.

"... Some specialists with considerable statistical sophistication in educational psychology, and other social fields do not completely accept the purely statistical point of view in trusting a
random sample, so do mathematical statisticians, who simply say the probability is such and such that the results will vary only a certain amount. It must be remembered that this statement contains the word probability... Even by the most perfect of sampling procedures, the research worker cannot be certain that he actually has any better representative sample than when he takes an intact group (such as a particular class of pupils in a given school), with all of its unknown selective factors, that is, the amount of selection which enters into a given sample by the best of procedures is still unknown... While the use of approved procedures in sampling may give the investigator a feeling of confidence in a single sample, this is purely a psychological matter rather than an actuality." (pp. 602-603).

**Measuring Instruments and Testing Procedure**

In order to arrive at valid and reliable results, it is important to determine a proper way of approach to the problem. A question of way of approach leads up to a consideration of methodological problem and a determination of the instruments of investigation.

**Manifest Anxiety**

The measure of manifest anxiety used in the present study was Sinha's M.A.S. (Manifest Anxiety Scale) which is given in Appendix 'B', the M.A.S. was individually administered to the sample population at the beginning of the 1971 academic year.
Sinha's Manifest Anxiety Scale

Sinha's Manifest Anxiety Scale consists of 100 items given in the form of questions. The subject is required to answer each item on the scale in 'Yes' or 'No'. Some of the questions are given in the positive form while the others are in the negative form. For each 'Yes' or 'No' answer depending on the negative or the positive form, one mark is awarded to the subject. Thus, the maximum a subject can score is 100 marks. The higher the marks obtained by the subject on this scale, the higher the level of Anxiety of the subject. Low score indicates low Anxiety.

Sinha has suggested that those using the scale should work out their own norm. We have worked out our own cutting points for determining the low, high and borderline anxiety subjects by the Quartile method. The details of the calculation are given in Appendix 'C'. Those scoring 28 or less on this scale are in low anxiety group, scoring between 29 and 54 are the borderline cases and those scoring 55 or more are in the high anxiety group.

Vocational Choice Inventory (V.C.I.)

A vocational choice response was obtained from each subject by administering the V.C.I. at the beginning of the experimental session. The V.C.I. is given in Appendix 'D'. The V.C.I. utilizes Trow's (1941) open ended questions for eliciting "probable occupation". As Crites (1962, Ch. 7, p.50) has noted, "Trow's questions have
acceptable reliability and considerable validity for the measurement of a choice."

Vocational Development Questionnaire (V.D.Q.)

In order to test the vocational maturity of the subjects, a modified version of vocational development inventory was used. It was named as Vocational Development Questionnaire which is given in Appendix 'E' consists of 11 items. Validation of this vocational development questionnaire was not only confined to the study of the literature in the field but several versions of the formulation of questions were discussed with the five teachers of the Department of Psychology, Aligarh Muslim University, Aligarh, who worked as judges for this purpose. In order to determine the reliability of this questionnaire the results of a fresh sample were taken into consideration. The reliability of the VDQ is .82, .9, which was determined by the split-half/test-retest method, the details of which are given in Appendix 'F'.

Cutting points for grouping the subjects as Immature, Borderline and Mature were worked out by using the Quartile method. Subject scoring 4 or below was considered as a immature subject, scoring between 5 and 6 were considered as borderline cases, 7 and above of score was taken as indicative/mature subjects. These cutting points are given in Appendix 'G'.

**Informational Treatment (Experimental Variable)**

Experimental group I and Experimental group II were treated with the experimental variable in order to see the effect of this variable and decide which of the subjects exhibit indecision and which subjects exhibit indecisiveness. The experimental variable consists of informational material regarding job possibilities and information about occupations which are possibly available in our country for those graduating in Arts, Science or Commerce. The material is not exhaustive, but covers a wide range of jobs available. The assumption, in providing this material, to the experimental group subjects was that they lack information regarding the world of work in this country and are, therefore, handicapped in making a choice.

The informational material was imparted to them in the form of a lecture and typed sheets about this information were supplied to the subjects, so that they may read it carefully. While administering the second administration of V.C.I., the investigator made it sure that the subjects have gone through the typed material and are in a better position about their knowledge of the available occupational opportunities in line with their educational background (Chapter I, p.7, Fig. 1). The information material sheet is given in Appendix 'H'.

**Conflict Resolution Experiment**

Conflict Resolution was studied by a pile of cards. A list of 11 occupations in a paired comparison form was selected and presented
to the subjects. The two occupations were printed on a card and the subject had to choose one out of these two occupations. The time between the presentation of a card and the choosing of an occupation was noted by a stopwatch. No occupation appeared in successive pairs.

The presentation of pairs of occupations, asking the subjects to choose one of the other alternatives made possible the identification of preferred and non-preferred occupations for each subject separately in terms of a frequency of a subject's choice response for a given occupation. In order to determine the strong choice the percentage of choice of an occupation was worked out in a paired comparison. (Woodworth's 'Experimental Psychology', pp. 206 and 252, for 'Z' score table was consulted). The highest percentage was taken as the strong choice. The lowest percentage was taken as the weak response. On the basis of these findings the three categories of conflict were induced. Strong choice versus strong choice was taken as an Approach-Approach type of conflict. Strong-weak was considered as Approach-Avoidance type of conflict. Weak-weak choice response was placed as an Avoidance-Avoidance type of conflict. These three types of conflict categories were treated with the Kruskal Wallis (One Way analysis of variance) test for significant differences.

A list of occupations, instructions about the occupational task and a list of paired occupations is given in Appendix 'I'.

**PROCEDURE**

The sample population was administered the Vocational Choice Inventory (V.C.I.). On the basis of the results of V.C.I. the choice and
No Choice groups were separated. The No Choice group was randomly divided into two groups. Each group was further divided into two control and two experimental groups giving control group I, Experimental Group I, and Control Group II, Experimental Group II. The Control Group II and Experimental Group II were administered Sinha's Manifest Anxiety Scale (M.A.S.) and modified version of Crites's Vocational Development Inventory called Vocational Development Questionnaire (V.D.Q.)

These four groups, each consisting of twenty-five subjects served as the design of this study. No instrument employed in this study, was given to control group I up to the last phase of this study. Control group I was administered the V.C.I at the end of all phases of the experiment along with other three groups. Control group II and Experimental group II were administered the M.A.S. and V.D.Q. Whereas experimental group II was exposed to the informational treatment (E.V.) along with Experimental group I, But M.A.S. and V.D.Q. was not administered to the Experimental group I. After all this treatment of various groups, all the four groups were administered the V.C.I. (second administration).

After the second administration of V.C.I. each group provided subjects who made the choice of a vocation and subjects who failed to make a choice. This treatment gave us eight sub-groups namely control No Choice I (CNC₁), Control Choice group I (CC₁), Experimental No Choice group I (ENC₁), Experimental Choice Group I (EC₁), Experimental No Choice group II (ENC₂), Experimental Choice group 2 (EC₂), control Choice group 2 (CC₂), and Control No Choice 2 (CNC₂). The entire group then (including
all the eight groups) was administered the M.A.S. and V.D.Q. (post-test).

On the basis of the experimental treatment and the results of the M.A.S. and V.D.Q. the different groups were treated with the Kruskal Wallis (one way analysis of variance) test in order to find out the main and interaction effects of Manifest Anxiety Scale and V.D.Q. so that the incidence of antecedent anxiety and the role of vocational maturity could be differentiated and indecision and indecisive subjects clearly identified.

Now the indecision and indecisive subjects were treated with the conflict resolution experiment. On the basis of the time taken to resolve a conflict on this experiment two groups namely the indecision and indecisive subjects were treated with the Kruskal Wallis (one way analysis of variance) test for significant differences in the time taken to resolve a conflict.

DESIGN

The complete design of the study is given in the form of Fig. 3.

HYPOTHESES

The following hypotheses, described in the null form were set up for the purpose of this study.
<table>
<thead>
<tr>
<th></th>
<th>Group 1</th>
<th>Group 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Choice - Stop</td>
<td>IC = None</td>
<td>IC = None</td>
</tr>
<tr>
<td>Choice - Stop</td>
<td>IE = Choice</td>
<td>IE = Choice</td>
</tr>
<tr>
<td>Choice - Post-test</td>
<td>IIE = Choice</td>
<td>IIE = Choice</td>
</tr>
<tr>
<td>Choice - Post-test</td>
<td>VCI1</td>
<td>VCI2</td>
</tr>
<tr>
<td>Choice - Post-test</td>
<td>IC</td>
<td>IC</td>
</tr>
</tbody>
</table>

**FIGURE - III: DESIGN**

- Conflict
- Resolution
- Experiment
- Pre-test
- Post-test
- VDQ
- IIB
- IC

- No choice
- Choice
Hypotheses of the First Phase of the Study (1-8)

The analysis of these hypotheses is given in Appendix 'A'.

Ho. 1 There are no significant differences in the choice behaviour of Low and High Anxiety subjects as a result of providing occupational information (E.V.).

Ho. 2 There are no significant differences between the choice behaviour of the subjects as a result of providing occupational information (E.V.).

Ho. 3 There are no significant differences in the choice behaviour of the subjects having the information effect of experimental variable with and without the effect of M.A.S. and V.D.Q.

Ho. 4 There are no significant differences in the choice behaviour of the subjects with the interaction effect of M.A.S. and V.D.Q. and with and without the effect of the experimental variable.

Ho. 5 There are no significant differences between the choice behaviour of the subjects with and without M.A.S. and V.D.Q.

Ho. 6 There are no significant differences in the choice behaviour of subjects with M.A.S., V.D.Q. and E.V. and those without M.A.S., V.D.Q. and E.V.

Ho. 7 There are no significant differences in the choice behaviour of the subjects with only M.A.S. and V.D.Q. and those with only E.V.

Ho. 8 There are no significant differences in the choice behaviour of all the four groups taken together as a whole.
Hypotheses of the second Phase of the Study (1-3.2)

Ho. 1 There is no significant difference in the choice behaviour of subjects and their level of maturity.

Ho. 2 There is no significant difference in the choice behaviour of subjects and their level of anxiety.

Ho. 3.1 The sample population does not differ in the time taken to resolve three types of conflicts.

Ho. 3.2 Subjects exhibiting vocational indecision and indecisiveness do not differ in the time taken to resolve conflict.

STATISTICAL TECHNIQUES

The statistical techniques used in a study are determined by the nature of the problem. In other words a statistical technique can be applied to data only when the method of data collection and the population sample confirm to certain assumptions regarding the applicability of a particular test or formula. As the aim of this study was to ascertain significant differences regarding the influences of certain variables within each group, between the groups and also in the combined group as a whole, it was decided to use a suitable statistical technique. For the purpose of testing the significant differences among the subjects the chi-square test was used; for the first phase of the study the formula for computing the chi-square value was:
\[ x^2 = \frac{N \left( \frac{(AD-BC)^2}{N/2} \right)}{(A+B)(C+D)(A+C)(B+D)} \]

(Sidney Siegel, pp. 109-110).

The use of Kruskal Wallis (one way analysis of variance) test by ranks was thought proper to be used in this study. Kruskal Wallis one way analysis of variance test by ranks is useful in drawing the inter-group differences, differences within the groups, in the second phase of the study.

The Kruskal Wallis one way analysis of variance test by ranks is an extremely useful test for deciding whether \( K \) independent samples are from different populations. The most useful function of this test is to tell whether the differences among the samples signify genuine population differences. The test assumes that the variable under study has an underlying continuous distribution. It requires at least ordinal measurement of that variable.

Rationale and Method

In the computation of the Kruskal Wallis test, each of the \( N \) observations are replaced by ranks. That is, all of the scores from all of the \( K \) samples combined are ranked in a single series. The smallest score is replaced by rank 1 the next to smallest by rank 2, and the largest by rank \( N \). \( N = \) the total number of observations in the \( K \) samples. After this the sum of ranks is found because this test determines whether the sums of ranks are so disparate that they are not likely to have come
from samples which were all drawn from the same population.

The following formula for computing \( k \) samples was used: (8.1).

\[
H = \frac{12}{N(N+1)} \sum_{j=1}^{k} \frac{R_j^2}{n_j} - 3(N+1)
\]

Formula for tied observations: \( 1 - \frac{T}{N(N-1)} \) ... (8.2)

(Sidney Siegel, pp. 185-188).

Compared with the most powerful parametric test, the \( F \) test, the Kruskal Wallis test has power efficiency of \( \frac{3}{\chi^2} = 95.5 \) per cent (Andrews, 1954).

The Kruskal Wallis test is more efficient because it uses more of the information in observations. It converts the scores to ranks, whereas the extension of the median test converts them simply to either pluses or minuses. The Kruskal Wallis test preserves the magnitude of scores more fully than does median test.

For the treatment in a part of this study 't' test has also been used. Formula used for combined standard deviation is:

\[
SED = SD \sqrt{\frac{N_1 + N_2}{N_1 N_2}}
\]

'\( t' = \frac{D}{\sigma D}
\]
The rationale for using this formula of 't' for our data is that the sample has very small N (less than 30). 't' is a critical ratio (CR), but all CR's are not 'ts'.

(Henry, E. Garreft, p. 215).