CHAPTER V

PURPOSE AND PROCEDURE OF THE INVESTIGATION

Planning a research which forms an essential step for an effective enquiry, should involve formulation of hypotheses, objectives and the experimental design.

The purpose of the present investigation is two-fold:

(i) Evolving methods of studying interest,

(ii) Studying the relationship between the interest patterns and environmental factors, e.g., area of residence, father's occupation, course of studies, etc.

With a view to making an intensive study in the assessment of the interest of the undergraduate students in Indian context, it was felt that the instruments should first be devised for ensuring the precision and effectiveness of our assessment procedure. Review of the previous studies (in chapters III & IV), however, points out the need for a systematic approach to study this complex relationship between interest and environmental factors.

Consideration behind Formation of Hypotheses

In any research the formation of hypotheses forms

an important step. The term hypothesis is indicative of certain probability based on working beliefs and considerations. In the present investigation, one of the purposes is to explore the environmental forces shaping interest. There is also a need for selecting a few environmental variables which might have significant impact upon interests.

Any hypothesis needs verification and its value has to be judged from the results. It is still desirable to have some plausible explanations for selecting a few postulates. In other words, besides logical considerations, the observations already made in the past also support the inclusion of certain hypotheses. As pointed out by Fryer (1), training and environmental factors are the main causes of vocational interest. This prompted the investigator to include course which one is undergoing as one of the environmental variables. As regard other environmental factors,family tradition has also been considered by Fryer (2) as an important variable determining one's interest.He has referred to the study conducted by Young(3) who conducted an inquiry into the reasons given for the vocational choices of London School Board

1 Fryer,D.: The Measurement of Interests,op.cit.,p.212.

2 Ibid., p. 167.

3 Young,Sarah: "School Girls' Ideas of Women's Occupations", Studies in Educ., 1902, II, 259-270.

girls between the ages of 7 and 14 years. In this connection, she observed that: "In general,caste, tradition, imitation and so on are far more influential than their interest or fitness in determining vocational choice." This observation indicates the scope for a hypothesis that interest and tradition might have a combined effect on vocational choice because of a possible interrelationship between them. Tradition has, therefore, been assumed to be one of the factors influencing interest in the present enquiry.

Similarly, the environmental experience derived from the immediate surrounding may influence the development of interest to a certain extent. In the words of Fryer (4), "It is the environment that determines the specialization of our interests". In support of his statement he also presents an example as follows: "If we are brought up in a mining community, our interests are determined by that fact. For one brought up on boardship there is a different determiner." It is also hinted that the present environment may not necessarily be the sole determinant of one's interest. There are past experiences which might go a long way in processing one's interest. In short, experiences derived out of the past or the present environment have been assumed to have certain

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4 Fryer, D.: op. cit., p. 211.

relationship with interest as postulated in the present study.

Another variable which has been very often regarded as an important determinant is the parental occupation. The occupation of the father provides a stimulus to the selective process of determining values. This may also influence interest formation to a great extent. This is supported by Fryer (5), who says: "The occupation of the father has been considered as a possible determiner of vocational interests. It is recognized that the weight of this influence might be greater or less according to the occupational conditions of choice in various countries."

It may appear from the above considerations that socio-economic status of the parents may be considered as a variable influencing one's interest. It is, however, doubtful as to whether this will prove to be a genuine consideration determining one's choice and preferences. It appears to be superficial as a point of consideration as indicated by the existing controversies on this point.

The home environment also exerts an influence too significant to be ignored in any study of interest. Besides, values differing from class to class considerably influence our perception and prove important determinants.

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5 Fyer, D.: op. cit., p. 168.

All these considerations suggest a need for further research with the following hypotheses as most of them are mere apprehensions hardly supported by research evidence. That motivational factors are processed considerably by the cultural determinants and environmental stimulations is one of the hypotheses set in accordance with the above view points.

Hypotheses

As it is almost conventional to formulate hypotheses on the basis of certain considerations, the following have been set up for verification:

(a) At the undergraduate level interests are identifiable.

(b) There are some broad basic patterns of interest inspite of overlap between some types of interest (e.g. Technical, Science, Agriculture).

(c) Interests tend to be influenced by environmental factors like father's occupation, area of residence, family tradition, parental desire, and courses of study, etc.

It has been considered desirable to make a

comprehensive approach to the study of interest for testing the hypotheses. The techniques would consist of four different types of tests. The rationale behind the construction of the tests would be described in the following chapter.

So far as the sample is concerned, two different sets of sample have been taken, one for pilot study and the other for the main investigation. The sample has been drawn from various areas and various cross-sections of students with a view to making it representative. For the pilot study, however, some criterion groups had to be selected for validating the instruments.

For the main investigation, the sample had to be more carefully selected with reference to physical environment, courses and socio-economic strata. The collection of the data is, no doubt, an arduous task as they should be free from bias and should help in testing the hypothesis. The investigator had to remain satisfied with the raw scores, as the tests were only used for the purposes of comparison. The testing of the hypothesis demands a number of statistical operations. Even for the validation of the instruments, selection of the external criterion has proved difficult because of poor reliability of the teacher's or parent's ratings. For the purpose of meeting

this problem of validation criterion groups have been selected and chi-square tests were tried out for finding out the validity of each item. For example, it was considered necessary to see whether an item designed to measure fine arts interest can discriminate between the fine arts group with sufficient involvement and the rest. For finding out the reliability of the instrument the test-retest reliability has been considered to be more convenient and practical in the circumstances. As regards testing the hypothesis (b), factorial analysis has been regarded as the most suitable statistical technique for exploring the basic patterns of interest. The hypothesis (c), however, requires varification from various angles. The comparison of the means, S.D., range and also the method of analysis of variance have been found suitable for the purpose.

Sample

As the construction and validation of the tests and techniques for assessment of interests formed a formidable part of the work, the investigator has to be less ambitious about the size of the population. It was, therefore, decided to take representative sampling as far as possible for the main investigation. The following points were kept in view while selecting the population:

(a) Every area viz. urban industrial, urban

Commercial, urban Residential, rural Agricultural, rural Residential, should be represented in a suitable design. Emphasis was laid on the area in which one has spent major part of his or her stay. While considering the area, it has been kept in view that the same village or town may have a number of environments which might vary from locality to locality. Thus, one living in the same town or village might have different environment viz., Commercial, Industrial, Residential, etc.

(b) Every stream viz. Fine Arts, Technical, Commerce, Agriculture, Humanities and Science must be covered in almost equal proportion. These streams or courses were selected with reference to the generally accepted interest classification. Agriculture, of course, has been added because of its dominance in Indian context. It may be mentioned that one of the purposes of the investigation was to find out the influence of the orientation in the above courses for a considerable period, on interests. This is why the undergraduate students who had orientation in respective courses for at least three years were selected in the sample.

(c) Both sexes and different socio-economic strata should be represented with a view to enabling the investigator to observe the impact of the various factors like parental occupation, family tradition, parental desire, etc. on interest. As the sample has to be a random one, equal proportion of population in respect of each of the variables is not expected.

(d) Age range of the population must fall between 18 and 20. This age range has been selected because of the confirmation by Strong and others about the formation of interest at this stage of life. On the assumption that in Indian context interest would take a definite shape at a later stage because of the prevailing confusion on the values of life and conflict therefrom, a higher age level has been selected deliberately in the investigation. Super (6) of course states, "that interest patterns begin to crystalize by early adolescence, and the exploratory experiences of the adolescent years in most cases merely clarify and elaborate upon what

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6 Super, D.E. and Crites, J.O.: Appraising Vocational Fitness, (New York and Evanston: Harper and Row Publishers, p. 411).

has already begun to take shape."

Measures of interest are more useful with mature than immature students as Freeman (7) says, "they can have validity only with persons whose lives have been long enough and varied enough to have provided them with experiences of the kind which will enable them to choose between the alternatives presented by each item in the inventories."

Tests and Techniques

As mentioned earlier, no single instrument has been considered effective or adequate for the purpose of studying interest with reference to various levels at which it is manifest. The investigator was conscious of the limitations of the forced-choice technique generally used in the inventories by Kuder and others. It has, therefore, been considered worthwhile to modify the forced-choice technique with the purpose of making it open-ended. Besides, it was felt that the variety of techniques should be employed in the present investigation in a combined form so that one can compensate the limitation of the other. Four sub-tests have, therefore, been used in a comprehensive test-battery so as to derive interest scores at all

7 Freeman, F.S.: Theory and Practice of Psychological Testing, (New York: Holt, Rinehart and Winston, 1962, p. 595.

levels from various angles.

In short, the techniques consisted of mainly paper and pencil tests, although ratings and interview could be used to supplement the techniques. The idea of obtaining teachers' ratings on interest has been looked at unfavourably because of the narrowness of the learning situation and big size of the class leading to a very limited scope for observation. Moreover, the possibility of closer contact between the teachers and students at the college level is rather remote in Indian situation. Even then the teachers in respective classes were asked to select criterion groups according to their best judgments for the purpose of using the groups for item validation.

Interview as a technique is not so much dependable as a technique as the efficacy of the method depends upon so many factors. This is one of the reasons why interview as a technique could not be employed in general in this investigation except in cases of extreme contradictions and doubts. For the collection of environmental data, an inventory appears to be an adequate instrument as it helps to get the information recorded in a systematic manner. Forced-choice technique is preferable in cases where one has to decide about the appropriateness of his response out of a number of categories or situations. In

other words, categorization of the response patterns has been assumed to be convenient for the sake of precision. Otherwise, the objective use of environmental data might prove problematic.

Statistical Techniques

The main objectives of the investigation are two: (1) Studying the interest patterns of the undergraduate students by means of the test-battery for the purpose. (2) Examining the relationship between environmental factors and interest as a product. With a view to studying the interest patterns, the investigator had the task of constructing and validating the test battery.

Item analysis by chi-square test formed the first step towards the validation of the instrument. The discriminating value of each item would then be found out after the criterion groups are formed. Each item would be retained only if it could discriminate between the criterion groups and the test. For example:

Fine Arts group - Non-Fine Arts group.

Technical group - Non-Technical group.

The following formula would be applied for finding out the chi-square value (8).

8 Garrett, H.E.: Statistics in Psychology and Education, (Bombay: Allied Pacific Private Limited, p. 265).

$$X^2 = \frac{N\,(AD - BC)^2}{(A+B)\,(C+D)\,(A+C)\,(B+D)}$$

When entries in a four-fold table are quire small (for example, 5 or less) Yates' correction for continuity would be applied to above formula. The corrected formula reads:

$$X^2 = \frac{N\,(AD - BC - \frac{N}{2})^2}{(A+B)\,(C+D)\,(A+C)(B+D)}$$

Besides, it would be necessary to find out the nature of distribution, range, central tendencies, of the interest scores for each group as well as of the entire sample for observations around hypothesis (a).

In addition to this process of finding out the internal consistencies of each item with the entire test, factorial validity by means of centroid analysis of the inter-correlations between the four sub-tests has been considered to be helpful in the validation process.

In the absence of a very dependable external criterion and suitable parallel tests for validation purpose, the validation procedure described would perhaps be quite justifiable.

Factor analysis has been employed for reflecting upon the basic patterns of interest.

As regards the second objective of the investigation, it has been considered essential to find out the

main effect of each of the environmental factors on interests.

Analysis of variance and particularly the factorial design has been considered as the most suitable statistical technique for the purpose. This would not only enable the investigator to find out the main effect of each environmental variable upon various interest patterns but also the interactions between the variables themselves.

Summary

Any effective planning of a research is guided by the formulation of clearcut objectives and procedures. The present investigation has its main purpose of studying the relationship between the interest patterns and environmental factors. But before such study, the more fundamental question arises as to what are the basic interest patterns. The study of the interest patterns was, therefore, included under the scope of the investigation. The entire procedure has been laid down under five general headings:

(a) Considerations behind formation of hypotheses

(b) Hypotheses

(c) Sample

(d) Tests and Techniques

(e) Statistical Techniques.

Before the formulation of hypotheses certain considerations have been put forward as a logical basis of the hypotheses. For example, interest has been taken as a product of the inner orientation towards the values in relation to environment which might be both physical and social. Accordingly, hypotheses have been set for their verification and the tests and techniques for collection of data have also been evolved. It has been considered important to take into account the relative merits and demerits of each of the techniques which have been widely used before the techniques for the present investigation have been finalized.

It has also been felt that no single technique is adequate to assess interest and a combined approach is able to do justice to this delicate task. The test battery used for the investigation has, therefore, been a comprehensive one including inventory, situational test, information blanks and a projective test.

As regards, sample, the pilot study required the selection of a handy sample drawn from various faculties with a view to forming certain criteria groups for validating the items comprising each subtest. For the main investigation the emphasis was on collecting a random and representative sample drawn from various social strata and physical environments.

The collection of the data becomes meaningful if it serves the purpose of testing the hypotheses. That is why the study required systematic treatment of the data by means of suitable statistical techniques. In addition to finding out the nature of distributions, central tendencies and the deviations, correlational techniques are expected to prove useful for forming the first step towards factorial analysis of the patterns of interest. For the validation of the test items, chi-square test would be employed to find out whether each item could discriminate between the criterion group and the rest. This would also help in checking up the possibilities of identifying clear cut patterns of interest.

With a view to exploring the possibilities of interaction between environment and interests analysis of variance is one of the techniques which could be profitably employed. This has been considered very convenient for the purpose of finding out both the main effect of each environmental factors under study as well as the interaction between them.