CHAPTER IV
MATERIALS AND METHOD

The present investigation, namely, The Study of Personality and Creativity as Correlates of Job Success Among Middle Management Industrial Executives, has been studied keeping the earlier stated objectives and hypotheses in view. The method and materials chosen to accomplish the requirements of the present study is discussed in detail in this chapter.

The Subjects

The present attempt as already stated is to study the relationship between the executive success and certain personality and creativity factors among the executives in industrial organizations. Accordingly for the purpose of the investigation it is decided to draw the sample consisting of middle level managers from the industries of Andhra Pradesh. For the sample supervisors, Assistant Managers, and managers are considered the middle level management personnel. These are persons concerned with sub-goal formation and plans for implementing decisions from above and co-ordinating activities from below.
The investigator, however, has attempted to draw a large sample of subjects for the present study, still many of the industrial establishments have not been accessible. And even in those industries which have accorded permission, a large number of executives have not been able to spare their time to take the tests. Hence the present study is limited to those industries which have accorded permission and those management personnel who have spared their time.


Personnel departments of these industries have provided the list of middle level managers. The subjects are both from the production and non-production departments. All of them are educated and earning over and above rupees ten thousands per annum. From the list, the two hundred fifty men executives available have been included in the sample. But 160 of them have responded to the request of being the sample for study. No one has been forced against his interest. However, in the
160 subjects, 23 are discarded due to incomplete responses. Lastly for the present investigation a total sample of 137 subjects have been considered.

The Instruments

The problem for the study is to assess the level of success of the executives and then to study their personality and creativity pattern in addition to studying the differences between the three levels of successful executives, viz., top level success, moderate level success and low level success group executives in personality and in creativity. As such the study involved the assessment of success, personality and creativity of the subjects. It is also planned to collect the biographical information through bio-data form. Executive success, personality and creativity are assessed by using already available tools. The administration of these tools approximately has taken 40 to 60 minutes. And all of them have been self-administrative tests.

A brief description of the testing tools used in this investigation are given below:

Measurement of Job Success

There are various methods of studying the level of success. Performance is one of the criteria to evaluate job success. Cummin (1967), Lal (1971), White (1972), and Berlew and Hall (Hill, 1976) have adopted executive performance as the
criterion for success. Thain (1978) has concluded that job performance is an important pre-requisite in measuring success. The Leader's Check List (Adamson, 1970) is one such paper and pencil test. It is an inventory which provide information from which one can infer the level of performance of the individual at one's own job. The scale has a list of activities generally attended by any successful manager in industry. And the executives are required to examine the extent to which these activities are performed in their jobs. It is a performance report in terms of job description.

This test consists of a set of statements representing different need functions. Accordingly the questionnaire was prepared to study the individual performance in the following areas: (a) task needs, (b) group needs and (c) individual needs. Task needs include performance of functions like defining the task, planning, allocation of work, controlling, checking performance and adjusting the plan when needed to attain the objectives of the organization. Group needs include functions like setting standards, maintaining discipline, building team spirit, encouraging, motivating and giving a sense of purpose, appointing sub-leaders, ensuring communication within the group and finally training the group. Individual needs include functions like attending to personal problems, encouraging individuals, giving status to individuals, recognizing and using individual abilities and training the individual.
In all 18 statements are included covering the three areas. The individual to whom the inventory is administered answers these statements by a five point scale extending from occasionally to invariably. All that the subject has to do is to locate his relevant position along the scale and indicate it by placing a tick mark (✓). These responses are symptomatic of the individual's degree of performance of these activities. A retest coefficient for reliability on a sample of 30 executives with an interval of ten days has yielded a coefficient of 0.87. No separate validation was carried out as it was not felt necessary. The inventory used is provided in the appendix.

Scoring

The data obtained from this scale are a collection of check marks on a five-point scale. To each of the five positions on these scales is arbitrarily assigned the digits 1, 2, 3, 4, and 5. The lower and (1) response carries a score of one and the higher end (5) carries a score of five. Thus the minimum total score possible is 18 and the maximum possible score is 90.

Assessment of Personality

Personality was assessed by the sixteen personality factor questionnaire, Form C. It is a tool to study the personality characteristics pattern of the individual. The 16 PF was developed by R.B. Cattell (1962) to measure not only individual traits but also factors in cluster.
In terms of personality factors measured Form C is exactly parallel to Form A and Form B. Form C, based on an extensive factor analysis, is a good test with maximum reliability and validity possible with only six items per factor. Form C, like Form A and B, tests as much of the total personality as can be covered by a questionnaire. It gets at such basic independent factors as emotional stability, dominance, etc., (Cattell, 1962). The 16 PF test leaves out no important aspect of total personality. Among personality tests, this is as pure a product of factor analysis as can be found. Each item has an appreciable saturation by one of the sixteen source traits of ability, temperament and character integration as claimed by the authors. In addition, the 16 PF Test, Form C has the advantage of ease of administration and scoring. A note may be added about the motivational distortion (MD) score. In the opinion of Cattell, most questions are designed to be as free as possible of value implications, so that the person will not be tempted to answer in any particular dimension for the sake of social approval. Still the likelihood of distortion in factors H and Q₂ is recognized and a correction for these factors is suggested. The correction is done by taking away one point from Factor H and to add one to Factor Q₂, if the MD score exceeds twelve points.

The growing evidence from a number of studies in various fields suggests that the taking into account of all the sixteen dimensions of personality gives a better prediction than what
may be obtained by single scale tests. In this sense, the Sixteen Personality Factor Questionnaire was thought to be the most suitable for the present investigation.

The 16 PF Test, Form C was chosen instead of the longer forms, Form A and B. Form C, being exactly parallel to Form A and B, has certain advantages. This form is shorter, nevertheless as effective as other forms. Therefore, in a relatively shorter time one can gain as much information as can be had from the longer forms. It has an elementary vocabulary which most subjects will follow. The inclusion of an index to guard against attempts at distortions of self-picture is an additional advantage. The Sixteen Personality Questionnaire, Form C and the personality dimensions is provided in the appendix.

Scoring

Scoring procedure was followed as mentioned in the Test Manual (The 16 PF Test manual, Cattell, 1962). Cattell has provided sixteen independent scoring keys for the sixteen factors. Individual score on all the factors range between one and twelve except on Factor B. The score on Factor B which is a measure of intelligence, the score varies between one and ten. For scoring and in calculation of raw scores the procedure given in the manual by Cattell was followed.

Assessment of Creativity

Among the various methods of studying the creativity the
Wallack and Kogan Creativity Instrument (Wallach and Kogan, 1965) is one such. It is an inventory which measure individual differences in productivity of ideas and the tendency to produce ideas that are unique.

Wallach and Kogan in this scale provided procedures to assess the two cognitive characteristics - ideational productivity and uniqueness. There are five such procedures and were expected to provide equally relevant materials from which the cognitive disposition of the individual could be evaluated. The aim of including several (five) probes was simply to increase reliability of measurement by sampling a diverse range of task stimuli whose ideational responses would vary both in number and in relative uniqueness.

In the five procedures three tasks present the person with conceptual entities, others, with visual materials. In the former category, one procedure - 'Instances' - named an object and ask the respondent to suggest for it as many similar things as he could. The next procedure - 'Alternate uses' - named an object and ask the respondent to suggest for it as many uses as he could. The 'Similarities' procedure, another conceptual task, named pairs of object and request the subject to specify as many similarities as possible between the members of each pair. The visual tasks, in turn, present the subject with various abstract visual designs or line forms.
The job of the respondent in each case is to generate as many interpretations as he could imagine concerning what each visual abstraction might represent. These abstract forms simply serve to provide representationally ambiguous visual materials that would be open to numerous alternative interpretations.

We may conclude that in the case of ideational output or ideational uniqueness, the five tasks provide roughly comparable types of assessment. What they have in common, therefore should give us a single best estimate of a person's typical level of productivity or uniqueness regarding the flow of ideas.

In view of the above advantages it is thought fit to measure creativity of the sample (executives) by employing C.R. Paramesh's (1972) Indian adoption of the Wallach and Kogan Creativity Instrument.

**Adoption of the Instrument**

These instruments developed in the American cultural context may have been influenced by the particular social milieu. Hence Parmesh has conducted the study on an Indian sample and adopted this test suitable to Indian culture.

In adopting this Parmesh felt that only the verbal instruments will require certain changes in their content in
order to relate them appropriately to local conditions. The two visual creativity instruments, viz., Pattern meanings and Line meanings were retained in their original form as they were considered to be free from cultural bias. Further more Paramesh has reported the validity and reliability for the adaptation of the instruments (Paramesh, 1972). Hence no separate validation was carried out for the present study as it was not felt necessary. But the reliability, coefficient obtained by Spearman-Brown Prophecy Formula (Split-Half-Method) on a sample of 60 executives was 0.72. The adopted version of the Wallach and Kogan Creativity Instruments is provided in the Appendix.

Scoring

Two types of scores viz., 'number' and 'uniqueness' were obtained for each individual on each of the five instruments following the scoring procedure of Wallach and Kogan (1965). The 'number' refer to the total number of responses given by an individual for each stimulus item in each instrument. An individual's total score for number on a particular instrument consist of the sum of his responses on all items comprising that instrument.

For obtaining 'uniqueness score', uniqueness was defined as that response to a given item that is offered by only one out of the whole sample. An individual's total score for uniqueness on a particular instrument consist of the sum of his unique responses to all the items comprising that instrument.
In scoring the responses for uniqueness, the following points have been observed. Different terms having the same meaning were considered to be the same, as for example, 'ball', 'round ball' and 'rubber ball' in instances procedure were considered to be the same response.

For alternate uses 'newspaper' such as 'packing', 'parceling' and 'used for parcel' are considered to be the same. In the visual stimulus for item (1) of 'pattern meanings', 'ballons and sticks', 'ballons on a stick' and 'a stick with ballons' were considered to be the same.

Singular and plural responses were considered to be the same with regard to verbal creativity procedures.

Phrases such as 'portion of', 'section of' and 'bit of' were considered as irrelevant when they referred to collective concept. Qualifiers like seldom, often, sometimes, occasionally and the like were not scored as different one for uniqueness.

Procedure

The data planned to collect from the executives of industrial establishments. And the instruments selected in this study for testing were: (a) Leader's Check List, (b) The Sixteen Personality Factors Questionnaire, Form C, and (c) Wallach and Kogan Creativity Instrument. In addition to these testing instruments biographical information was included.
The sample for the present study was drawn from the industries who accorded permission and cooperation. The personnel departments of these industries facilitated all the requirements. First the list of employees in the middle management level has been collected. There were supervisors, assistant managers and managers in the list and the number of employees available were 250. The two hundred and fifty employees were contacted individually. In the course of general conversation the purpose of the investigation has been explained to them with a request for their whole-hearted participation and cooperation in this connection.

The testing tools being self-administration type, the instruments were handed over to the subjects along with instructions. They were requested to provide the responses at their leisure, some time in the evening. This provision was made expecting stress during the routine schedule of work. They were told to return the test materials along with the response sheets within a week. On a pre-appointed date the employees were contacted again to collect the data sheets. One hundred and sixty of them returned the data sheets. The remaining employees returned blank sheets giving some excuse or other. These individuals were not disturbed again. However among the 160 subjects 23 have been discarded due to incomplete responses. Finally a sample of 137 subjects were retained for the present investigation.
Statistical Treatment

The raw scores obtained through testing were retained for analysis. The data thus collected has been subjected to relevant statistical treatment.

To find out the differences between the three groups, namely, top, moderate and low level success group executives with regard to job success, personality and creativity were tested for significance by analysis of variance and t tests wherever applicable.

Analysis of variance for Profile data (Morrison, 1967) has been applied to observe the differences between the above said three groups in personality using all the sixteen factors in a single analysis.

Step-wise regression analysis (Kerlinger and Pedhazur, 1973) has been undertaken to select the set of independent variables that best predicts the dependent variable and to eliminate superfluous variables.