CHAPTER VI

DISCUSSION OF RESULTS
DISCUSSION

The present research effort an exploratory in nature, aims at studying vocational choices of post-graduate students in relation to intelligence personality and motives. This research was directed towards finding inter faculty (i.e. between Science, Arts and Languages) differences in vocational choices and evaluating the role of three psychological variables (Intelligence, Personality, and Motives) as correlates and predictors of vocational choices. For the identification of faculty wise differences in vocational choices and their corresponding psychological correlates, related hypothesis were framed (Chapter IV) and tested through various statistical techniques (Chapter V). The obtained results are now being discussed systematically following the framework of the hypothesis, unfolding the salient feature of each one by one, in the ensuing discussion.

Vocational Choices of Post-graduate Students

The post-graduate students from faculties of Science, Arts and Languages are exposed to different educational courses, which in turn makes them competent for different occupations, and on the other hand each occupation also requires specific type and level of education. Consequently, vocational choices of students from different fields of education are likely to be different, and vocational choice pattern of each faculty is discussed separately.
Vocational Choices of Science Students

The mean scores of science students (N=200) on SDSQC (Mohan and Banth, 1975) presented in Table 3 is based on the guidelines of semantic differential scoring of seven point scale on seven bipolar adjectives. The total score range of ratings on each occupational 'level' of different occupational 'fields' is from 0 to 49. Score range of 35 to 49 indicates preference in an increasing order (this being the positive pole of the bi-polar seven point scale) whereas, scores of 21 and less indicates negative choice (this being the negative pole of the same scale). The intermediate scores between 21 and 35 indicates a low degree of choice.

A detailed scrutiny of Table 3 based on above scoring guidelines, revealed that the highest preference of Science students is for the 'Science Group, Level I' with the mean score of 44.4, second highest preference is for 'Technology Group, Level I' (43.79) and the third preference is for 'Organization Group, Level I' (41.47). Further it was also found that there was higher rating on level II jobs of the first three preferences. This trend was also apparent in the graphic presentation of mean scores in form of bar-diagrams presented in Figure IIIa.

Differences between Science, Arts and Language faculties for their vocational choices was tested through t-ratios (See Table 5). The t-ratios revealed that mean scores of Science sample on 'Organization', 'Technology', and 'Science' fields of occupations at all levels are significantly higher than those
of Arts and Language faculties (except on Organization, Level III).
Rotated factorial structure of Science faculty (See Table 18) illustrates that the vocational choices on 'Organization', 'Technology' and 'Science', at Level I have clustered together on Factor II of rotated factor matrix. The loadings on these groups and levels of jobs are positive and significant (See Table 18). The vocational choice scores on 'Technology' and 'Science Group' at level 1, have also formed a cluster on Factor VII and loadings on these are significant (See Table 18).

Science students are undergoing educational training which makes them competent for jobs in scientific and technological fields. The choice for 'Organization' group indicates that science students would also like to hold high positions in the technical and scientific organisations. Post-graduate students are usually from the age group of 18 years to 21 years, which according to Ginzberg (1951) is the 'realistic' stage (17 years+) of vocational choice. The congruency between their educational courses and vocational choices is indicative of the realistic nature of their choices. Ginzberg (1951) also advocated in his theory of vocational choice that decisions at the 'realistic stage' are implementation of decisions made in 'tentative stage' of vocational choice. The fact, that science students had science subjects at matriculate and graduation stage (tentative decision), which they have implemented by joining science faculty and expressing preference on science related jobs (realistic decision), lends support to the theory.
Frandsen (1953) reported that students from scientific courses tend to select scientific occupations. Parameswaran et al. (1968) found that the responses to vocational interest patterns were in line with the educational courses of engineering and science students. Vohra (1977) also reported that students of polytechnic college gave maximum preference to the 'Technology Group' of SDSOC (Mohan and Banth, 1975) which corresponded to their educational training.

Vocational Choices of Arts Students

A detailed scrutiny into mean scores (N=205) on SDSOC (Table 3) revealed that Arts students in contrast to science students have expressed preference for a wide range of occupational fields. This sample except for the fields of 'Science' and 'Technology' have expressed choice on all the rests of the six occupational fields. The maximum preference is on 'Social Service, Level 1' with mean score of 41.87, the second highest preference is on 'General Culture, Level 1' (40.11), third preference is on 'Organisation, Level 1', the fourth fifth and sixth preference being on the fields of 'Arts and Entertainment', 'Business Contact' and 'Outdoor' (all at level 1) respectively. This pattern of choice has been diagramatically shown in bar diagrams presented in Figure IIIb.

A further probe into the mean scores revealed that Arts students in contrast to science students have not expressed preference for jobs at level II in all the chosen fields of occupations. Arts students have expressed Level II preference.
on just four chosen groups namely 'Social Service', 'Organization', 'General Culture' and 'Arts and Entertainment'. The mean scores on Level III jobs in the chosen fields of occupations are low, but are greater than the negative choice score of 21. This implies that these students, though they do not prefer these jobs, but they do not even dislike or find these jobs unpleasant or uninteresting.

The difference between Arts and Science and Arts and Language in terms of vocational choices, was tested through t-ratios (see Table 5) and it was found that mean scores of Arts students in the fields of 'Business Contact', 'Outdoor' and 'Arts & Entertainment' at all levels are significantly higher than those of Science and Arts faculties. The means of Arts students on 'Social Service' (at all levels) and 'General Culture' (at first levels) are significantly higher than the science sample but are significantly less than the language sample. Similarly, mean scores of Arts students on 'Organization' (at all levels) are significantly greater than the Language students but are significantly less than the science sample.

The first four preferences of Arts students are significantly loaded on Factor II in the factorial structure of rotated factor of Arts students (see Table 19). The highest loading (.76) on 'Social Service, Level 1', followed by loading of .72 both on 'General Culture, Level 1', and 'Arts and Entertainment, Level 1'. The factor loading on 'Organization, Level 1' is .54. Vocational groups of 'Business Contract', 'Outdoor' (at all levels) have emerged as independent factors
in the factorial structure with significant high loadings (Factors VI & X). The vocational group, of 'Business Contact, Level 1' has also shared total variance with 'Social Service, Level 1' and 'Organization, Level 1' on Factors V and VII. 'General Culture, Levels 2 & 3' and 'Arts & Entertainment, Levels 2 and 3' have also emerged as independent factor (Factor I).

Arts students are undergoing educational courses which make them competent to enter jobs in these six fields of occupations. The educational qualification of students at post-graduate level also corresponds to jobs at first two 'levels' (Roe, 1954). The above two facts suggest that vocational choices of Arts students are also realistic in nature, and the explanation offered for such realistic choices for the Science sample (in terms of Ginsberg's theory), holds true in this case also. Super and Crites (1962), Gribbons and Lohnes (1967) and Tiedeman and O'Hara (1963) also confirmed Ginsberg's hypothesis of 'realistic stage' choices. Fradsen (1953) reported that students with social study courses tend to choose social service occupations. Feldman & Newcomb (1974) also suggested that college students may seek out congenial situations in the world of work, which may utilize their educational training. He further added that it was useful to regard 'major' field as a reliable estimate of vocational choice. Hashmi (1977) indicated that library students gave first preference to the job, which was related to the educational course, they were undergoing.
Vocational Choices of Language Students

As regards vocational choices of Language students, the mean scores (N=120) on SDSOC (See Table 3) shows that this sample has expressed choice on only two 'fields' of occupations namely - 'Social Service' and 'General Culture'. The first preference is on 'General Culture, Level 1' (44.74), second preference is on 'Social Service, Level 1' with mean score of 43.91. Further it was found that there was also higher ratings on the 'Level 2' jobs of the said 'fields' of occupations (43.03, 41.57). This trend was also apparent in the graphic presentation vide bar-diagrams in Figure IIIc. The t-ratios between Language and Science and Language and Arts (See Table 5) indicate that mean scores on 'General Culture, Levels 1 & 2' and 'Social Service, Levels 1 & 2' are significantly higher than those of Science and Arts samples. The above occupational groups have clustered together with significant positive loadings on Factor VI in the factorial structure of rotated factors of Language students (See Table 20).

The choices of language students are also realistic in nature, because (a) educational training imparted to language students makes them competent for teaching jobs (General Culture) or appear for various competitive exams (Social Service), (b) These students have chosen levels 1 & 2 jobs which correspond to their level of education. Language students are also at the realistic stage of vocational choices (Ginsberg, 1951) which explains the congruency between their educational courses and chosen fields of occupations. Simpson (1975) concluded from his
study that career choices at college level were realistic. Larcebeau (1977) in a longitudinal research project indicated that expression of vocational choices of pupils of 17-18 years old were realistic in nature. Slaney & Russell (1981) reported that there were significant relation between vocational choices and college majors.

The final picture of choice pattern of each faculty has been diagrammatically presented below:

Table 29

Vocational Choices of Post-Graduate Students

<table>
<thead>
<tr>
<th>Science Faculty</th>
<th>Arts Faculty</th>
<th>Language Faculty</th>
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<td>L₁ L₂ L₁ L₂ L₁ L₂</td>
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Intelligence and Vocational Choices

With a view to visualize a meaningful picture of intelligence as related to vocational choices of the three faculties, it was thought to first discuss the intelligence of
the three faculties. The mean scores on the SPM for Science, Arts & Language faculties were 50.22, 49.33 and 46.66 respectively (see Table 3). Comparatively it was found (Table 4) that intelligence of science sample was significantly higher than Arts and Language students, whereas intelligence of Arts students was significantly higher than language students. These differences in intelligence may be due to the fact that most of the bright students at school level opt for science subjects and later join related courses at graduate and post-graduate level. Students less brighter than Science students usually take up Arts subjects but at post-graduate level the brighter students within this group join Arts faculty whereas students who do not get admission in Arts faculty usually join language departments.

Wolfle & Oxtoby (1952) reported that highest scores on intelligence were obtained by students specializing in physical science and engineering, whereas the lowest scores were obtained by students majoring in humanities subjects. Shultz & Angoff (1956) also reported that students majoring in physical sciences have higher quantitative intelligence scores than those majoring in social sciences and humanities. Mohan and Kumar (1976) also indicated that students majoring in Science subjects have higher intelligence scores, while those majoring in humanities scored less on intelligence tests.

In order to visualize a meaningful picture of intelligence as related to vocational choices of Science, Arts and Language students, only statistically significant correlations between
intelligence and vocational choices are discussed.

Science Faculty:

A correlational analysis of the science sample revealed positive and significant correlation between intelligence and three occupational groups - 'Organization, Level 1' at .01 level and 'Technology Level 1' at .01 level and 'Science, Level 1' at .05 level (See Table 9). These relationships lucidly suggest that intelligence of science faculty is positively related to their chosen fields of occupations at level,1 only. This relationship has also been indicated through Factor Analysis, whereby the above three groups of occupations have clustered together with intelligence on Factor II of the rotated factors (See Table 18). Thus we may infer that vocational choices of science students are influenced by intelligence.

Arts Faculty:

A correlational analysis of Arts students revealed significant positive correlation between intelligence and 'Social Service, Level 1', 'General Culture, Level 1', 'Arts & Entertainment, level 1' (all at .01 level) and 'Organization, Level 1' (at .05 level) (See Table 10). Further analysis of significant correlations shows significant negative correlation between Intelligence and Business Contact, Level 1 occupations. Few other significant negative correlations are between Intelligence and level 2 and 3 jobs in 'Organization' and Level 3 jobs in 'General Culture' groups. Rotated factors of factor analysis (See Table 19) also depicts this relationship.
The occupational groups of 'Social Service', 'Organization', 'General Culture' and 'Arts & Entertainment' (all at level 1) have clustered together with intelligence on Factor II of the varimax rotated factors. A negative significant loading of Intelligence on Factor V, also shows a clustering with positive factor loadings on 'Business Contact' and 'Organization' (at level 1).

The above discussed relationships suggest
(a) Intelligence significantly influences the vocational choices of arts students, in the fields of 'Social Service', 'General Culture', 'Organization' and 'Arts & Entertainment' (all at level 1). (b) Arts students with high intelligence do not prefer jobs in the field of Business Contact (at Level 1). They also do not prefer jobs at Level 2 in any of their chosen groups of occupations.

Language Faculty

A correlational analysis of language students vide Table 11 reveals significant positive correlation between Intelligence and just one group of occupation, i.e., 'Outdoor, Level 1'. The choice of 'General Culture, Level 1' is significantly negatively related to intelligence. Over all the relationship of Intelligence to the vocational choices of language students, has not shown any consistent trend. Factor analytical analysis (See Table 20) also depicts this inconsistency whereby intelligence has not clustered together
with any occupational group. Only negative relationship between intelligence and various levels 2 and 3 jobs are evident on the Factor IV of the rotated factorial structure. The above discussion simply implies that intelligence does not influence the vocational choice of language students.

The above faculty-wise discussion highlights that:

(a) Comparatively intelligence of science students is higher than arts and language students whereas intelligence of arts students is higher than language sample. (b) Science faculty, intelligence has influenced their vocational choices on 'Science', 'Technology', and 'Organization' (all at level 1).

(c) In Arts sample, Intelligence has influenced vocational choices on 'Social Service', 'General Culture', 'Organization' and 'Arts & Entertainment', all at level 1. (d) In Language sample, intelligence does not effect their choices. (e) Level of intelligence operates as a selective factor in guiding brighter students towards vocations requiring more intelligence (Scientific & Technological Occupations) and directing vocational choice of students with comparatively less intelligence towards less intellectual demanding occupations.

(f) Consistency between intellectual level and corresponding choice on related occupations, indicates the realistic nature of vocational choices of Science and Arts students. Language sample does not show consistent and realistic tendencies.
Few research evidences supporting the above findings of the present study – Livesay (1941) in a study of high school students indicated that students with high intelligence chose technical and scientific jobs, whereas individuals with average intelligence preferred teaching, business and agriculture, and students with lowest intelligence preferred the unskilled jobs. Ferrone (1964) using occupational preference questionnaire based on Roe’s eight occupational groups, reported that in general higher intelligent group expressed more choice on non-person groups e.g. Science, Technology and Organization than the person-oriented groups e.g. Social Service and Business Contact, General Culture Arts & Entertainment. Welsh (1971) in an investigation on gifted adolescents reported positive relationship with non-verbal intelligence scores and scientific interests. Business interests particularly in sales showed negative relationship with non-verbal intelligence scores. Few research evidences are available supporting our findings of intellectual ability positively related to the choice of occupations at first level only. Wrenn (1935) indicated that high IQ individuals choose occupations at professional level. Livesay (1941) also indicated that students preferring occupations at the professional level had the highest intelligence scores. Gribbons & Lohnes (1966) that the higher IQ groups 115 and above preferred professional and other high level occupations, whereas middle range 105-115 IQ preferred lower level of occupations. Benducci (1968) reported that bright students have more accurate stereotypes
Personality and Vocational Choices

Feld and Newcomb (1974) suggested that students enrolled in different curricula show some special common personality characteristics and students chosen major field tend to accentuate these personal characteristics. Students may further seek out congenial work roles, which may further reinforce their personality characteristics. In short, personality plays an important role in educational and vocational planning.

Personality in the present research was assessed through EPI (Eysenck & Eysenck, 1964). Two major dimensions of personality under study are Neuroticism (henceforth to be written as N) and Extraversion/Introversion (henceforth to be written as E/I), and each is being discussed separately in the context of vocational choices.

Neuroticism and Vocational Choices

In order to visualize a meaningful picture of N as related to vocational choices of the three faculties, degree of Neurotic tendencies in each faculty is discussed briefly. The mean scores on N was 8.32, 11.64 and 10.00 for Science, Arts and Language samples respectively (See Table 3). The mean score on N of the Arts sample is significantly higher than Science and Language samples whereas language sample's mean is significantly higher than the science sample (See t-ratios in Table 4). The mean scores of the three samples on N clearly bear out that science sample is stable, whereas Arts & Language samples have neurotic tendencies. Rao (1966) reported
that nurses, teachers and medical students show comparatively high scores on $N$, while engineering and science students showed low scores on $N$. Hornet et al. (1975) indicated that in comparison to engineering students, social science students were high on $N$ scale of EPI. Eysenck & Eysenck (1978) also found that Arts students scored high on $N$, whereas professional students scored low on $N$. Vohra (1977), Bhanot (1980), Ummat (1983) have reported that students and workers in the field of Science and Technology are stable.

With a view to get a clear picture of personality in relation to vocational choices it was considered appropriate to discuss mainly the significant relationships of $N$ with the chosen groups of occupations of each faculty.

Science Faculty:

Personality factor $N$ of Science sample is found to have positive and significant correlation (See Table 9) with all the three chosen groups of occupations namely organization ($r=.38$), Science ($r=.12$) and Technology ($r=.20$). Since the Science sample (Table 3) has been found to score low on $N$, average students being stable, the above significant relationship may imply that within the low Neurotic group of science students, relatively higher on $N$ are likely to choose the above said occupations. Further probe into Table 9 revealed significant negative relationship between $N$ and Level 2 jobs in Organization and Science. This relationship implies that stable science students may opt for Level 2 jobs in their chosen fields of occupation. The personality factor $N$ has also clustered with
Organization, Technology and Science (all at level 1) groups on Factor II in the rotated factorial structure (See Table 18).

Personality Factor N is also positively significantly related to some of the non-chosen groups of occupations - Social Service, Levels 1 and 2 and negatively significantly related to level 2 jobs in 'Business Contact'. But these relationships are not evident from the rotated factorial structure (see Table 18).

Arts Sample t—

As regards the relationship between N and chosen fields and levels of Arts students, significant and positive correlations have emerged between N and 'Social Service', 'Organization', 'General Culture' and 'Arts & Entertainment', all at level 1 (See Table 10). These results imply that Arts students whose score of N is comparatively significantly higher than Science and Language students, are likely to choose occupations in the above fields of occupations. Significant negative relationship between N and level 1 of the chosen group of Business Contact, implies that stable Arts students prefer jobs in this field. Significant negative relationship between N and Level 2 of the chosen groups of 'Organization' implies that stable students prefer jobs at level 2 in the field of Organization.

Factor analytical picture on rotated factors has also depicted somewhat similar relationships (See Table 19). Personality Factor N has significant loadings on two factors viz., Factor II and Factor V. N has clustered with 'Social
Finally as regards the relationship between vocational choices on N of language students, Table 11 revealed significant negative relationship between N and 'General Culture, Level 1' jobs. It implies that stable students from language faculty are likely to choose jobs in the said occupation. Unlike the other two faculty of Arts & Science, this group failed to give any consistent trend in significant relationship between N and their chosen fields and levels of occupations (Also see Table 20 of rotated factors).

Above discussed relationships lead to following conclusions: (a) comparatively low scores on N is related to jobs at level 1 in scientific fields of occupations. (b) Higher scores on N is related to jobs in the fields of 'Social Service', 'Organization', 'General Culture' and 'Arts & Entertainment', all at level 1. (c) Language sample has shown inconsistent relationship between N and their chosen fields of occupations.

The above conclusions may be explained in terms of typical characteristics and drive level of subjects with high N. Subjects high on N are typically instable, unadaptable and are likely to break down under stress, the traits which are not
conducive to efficient working in occupations requiring persistence and hard-work, e.g., 'Science' and 'Technology'. Neuroticism is also associated with autonomic drive (Spence, 1964; and Eysenck, 1967) and there is an optimum level of drive for successful performance on tasks of constant difficulty or easier ones. The stable subjects with their drive level would have a constant performance on tasks with increasing difficulty, whereas high on N, performance would decrease (Doerr & Hokanson, 1965; Eysenck, 1967; Mohan & Kumar, 1973; and Mohan, 1976). The task difficulty in Science related occupations is high and thus subjects with low N are likely to perform well.

Gupta (1977) reported that engineering students had low scores on N in comparison to other students. He further reported that students scoring high on N preferred sedentary type of occupations such as teaching, writing and painting. Vohra (1977) found a negative correlation between neuroticism and vocational choice on the 'Technology group, Level 2' occupations of polytechnic students. Luthra (1976) reported a negative correlation between work output and neuroticism of industrial workers. Bhanot (1980) reported negative or low relationship between N and performance of technical students and workers. Ummat (1983) also reported efficient performance in the field of engineering to be negatively related to N.

E/I and Vocational Choices

Prior to discussing relationship of E/I with vocational choices it would be appropriate to discuss the E/I pattern of personality as found in different faculties. The mean scores
on E/I were 9.53, 10.32 and 11.01 for Science, Arts and Language students respectively (See Table 3). The three mean scores are statistically different from each other, highest being for the language sample, followed by Arts sample and then by language sample (See Table 4). The above mean scores indicate that science sample has introverted tendencies, whereas Arts & Language samples tendencies are more towards extraversion.

Science is a difficult task and to master it one needs persistence and hard work qualities which are found in subjects with introvert tendencies, which explains the low scores on E/I of science students. Coker (1975) reported that the total sample of students from Technology were introverts. Wankowski (1976) indicated that introverts gravitate towards hard science courses, while extraverts towards Arts and Social Science courses. Kokosh (1976) also reported that science students scored low on E/I than social science students. Rezler & Buckley (1977) also reported that science students were introverts.

The significant relationships between E/I and chosen fields of occupations of students from the three faculties are discussed below:

Science Faculty:

Personality dimension of E/I of science sample is found to have negative and significant correlation with their three chosen groups of occupation. 'Organization', 'Science' and
'Technology' all at level 1. (See Table 9). These relationships imply that introverts science students tend to choose occupations in the above said fields. A look at the rotated factor loadings (See Table 18) show that E/I forms one major cluster with 'Organization, Level 1', 'Technology, Level 1' and 'Science Level 1' occupations on Factor II. The loadings in this factor on the said occupations are significant and positive whereas loading on E/I are comparatively low and negative.

Significant positive correlations between E/I and choice on 'Business Contact, Levels, 1 and 2' are also reported in Table 9. This relationship implies that Science students high on E/I are likely to take up jobs in the field of 'Business Contact' at levels 1 and 2. These have also clustered factorially in the rotated factor matrix on Factor IV (See Table 18).

Arts Faculty:

The relationship between E/I and vocational choices of Arts students (Table 10) reveals significant positive correlation between E/I and choices on 'Social Service, Level 1', 'Business Contact, Level 1' and 'Organization, Level 1'. This relationship implies that subjects high on 'E/I' choose above said jobs, requiring extraverted behavior patterns of sociability. A scrutiny into the rotated factorial structure (See Table 19) reveals the above pattern of relationship. All these variables have clustered together on Factor VII with
significant positive loadings on rotated factor matrix.

Significant negative correlation between E/I and 'Organisation, Level 2', indicates that introvert arts students tend to choose the said occupations.

Language Faculty:

Finally as regards the relationship between E/I and vocational choices of language students. Table 11 reveals that E/I is not significantly related to the chosen fields of 'Social Service' and 'General Culture', whereas these jobs need high level of sociable tendencies, which implicates that no consistent trend has emerged between the E/I and Vocational choices of language students. However positive significant correlations have emerged between E/I and 'Arts & Entertainment, Level 1', 'Outdoor, Level 2' and 'Level 3' jobs in the field of 'Technology' and 'Business Contact' and 'Social Service', which implies that language students high on E/I have not shown any consistent trend in the level choice also.

Above discussed relationships lead to following broad conclusions:

(a) Science sample is comparatively low on E/I than Arts & Language sample.

(b) Introversion is related to choice in the fields of Science & Technology.

(c) Extraversion is related to choice on jobs in the 'Social Service', 'Business Contact' and 'Organizations'.
(d) Language sample highest on E/I mean scores has shown inconsistent and unrealistic relationship between E/I and Vocational Choices.

(e) Arts & Science samples have shown consistent and realistic relationships.

The above conclusions may be explained in terms of theoretical expositions presented by Eysenck (1968, 1971, 1973, 1975). Eysenck maintains that extraversion refers to impulsive and sociable tendencies and introversion implies controlled responsible and non-sociable tendencies. Roe (1963) on the other hand, indicated that occupations are either person-oriented (sociable) or non-person oriented (non-sociable). Taking cue from above theoretical expositions, one may deduce that Extraverts due to their sociable nature would prefer person-oriented jobs (Social Service, Business Contact, Organization) whereas introverts would prefer non-person oriented jobs (Science & Technology).

Eysenck (1971) expressed that Extraverts possess 'social intelligence, an ability to relate to others which may be of greater value in many occupations than academic knowledge and ability, e.g., jobs in the fields of 'Social Service' and 'Business Contact'. Introverts on the other hand possess ability to resist boredom and to continue with given tasks for long periods, which may be of great value in scientific jobs needing hard work and task persistence.

Bendig (1963) found that SVIB scales in area of 'General profession', 'Science & Engineering' and 'Political' tend to
show negative correlation with E/I. He further added that jobs in the field of 'Service' and 'Sales' show positive relationship with E/I scores. Gupta (1971) reported that subjects scoring high on E/I preferred outward oriented jobs - Salesman, Commerce trade, press correspondent, army and foreign services. Vohra (1977) reported a low correlation between E/I and Vocational choice of 'Technology' group of occupation (SDSOC) by polytechnic students. Bhanot (1981) reported technical personnel to be low on E/I dimension of EPI. Unnat (1983) also reported that engineers were low on E/I dimension of EPI.

Motives

The empirical findings and discussion, on personality as taken in Eysenckian frame work, brought to light that students with different personality make-up choose different jobs. Motives too form an important aspect of the personality make-up of an individual, specially the acquired attitudinal part. If personality make-up determines an individual's vocational behavior on the basis of his hereditary predisposition, motives motivate and energize the individual to strive for need related jobs. Atkinson & McClelland (1961) illustrated that individuals select jobs because they see potential for the satisfaction of their needs and individuals choose occupations in accordance to their need pattern. In present investigation, an attempt has been made to explain vocational choices in relation to
McClelland's trichotomy of needs - Need for Achievement (henceforth to be written as nAch), Need for Affiliation (henceforth to be written as nAff) and Need for Power (henceforth to be written as nPow).

nAch and Vocational Choices

In order to get a better understanding of how nAch relates to vocational choices of different faculties, a discussion on the strength of nAch in each faculty would prove beneficial. The obtained means of the present research on nAch (on six pictures of SIBT, 1964) shows that science sample has the highest mean score (10.01), followed by Arts (7.43) and then Language (6.10) (See Table 3). The mean on Science faculty is significantly higher than Arts and Language faculties, but mean of Arts faculty is significantly greater than language faculty (See Table 4).

Nikore, Singh and Deshpande (1965) reported that students with Science and Medicine were high on nAch as compared to Arts and Commerce students. Pal (1969) also reported that nAch scores of engineering and medical students were higher on nAch, than law and teacher training students. Bose and Gupta (1979) indicated that engineering subjects score on nAch was higher than non-engineering students.

Faculty-wise discussion of relation between nAch and their chosen fields and levels of occupations is presented below.
Science Faculty

Table 9 depicts that nAch is significantly and positively related to chosen fields of science students namely 'Organization', 'Technology' and 'Science', all at Level 1. This relationship illustrates that science students high of nAch have opted for above jobs. Significant negative relationship between nAch and 'Outdoor', Levels 1 and 2 jobs implies that students with low nAch are likely to choose these jobs. The factorial structure of rotated factors (See Table 18) reveals that nAch with significant high loadings has formed a cluster with 'Technology, Level 1' and 'Science, Level 1' (also with significant loadings) on Factor VII.

Arts Faculty

Table 10 reveals that nAch is positively and significantly related to only three chosen fields namely - 'Social Service', 'Business Contact', and 'Outdoor' all at Level 1. This relationship implies that Arts students high on nAch are likely to choose the above said jobs. Negative significant correlations between nAch scores and choice on 'General Culture, Level 1', 'Arts and Entertainment, Level 1' and 'Organization, Level 1', have also emerged. This relationship may be interpreted that Arts students with low nAch would choose the above said jobs. Rotated factor matrix (See Table 19) has not shown such relationships, nAch has formed a cluster with 'Business Contact' and 'Organization' on Factor V (all with significant positive loadings).
Whereas nAch with negative loadings has formed a cluster with 'Social Service, Level 1', 'Organization Level 1', 'General Culture, Level 1' and 'Arts & Entertainment, Level 1' with significant positive loadings.

Language Faculty 1—

As regards the relationship between nAch of language sample and their chosen fields and levels of occupations, inconsistent trends have emerged (see Tables 11 and 20). No significant relationship has emerged between nAch and their chosen fields of 'Social Service' and 'General Culture', whereas Arts sample has shown significant relationships and trend between nAch and these choices. However, positive and significant relationship between nAch and 'Business Contact', 'Organization' both at level 1, would imply that Language students high on nAch would opt for these jobs. In language sample relationship of nAch to levels 2 and 3 jobs has also emerged which further supports the unrealistic and inconsistent trend of these students.

The above faculty-wise discussion highlights the following broad facts on nAch as a correlate of vocational choices:

(a) nAch of science faculty is higher than Arts and Language faculties, but nAch of Arts is higher than language.

(b) nAch plays an important role in the choice formation of science and Arts students.

(c) Subjects high on nAch are likely to choose jobs
in 'Organization', 'Business Contact', 'Science', 'Technology' and 'Outdoor' all at level 1.

(d) Subjects low on nAch are likely to choose jobs in 'General Culture' and 'Arts & Entertainment'.

(e) Language Students relationship between nAch and their choice has further added to their trend of unrealistic and inconsistent choice patterns.

The above relationships between nAch and various jobs may be explained in term of dispositional nature of nAch. McClelland et al. (1953) regarded nAch as a disposition to engage in activities in which doing well or competing with a standard of excellence was important. Thus individuals with high nAch would choose those jobs where the potentiality for the satisfaction of above disposition is comparatively higher. McClelland also pointed out that achievement motivated people are often found in jobs where they get a concrete feedback on how well they are doing, which fulfills their concern for personal accomplishments. McClelland et al. (1953,1961) also reported that due to above tendencies achievement oriented individuals, are likely to join jobs in the fields of Science, Technology (as researchers), business and sales occupations. The present findings have also shown somewhat similar trend, where achievement oriented students have opted for the above said occupations. Though they have expressed choice on 'Organization' and 'Outdoor' jobs also.

McClelland et al. (1953), Ricciuti (1954) and McClelland (1955) in their different studies reported the
subjects with high nAch tends to choose business and research scientist occupations. Nikore, Singh & Deshpande (1965) and Pal (1969) also reported that high nAch students choose scientific and medical jobs. Tahmankar (1968) reported that students preferring theoretical occupations have highest mean nAch whereas those preferring occupation related to aesthetic values have lowest nAch scores. Singh (1974) in comparative study of motives of fast and slow progressing farmers (0utdoor in the present case) reported that successful farmers were very high on nAch scores. Hayes (1975) reported that black students choosing professional and technical jobs were high on nAch.

nAff and Vocational Choices

As pointed out earlier an insight into the strength of need in each faculty would prove useful for interpreting relationships, between the need and vocational choices. The mean scores on EPI for nAff is 2.77, 4.69 and 11.66 for Science, Arts and Language faculties respectively (See Table 3). The mean on language sample is significantly higher than Arts & Science sample, whereas the mean of Arts sample is significantly higher than the science sample (See Table 4).

Science is a difficult subject and its mastery requires long hours of work, whereas subjects high on drive to relate to people (nAff) would not be able to work continuously for long periods, which explains the low scores on this drive in science students. Nikore, Singh and Deshpande (1965) reported that students from Commerce and Arts were high on nAff, whereas
students from science and medicine were negatively loaded with nAff.

We now present relationship of nAff to the chosen fields and level of occupations of all the faculties.

**Science Faculty:**

No significant correlations have emerged between nAff and vocational choices of science students (See Table 9). Science students have by and large expressed choices on 'Organization', 'Science' & 'Technology' at both the levels, the Correlation Table 12 shows very low relationship between these groups and nAff. The jobs in scientific fields are task-oriented i.e. people choosing these jobs are concerned with better performance on tasks, whereas people with high nAff are concerned with establishing and maintaining effective relationships. Thus nAff would show either no or low relationship with scientific jobs. This deduction has been duly substantiated in the present case where correlations between the two have emerged to be low. Even factorial structure of rotated factors (Table 18) demonstrates the above deduction, it however shows that nAff forms a cluster with levels 2 and 3 of various groups, on Factor IX.

**Arts Faculty:**

Significant positive relationships have emerged between nAff and Vocational choices on 'Social Service', 'Organization', 'General Culture' and 'Arts & Entertainment' groups, all at Level 1. (See Table 10). This relationship implies that students high
on nAff are likely to choose these jobs whereas discussion of nAch revealed that students opting for these jobs were low on nAch. The rotated factorial structure also demonstrates these relationships. On Factor II of rotated factor matrix (See Table 19) nAff with significant high loadings have clustered with jobs in 'Organization', 'Social Service', 'General Culture' and 'Arts & Entertainment' (all significant loadings). These jobs require high need to maintain and establish relationships, which explains the significant relationship and also indicates the realistic and consistent trend of Arts students in choosing these jobs.

Language Faculty:

Language students results again indicated inconsistency between their motivation to affiliate and their choices (See Tables 11 and 20). As expected the reported choices of languages students on 'Social Service, Levels 1 and 2', and 'General Culture, Levels 1 and 2', should have significant positive relationship with nAff (as in case of Arts Sample). But this trend was not noticed in the language faculty, however, 'Social Service, Level 1' jobs have shown positive and significant relationship with nAff, which implies that subjects choosing this occupation are high on nAff.

Above findings may be broadly concluded as follows:

(a) nAff is high on language students than Arts and Science, and their choice does not show any congruency with the need requirement of the jobs.
(b) No relationship has emerged between nAff and vocational choices of science students, which adds to the fact that their choices are congruent to need demands of the chosen jobs and thus are realistic in nature.

(c) Students high on nAff are likely to choose people oriented jobs - 'Social Service', 'Organization', 'General Culture' and 'Arts & Entertainment'.

The above discussed trends may be explained in terms of general characteristics of individuals with high nAff and jobs requiring these characteristics. Individuals high on nAff are concerned with welfare of others maintaining affective relationships, they have little interest in situations requiring hard work. The jobs which coincide with the above needs are usually the people-oriented jobs (Roe, 1965) namely - Social Service, Organization, General Culture and Arts & Entertainment. Thus individual high on nAff would like to opt in for these jobs.

Nikore, Singh and Deshpande (1965) indicated that need for affiliation is highly loaded in students choosing commerce and Arts related occupations, whereas students opting for science and medical occupations were low on nAff. Weismann (1974) also indicated that students high on need to affiliate chose social service occupations. Harrell and Stahl (1981) reported that graduate students and management executives, weighted nAff more than scientists and engineers, for arriving...
at their job choice decisions.

**nPow and Vocational Choices**

With a view to gain a better understanding of the relationship between nPow and vocational choices, a discussion on the strength of this need found in different faculties would prove beneficial. The obtained mean scores on nPow (See Tables 3 and 4) shows that Arts sample is significantly higher than Science and Language sample, whereas nPow of Language sample is higher than Science sample, but the difference is not statistically significant. Veroff (1957) found that college men high in nPow tended to be argumentative in class and to be eager to convince their instructors or fellow students of their point of view. This may be why high in nPow do well in college psychology and math courses that require class-room participation (McKeachie,1961). Even arts subjects need class participation more than the Science and Language subjects, which explains the trend of present results.

Faculty-wise discussion of relation between nPow and their chosen fields is presented below:

**Science Sample**:

Positive and significant relationships have emerged (See Table 9) between nPow and all the three chosen fields of science students namely - 'Organization', 'Technology', and 'Science' (all at Level 1). This relationship illustrates that students opting for these jobs are high on nPow. Hersey & Blanchard (1981) suggested that need for power may be of two
Individuals who seek power from others because of their position, have position power, whereas who derive their influence from their personality and behaviour have personal power. In the present results, the explanation of the above relationship would be in terms of position power, science related jobs holds very high position in our society, which explains the relationship of nPow with these jobs.

Few negative relationships between nPow and choice on Arts & Entertainment (at all levels) have also emerged, which indicates that science students opting for these jobs are low on nPow.

The above discussed trend is also evident in the rotated factor matrix (See Table 18) where nPow has clustered with 'Organization', 'Technology' and 'Science' (all at Level 1) on Factor II.

As regards the relationship between nPow and chosen fields of Arts students, significant and positive relationships have emerged between nPow and their four chosen fields of occupations namely 'Social Service', 'Organization', 'General Culture' and 'Arts & Entertainment' (all at level 1). Individuals high in nPow would acquire or display the trapping of prestige, power and potency. The jobs in the above fields gives maximum opportunity to fulfill this need. Negative significant relationship between 'Science Level 1', has also
emerged indicating that Arts students low on nPow would choose this occupation. The above discussed trend is also evident in the rotated factor matrix (See Table 19) where nPow has clustered with the above said occupations on Factor II, with significant positive loadings.

Language Sample:—

The relationship between nPow and the chosen occupations of language sample has exhibited only one consistent trend. nPow is significantly and positively related to 'Social Service, Level 1'. Rest of the significant positive relationships i.e., between nPow and 'Technology, Level 1', 'General Culture Level 2', and significant negative relationship, between 'Organization Level 2', and 'General Culture, Level 3', just indicates that nPow is not systematically related to choice of language sample. This trend is also visible in the rotated matrix of language sample (See Table 20). The rotated factorial structure has failed to show any cluster of nPow and 'Social Service' Level 1 as indicated through significant correlations.

The above discussed relationships have concluded following this:

(a) Arts sample is high on nPow than Science and Language, whereas Science sample is higher than language sample.

(b) Subjects high on nPow chooses both the scientific and non-scientific jobs.
(c) No significant relationship has emerged between nPow and choice on 'Business Contact' and 'Outdoor' occupations.

(d) Language sample's vocational choice shows no congruency with their need power patterns as exhibited in Arts sample's choice.

The above conclusions may be discussed in the light of the fact that individuals with power motive possess personality characteristics which make them seek prestige, power and potency. All the scientific and non-scientific jobs fulfill this need, though in different degrees. Thus students in accordance with their strength of their need would choose corresponding jobs. Meyer et al. (1961) reported no significant difference on nPow between managers and group of specialists employed in an organization. Eggleton (1978) also found that power scores, of administrative personnel, non-administrative and staff specialists of an organization, did not differ significantly. Armstrong (1979) reported that need for power of students majoring in education, social work and business administration, did not show any significant differences.

In the light of the results obtained and discussed in the present investigation, the final picture of choice patterns of each faculty, as related to intelligence, personality and motives, is presented in the tabular form.
Table 30

Summary Chart of Significant Relationships Between Int., Pers., Motives and Vocational Choices of Science, Arts and Language Faculty

<table>
<thead>
<tr>
<th>Vocational Choice</th>
<th>Int.</th>
<th>N</th>
<th>E/I</th>
<th>nAch</th>
<th>nAff</th>
<th>nPow</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Science Sample</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Organization</td>
<td>L₁</td>
<td>+ve</td>
<td>+ve</td>
<td>-ve</td>
<td>+ve</td>
<td>-</td>
</tr>
<tr>
<td>Science</td>
<td>L₁</td>
<td>+ve</td>
<td>+ve</td>
<td>-ve</td>
<td>+ve</td>
<td>-</td>
</tr>
<tr>
<td>Technology</td>
<td>L₁</td>
<td>+ve</td>
<td>+ve</td>
<td>-ve</td>
<td>+ve</td>
<td>-</td>
</tr>
<tr>
<td><strong>Arts Sample</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social Service</td>
<td>L₁</td>
<td>+ve</td>
<td>+ve</td>
<td>+ve</td>
<td>-ve</td>
<td>+ve</td>
</tr>
<tr>
<td>Business Contact</td>
<td>L₁</td>
<td>-ve</td>
<td>-ve</td>
<td>+ve</td>
<td>+ve</td>
<td>-ve</td>
</tr>
<tr>
<td>Organization</td>
<td>L₁</td>
<td>+ve</td>
<td>+ve</td>
<td>+ve</td>
<td>-ve</td>
<td>+ve</td>
</tr>
<tr>
<td>Outdoor</td>
<td>L₁</td>
<td>+ve</td>
<td>+ve</td>
<td>+ve</td>
<td>-ve</td>
<td>+ve</td>
</tr>
<tr>
<td>General Culture</td>
<td>L₁</td>
<td>+ve</td>
<td>-</td>
<td>-</td>
<td>+ve</td>
<td>+ve</td>
</tr>
<tr>
<td>Arts &amp; Ent.</td>
<td>L₁</td>
<td>+ve</td>
<td>-</td>
<td>-</td>
<td>+ve</td>
<td>+ve</td>
</tr>
<tr>
<td><strong>Language Sample</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social Service</td>
<td>L₁</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>+ve</td>
</tr>
<tr>
<td>General Culture</td>
<td>L₁</td>
<td>-ve</td>
<td>-ve</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

+ve = Significant positive
-ve = Significant negative
- = Insignificant relationship.

To summarize, the present findings suggest that variables of intelligence, personality and motives are significantly and consistently related to vocational choices of 'Science' and 'Arts'.
students. At post-graduate level students from these two faculties have made realistic choices by matching their level of intelligence, personality make-up and need pattern to working requirements of their chosen jobs. In an educational and vocational workshop held at Saltsjobaden in 1977, it was proposed that the development of occupational choice is based on total personality structure, which also helps to determine the refusal or acceptance of occupational choice without the recognition of the individual. Krishna, Ansari and Mahfooz (1975) also reported similar trend in Indian population, and indicated that needs and personality make-up influences the vocational choices of under-graduate and post-graduate students. Dauenhauser (1977) stated that the development of realistic occupational choices is the main purpose of the occupational choice process and it is realistic only if it matches their self to the working conditions. Earlier Ginzberg (1951) also advocated similar theory of realistic choices, which was also later on confirmed by findings of Super and Crites (1962) (Tiedeman and O'Hara,1963; Gribbons and Lohnes,1967; and Larcebeau,1977).

However, any significant and consistent relationship between intelligence, personality and motives failed to emerge for students in Language faculty, thereby indicating that vocational choices of these students do not correspond to their psychological make-up and hence are not realistic in nature.
Predicting Efficiency of Intellectual Personality and Motivational Variables for Vocational Choices

In order to examine the predictive efficiency of significant intellectual, personality and motivational correlates (as identified through Pearson's Product Moment correlations and Factor Analyses); and to see whether the prediction of vocational choices of science and Arts students (their maximum preferred occupations) on the basis of the conjoint effect of intellectual, personality and motivational variables in higher than their separate predictions; and also to determine the combinations of predictor variables which best explain the variance in maximum preferred occupations, the tables of multiple correlation and step-up regression equations of Science and Arts samples were scrutinized.

Science Faculty:

Three models of step-up regression equations have been reported for each of the three maximum preferred occupations i.e. 'Organization, Level 1', 'Technology, Level 1' and 'Science, Level 1'.

Model I(a)

Vocational choice on 'Organization, Level 1' (would be abbreviated as VCOL₁) as predicted by Intelligence, N, E/I, nAch and nPow.

\[ R^2\text{VCOL}_1 : (\text{Int.} + N + E/I + n\text{Ach} + n\text{Pow}) \] gives the proportion of variance of the criterion measure of vocational preference on 'Organization, Level 1' = .222 attributable to the conjoint
effect of the intellectual, personality and motivational variables of Int, N, E/I, nAch, nPow. The value of $R^2 = .222$ (see Table 21) shows that 22.26 of whatever makes science students choose 'Organization, Level 1' occupation is attributed to five independent variables of Int, N, E/I, nAch and nPow.

$$R^2_{VCOL_1} = .094 + .065 + .005 + .039 + .019 = .222$$

This model implies that 9.4% of the variance of the criterion measure of vocational choice on 'Organization, Level 1' is attributable to intelligence, 6.5% to the personality dimension 'N', zero per cent to personality dimension of E/I, 3.9% to nAch and 1.9% to nPow. The remaining of 77.80% of the variance of occupational choice of science students on 'Organization, Level 1' is attributable to factors other than those included in the present study. The value of multiple correlation $R = .471$ is higher than the individual correlations between independent and dependent variables which are

$$r(VCOL_1, \text{Int.}) = .30 \quad r(VCOL_1, N) = .38 \quad r(VCOL_1, E) = -.14$$

$$r(VCOL_1, nAch) = .16 \quad r(VCOL_1, nPow) = .24$$

F-test shows that for the criterion measure of Vocational Choice on 'Organization, Level 1', addition of the variables of Intelligence, N, E/I, nAch and nPow are all significant at .01 level (See Table 21). From these results it may be inferred that 22.20% of the variance of criterion
measure, is attributed by all the predictor variables. Thus these variables have emerged as potential predictors of science students preference on 'Organization, Level 1' occupation. Intelligence is appearing as the most significant predictor amongst all the predictor variables. Personality factor 'N' is also equipped with comparatively high predictive efficiency than the personality factor E/I. Among the motivational variables nAch has higher predictive efficiency than the nPow. On the whole intelligence is the highest contributing factor followed by personality and motivational factors, to the vocational choice for 'Organization, Level 1' of science students. The conjoint effect of the independent variables is higher than their separate predictors.

Model I(b)

The choice of science students on 'Technology, Level 1' (would be abbreviated as VCTL₁) as predicted by intelligence, N, E/I, nAch and nPow.

\[ R^2_{VCTL₁} : (\text{Int.} + N + E/I + nAch + nPow) \text{ gives the proportion of variance of the criterion variable of occupational choice on 'Technology, Level 1' = .193 attributable to the conjoint effect of intellectual, personality (N, E/I) and motivational variables (nAch, nPow). The value of } R^2 = .193 \] (See Table 22) shows that 19.30 % of whatever makes science students choose this occupation is accounted by the five predictor variables, rest of the 80.70 % variance is accounted by some other variables not included in this study.
\[ R^2_{VCTL_1} = 0.042 + 0.014 + 0.009 + 0.097 + 0.031 \times 0.193 \]

The above model implies that 4.2% of the variance of the criterion measure of vocational choice is attributable to intelligence, 1.4% of the variance to N, 0.9% to E/I factor of personality, 9.7% to nAch and 3.1% to nPow. The value of multiple correlation \( R = 0.439 \) is higher than the individual correlations between the independent variables taken singularly i.e. Int, N, E/I, nAch and nPow, and dependent variable of vocational choice on Technology, Level 1, their 'r' values being

\[
\begin{align*}
  r(VCTL_1), \text{Intelligence} & = 0.21 \\
  r(VCTL_1), N & = 0.20 \\
  r(VCTL_1), E & = -0.12 \\
  r(VCTL_1), nAch & = 0.33 \\
  r(VCTL_1), nPow & = 0.25
\end{align*}
\]

F-test shows that for the criterion variable of vocational choice, addition of the variables of intelligence, N, E/I, nAch, nPow to the predictions of vocational choice for 'Technology, Level 1' are all significant at .01 level (See Table 22). These results imply that out of the five predictor variables, nAch possesses highest predictive efficiency (9.7%), followed by intellectual variable (4.2%) and nPow (3.1%), whereas predictive efficiency of N and E/I factors have emerged as comparatively low. Thus intelligence
and motivational variables have emerged as potential predictor of choice for Technology group, Level 1 occupations.

**Model I(c)**

The choice of science students for science group, level 1 occupations (VCSL₁) as predicted by intelligence, N, E/I, nAch and nPow.

\[ R^2_{VCSL_1} = (\text{Int.} + N + E/I + nAch + nPow) \]

gives the proportion of variance of the criterion measure of choice on Science, Level 1 occupations attributable to the conjoin effect of significant variables of Int., Personality (N, E/I) and motives (nAch, nPow). The value of \( R^2 = .281 \) (See Table 23) indicates that 28.10% of whatever makes students choose the said job is attributed to said five predictor variables

\[ R^2_{VCSL_1} = .078 + .018 + .150 + .005 + .030 \]

\[ = .281 \]

indicates that 7.8% of the criterion measure of choice on 'Science, Level 1' is attributable to intelligence, 1.8% to N dimension of personality, 15% to E/I dimension of personality, .05% to nAch and 3% to nPow. The remaining 71.90% of the variance of choice on science group, level 1 is attributable to factors not measured in this case. The value of multiple correlation \( R = .530 \) is higher than the individual correlations between independent variables of Int., N, E/I, nAch, nPow and dependent variable of choice on 'Science, Level 1' occupation.
F-test shows that for the criterion variable of choice for Science group, Level 1, addition of the predictor variables - intelligence, personality (N, E/I) and motives (nAch, nPow) are significant at .01 level (See Table 23). It may thus be inferred that out of the five predictor variables the variable of E/I has contributed maximum to the total variance, and has emerged as a potential predictor of choice of science students on scientific occupations. Intelligence and nPow have also emerged as potential predictor whereas contribution of N and nAch to total variance is very meager.

**Arts Faculty**

Five models of step-up regression equations have been selected on the basis of significant intellectual, personality and motivational correlates of the five preferred occupations i.e. 'Social Service, Organization levels 1 and 2', 'General Culture, Level 1' and 'Arts & Entertainment, Level 1'. Since jobs in the fields of Business Contact and Outdoor did not show significant correlations with the above variables, thus they were not included in the present models.

**Model III(a)**

Choice in the field of 'Social Service at Level 1' (VCSSL1) as predicted by Intelligence, N, E/I, nAch, nAff, nPow.
\[ R^2(\text{VCSSL}_1) = (\text{Int.} + N + E/I + nAch + nAff + nPow) \]
gives the proportion of variance of the criterion measure of choice on 'Social Service, Level 1' occupation = .584 attributable to the conjoint effect of the intellectual, personality and motivational variables. The value of \( R^2 = .584 \) (Table 24) shows that 58.40% of whatever makes arts students choose jobs in the field of social service is attributable to six independent variables.

\[ R^2(\text{VCSSL}_1) = .148 + .015 + .089 + .030 + .049 + .253 = .584 \]

This model implies that 14.8% of the variance of the criterion measure of choice on 'Social Service, Level 1' is attributable to intelligence (1.5% to personality dimension N, 8.9% to personality factor of E/I, 3.0% to nAch, 4.9% to nAff and 25.3% to nPow. The remaining of 41.60% of the variance of choice on 'Organization, Level 1' is attributable to factors other than those included in the present study. The nature of multiple correlation, \( R = .764 \) is higher than individual correlations between independent and dependent variables which are:

\[
\begin{align*}
    r(\text{VCSSL}_1), \text{Int.} &= .38 & R(\text{VCSSL}_1), nAch &= -.34 \\
    r(\text{VCSSL}_1), N &= .20 & R(\text{VCSSL}_1), nAff &= .39 \\
    r(\text{VCSSL}_1), E &= .30 & R(\text{VCSSL}_1), nPow &= .73
\end{align*}
\]

F-test shows that for the criterion measure of choice on 'Social Service, Level 1' jobs; addition of the variables of Intelligence, N, E/I, nAch, nAff and nPow are all significant at .01 level (See Table 24). The above results lead us to
infer that in Arts faculty the choice of 'Social Service, Level 1' jobs, nPow is a very strong predictor and accounts for almost 1/2 of the total variance accounted by the predictor variables. Intelligence has also emerged as a strong potential predictor, whereas N, nAch, nAff and E/I have emerged as predictors, but accounts for meagre variance. The conjoint predictive efficiency of all these variables is higher than that of each independent variable.

**Model II(b)**

Choice in the field of 'Organization, Level 1' (VCOL) predicted by Intelligence, N, E/I, nAch, nAff, nPow.

$$R^2(VCOL) = (\text{Int.} + N + E/I + nAch + nAff + nPow)$$

This model implies that 2.8% of the variance of the criterion measure of choice on 'Organization, Level 1' is attributable to intelligence, 4.3% to personality dimension N, 2.4% to personality factor of E/I 4.4% to nAch, 1.5% to nAff and 2.2%
to nPow. The remaining of 82.40% of the variance of choice on 'Organization, Level 1' is attributable to factors other than included in the present study. The value of multiple correlation R = .419 is higher than individual correlations between independent and dependent variables which are:

\[ r(VCOL_1), \text{Int.} = .18, \quad r(VCOL_1), nAch = -.25 \]
\[ r(VCOL_1), \quad N = .24, \quad r(VCOL_1), nAff = -.23 \]
\[ r(VCOL_1), \quad E = .15, \quad r(VCOL_1), nPow = -.32 \]

F-test shows that for the criterion measure of choice on 'Organization, Level 1' jobs addition of the variables of Intelligence, N, E/I, nAch, nAff and nPow are all significant at .01 level (See Table 25). The above results lead us to infer that in Arts faculty, all the independent variables have emerged as potential predictors of choice on this group. However, the predictive efficiency of personality factor 'N' and motive to achieve has emerged to be much higher than the rest of the variables. The conjoint efficiency to predict is also much higher than independent predictive efficiency of each variable.

**Model II(c)**

Choice in the field of 'Organization Level 2' (V COL2) as predicted by Intelligence, N, E/I, nAch, nAff, nPow.

\[ R^2(VCOL_2) = (\text{Int.} + N + \text{E/I} + nAch + nAff + nPow) \] gives on 'Organization Level 2' occupation = .349 attributable to the conjoint effect of the intellectual, personality and
motivational variables. The value of $R^2 = 0.349$ (See Table 26) shows that 34.90% of whatever makes arts students choose jobs in the field of 'Organisation, Level 2' is attributable to six independent variables.

$$R^2(VCOL_2) = 0.087 + 0.002 + 0.015 + 0.241 + 0.003 + 0.001 = 0.349$$

This model implies that 8.7% of the variance of the criterion measure of choice on 'Organization level 2' is attributable to intelligence, 0.2% to personality dimension N, 1.5% to personality factor of E/I, 24.1% to nAch, 0.30% to nAff and 0.10% to nPow. The remaining of 65.10% of the variance of choice on 'Organization Level 2' is attributable to factors other than included in the present study. The value of multiple correlation $R = 0.590$ is higher than individual correlations between independent and dependent variables which are:

- $r(VCOL_2), \text{Int.} = -0.30$
- $r(VCOL_2), \text{nAch} = 0.58$
- $r(VCOL_2), \text{N} = -0.04$
- $r(VCOL_2), \text{nAff} = -0.15$
- $r(VCOL_2), \text{E/I} = -0.13$
- $r(VCOL_2), \text{nPow} = -0.19$

F-test shows that for the criterion measure of choice on 'Organization, Level 2' jobs, addition of the variables of Intelligence, E/I, nAch, are significant at .01 level (See Table 26). The above results lead us to infer that in Arts faculty, only three independent variables have emerged as potential predictors of this choice in this job. The variables of N, nAff and nPow do not contribute to the variance of the criterion measure. Out of the three potential predictors the
variable of nAch has contributed maximum variance to the total variance. The conjoint effect of the independent variables is higher than their separate predictions.

Model II(d)

Choice in the field of 'General Culture, Level 1'
(TCGCL1) as predicted by Intelligence, N, E/I, nAch, nAff, nPow.
$R^2 (TCGCL_1) = (\text{Int.} + N + E/I + nAch + nAff + nPow)$ gives the proportion of variance of the criterion measure of choice on 'General Culture, Level 1' occupation = .308 attributable to the conjoint effect of the intellectual, personality and motivational variables. The value of $R^2 = .308$ (See Table 27) shows that 30.80% of whatever makes arts students choose jobs in the field of 'General Culture, Level 1' is attributable to six independent variables.

$R^2(TCGCL_1) = .112 + .029 + .002 + .017 + .090 + .058$
$= 30.807.$

This model implies that 2.0% of the variance of the criterion measure of choice on 'General Culture, Level 1' is attributable to intelligence, 2.9% to personality dimension N, .02% to personality factor of E/I, 1.7% to nAch, 9.0% to nAff and 5.8% to nPow. The remaining of 69.20% of the variance of choice on 'General Culture, Level 1' is attributable to factors other than included in the present study. The value of multiple correlation $R = .554$ is higher than individual correlations between independent and dependent variables which are:
F-test shows that for the criterion measure of choice on 'General Culture, Level 1' jobs, addition of the variables of Intelligence, N, E/I, nAch, nAff and nPow are all significant at .01 level (See Table 27). The above results lead us to infer that all the independent variables have emerged as potential predictors of choice in the said occupation. Out of these six variables Intelligence has contributed maximum variance, followed by variance of nAch and then of nPow. The conjoint effect of the independent variables is higher than their separate predictions.

Model II(c)

Choice in the field of 'Arts & Entertainment, Level 1' (VCASEL) as predicted by Intelligence, N, E/I, nAch, nAff, nPow.

$$R^2(VCASEL) = (Int. + N + E/I + nAch + nAff + nPow)$$
gives the proportion of variance of the criterion measure of choice on 'Arts & Entertainment, Level 1' occupation = .251 attributable to the conjoint effect of the intellectual personality and motivational variables. The value of $R^2 = .251$ (See Table 28) shows that 25.10% of whatever makes arts students choose jobs in the field of 'Arts & Entertainment, Level 1' is attributable to six independent variables.
This model implies that 10.7% of the variance of the criterion measure of choice on 'Arts & Entertainment, Level 1' is attributable to Intelligence 3.4% to personality dimension N, 1.1% to personality factor of E/I, 1.3% to nAch, 5.0% to nAff, 3.6% to nPow. The remaining of 75.90% of the variance of choice on 'Arts & Entertainment, Level 1' is attributable to factors other than included in the present study. The value of multiple correlation, R = .500 is higher than individual correlations between independent and dependent variables which are:

\[ r(VCAEL_1), \text{Int.} = -0.02 \quad r(VCAEL_1), nAch = 0.10 \]
\[ r(VCAEL_1), \quad N = 0.00 \quad r(VCAEL_1), nAff = 0.36 \]
\[ r(VCAEL_1), \quad E = -0.07 \quad r(VCAEL_1), nPow = -0.00 \]

F-test shows that for the criterion measure of choice on 'Arts & Entertainment, Level 1' jobs addition of the variables of Intelligence, N, E/I, nAch, nAff and nPow are all significant at .01 level (See Table 28). The above results lead us to infer that all the six variables have emerged as potential predictor of choice in this job. Intelligence has emerged as a very strong predictor contributing the maximum variance. nAff has also emerged with higher predictive efficiency than the other motivational variables. The conjoint effect on prediction efficiency of all these variables is
much higher than their independent prediction efficiency.

Summary of significant individual and conjoint predictive efficiency of intelligence, personality and motives vide different models has been depicted in Table 31.

**Table 31**

Summary of Individual & Conjoint Predictive Efficiency of Int, Personality & Motives

<table>
<thead>
<tr>
<th>Occupational Groups</th>
<th>Sage contribution in variance by Predictor Variables</th>
<th>Int</th>
<th>N</th>
<th>E/I</th>
<th>nAch</th>
<th>nPow</th>
<th>Conjoint effect</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>SCIENCE SAMPLE</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Organisation</td>
<td></td>
<td>9.4</td>
<td>6.5</td>
<td>0.5</td>
<td>3.9</td>
<td>1.9</td>
<td>22.20</td>
</tr>
<tr>
<td>L₁</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Technology</td>
<td></td>
<td>4.2</td>
<td>1.4</td>
<td>0.9</td>
<td>9.7</td>
<td>3.1</td>
<td>19.30</td>
</tr>
<tr>
<td>L₁</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Science</td>
<td></td>
<td>7.8</td>
<td>1.8</td>
<td>15.0</td>
<td>0.5</td>
<td>3.0</td>
<td>28.10</td>
</tr>
<tr>
<td>L₁</td>
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<td></td>
<td></td>
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<tr>
<td><strong>ARTS SAMPLE</strong></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Social Service</td>
<td></td>
<td>14.8</td>
<td>1.5</td>
<td>8.9</td>
<td>3.0</td>
<td>4.9</td>
<td>25.3 58.46</td>
</tr>
<tr>
<td>L₁</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Organization</td>
<td></td>
<td>2.8</td>
<td>4.3</td>
<td>2.4</td>
<td>4.4</td>
<td>1.5</td>
<td>2.2  17.60</td>
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<tr>
<td>L₁</td>
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<td></td>
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</tr>
<tr>
<td>Organization</td>
<td></td>
<td>8.7</td>
<td>0.2</td>
<td>1.5</td>
<td>24.1</td>
<td>0.3</td>
<td>0.1  34.90</td>
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<tr>
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<td></td>
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<tr>
<td>General Culture</td>
<td></td>
<td>11.2</td>
<td>2.9</td>
<td>0.2</td>
<td>1.7</td>
<td>9.0</td>
<td>5.8  30.80</td>
</tr>
<tr>
<td>L₁</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arts &amp; Ent.</td>
<td></td>
<td>10.7</td>
<td>3.4</td>
<td>1.1</td>
<td>1.3</td>
<td>5.0</td>
<td>3.5  25.10</td>
</tr>
<tr>
<td>L₁</td>
<td></td>
<td></td>
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</tbody>
</table>
Findings as based on summary chart of Regression Analysis tend to suggest following points:

(1) The predictive efficiency of the variables of Intelligence, N, E/I, nAch and nPow taken conjointly accounts for 19% to 28% of the total variance of vocational choices of science students, which means that almost 1/4th of whatever determines their choice is accounted by these variables.

(2) The range of predictive efficiency of variables of Intelligence, N, E/I, nAch, nAff and nPow taken conjointly for vocational choices of Arts students, is between 17% to 58%, which means that these variables may account for almost 1/6th to 1/2 of whatever determines the choices of Arts students.

(3) The conjoint predictive efficiency of Intelligence, Personality, and Motives, is much higher than their independent efficiency of predicting vocational choices of Science and Arts faculties.

(4) From the findings as based on Regression Analysis, significant correlations and factorial clusters we may deduce that Science students with high Intelligence, moderate neuroticism, high introversion tendencies, high need for achievement and power are likely to choose scientific jobs, at level 1.

(5) Similarly Arts students with high intelligence, neurotic extravert tendencies, high need for
affiliation and power, but low need for achievement, are likely to choose jobs in 'Social Service' and 'Organisation' groups. Whereas, students high on intelligence, with neurotic tendencies and with high need for affiliation and power but low need for achievement, are likely to choose 'General Culture' and 'Arts & Entertainment' jobs all at level 1.

In general, it may be inferred that multiplicity of intellectual, personality as well as motivational factors (that have been identified as statistically significant correlates and predictors) influences the multidimensional construct of vocational choice. 'Super and Overstreet' (1960) also postulated "that vocational choice is the result of a variety of determinants. Some determinants are more important than other determinants". Recently Shaw (1982) while studying various objectives and subjectives factors in relation to realistic vocational choices also suggested that different types of variables are needed to understand why some students are more realistic in choices and also coping better with vocational developmental tasks which confronts them.