CHAPTER II

REVIEW OF RELATED RESEARCH

An individual acquires maturity for vocational development when he/she develops better understanding of situational (environmental) as well as personal (psychological) factors. Thus, a review of these factors influencing vocational maturity is given in terms of (a) Environmental variables and (b) Psychological variables.

A. Environmental Factors Affecting Vocational Maturity

The process of vocational maturity is influenced by many environmental factors: culture (race), social class status, family, school, rural-urban background, educational age/grade levels and the same is reviewed briefly as under:

1. Culture

The cultural milieu in which an individual inhabits, affects his freedom to choose indirectly by exerting the force of the existing social patterns. Various conditions and modes of living in different cultures, induce their members to take up jobs, in consonance with their prevailing systems and value structure (Madan, 1984). Bresnan (1976) found that Blacks were significantly more vocationally mature than Pureto Ricans. Etulain (1979) found significant differences in career maturity levels of the three ethnic groups - Indian, Eskimo, Caucasian. McDowell (1978) found
that Black and Hispanic Ss mean scores were significantly different from those of the American Indian and the white Ss. Davis (1973); Currie (1974); Morris (1978); Karayanni (1977 and 1981) and Coleman (1980) found that white students scored significantly higher than non-white students in vocational maturity. Perez (1980) found differences in vocational maturity attributed to ethnicity. Anderson (1977) reported significant relationships between career maturity and race. In multivariate designs, Brumlow (1980) indicated that race and sex differences were statistically significant. Average career attitude maturity level and social self-concept exhibited differences which could be associated with race. McNair (1981) found that group membership (Sex and Race) had a significant effect on the career maturity scores. Hwang, Ru-Ing (1983) found that cultural realms were found to be most related to foreign students career planning, academic level to knowledge of preferred occupation scale and the sex factor to the composite measure.

As a conclusion, it can be pointed out that comparisons of vocational maturity of the various ethnic groups highlight the differences which are attributable to racial background.

2. Social Class

"The adolescents' social class effects a person's vocational development by its influence on his becoming the kind of person, he is, and by the effects of the general
socio-economic milieu of the family of the young person's attitudes, values, opportunities and the reactions of others toward him" (Jersild, 1957). Super and Bachrach (1957) also emphasized that in selecting an occupation, an individual is more or less directly influenced by several social systems.

Empirical evidence by Reynolds and Shister (1949); Hollingshed (1949); Gribbons and Lohnes (1964); Richards (1973); Currie (1974); Holland (1979 and 1981) and Karayanni (1981) shows that social class status of parents of a child has a positive correlation with vocational development. Similar findings on Indian samples were reported by Chand (1979) and Josan (1983). Alomari (1978) found that socio-economic status seems to have more influence than ethnicity upon career maturity. Dillard (1976) found that socio-economic status of family was the best predictor of vocational maturity. There were significant differences in the vocational maturity of urban-lower, urban-middle and sub-urban middle class black males. Huang, Chin-Li (1974) found that in Chinese population those who belonged to higher socio-economic strata were superior in vocational maturity than the students from the lower group. There are few other studies which have reported low correlations between social class status and vocational maturity. Scheri (1973) and Crosby (1975) found little correlation between social class status and vocational maturity.
Studies reported above imply that socio-economic status significantly influences the vocational maturity process. It seems that environment influences the vocational maturity more among pupils from upper socio-economic classes.

3. Family

Family structure and function are inextricably interwoven with the economics and the vocational pursuits of persons of all societies. Family affects vocational maturity of an individual in various ways e.g. family size, parental education, broken homes, parent-child interaction etc. The level of education attained by parents directly influenced the vocational development of children (Harkness, 1973). Bloss (1973) found that most of the vocationally immature children come from the parents who could not get education beyond X class. Khan and Alvi (1983) found that CMI scores were generally correlated with their parent's educational level. Alomari (1978) found that mother's education, feelings of discrimination, cultural misrepresentation, closeness to the family, number of people living in the family have an affect upon different sub-tests of the CMI. Hoyte (1976) found that male adolescent in the two parent family is likely to have a higher level of vocational maturity than male adolescent in the one parent family where father is separated from home. The adolescents in this one parent separated category appeared to have the lowest level of three groups. He further found
that male adolescent where father was dead seemed to possess the highest level of vocational maturity in these groups. In the correlational studies, it has been found that there were significant positive relationships between parent's occupation and vocational maturity (Nimkuntod, 1978; Osgood, 1978; Chand, 1979; Miller, 1979 and Loe, 1984). Pavlak (1981) found father's occupational level along with other variables were the best predictors of IX grade vocational attitude maturity (CMI). McNair (1981) indicated that the best set of predictors of vocational maturity was parental influence.

Research evidence cited above confirms the importance of family as a socializing influence upon its young members and as a medium for the transmission of cultural values to the child. In addition to this, studies have confirmed association of vocational development with aspects of family structure such as parental education, occupation, types of family, number of people living in a family.

4. School

A young person's relationship with school and work has its origins in the developmental context within which the processes of learning and decision making take place, what has been called "vocationalization" (Crites, 1969; and Herr and Cramer, 1972). The children mature through a variety of experiences e.g. formal, informal, curricular, co-curricular and extra-curricular programmes during the school period.
Mathewson and Orton (1963) and Nimkuntod (1978) found positive and significant correlation between vocational maturity and participation in school extra-curricular activities. McCaffrey (1980) found that students who had a high degree of participation in those extra-curricular activities which emphasized individual responsibility and a positive response to social expectation were more likely to evidence high levels of vocational maturity than those students who did not participate in these types of activities. Currie (1974) concluded that those students who continued school education were superior to those adolescents who left the school, in vocational maturity. Brandt (1976) found that attitude towards the school situation was positively related to the maturity of vocational choice attitude (CMI). Gadzinski (1979) found that traditional high school students demonstrated better career attitudes than alternative high school students. Mague (1982) found that Teacher rating of social competence, evaluating competencies in social co-operation and independent working skills, proved to be the most significant correlate of the career attitude and career knowledge as measured by Ohio Career Education Inventory in VII grade.

Above mentioned research findings show that participation in extra-curricular activities, types of school and teachers ratings significantly affect the vocational development and maturation of children. Similarly, the school acts as a socializing agent which
rewards and punishes children for their actions. School teaches a child to respond in certain ways and not in others. A child develops certain attitudes and competencies about such vocationally relevant matters as achievement and satisfaction. It can be said that the way in which school responds to particular groups of children, may be of vital importance to them in developing vocationally mature behaviour.

5. **Ecological Factors**

Individuals from rural areas being deprived of the urban environments and having a fewer opportunities in all areas of life. They lag behind in vocational maturity from the individuals of urban areas. It has been empirically investigated that urban students were significantly more vocationally mature than students belonging to the rural area (Lipsett, 1962; Super and Overstreet, 1960; Crosby, 1975; Smith, 1975 and Josan, 1983). Davis (1973) found that urban students belonging to larger cities were vocationally more mature than the students from small cities. Etulain (1979) found that IX grade students in an urban area of Alaska scored significantly lower on self-appraisal sub-test of CMI than did freshmen students surveyed in two rural areas of the state. Conversely, the urban freshmen scored significantly higher on their knowledge about jobs and on planning (Sub-tests of CMI) than did their rural counterparts.
Studies reported above show that there are systematic sub-cultural differences between rural and urban students in vocational maturity. These differences between sub-cultures demonstrated along geographical and residential lines are often reflected in the vocational growth of an individual.

6. Educational Grade Levels

Grade has been used in the vocational development to define vocational maturation. Age plays an important role in vocational maturity. Although age has not been taken into account in the present study yet age is directly related to the various educational grade levels. Thus, educational grade levels are direct rough indices of age which are being used in the present study. The research evidence on age/educational grade levels in relation to vocational maturity is reviewed as under:

a) Age

It has been scientifically investigated by various researchers that age is positively and significantly related to vocational maturity (Super, 1977; Dysinger, 1950; Miller and Form, 1951; Richard, 1973; Noeth and Prediger, 1978; Lange, 1980; Guthrie and Herman, 1982 and Alvi and Khan, 1982).

b) Grade Levels

The process of vocational development and maturation would proceed apace with advancement from one grade levels to another due to different occupational orientation experiences. But there is some empirical evidence from the
various studies that grade differentiates stages in vocational maturity better than chronological age. The maturation of vocational maturity as a developmental process during school, college, university and at higher stages of development have been empirically investigated. It has been scientifically investigated by various researchers that there exist significant grade to grade differences in vocational maturity i.e. as grade level increases vocational maturity also increases (Hollender, 1967; Gribbons and Lohnes, 1968; Rhodes, 1973; Kerr, 1974; Achebe, 1975; Smith, 1975; Mintzer, 1976; Pendleton, 1976; Herr and Enderlein, 1976; Tilden, 1976; Alexander, 1977; Arredondo, 1977; Carlivati, 1977; Karayanni, 1977; Kelso, 1977; Gilbert, 1977; Seaward, 1977; Alomari, 1978; Seik, 1978; Hershenson and Lavery, 1978; Tiibon, 1978; Martin and Redmore, 1978; Chand, 1979; Etulain, 1979; Gadzinski, 1979; Sease, 1979; Coleman, 1980; Dillard and Perrin, 1980; Dwinell, 1980; Mahy, 1980; Perez, 1980; McCaffrey, 1980; Riese, 1980; Utairat, 1981; Fiorillo, 1981; Hwang, Ru-Ing, 1983; Josan, 1983; Nwachukwu, 1983; Weener, 1983; McCaffrey et al., 1984).

Chatman (1976) found that grade level and characteristics of high school were related to the overall performance on the CDI - Form I (Super and Forrest's, 1972). Leach (1979) found positive and significant relationships between CMI-attitude scale and grade level. Alvi and Khan
(1983) found that CMI-competencies but not attitudes were monotonically related to age/grade. Robbins (1978) found that grade level had a significant affect upon career maturity inventory (CMI). Chodzinski (1983) found that grade along with other variables emerged as the best predictor of CMI variables. Daly (1983) found that grade explained 6% of the variance in maturity of career attitudes (CMI). Brown (1983) found that grade along with other variables made the highest contribution to all five scales (CDI) - (1) Career planning 19%, (2) Career development attitude 26%, (3) World of work 43%, (4) Career development knowledge and skills 55% and (5) Career orientation total 45%.

Studies referred above illustrate wide differences in vocational maturity between different age and educational grade levels. A high level of consistency in the developmental and maturational differences of vocational maturity implies that vocational maturity of a person increases as he/she grows through different age and grade levels. Vocational maturity changes with time and experience and is a continuous process. This process may be summed up in life stages. Vocationally mature behaviour becomes more differentiated overtimes. In this sense, it is possible to use an individual's pattern of vocational maturation as a rough index of his developmental maturity. Age and educational grade levels play an important role in the development of vocationally mature behaviour of a
The widely recognised developmental nature of vocational maturity can be more helpfully used as a basis for interpreting data.

**Conclusion**

Environmental variables reviewed above imply that the process of educational and vocational socialization is a fundamental factor along with other socializing forces such as culture, social class, family, school, ecological factors, and age and grade levels, in the personality development of a person. These factors in an individual's environment influence his vocational maturity and provide the direction and strength of these influences. These factors may be good statistical predictors of educational and vocational behaviour. Individual's personal development can only be understood in connection with the actually existing society to which he/she belongs. A person will try to form his/her life according to the specific relations and conditions of his/her society. It will be appropriate to refer that environment in which a person grows play an important role in the development of vocational maturity of a person. Not only are the environmental factors which contribute to the vocational maturity but there is evidence that psychological factors also influence the self-perception of an individual and may attribute to educational and vocational development of a person.
B. Psychological Factors Affecting Vocational Maturity

Psychological factors work as catalysts for environmental factors and moreover essential factors in themselves. Many individual characteristics or traits and dimensions have been correlated with vocational behaviour. Personality variables, sex, academic achievement, intelligence abilities or in broader sense aptitudes are one group of variables. Some of the salient ones are briefly examined as under :

1. Personality

Personality has been studied extensively in the domain of vocational psychology since the time of Parsons (1909). Most of the studies of personality and vocational behaviour have either explicitly stated or implicitly assumed that personality plays an important role in the determination of vocational choices and vocational maturity. Vocational maturity seems to be a reflection of general personality development. Researchers have generated a lot of evidence of personality correlates of vocational maturity in the context of different aspects of personality measured with different instruments. Super and Overstreet (1960); Crites (1969) and Jones (1973) concluded that personality is a viable dimension in terms of vocational development and vocational maturity appears to be a reflection of the general personality of persons. Bartlett's (1968) findings show that the development of vocational behaviour is analogous to the development of mature personality characteristics. There is a mass of research to confirm Super's (1:51 b)
hypotheses that, "In choosing an occupation is, in fact, choosing a means of implementing a "Self-concept". The most productive lines of investigation have been stimulated by the "Self-concept" theory of Super (1951, 1957 and 1963), which has provided the conceptual framework for the Super and Overstreet (1960) monograph. There is an increasing evidence that the self-concept is related to vocational maturity which generally supports Super's theory of the association between these two variables (Super and Overstreet, 1960; Korman, 1966; Jones, 1973; Dillard, 1976; Mintzer, 1976; Pound, 1976; Chand, 1979; Holland, 1979; Brumlow, 1980; Holland, 1981; McNair, 1981; Utairat, 1981; Mague, 1982 and Nwachukwu, 1983). There is also some research which indicates that self-esteem is related to vocational maturity (Brisk-Hellman, 1980; Coleman, 1980; Fiorillo, 1981 and Crook et al., 1984). It was found that students with high self-esteem have greater vocational maturity than students with low self-esteem (Kelley, 1978; Marganoff, 1978; Khan and Alvi, 1983 and Helbing, 1984). Martin and Redmore (1978) found that ego development was significantly related to vocational maturity but not to reasons for vocational choices. Desmond (1979) found that girls in the high time competence (TC) and high inner directedness (I), (Self-actualizing components) groups were more vocationally mature than their counterparts in the low TC and low I groups. It has been found that internal locus of control students scored significantly higher than
external locus of control students in vocational maturity (Froke, 1976; Wilton, 1978 and Grossman, 1979). It has been reported by various researchers that locus of control is likely to be a mediating factor in vocational maturity (Bresnan, 1976; Ifenwanta, 1978; Dwyer, 1981; Robinson, 1981; Lokan et al., 1982 and Bernardelli et al., 1983). Gardner et al. (1981) found that the treatment group had significantly higher locus of control and vocational maturity scores than the no-treatment group. Bergwall (1975) and Karayanni (1977) found positive and significant correlation between personality adjustment and vocational maturity. McNamara (1975) and Triger et al. (1983) found that vocational adjustment significantly influences vocational maturity. Descombs (1980) indicated that CMI-attitude scale was positively related to personal adjustment. Franz (1983) found that lower stress was related to slightly higher career maturity (CMI) in a linear manner. Lower stress scores were associated with higher cognitive complexity and greater overall career maturity among the experienced (8+ years) teachers. Burke (1979) found that CPI sub scales (Gough, 1975) of self-acceptance, achievement via independence and intellectual efficiency correlated positively with the competence tests of the CMI. Magiera (1981) concluded that there were significant structural relationship between vocational maturity and personality (California Psychological Inventory, CPI). Capehart (1974) studied the relationship of vocational maturity to Holland's theory of vocational
choice and found that explicit role preference was an effective predictor of vocational maturity. McCaffrey (1980) found that students who were undecided about academic major choice had the lowest level of vocational maturity, while students in the high congruence group had the highest level of vocational maturity. Guthrie and Herman (1982) found that congruency and age related significantly to vocational maturity. Significant differences also occurred within both personality and program typologies. It is also concluded that there were significant relationships between vocational maturity and specific factors on the Cattell's 16 P.F. (Chapin, 1975; Ward et al., 1976; Chand, 1979; Robinson, 1981; Agarwal, 1981; Josan, 1983 and Saxena, 1984).

In the present study, personality is being investigated in Eysenckian framework. Therefore, Eysenckian Personality Model along with few reported findings of its relationship to vocational maturity is discussed in detail as under:

Eysenck's Personality Theory

Eysenck proclaimed and manifested the personality theory which has been modified by him over the years (1947, 1957, 1960, 1963 and 1972). His definition of personality revolves around four behavioural patterns; cognitive (intelligence); conative (character); affective (temperament); and somatic (constitution). Thus, actual or potential behavioural patterns of an organism as deter-
mined by heredity and environment, constitute personality. It originates and develops through the functional interaction of the forming sectors in which these behavioural patterns are organized (dimensions of personality). Eysenck classified these main dimensions as Extraversion / Introversion, Neuroticism (Stability), psychoticism and intelligence which are uncorrelated. Eysenck (1960) terms "dimension" as a continuum for a type which in turn is defined as a group of correlated traits...." Out of these four dimensions of personality, the dimensions of Extraversion/Introversion (E/I) and Neuroticism/Stability have figured in numerous statistical researches in the literature on the Indian culture (Mohan, 1966; Malhotra, 1974 and Mohan, 1974 & 1976). Intelligence is a cognitive dimension and psychoticism has been applied by Eysenck and Eysenck (1970) for differentiating the normal from the abnormal. In the present study, the dimensions of E/I and N have been employed to determine their relationship with vocational maturity.

**Extraversion/Introversion (E/I)**

According to Eysenck and Eysenck (1968) Extraversion relates to impulsive, sociable tendencies whereas Introversion indicates controlled and responsible behaviour. The scientific researches on Extraversion have presented a picture of typical Extravert, "who is sociable, like parties, has many friends, needs to have people to talk and does not like reading or studying by himself. He craves for
excitement, takes chances, often clings his neck out, acts on spur of the moment and generally is an impulsive individual. He is fond of practical jokes, always has a ready answer and generally likes change. He is carefree, easy going, optimistic and likes to laugh and be marry. He prefers to keep moving and doing things, tends to be aggressive and loses his temper quickly. His feelings are not kept under tight control and he is not always a reliable person."

In comparison to above, a typical "Introvert is a quiet retiring sort, introspective, fond of books rather than people, reserved and distant except to very intimate friends. He inclines to plan ahead "looks before he leaps" and distrusts the impulses. He does not like excitement, takes matters of life with appropriate seriousness and adopts a well set mode of life. He preserves his feelings under close control, seldom behaves in an aggressive manner and does not lose his temper easily. He is reliable, somewhat pessimistic and attaches great value to ethical standards" (Eysenck and Eysenck, 1968).

On the genotypic level Eysenck (1957) strived to relate differences in E/I to hypothetical inherited differences in the functioning of nervous system. For this purpose Eysenck cites the Pavlovian (1927) concept of excitation and inhibition. He explained that individuals in whom excitatory potentials generated are relatively weak and are predisposed to develop extraverted patterns of
behaviour. Individuals in whom excitatory potential is rapidly generated, there is a strong predisposition to develop introverted patterns of behaviour.

The causation of E/I was further elaborated with reference to Hulls (1948) sub-molar principles of reactive-inhibition (Ir). Eysenck (1957) quoted that individuals in whom reactive inhibition is developed quickly and is of a strong nature and dissipates slowly are predisposed to develop extraverted patterns of behaviour. Contrarily, individuals in whom reactive inhibition dissipates speedily are thereby predisposed to develop introverted patterns of behaviour (Eysenck, 1957 and 1963).

The physiological basis of E/I is assumed to be due to differences in the threshold of arousal of ARAF. Introverts are assumed to have lower thresholds of reticular arousal than extroverts. Therefore, Eysenck's theory affirms that introverts have inherited a nervous system which permits them to form learned connections between stimuli and responses more promptly than extraverts. The genotypic variations along with neurological bio-chemical lines interact with the environmental patterns of behaviour.

**E/I and Vocational Maturity**

Research evidence on E/I in relation to vocational maturity is very limited. Chauhan (1975) found negative correlations between extraversion and vocational maturity for males; the opposite was the case for females. Tancredi (1977) found that the college freshmen who perceive
their relations with the dominant parents as accepting showed a greater degree of vocational maturity and extraversion, and those who perceive their relations as concentrating or avoiding are less mature. Also, he found that introverts were vocationally mature than extraverts. Ahuja (1985) found positive correlations between measures of career maturity and extraversion.

Studies of E/I in relation to choice of different groups of occupations are also being reviewed because vocational choice is an important component of vocational maturity and indirect inference of the relationship between vocational maturity and E/I can be drawn from these studies.

Several studies have confirmed relationship between E/I and different groups of occupations. Bhanot (1981) found that technical personnel were low on E/I personality dimension of EPI. Madan (1984) concluded that E/I was significantly and positively related with three vocational choices namely "Social Service", "Business Contact" and Organisation (all at level I). Choice on "Organisation" level 2 was significantly negatively related to E/I.

Neuroticism (N)

Neuroticism by which Eysenck expresses drive levels, compliments the E/I in explaining various behavioural patterns. By neuroticism, Eysenck (1953 & 1957) cites the "Emotional liability or over responsiveness of an individual and likelihood of breakdown under stress. The general nature of neuroticism is assessed as instability, unadapt-
ability, depressive moods, weak dependable attitude, narrow interests, symptoms of nervous breakdown.

The basis of neuroticism is taken to be neuro-physiological and derived from the Hullian theory of drive. Eysenck (1963) is of the opinion that "differences between people in emotionality or neuroticism are mediated by inherited differences in the liability and excitability of the autonomic nervous system (ANS)". Brody (1972) affirms that emotionality is thought by Eysenck to be dependent upon the arousal of visceral brain. The arousal of the visceral brain in assumed to lead to arousal of reticular activation system but not the converse. Neurotics are assumed to have low threshold of such activation. Eysenck (1953 and 1957) explained Neuroticism as instable, unadaptable, anxious and dependent individuals. Neuroticism is equated with an autonomic drive (Eysenck, 1967 and Mohan, 1976) the optimum drive or N for easier tasks is expected to be higher than difficult tasks.

Neuroticism and Vocational Maturity

The research evidence on the relationship of N and vocational maturity has been very scarce. Thus indirect evidence on anxiety, in relation to vocational maturity have been reviewed because anxiety and neuroticism are similar terms. Brosnon (1981) concluded that high levels of anxiety are significantly related to a lack of career planning (CDI). But, Kathuria (1974) did not find any significant differences in the anxiety scores of vocationally decisive and undecisive undergraduate females. Lee (1975)
concluded that there was no significant correlation between anxiety and vocational maturity.

The present efforts may be valuable in exploring the relationship between N and vocational maturity. It would also help to understand the vocational behaviour patterns in the process of vocational development and maturation.

Above cited evidence implies that individual characteristics influence vocational behaviour. The development of a person is based on the personality structure which helps to determine the vocational maturity. Personality is very complex and the theory that forms its basis should recognize continuity of development. An individual is a continuously developing organism. Individuals differ in the level at which they consider themselves and others in a learning process. Personality matures through interpersonal relationships. Each person has a sense of self and identity. A firm sense of identity is part of maturity. Different levels of self could be tackled by different assessment devices. Individual's self-concept is considered as one of the most basic and crucial components of personality. Positive high self-concept, self-esteem, ego-development, self-actualizing components, personal adjustment, vocational adjustment, personality adjustment and lower stress are required for healthy adjustment. Vocational development constitutes an aspect of personal development which is intimately linked to the formulation and consolidation of a mature self-identity. In other words, it is concerned with successful satisfying
performance, leading to economical and emotional self-sufficiency. Personality as a factor in vocational development has been widely recognized, but the findings are still equivocal. It is not conclusive as the work on self-concept. Personality dimensions such as extraversion/introversion and neuroticism may be important determinors of vocational maturity. The research efforts in this connection are lacking. However, on the basis of research available in this direction, it is difficult to point out and to identify consistent trends. Hence, to draw a conclusion with regards to vocational maturity in its relationships with personality dimensions such as extraversion/introversion and neuroticism, making of an attempt to investigate it, is valuable systematic exploration in to dimentional approach as given by Eysenck (1947). It will probably make more sense of variation in the results of earlier research. Further, extensive research must be warranted for establishing the normative standards for the maturity of personality in vocational spectrum.

2. **Sex**

Literature abundantly confirms relationship of sex with vocational maturity. Various researchers have examined sex differences between boys and girls on vocational maturity variables and established the fact that girls were more vocationally mature than boys. This view has been

Martinez (1980) found a highly significant sex effect on career choice attitudes (CMI), in favour of college males. Bernardelli et al. (1983) found that males with more favourable attitudes towards making career choice more actively sought out occupational information than IX grade females. Markiewicz (1979) investigated that males showed a higher level of general vocational exploratory activity than females.

Leach (1979) found significant relationships between career choice attitudes and sex. Long (1980) and Neely and Johnson (1981) concluded that sex was correlated positively and significantly with vocational maturity. Chodzinski (1983) reported that sex along with other variables emerged as the best predictor of CMI variables. In multivariate designs, Bresnan (1976) found that ethnicity and the
interaction of sex and locus of control had a differential effect on vocational maturity. Reise (1980) found that the interaction of sex and grade level on the competence scores showed that male freshman and female seniors scores were significantly different.


The research evidence on sex differences in vocational maturity shows clearly that girls are vocationally more mature. This may be accounted for by the fact that girls are slightly ahead of boys, due to their maturational process. But, the differences in vocational maturity between boys and girls, the more it is apt to reflect the influence of the peer group. Probably girls are more docile and conforming than boys. Sex differences in vocational maturity between boys and girls may be thought to have a bearing on the vocational developmental and maturational process.
3. Abilities

Super and Crites (1962) have proposed that ability be used as a generic term which embraces both aptitude and proficiency or skill. The latter denotes "the degree of mastery already acquired in an activity", whereas the former refers to specific, factorially unitary behaviours which facilitate the learning of a task and which are relatively constant overtime. By the term differential abilities, we mean those basic human traits which combine in various ways in different individuals. The variety of combinations is reflected in the achievement levels of an individual in the various subject matter areas. There are different categories of these abilities, depending upon the investigator who is listing them. To turn briefly to abilities, it is obvious that a person's intelligence or his aptitudes play a significant role in the vocational maturation he is likely to attain. In the present study, abilities denote intelligence as well as aptitudes which are reviewed separately in the following paragraphs:

a) Intelligence

The importance of intelligence in vocational development and in achieving vocational maturity has been traced by many researchers. Terman and Oden (1947) found that the more intelligent an individual is the more capable he is in dealing with various vocational developmental tasks and hence vocationally more mature. Over a period of two decades, it has been found by various researchers that there
were positive and significant relationships between intelligence and vocational maturity (Crites, 1969; McGee, 1973; Parlikar, 1973; Scheri, 1973; Tinney, 1973; Kelso, 1975; Seaward, 1977; Chand, 1979; Wintersteen, 1979; Agarwal, 1981; Somers, 1981; Palmo and Lutz, 1983 and Simpson, 1983). Khan and Alvi (1983) found that CMI scores were generally correlated with self-estimates of their general ability. Super and Overstreet (1960); Harkness (1973); Whiteman (1973); Lawrence and Brown (1976); Pavlak (1981); Chodzinski (1983) and Saxena (1984) concluded that intelligence emerged as the best predictor of vocational maturity.

Smeda (1973) found that high IQ Ss were more vocationally mature than the low IQ Ss. Smith (1975) indicated that VDI attitude scores increased as academic aptitude increased from below average to average, to above average DIQ for both groups. Josan (1983) found that high scoring groups of both verbal and non-verbal intelligence scored higher than average and low scoring group on attitude scale, occupational information, goal selection, problem solving and total maturity (CMI) with the exception of self-appraisal and planning where low scoring group scored the highest. Newman (1977) found that (a) Ss choosing innovative occupations had patterns which indicated a higher level of career maturity and a perception of themselves as above average in intelligence than those choosing occupations in the other groups, (b) Females choosing
occupations classified as moderate tend to perceive themselves as fairly intelligent have the lowest level of career maturity of the three groups and (c) Those who choose traditional occupations for women tend to have a lower level of career maturity than those choosing innovative occupations. This group perceives itself as being less intelligent than those choosing occupations in the other two groups.

b) **Aptitudes**

The success of a person in a job or vocational setting depends on his special abilities and his motivations. The research evidence attempting to relate aptitude and vocational maturity is very limited. The traceable endeavour is restricted to the relationships of aptitude to vocational choices, vocational success, academic success and occupations rather than vocational maturity. The research evidence is being undertaken simply for their indirect bearing. Vocational maturity highlights realistic self-perception in terms of vocational choices and vocational success. Thus, developing insight into possible relationships of vocational maturity and aptitude will provide some direction in the formation of related hypothesis. There is a paucity of direct evidence on the relationship of vocational maturity with aptitudes.

Crosby (1975) concluded that Ss with high levels of intellectual maturity tended to be more vocationally mature than others with lesser mental abilities. Furthermore,
juniors with high mental maturity from all the three selected areas of Kentucky were inclined to plan more for a career, had gained occupational information, and were better able to make valid career decisions based upon the attained information. Crosby (1975) found that total sample of juniors with high verbal aptitudes tended to have high levels of vocational maturity. Ashley-Foster (1979) found that verbal aptitude was significantly related to each of the four career maturity measures (attitude, self-appraisal, planning, problem solving). Brown (1983) found that MISC-R Verbal and performance IQs along with other variables contributed significantly to the attitude scale (CMI). Descombs (1980) reported that attitude scale (CMI) positively related to intellectual level and school aptitudes. Dillard (1976) found that reading ability (as measured by the total reading achievement scores of the Metropolitan Achievement Test, and the Iowa Tests of Basic Skills) was a significant source of variance on the attitude scale of CMI. Brandt (1976) found that students' own estimate of their growth in knowledge of their interest, abilities and occupational information related to planning and choice. Stanley (1981) found that cognitive ability as measured by preliminary scholastic aptitude test (PSAT) scores had a significant effect on subjects mean change scores on the CMI attitude involvement scale. Manley (1974) found (i) significant negative correlations between the level of vocational choice and the following aptitudes (GATB) intelligence, verbal,
numerical, spatial, form perception and clerical perception; (ii) Significant negative relationships were found between the level of vocational preference and the following aptitudes (GATB) intelligence, verbal aptitude, numerical aptitude, clerical perception, motor co-ordination; (iii) The correlation coefficients for the level of vocational aspiration were found to be negatively related to the following variables (GATB): intelligence, verbal aptitude, numerical aptitude, form perception, clerical perception, motor-coordination finger dexterity.

Studies reported by Stanton (1935) and Leffel (1939) suggest that there is a positive relation between aptitude and occupational choices. According to Bennett, Seashore and Wesman (1966), students who are superior in numerical ability, spatial relations, besides mechanical reasoning will do better in engineering courses. Doppelt, Seashore and Odeger (1959) and Super and Crites (1962) found that engineers were particularly high in numerical ability, abstract reasoning and mechanical reasoning. Deb (1973) found positive and high correlation between engineering aptitude test scores and the marks obtained in different subjects of annual examination of engineering college. Vohra (1977) concluded that the occupational choices of polytechnic students are affected by the aptitudes of persons. Mohan and Brar (1988) found the technical personnel under training to be superior in Space Relations, Numerical ability, Abstract reasoning and mechanical reason-
ing than industrial workers, and that a positive correlation existed between these aptitudes scores and academic achievement practical as well as theoretical. Mohan and Ummat (1987) confirmed that aptitudes in terms of mechanical reasoning, abstract reasoning and numerical ability were highly correlated with academic achievement (success) in engineering profession.

It may be mentioned that special abilities, job aptitudes and intelligence are all important in analysing and predicting an individual's vocational behaviour. However, on the basis of research available in this direction, it is difficult to point out and to identify consistent trends. Hence, a conclusion with regard to vocational maturity in its relationship with aptitudes, making of an attempt to explore it, is worthwhile.

4. Academic Achievement

The importance of academic achievement in the field of vocational psychology emphasizes the need to examine closely the nature and the relative role of academic performance in relation to vocational maturity. It is now a scientifically well established fact that those students who have better academic records, tend to be vocationally more mature individuals than those whose academic achievements are poor (Bloss, 1973; Burkhart, 1973 and Crosby, 1975). Gasper (1976) concluded that students who perceived themselves as doing well in school possessed higher vocational maturity than those who perceived themselves as
being less successful in school. It has been found by various researchers that academic achievement is positively and significantly related to vocational maturity (Huang, Chin-Li, 1974; Brandt, 1976; Tilden, 1976; Karayanni, 1977; Seaward, 1977; Nimkuntod, 1978; Osgood, 1978; Chand, 1979; Armour, 1980; Descombs, 1980; Perez, 1980; Robinson, 1981; Mague, 1982; Hwang, Ru-Ing, 1983; and Khan and Alvi, 1983). Pavlak (1981) concluded that grade point average (GPA) along with other variables were the best predictors of IX grade vocational attitudinal maturity (CMI). Phillips and Strohmer (1982) found that only a combination of the scholastic achievement variable and lack of dependent decision style was even moderately predictive of vocational maturity. Arredondo (1977) found that Ss' academic achievement (GPA) did not have a significant affect on career maturity. However, when controlling for age, significant differences were found in the planning and total scale. In both instances, the data revealed that Ss in the A grade average group had significantly higher mean scores than the C grade average group.

Education has affects on individual development. Schools will have affects not only on achievement & knowledge of skills, but also influences the students in direction described in the goals of educational and vocational maturity in terms of school subjects. Different lines (or groups of subjects) might have different affects on the attitude and competencies (vocational maturity), which ultimately help in
development of realistic self-image of an individual. Thus, the horizon of educational and vocational development is based on academic performance which helps to determine vocational maturity. In conclusion, it can be pointed out that higher academic achievement is associated with higher vocational maturity.

**Conclusion**

Environmental and Psychological factors can be helpful in developing educational and vocational realistic self-perception of an individual. It may be said that these factors can help at the maximum possible development of different selves and integration of these into a harmonious system. The integrated person displays an effective balance in his behaviour. It is apparent that civilized personality could not exist unless personality characteristics were reasonably well-integrated. As such vocational maturity is the result of an interaction of environmental and psychological variables. The interaction viewpoint of development leads to conclusion that it is essential to investigate psychological and environmental variables for better understanding of vocational maturity in which person's life situation is determined. Review of related research and variables under study will be worthwhile in effective guidance toward personal development and personality integration and understanding problems of maladjustment and mental illness.

In the preceding Chapter necessary review of literature concerned with present study was made. Significance and hypotheses under study are reported in the succeeding Chapter-III of "Aims and Hypotheses."